



Royal Decree approving the Technical Regulation on the Safety of Infrastructure and Installations for Gaseous Fuels and its Supplementary Technical Instructions.

1. Article 12 (5) of Law 21/1992 of 16 July on Industry provides that the Industrial Safety Regulations at State level shall be approved by the National Government, without prejudice to the possibility for the Autonomous Communities with legislative powers over industry to introduce additional requirements on the same matters in the case of installations located in their territory.

Royal Decree 919/2006 of 28 July, approving the Technical Regulation on the distribution and use of gaseous fuels and its additional technical instructions ICG 01 to 11, brought together in a single text the technical and safety conditions of the installations that make it possible to distribute gaseous fuels from the transport networks, in the case of pipelines, or from production or storage centres, in other cases, to premises and consumer equipment or appliances, which were until then subject to a regulatory framework that differed in time, form and technique. It has also greatly contributed to enhancing and promoting safety in gaseous fuel installations covered by its scope. However, experience with the application of this Regulation and technical developments make it necessary to review these safety conditions and include other types of installations whose regulations have not evolved over time.

Furthermore, Law 34/1998 of 7 October 1998 on the hydrocarbons sector makes continuous references to the safety conditions that installations must meet and, in particular, provides in Article 89 that installations for gaseous fuels, as well as their technical and material elements, must comply with the corresponding technical standards for industrial safety and quality, in accordance with the provisions of Law 21/1992 of 16 July 1998, without prejudice to the provisions of the corresponding Autonomous Community legislation.



In the particular case of installations receiving gaseous fuels by pipeline, the aforementioned law initially assigned to the distribution companies the exclusive responsibility of carrying out the inspection of this type of installation. By means of Law 8/2015, of 21 May, amending Law 34/1998, of 7 October, on the Hydrocarbons Sector, and regulating certain tax and non-tax measures in relation to the exploration, investigation and exploitation of hydrocarbons, this provision is amended, extending the possibility of carrying out inspections of gas receiving installations to any of the authorised gas installation companies, with the distribution company playing a subsidiary role in carrying out these inspections. Royal Decree 984/2015 of 30 October 2014 regulating the organised gas market and third-party access to the facilities of the natural gas system goes further, establishing the procedure to be followed for carrying out this type of inspection and amending Royal Decree 919/2006 of 28 July 2014 in order to integrate these changes for reasons of regulatory consistency.

It should be noted that the definition of 'distributor' laid down in Law 34/1998 of 7 October 2007 is at all times related to the natural gas system. This applies to the existence of reception facilities fed by other types of gas, such as liquefied petroleum gases (LPG), which are also subject to an inspection regime for safety reasons and in which it is not explicitly stated what the role of the person responsible for inspecting the receiving facility is, and clarification is therefore needed in this regard.

2. Standardisation in the sector has made it possible to have technical instruments with a high degree of prior consensus, on which the regulation has relied by using as a reference standards approved by bodies accredited at both national and international level to carry out this activity. These standards contain prescriptions or recommendations of an eminently technical nature, especially when dealing with material characteristics. They do not therefore constitute mandatory documents, but they are part of a homogeneous set drawn up to provide a reference framework for safety aspects, as well as facilitating the systematic implementation of installations and trade and enabling continuous updating.

In this regard, it should be borne in mind that, according to Article 103 of the Spanish Constitution, it is for the public authorities to serve the general interests objectively and that they must therefore be the ultimate guarantors of the establishment of all the necessary safety conditions applicable to industrial installations, either directly in the legislative texts or on the basis of the rules referred to above. It is for this reason that we are taking the opportunity to review all the safety conditions that may be included in this Regulation or in the relevant additional technical instruction, as we consider the public administration to be the most appropriate agent for setting them, leaving the most technical requirements to the standards.

In order to facilitate their updating, the text of the so-called Supplementary Technical Instructions (ITC) only cited those standards by their reference numbers, without



the year of publication. An instruction to that effect contained the entire list of standards, this time with the year of publication, so that, when new versions appeared, the respective changes could be made to that list, automatically being updated in the operative text, without the need for any further intervention.

The list of standards was updated several times, the first time by decision of 29 April 2011 and the last time by decision of 25 March 2025. This method has proven to be efficient in its purpose, in that something as complicated has been achieved in administrative legislation as obtaining a certain degree of update at technical level, but it has also revealed some shortcomings such as the presumption that a standard changed its year of edition only over the years, never changing numbering, or that national standards could not be replaced by international standards because they coincided in scope. This has shown throughout the updates referred to above that there is a real possibility of loss of traceability between standards in cases where one of the above circumstances occurs, leaving the text of the corresponding ITC with the original standard code without it being possible to find its current equivalence in the table of standards. In order to prevent this situation, a system of reference to timeless standards has been implemented, using fixed codes that will be matched in the ITC containing the list of standards. Thus, any change in the numbering of a standard will always refer to the fixed code originally assigned, without there then being any possibility of such a loss of traceability.

In the same way as hitherto, it will also be possible to set deadlines for the transition between versions, as well as maximum deadlines for the execution of installations designed with old versions, each time the list is updated, so that companies and persons manufacturing and distributing equipment and materials can make products manufactured in accordance with the version of the annulled standard available within a reasonable time.

3. The numbers of persons and installation companies do not differ substantially from those already in existence, although the performance of specific tasks of particular sensitivity, as well as the emergence of new technologies as a result of technological developments, have made it advisable to determine in particular the characteristics of the persons who must perform them by introducing the concept of specialists in hydrogen and LNG or cryogenic.

4. For the construction and commissioning of the facilities, technical documentation in the form of a project or a report is still required, depending on the characteristics of the facilities and, in some cases, their communication to the Administration.

5. Experience with the application of the previous Regulation and the need for the public administration to have better knowledge of the facilities being set up, so that it can exercise its obligation to monitor the safety conditions of the facilities, makes it advisable to change the time at which this communication is made, and it is now mandatory to do so before the start of operations.



the installation, without it being necessary for that purpose to await the agreement of that public authority.

Furthermore, also as a result of the experience gained since the adoption of the previous Regulation and in order to enable the competent public administrations to exercise more effectively their control role over existing installations, the inspection table is revised, establishing in some cases that the administration verifies safety provisions and requirements through an authorised control body, as provided for in Article 14 of Law 21/1992 of 16 July 2003. We would also like to take the opportunity to provide a more detailed description of the procedure to be followed by this official working with the Administration for the control of the installations. In the case of installations

receiving piped gas, the requirements of Law 34/1998 of 7 October 2007 are complied with. The obligation on natural or legal persons who own installations of all types to keep them in good condition by means of appropriate maintenance and periodic inspections laid down in the regulations is maintained.

In addition, the addressees of this Regulation shall make all communications with the administration in accordance with Article 14 of Law 39/2015 of 1 October 2015 on the Common Administrative Procedure of Public Administrations.

6. It is also necessary to provide for new gaseous fuels, such as those covered by Directive 2014/94/EU of the European Parliament and of the Council of 22 October 2014 on the deployment of alternative fuels infrastructure and its derived regulations, and to open up the regulation to new types of installations that may arise from the widespread use of combustible gases, such as hydrogen.

Finally, it is important to highlight the crucial role of renewable gases, and in particular hydrogen, in the process of energy transition and decarbonisation of our society. In order to facilitate the deployment of this key infrastructure for the decarbonisation of transport, the Regulation has been adapted to this new reality. To this end, an annex has been added setting out the minimum safety distances in the event of hydrogen leakage between the various elements of the installations of service stations supplying this gas to vehicles, taking as a reference internationally recognised standards.

7. In view of the above, the Technical Regulation on the distribution and use of gaseous fuels and its additional technical instructions ICG 01 to 11, approved by Royal Decree 919/2006 of 28 July, need to be adapted and updated.

A regulatory structure is maintained in the form of a basic regulation, containing the general rules applicable to all its additional technical instructions, followed by a collection of additional technical instructions (abbreviated to 'JTIs'), with one of these JTIs being used as a container in the list of reference standards relating to the most aspects.



technicians and developers of the provisions laid down in the regulation, so that the whole body demonstrates regulatory consistency and, at the same time, makes it easier to update them.

In addition, and taking into account experience in the application of this Regulation, it is necessary to approve a new additional technical instruction for the design, construction and operation of storage, transfer and filling plants for liquefied petroleum gas containers, hitherto regulated by the Order of 1 December 1964 approving safety standards for liquefied petroleum gas (LPG) filling and transfer plants.

8. On the other hand, in order to adapt the legislation to the development of the technique and to avoid regulatory dispersion, it is also necessary to approve a new technical instruction aimed at establishing the essential technical requirements and minimum safety measures to be observed when designing, constructing and operating installations for gaseous fuels with a maximum design pressure of more than 16 bar and their auxiliary installations, including regulating stations and

connections connected to these networks, until now regulated by the Order of 18 November 1974 approving the Regulation on Gaseous Fuels Networks and Offences in everything that does not contradict Royal Decree 919/2006 of 28 July.

It is also worth noting the publication of Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 on fluorinated greenhouse gases, amending Directive (EU) 2019/1937 and repealing Regulation (EU) No 517/2014, which updated the safety conditions for refrigeration installations in order to achieve a reduction in hydrofluorocarbon (HFC) emissions, and to adapt those conditions in line with technical developments and experience gained in applying the legislation. In order to adapt the national legislation to the new European framework, it is therefore necessary to make amendments to Royal Decree 552/2019 of 27 September approving the Safety Regulation for refrigeration installations and its additional technical instructions, as well as to the Regulation on technical conditions and safety guarantees in high-voltage electrical installations and its Supplementary Technical Instructions ITC RAT-01 to 23, approved by Royal Decree 337/2014 of 9 May. In the case of Royal Decree 552/2019, of 27 September, minor amendments are also made to bring that regulation into line with the provisions of Royal Decree 487/2022, of 21 June, laying down the health requirements for the prevention and control of legionellosis.

A final provision has been added to amend the Regulation on pressure equipment, approved by Royal Decree 809/2021 of 21 September, and its ITC-EP 6 on transportable pressure vessels. Specifically, the amendment to ITC-EP 6 is in line with the conditions included in the new ITC-ICG 11 approved by this Royal Decree, allowing pressure tests on charging circuits to be carried out also by means of a pneumatic test, provided that the respective safety measures required for this type of test are taken, and without the need to request authorisation.



administrative. It has also been clarified which fluids may generally be used in the hydrostatic test set out in section 2.3 of Annex III to the Regulation on pressure equipment, so as to include not only water but also other working fluids, provided that these are not dangerous. This qualification was included in the previous guide to the previous Regulation on Pressure Equipment, approved by Royal Decree 2060/2008 of 12 December. However, given that the guides are not binding, it is considered appropriate to include this qualification in the Regulation and to avoid discrepancies in interpretation in this area.

A final provision has also been added for the amendment of the Regulation on the storage of chemical products, approved by Royal Decree 656/2017 of 23 June, with the aim of maintaining a correct level of fire protection in these industrial installations, in line with the changes introduced by the Regulation on Fire Safety in Industrial Establishments, approved by Royal Decree 164/2025 of 4 March.

9. This draft complies with the principles of good regulation according to which public administrations must act in the exercise of legislative initiative and regulatory power, such as the principles of necessity, effectiveness, proportionality, legal certainty, transparency and efficiency, provided for in Article 129 of Law 39/2015 of 1 October 2015.

To this end, compliance with the principles of necessity and effectiveness is demonstrated in order to resolve the shortcomings observed in the regulations currently in force and to coordinate

the action of the different administrations as well as to facilitate and coordinate the action of the different actors in the sector and that the legislation is in line with the principle of proportionality, as it contains the regulations essential for achieving the aforementioned objectives, and also complies with the principle of legal certainty by establishing a uniform basic framework throughout the territory. As regards the principle of transparency, the various procedures specific to public participation, namely public consultation and public consultation and information procedures, have been complied with. With regard to the principle of efficiency, the main objective of the standard is the adaptation of the safety regulation for installations of gaseous fuels to the new codification of standards referred to above, and the improvement of the regulation taking into account the evolution of the technique and the experience that has accumulated with the application of the same. Also, with regard to public expenditure, it should be noted that the budgetary impact is zero.

In order to draw up this Royal Decree, the Autonomous Communities have been consulted and, in accordance with Article 26 (6) of Government Law 50/1997 of 27 November, those bodies related to the sector that are known and considered to be the most representative have been consulted. This Royal Decree has also been the subject of a report by the Industrial Safety Coordination Council, in accordance with Article 18 (3) (a) of Law 21/1992 of 16 July and Article 2 (d) of Royal Decree 251/1997 of 21 February approving the Regulation of the Industrial Safety Coordination Council.



Finally, this Royal Decree has been communicated to the European Commission and the other Member States in accordance with the requirements of Royal Decree 1337/1999 of 31 July regulating the transmission of information in the field of technical standards and regulations and regulations relating to information society services, in application of Directive (EU) 2015/1535 of the European Parliament and of the Council of 9 September 2015 laying down a procedure for the provision of information in the field of technical regulations and of rules on Information Society services.

This legislation constitutes a regulatory rule on industrial safety and is approved in the exercise of powers in matters of industrial safety, pursuant to Article 149 (1.13) of the Spanish Constitution, which confers on the State the power to determine the bases and coordination of the general planning of economic activity, without prejudice to the powers of the Autonomous Communities in matters of industry, as has been repeatedly stated in constitutional case-law. This regulation is issued pursuant to Article 12 (5) of Law 21/1992 of 16 July on Industry. In this regard, it should be noted that the regulation adopted is a basic regulation and contains provisions of an exclusive and highly technical nature, so that the law is not an appropriate instrument for its establishment and its approval by means of a royal decree is justified.

Accordingly, on a proposal from the Minister for Industry and Tourism, in agreement with the Council of State and following deliberation by the Council of Ministers at its meeting of [XX XXX 202X],

I HEREBY ORDER:

Sole Article Approval of the Regulation

The Technical Regulation for the Safety of Gas Fuel Infrastructure and Installations and its Supplementary Technical Instructions, the text of which is inserted below, is hereby adopted.

First supplementary provision. *Technical guide*

The management body responsible for industrial safety within the Ministry of Industry and Tourism may draw up and, where appropriate, keep up to date a non-binding technical guide for the practical application of the Regulation and its additional technical instructions, which may clarify general concepts.

Second supplementary provision. *Insurance cover or other equivalent guarantee taken out in another Member State of the European Union.*

Where the gas installation undertaking which establishes itself or carries out the activity in Spain is already covered by professional indemnity insurance or another guarantee which is essentially equivalent or comparable as regards its purpose and the cover it offers in terms of insured risk, sum insured or limit of the guarantee in another Member State



the requirement laid down in paragraph 3.2 (e) of ITC ICG-09 approved by this Royal Decree shall be deemed to have been met if the entire Spanish territory is included in the insurance cover. If the equivalence with the requirements is only partial, the gas installation undertaking shall extend the insurance or equivalent guarantee until the required conditions are met. In any event, the insurance undertaking must be authorised to operate in Spain.

In the case of insurance or other guarantees taken out with insurance undertakings and credit institutions authorised in another Member State of the European Union, certificates issued by them shall be accepted for accreditation purposes.

Third supplementary provision. *Acceptance of documents from other Member States of the European Union for the purpose of accreditation of compliance with requirements.*

For the purposes of proving compliance with the requirements imposed on gas installation undertakings, documents from another Member State of the European Union showing that those requirements are met shall be accepted, under the terms laid down in Article 17 of Law 17/2009 of 23 November 2009 on free access to service activities and the exercise thereof.

Fourth supplementary provision. *Equivalence of requirements.*

In relation to goods subject to Article 34 of the Treaty on the Functioning of the European Union and lawfully marketed in another Member State for use in gaseous fuel installations, the provisions of Regulation (EU) 2019/515 of the European Parliament and of the Council of 19 March 2019 on the mutual recognition of goods lawfully marketed in another Member State and repealing Regulation (EC) No 764/2008 shall apply.

Fifth additional provision *Sworn declaration template*

It will be up to the Autonomous Communities to draw up and keep available the templates for the self-declaration. In order to facilitate integration with the Integrated Industrial Register governed by

Title IV of Law 21/1992, of 16 July, on Industry, and its Regulation approved by Royal Decree 559/2010, of 7 May, the competent body for industrial safety of the Ministry of Industry and Tourism may draw up a proposal for model self-declaration forms, which shall include the data to be supplied to the aforementioned register and which, where appropriate, shall be made available on the Ministry's internet portal.

Sixth supplementary provision. *Information and complaints obligations.*

Gas installation undertakings must comply with the information obligations of suppliers and with the obligations relating to complaints laid down, respectively, in Articles 22 and 23 of Law 17/2009 of 23 November.



First transitional provision *Inspection bodies authorised before the entry into force of this Royal Decree.*

The inspection bodies authorised in accordance with the Technical Regulation on the distribution and use of gaseous fuels and its additional technical instructions ICG 01 to 11, approved by Royal Decree 919/2006 of 28 July, may continue to carry out the activities for which they are authorised for a period of twenty-four months from the date of entry into force of this Royal Decree.

Likewise, the control bodies authorised in the area of LPG filling and transfer plants or authorised in the area of gaseous fuel installations by pipeline at a maximum pressure of more than 16 bar may continue to carry out the activities for which they are authorised for the same period of twenty-four months from the date of entry into force of this Royal Decree.

Once this period has elapsed, these bodies must be accredited and authorised in accordance with the new legislation approved by this Royal Decree and, where applicable, its implementing rules.

Second transitional provision: *Administrative regularisation of installations.*

If no other provisions are laid down in this regard in the relevant additional technical instructions, the owners of the installations included in the scope of the regulation approved by this Royal Decree, whose implementation and subsequent implementation took place before its entry into force, but who, for various reasons and for which notification is mandatory, have no record of the submission of the documentation required for their commissioning to the competent industry body of the respective Autonomous Communities, shall have three years from the entry into force of this Royal Decree to submit the following documentation to the competent body of the Autonomous Community in which the installation resides:

- a) Self-declaration by the operator indicating the year of installation and putting into service, and that the installation complies with the applicable legislation at the time of implementation and applicable regulations and that it has been in continuous operation since being put into service.
- b) Original documentation proving the year in which the installation was put into operation, as well as justifying both the correct state of maintenance and the proper continuous operation until the submission of the new communication and establishing a description of the installation

accompanied by calculations, drawings and documentation specific to any equipment in accordance with the technical requirements of the regulations in force at the time of putting into service.

If there is no original documentation, a technical report must be provided showing the actual and current state of the installation, carried out per qualified technical person or per undertaking.



an installation authorised, where appropriate, in accordance with the relevant ITC, which describes the installation and accompanies calculations, drawings and descriptions of the equipment, stating that the installation complies with the technical requirements of the regulations in force at the time of installation or of the current regulations and that it is in good working order. In this case, the competent body may request any additional information it deems necessary.

- c) Valid periodic inspection certificate issued by the entity applying it depending on the type of installation, verifying the safety conditions of the installation in relation to the regulations applicable to it.

Third transitional provision: *Periodic reviews and inspections of existing installations.*

The period for carrying out the first periodic inspection, starting from the entry into force of this Royal Decree, shall start to run from the last periodic review or inspection carried out, in accordance with Royal Decree 919/2006 of 28 July 2007, or, failing that, from the date on which the installation is put into service.

Where the period laid down in this Royal Decree for carrying out inspections or periodic inspections is shorter than that laid down in Royal Decree 919/2006 of 28 July 2007, and the provisions of the previous paragraph mean that, on the entry into force of this Royal Decree, the facility is out of time to carry out its next periodic inspection or inspection, the period originally laid down may be maintained and carried out within the period initially laid down, and the operator of the facility must inform the inspection body or the person carrying out the periodic inspection of this situation, which must be noted in the corresponding report or report. The time limits for successive checks or inspections shall be those laid down in this Royal Decree.

For installations falling within the scope of the ITC-ICG-03, during the two years following the entry into force of this Royal Decree, inspections may be carried out by control bodies accredited to carry out initial inspections in accordance with Royal Decree 919/2006.

In the case of LPG filling and transfer plants, as well as in gaseous fuel installations under pipeline pressure of a design maximum of more than 16 bar, the time limit shall be counted from the last periodic review or inspection carried out in accordance with the regulations applicable to this type of plant until the entry into force of this Regulation or, failing that, from the date on which the installation is put into service.



In cases where no periodic inspections or reviews have been provided for until the entry into force of this Royal Decree, the first inspection or review shall be carried out within the period provided for in the relevant ITC or, if not provided for, no later than two years after the entry into force of this Royal Decree.

Fourth transitional provision *Installations in operation on the date of entry into force of the Regulation.*

The implementation and commissioning of those installations, within the scope of the regulation approved by this Royal Decree, whose technical design was carried out before the entry into force of this Regulation, may be carried out in accordance with the legislation in force at the time of the design during the two years following the entry into force of this Regulation.

In order to determine the date from which an installation is considered to be in operation, the following shall be taken into account:

- a) If the installation requires a project requiring approval by a professional body or has been submitted and registered with the competent administrative body, the date of approval or registration shall be taken.
- b) If the project is not approved or no project is required, the date of application for an administrative licence or the date of submission of the declaration of compliance, if any, to the competent administrative body shall be taken into account, with a time-stamped electronic signature.

The installation documentation shall state that the installation is covered by this transitional provision, specifying the date from which the installation is in operation.

Fifth transitional provision *Previously authorised gas installation companies.*

Gas installation undertakings authorised on the date of entry into force of this Royal Decree may continue to carry out the activity subject to authorisation without having to submit the self-declaration regulated in ITC ICG-09 of the Technical Regulation on the Safety of Gas Fuel Infrastructure and Installations approved by this Royal Decree.

However, those authorised Category A gas installation undertakings wishing to operate hydrogen or LNG facilities shall have two years from the entry into force of this Royal Decree to adapt to the new requirements imposed by paragraph 3.2 of supplementary technical instruction ITC ICG-09 and to submit a new self-declaration specifically covering these activities. If such a self-declaration is not submitted within the prescribed period, it shall be understood that these gas installation undertakings are not entitled to carry out their activity in this type of installation.

Sixth Transitional Provision. *Gas appliances.*



Existing gas appliances that are not subject to Regulation (EU) 2016/426, which burn gas, have been certified by the unit verification procedure and have been put into operation prior to this Royal Decree, must submit to the corresponding Autonomous Community within 5 years of the entry into force of this Regulation, together with the periodic inspection, the initial inspection or the simplified design document of the appliance to be registered, indicating the date on which it was put into operation and the safety conditions of the appliance, for inclusion in the corresponding register of the Autonomous Communities since the entry into force of this Royal Decree.

If the periodic inspection or review of ITC ICG-07 finds that the equipment placed on the market with unit verification or as single-type equipment is not registered or has not been subject to periodic inspection by a control body, it must be indicated as a secondary anomaly and the deadline for registration is 5 years after the entry into force of this Royal Decree.

After this period, if equipment is detected without proper recording, it shall be indicated as a major anomaly or serious defect.

Seventh transitional provision. Installations affected by the fourth final provision that are in the process of being implemented at the entry into force of this Royal Decree.

The implementation and commissioning of installations, within the scope of Royal Decree 656/2017 of 23 June approving the Regulation on the storage of chemical products and its additional technical instructions MIE APQ 0 to 10, the technical design of which was carried out before the entry into force of this Royal Decree, may be carried out in accordance with the legislation in force at the time of design for six months following the entry into force of this Royal Decree.

In order to determine the date from which an installation is considered to be in operation, the following shall be taken into account:

- a) If the installation requires a project to be approved by a professional body or has been submitted and registered with the competent administrative body, the date of approval or registration shall be taken.
- b) If the project is not approved or no project is required, the date of the building permit or the date of submission of the required documentation, depending on the type of storage, to the competent administrative body shall be taken into account, with a time-stamped electronic signature.

The installation documentation shall state that the installation is covered by this transitional provision, specifying the date from which the installation is in operation.

Sole repeal provision. Repeal of legislation.



Any provisions of equal or lesser rank that contradict, contradict or are incompatible with the provisions of this Royal Decree, and in particular the following provisions, shall be repealed:

- a) Royal Decree 919/2006 of 28 July approving the Technical Regulation on the distribution and use of gaseous fuels and its additional technical instructions ICG 01 to 11.
- b) Order of 1 December 1964 adopting safety standards for the construction, assembly and operation of 'Liquefied petroleum gas filling and transfer plants'.
- c) First additional provision of Royal Decree 984/2015 of 30 October regulating the organised gas market and third-party access to the facilities of the natural gas system, with the exception of paragraphs 7 and 8.
- d) Order of 18 November 1974 approving the Regulation on Gaseous Fuel Networks and Offences, in so far as it contradicts or conflicts with the provisions of this Royal Decree.

First final provision *Amendment of Royal Decree 552/2019 of 27 September approving the Safety Regulation for refrigeration installations and its additional technical instructions.*

Royal Decree 552/2019 of 27 September 2014 approving the Safety Regulation for refrigeration installations and its additional technical instructions is hereby amended as follows:

One. The first subparagraph of Article 9(3) of the Regulation is amended to read as follows:

'Where facilities employ or are intended to employ fluorinated refrigerants or their alternatives, staff carrying out the activities provided for in Royal Decree 115/2017 of 17 February 2006 regulating the placing on the market and handling of fluorinated gases and equipment based thereon, as well as the certification of professionals using them and establishing the technical requirements for facilities carrying out activities that emit fluorinated gases, must be in possession of the certification required in accordance with that standard or its subsequent developments.'

Two. Article 13(6) of the Regulation is amended to read as follows:

'6. Furthermore, in accordance with Article 5 (3) of Royal Decree 487/2022 of 21 June establishing the health requirements for the prevention and control of legionellosis, the installation companies of cooling towers and evaporative capacitors must inform the holder in writing of the obligation to notify the competent health administration of the entry into operation of evaporative towers and capacitors within one month, the number and technical characteristics of this equipment and the proposal a-rue-2-6a1031ac5a9ed042399183.docx11 February.



amendment affecting the system, by means of the document set out in Annex II to the aforementioned Royal Decree.'

Three. A new subparagraph is added at the end of Article 21(6) of the Regulation to read as follows:

'In the case of the abovementioned systems, which are charged with refrigerants belonging to group L1 or group A2L, installation, maintenance, repair and production of the installation certificate may be carried out by a level 1 installation company. For the other systems subject to this paragraph, these tasks may only be performed by Level 2 companies, with the certificate signed, in these cases, by the qualified technician competent for it.'

Four. Section 3.6.11 of Supplementary Technical Instruction IF-01 is amended to read as follows:

'3.6.11 fluorinated refrigerant leakage detection system

Calibrated mechanical, electrical or electronic device for detecting leakage of fluorinated greenhouse gases as defined in point 26 of Article 3 of Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 on fluorinated greenhouse gases, amending Directive (EU) 2019/1937 and repealing Regulation (EU) No 517/2014, which, in the event of detection, alerts the operator, who shall report this to the holding company.'

Five. Three new paragraphs are added at the end of Section 1 of Supplementary Technical Instruction IF-04, worded as follows:

"Generally speaking, standards for product families dealing with the safety of refrigeration systems prevail over horizontal and generic standards dealing with the same subject.

In the particular case of household and similar electrical appliances such as electric heat pumps, air conditioners and dehumidifiers manufactured in accordance with standard UNE EN IEC 60335-2-40: 2024 or UNE EN IEC 60335-2-40: 2025, the safety criteria laid down therein (load limits, location of detectors, valves, alarm, ventilation, etc.) or in the installation manuals for the equipment manufactured under those standards may alternatively be applied.

Appliances not intended for normal domestic use but which may nevertheless be a source of danger to the public, such as appliances intended for use by inexperienced users in shops, light industry or farms, fall within the scope of standards UNE EN IEC 60335-2-40: 2024 and UNE EN IEC 60335-2-40: 2025. This use also includes hotels, restaurants, offices, schools and, in general, any



another room, the occupants of which do not necessarily have to be trained in the operation of these appliances.'

Six. Two new paragraphs have been added at the end of Section 3.1 of Supplementary Technical Instruction IF-04, worded as follows:

"Where product standards exist for certain types of systems and where such product standards refer to quantitative limits for refrigerant; for the particular case of household and similar electrical appliances such as electric heat pumps, air conditioners and dehumidifiers manufactured in accordance with UNE-EN IEC 60335-2-40: 2024 or UNE EN IEC 60335-2-40: 2025, for equipment manufactured in accordance with those standards, the quantitative limits on refrigerant laid down therein, or in the installation manuals for equipment manufactured under those standards, may be applied alternatively to those indicated in the rest of IF-04.

Appliances not intended for normal domestic use but which may nevertheless be a source of danger to the public, such as appliances intended for use by inexperienced users in shops, light industry and farms, fall within the scope of standards UNE EN IEC 60335-2-40: 2024 and UNE EN IEC 60335-2-40: 2025. This use also includes hotels, restaurants, offices, schools and, in general, any other premises the occupants of which do not necessarily have to be trained in the operation of these appliances.'

Seven. The first paragraph of Section 3.3.1.1 of Supplementary Technical Instruction IF-04 is amended to read as follows:

'For systems with flammable refrigerants, refrigeration systems must be constructed in such a way that the refrigerant cannot flow or stagnate in such a way as to cause a risk of fire or explosion in internal areas of equipment where there are components and appliances which could constitute a source of ignition and which can operate under normal conditions or in the event of leakage. Cooling systems that fall within the scope and comply with the requirements of the EN 60335 series of standards are considered to comply with this paragraph.'

Eight. Section 4.3 of Supplementary Technical Instruction IF-06 is amended to read as follows:

'4.3 fluorinated refrigerant leakage detection systems.

Installations of stationary equipment using fluorinated refrigerants listed in points (a) to (d) of Article 5 (2) of Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 shall have leakage detection systems in place for each equipment that contains fluorinated greenhouse gases listed in Annex I to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 in quantities of 500 tonnes of CO₂ equivalent or more or gases listed in the proposal a-rue-2-6a1031ac5a9ed042399183.docx11 February. 15



section 1 of Annex II to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 in quantities of 100 kilograms or more. These leak detection systems shall alert, at the time a leak is detected, the operator of the installation and, in the case of Tier 2 installations, the maintenance company at the time a leak is detected. These alarms and the action taken must be recorded in the table of periodic leak checks in the logbook of the refrigeration installation.”

Nine. The first paragraph of Section 3.1 of Supplementary Technical Instruction IF-14 is amended to read as follows:

“Level 2 refrigeration facilities shall be inspected every ten years.

Systems using fluorinated refrigerants listed in Annex I or Section 1 of Annex II to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 shall, irrespective of the level of the installations, be inspected in accordance with the following limits:

If they contain fluorinated refrigerants listed in Annex I:

Refrigerant charge: (tonnes CO ₂ equivalent)	Periodicity
Load $\geq$ 5000	Annual
$500 \leq$ Load $<$ 5000	Every two years
$50 \leq$ Load $<$ 500	Every 5 years

If containing fluorinated refrigerants listed in Annex II, Section 1:

Refrigerant charge: (kg)	Periodicity
Load $\geq$ 200	Annual
$100 \leq$ Load $<$ 200	Every two years
$10 \leq$ Load $<$ 100	Every 5 years

Ten. Section 1.10.2 of Supplementary Technical Instruction IF-17 is amended to read as follows:

‘1.10.2. Refrigerants rejected for reuse.

Where used refrigerants of the types HFCs, PFCs and HFOs cannot be reused because cleaning or reclamation is not possible, they must be handed over to the authorised waste manager for disposal.’



Eleven. Paragraph 2.3 (v) of Instruction IF-17 is amended to read as follows:

“(v) Equipment with charges of fluorinated greenhouse refrigerants in quantities of 500 tonnes of CO₂ equivalent or more listed in Annex I to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 or quantities of 100 kilograms or more of gases listed in Section 1 of Annex II to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 shall be fitted with leakage detection systems consisting of calibrated mechanical, electrical or electronic devices for detecting leakage of fluorinated greenhouse gases which, if detected, alert the operator of the technical operation of the installation.”

Twelve. Section 2.5.2 of Supplementary Technical Instruction IF-17 is amended to read as follows:

‘2.5.2. Programme for the review of refrigeration systems.

In accordance with Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024, the following systems will be reviewed in accordance with the procedure specified in paragraph 2.5.3 of this JTI:

New systems.	Immediately upon putting into service.
Equipment that contains fluorinated greenhouse gases not contained in foams listed in Annex I to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 in quantities of less than 5 tonnes of CO ₂ .	Not subject to periodic inspection.
Equipment that contains fluorinated greenhouse gases not contained in foams listed in Section 1 of Annex II to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 in quantities below 1 kilogram.	
Hermetically sealed equipment that contains less than 10 tonnes of CO ₂ equivalent of fluorinated greenhouse gases listed in Annex I to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024.	
Hermetically sealed equipment that contains less than 2 kilograms of fluorinated greenhouse gases listed in Section 1 of Annex II to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024.	
Hermetically sealed equipment installed in residential buildings containing less than 3 kg of gases	



fluorinated greenhouse gases, provided that they are labelled as hermetically sealed.	
Equipment that contains less than 50 tonnes of CO ₂ equivalent of fluorinated greenhouse gases listed in Annex I to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024.	At least every 12 months (if a leakage detection system is in place, at least every 24 months).
Equipment that contains less than 10 kilograms of fluorinated greenhouse gases listed in Section 1 of Annex II to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024.	
Equipment that contains at least 50 tonnes of CO ₂ equivalent but less than 500 tonnes of CO ₂ equivalent of fluorinated greenhouse gases listed in Annex I to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024.	At least every 6 months (if a leakage detection system is in place, at least every 12 months).
Equipment that contains at least 10 kilograms but less than 100 kilograms of fluorinated greenhouse gases listed in Section 1 of Annex II to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024.	
Equipment that contains at least 500 tonnes of CO ₂ equivalent of fluorinated greenhouse gases listed in Annex I to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024.	At least every three months (if a leakage detection system is in place, at least every six months).
Equipment that contains at least 100 kilograms of fluorinated greenhouse gases listed in Section 1 of Annex II to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024.	

Refrigerant leakage detection systems shall be mandatory for equipment that contains fluorinated greenhouse gases listed in Annex I to Regulation (EU) 2024/573 of the European Parliament and of the Council of 7 February 2024 in quantities of 500 tonnes of CO₂ equivalent or more or gases listed in Section 1 of Annex II to that Regulation in quantities of 100 kilograms or more, in accordance with paragraph 4.3 of IF-06, and shall be monitored at least every twelve months to ensure their proper functioning.

In cases where they do not function properly, the frequency of the leakage reviews referred to above shall be doubled.”

13. Three new rows are added to the table relating the reference standards of Supplementary Technical Instruction IF-21.



Norm	Title
UNE-EN IEC 60335-2-40: 2024/A11: 2024.	Safety of household and similar appliances Part 2-40: Particular requirements for electric heat pumps, air conditioners and dehumidifiers
UNE-EN IEC 60335-2-40: 2024.	Safety of household and similar appliances Part 2-40: Particular requirements for electric heat pumps, air conditioners and dehumidifiers
UNE EN IEC 60335-2-40: 2025	Safety of household and similar appliances Part 2-40: Particular requirements for electric heat pumps, air conditioners and dehumidifiers

Second final provision *Amendment of the Regulation on pressure equipment and its supplementary technical instruction ITC EP-6 'Transportable pressure vessels', approved by Royal Decree 809/2021 of 21 September.*

The Regulation on pressure equipment and its supplementary technical instruction ITC EP-6 'Transportable pressure vessels', approved by Royal Decree 809/2021 of 21 September, are amended as follows:

One: Article 1(2) shall read as follows:

'2. The following are excluded from the application of the provisions of this JTI:

- a) LPG cartridges.
- b) Fire extinguishers, which shall be governed by Royal Decree 513/2017 of 22 May approving the Regulation on fire protection installations.
- c) Self-contained respiratory equipment cylinders included in JTI EP-5.
- d) Liquefied petroleum gas (LPG) container filling plants included in Royal Decree XXX/XXX approving the Technical Regulation on the Safety of Infrastructure and Installations for Gaseous Fuels'

Two. Paragraph 2.3, 'Level C: Off-service inspection with pressure test' of Annex III 'Periodic inspections' to the Pressure Equipment Regulation shall read as follows:



‘2.3 level C: Inspection out of service with pressure test.

It shall consist of at least one level B inspection in addition to a hydrostatic pressure test, under the same conditions and pressures as those of the first test, or the one indicated on the labelling referred to in section 3.3 of Annex I to Royal Decree 709/2015 of 24 July, or any special test replacing it that has been expressly indicated by the manufacturer in his instructions or previously authorised by the competent body of the Autonomous Community corresponding to the location of the equipment or installation.

The hydrostatic pressure test may be carried out with water or with the working fluid of the equipment itself provided that the fluid is in the liquid phase, is not considered dangerous in Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 and the test is carried out at room temperature.’

Three. Article 11 of supplementary technical instruction ITC EP-6 shall read as follows:

‘Article 11. Regular inspection of recharging centres.

1. Every five years from the date on which the installation is brought into service, the recharging centres must undergo a periodic inspection to verify that the regulatory conditions of this ITC have been met and that the site conditions have not been changed.

A pressure line test shall be carried out. The test pressure shall be 1,3 times the maximum working pressure of the installation in the case of a hydrostatic test or 1,1 times the maximum working pressure of the installation in the case of a pneumatic test.

In the case of plants with equipment for which the pooled pressure test would present specific technical difficulties, it is considered permissible to carry out tests on each of its parts or special replacement tests as set out in point 2.3 of Annex III to the Regulation.

The safety valves shall be removed from the installation by visual inspection of the condition of the installation. These valves shall then be tested and their tripping verified and sealed at the maximum operating pressure of the installation.

The proper functioning of all control and safety elements of the installation (safety valves, pressure gauges, pressure gauges, etc.) shall be checked.

The periodic inspection shall be carried out by a control body. A report will be issued on the outcome, indicating any shortcomings detected, which will be made available to the competent body of the Autonomous Community.



2. In the case of a pneumatic test, the following recitals shall be taken into account:

a) The operator of the installation shall draw up a test plan which shall include the stages of its development with maintenance times for the pressures during each stage of the test, as well as the other operations to be carried out during the test. This plan must also include the minimum safety distances to be maintained during the test, together with the other safety and security measures to be carried out during the test.

The inspection body responsible for carrying out the test must validate the test plan drawn up by the operator of the installation.

b) The operator of the installation shall appoint a test coordinator who shall be responsible for the conduct and safety of the test and shall be present throughout the test.

c) Before the pneumatic test is carried out, the inspection body shall carry out a visual inspection of the installation.

d) During the test, the area in which the movement of personnel from outside the test is not permitted shall be marked.

3. In addition to the inspections indicated in the previous sections, the operator of the installation shall review, or cause to be reviewed annually per authorised installation company, the correct functioning of all control and safety elements of the installation (safety valves, manometers, pressure gauges and pressure regulators, among others). A written record of the outcome of the reviews and verifications shall be kept at the disposal of the competent authority for a period of 10 years.'

Final provision 3. Amendment of the Supplementary Technical Instructions to the Regulation on technical conditions and safety guarantees in high-voltage electrical installations, approved by Royal Decree 337/2014 of 9 May 2007.

The Supplementary Technical Instructions of the Regulation on technical conditions and safety guarantees in high-voltage electrical installations, approved by Royal Decree 337/2014 of 9 May, are amended as follows:

One. Article 2(1) of Supplementary Technical Instruction ITC-RAT 06, 'Circuit manoeuvring apparatus', shall read as follows:

"2.1 switches, whether or not automatic, may use for arc quenching systems based on the use of dielectrics such as equivalent insulating oils or liquids, compressed air, sulphur hexafluoride or equivalent insulating gases, vacuum, and technologies



based on the principles of magnetic blowing, self-blowing, or any other principle recommended by experience.

The positions "closed" and "open" shall be clearly indicated by means of signs on the shunting mechanism.'

Two. Article 4(4) of Supplementary Technical Instruction ITC-RAT 14 'Inner House Electrical Installations' shall read as follows:

'4.4 ventilation.

3.1.1 In order to ensure good ventilation in the installations in order to avoid excessive heating, adequate air inlets and outlets shall be provided, where natural ventilation is used.

Ventilation may be forced, in which case the arrangement of the ducts shall be the most appropriate according to the design of the electrical installation, and shall be fitted with automatic stopping devices for their operation in the event of fire.

In processing centres, ventilation may be direct to the outside, or where permitted by specific regulations affecting compartmentalisation, indirect through a room with ventilation to the outside.

3.1.2 Vents intended for ventilation must be protected in such a way as to prevent the passage of small animals where their presence is likely to cause damage or accident and must be so arranged or protected that, if they are directly accessible from the outside, they cannot give rise to inadvertent contacts when metal objects are introduced through them. They must be in an appropriate form or have adequate protection against the entry of rainwater.

3.1.3 In processing plants located in buildings of other uses, the ventilation duct shall have its outlet outlet in such a way that the air expelled does not disturb the other users of the building.

Ventilation ducts must comply with the fire sectors of the building, which they establish according to the type of building in this ITC-RAT 14 and in the Technical Building Code.

3.1.4 The design of buildings shall consider how to prevent the leakage of dielectric gases that are heavier than air from accumulating in low-lying areas. Escape of such gases to public service sewers shall be prevented.

In rooms with gas-insulated installations above the ground, natural ventilation through the room is generally sufficient. For the design of natural ventilation, approximately half of the ventilation openings, seen in



a section plan must be located close to the ground. Forced ventilation is required if openings cannot be arranged close to the ground.

Premises with gas-insulated installations located below the ground should be provided with forced ventilation if the amount of gas that may accumulate is likely to endanger the health and safety of persons. Forced ventilation may be omitted provided that the gas volume of the largest gas compartment does not exceed 10 per cent of the room volume at atmospheric pressure. For the purpose of calculating the total volume of dielectric gas at normal temperature and pressure, the gas volume of cylinders should be taken into account in case they are permanently connected for the automatic refilling of the compartment.'

Three. Article 1 of Supplementary Technical Instruction ITC-RAT 16, 'Low-Involved Metallic Power Plant Prefabricated assemblies up to 52 kV', shall read as follows:

'1. GENERAL

Standard UNE-EN IEC 62271-200, with the amendments and additions contained in this ITC, is established as a mandatory standard for these facilities.

When the facilities referred to in this ITC use fluids under pressure as insulation, they are exempted from the application of Royal Decree 709/2015, of 24 July, establishing the essential safety requirements for the placing on the market of pressure equipment.'

Four. Article 2(2) of Supplementary Technical Instruction ITC-RAT 16, 'Low-Involved Metallic Power Plant Prefabricated assemblies up to 52 kV', shall read as follows:

'2.2 this instruction shall apply both to installations using air under atmospheric pressure as insulation and to installations using dielectric or liquid gases. Gas filled compartments with a design relative pressure greater than 3 bars shall be designed and tested in accordance with the pressure requirements of standard UNE-EN IEC 62271-203.'

Five. Article 3(3) of Supplementary Technical Instruction ITC-RAT 16, 'Low-Involved Metallic Power Plant Prefabricated assemblies up to 52 kV', shall read as follows:

"3.3 automatic gas loss alarm systems (density decrease) shall be provided, except where the design of cells or assemblies is checked by appropriate tests, so that the manufacturer can ensure that the leakage rate is less than 0.1 % per year and their service life is longer than thirty years; or unless the useful life is longer than thirty years and contains less than 6 kilograms of fluorinated greenhouse gases. However, if the minimum operating absolute pressure referred to in 20



OC guaranteeing the rated values of the switchgear is more than 1.2 bar, at least one pressure indicator is required."

Six. Article 1 of Supplementary Technical Instruction ITC-RAT 17, 'Remanufactured low-voltage electrical switchgear assemblies up to 52 kV', shall read as follows:

'1. GENERAL

Standard UNE-EN 62271-201, with the amendments and additions contained in this ITC, is established as a mandatory standard for these facilities.

When the facilities referred to in this ITC use fluids under pressure as insulation, they are exempted from the application of Royal Decree 709/2015, of 24 July, establishing the essential safety requirements for the placing on the market of pressure equipment.'

Seven. Article 2(2) of Supplementary Technical Instruction ITC-RAT 17 Low-Envolvede Aislante pre-manufactured assemblies up to 52 kV' shall read as follows:

'2.2 this instruction shall apply both to installations using air under atmospheric pressure as insulation and to installations using dielectric or liquid gases. Gas filled compartments with a design relative pressure greater than 3 bars shall be designed and tested in accordance with the pressure requirements of standard UNE-EN IEC 62271-203.'

Eight. Article 3(3) of Supplementary Technical Instruction ITC-RAT 17, 'Low-Envolvente Aislante pre-manufactured assemblies up to 52 kV', shall read as follows:

"3.3 automatic gas loss alarm systems (density decrease) shall be provided, except where the design of cells or assemblies is checked by appropriate tests, so that the manufacturer can ensure that the leakage rate is less than 0.1 % per year and their service life is longer than thirty years; or unless the useful life is longer than thirty years and contains less than 6 kilograms of fluorinated greenhouse gases. However, if the minimum absolute operating pressure at 20 °C guaranteed by the rated values of the switchgear is greater than 1.2 bar, at least one pressure indicator is required.'

Nine. Article 1 of Supplementary Technical Instruction ITC-RAT 18, 'Aparamenta Bajo Envolvente Metálica con Aislamiento gaseoso de Tensión Alsignada Igual o Superior a 72.5 kV', shall read as follows:

'1. GENERAL



Standard UNE EN IEC 72,5-62271 is mandatory for installations with a voltage of 203 kV or more.

The installations referred to in this ITC are exempt from the application of Royal Decree 709/2015 of 24 July 2011 laying down the essential safety requirements for the placing on the market of pressure equipment.'

Ten. Article 3(4) of Supplementary Technical Instruction ITC-RAT 18, 'Aparamenta Bajo Envolvente Metálica con Aislamiento gaseoso de Tensión Alsignada Igual o Superior a 72.5 kV', shall read as follows:

"3.4 for each watertight compartment of the switchgear, pressure indication and automatic gas loss alarm systems (density reduction) shall be provided."

Fourth final provision *Amendment of the Regulation on the storage of chemical products and its Supplementary Technical Instructions MIE APQ 0 to 10 and Royal Decree 656/2017 approving it.*

The Regulation on the storage of chemical products and its Supplementary Technical Instructions MIE APQ 0 to 10 and Royal Decree 656/2017 approving it are worded as follows:

One. Article 2(2) shall read as follows:

'2. The application of this Regulation is without prejudice to the requirement, where applicable, of the provisions of Law 31/1995 of 8 November 1995 on the Prevention of Occupational Risks and its implementing legislation, as well as of Royal Decree 840/2015

of 21 September 2004 approving measures for the control of major-accident hazards involving dangerous substances, Royal Decree 393/2007 of 23 March 2007 approving the Basic Standard for Self-Protection of Centres, Establishments and Dependencies engaged in activities that may give rise to emergencies, Law 38/1999 of 5 November 2007 on Building Planning, and the Technical Building Code for buildings for industrial use, Royal Decree 164/2025 of 4 March 2004 approving the Regulation on Fire Safety in Industrial Establishments (hereinafter RSCIEI) and the provisions governing the transport of dangerous goods.'

Two. Article 14 (1) of ITC MIE APQ 01 shall read as follows:

'1. Characteristics of the buildings. The building shall be constructed in such a way that the storage area and the walls adjacent to other rooms of the adjacent building (s) have a fire resistance according to Annex II of the IRISR and shall be built in the independent fire sector.



All of the above areas must have two independent access routes if the actual maximum distance (bypassing any obstacle) at the nearest exit is more than 30 metres. In no case shall the arrangement of the receptacles hinder normal or emergency exits or prevent access to safety equipment or areas.

Natural or forced ventilation must be provided. For liquids of class A or subclass B1, ventilation shall be forced with a minimum of 0.3 m³ per minute and square metre of enclosure area, and not less than four cubic metres per minute.'

Three. The second additional provision: 'Installations unable to comply with the requirements laid down in the ITCs' shall read as follows:

'Where an installation falling within the scope of the Regulation cannot comply with the requirements laid down in the Additional Technical Instructions (ITCs), the competent body for industry of the Autonomous Community may, at the request of the interested party, which shall be accompanied by the corresponding technical documentation stating and justifying that impossibility, and formulating an alternative technical solution, with a favourable report from an authorised inspection body, authorise that installation to comply with the proposed solution, which may under no circumstances lead to a reduction in the safety resulting from the requirements of those ITCs.

By way of derogation from the above, when requesting an alternative technical solution to the requirements laid down in the Annexes to the Regulation on Fire Safety in Industrial Establishments approved by Royal Decree 164/2025 of 4 March, or other fire protection measures laid down in this Regulation, the procedure for special cases or reasonable adaptations regulated in Articles 5.1.b or 5.3 of the Regulation on Fire Safety in Industrial Establishments approved by Royal Decree 164/2025 of 4 March, applied in addition to the provisions of Articles 10.3 and 11.1.c thereof, shall be followed.

This procedure shall ensure that the proposed solutions achieve an adequate level of safety, corresponding to that required by the Fire Safety Regulation in industrial

establishments, by means of engineering and technical analyses justifying the fulfilment of the fire protection objectives.'

Four. Article 10(h) of ITC MIE APQ 07 shall read as follows:

“(h) The building shall be constructed in such a way that the storage area and the walls adjacent to other rooms of the adjacent building (s) have a fire resistance according to Annex II of the CRSCIEI and shall be in the independent fire sector and for the exclusive use of this storage.”

Five. Article 10.6 (c) and (d) of ITC MIE APQ 09 shall read as follows:



“(c) Fire sectors in closed industrial storage and safety cabinets.

Sectors of high intrinsic risk may be implemented in buildings of type A_v and of high intrinsic risk 8 in buildings of type A_H or B if the following requirements are met:

- i. In buildings of type A_v, A_H and B high intrinsic hazard 8, the structure, including walls and upper enclosures (such as roofs) delimiting the fire sector, shall be independent of the rest of the building so that a potential fire inside the sector does not affect the rest of the building structure.
- ii. The sector cannot be underfloor, its evacuation height must not exceed 15 metres and the establishment must have an accessible façade of at least 5 metres.
- iii. At least one equipped fire hydrant (BIE) shall be provided, if its surface exceeds 25 m², either internally or externally near the entrance (in small sectors) so that it can reach the whole interior.
- iv. The maximum area of the sector shall be 100 m², which may be 300 m² for Type A_v and Type A_H and 600 m² for Type B if all of the following systems are available: fixed automatic extinguishing system, fire detection and fire alarm system with both automatic and manual triggering devices (hand operated detectors and push-buttons) and smoke and heat monitoring system according to section 8.3 of Annex III of RSCIEI.

For the other requirements set out in Annexes II to IV of the CRSCIEI, the sector shall comply with the requirements corresponding to:

- a. For types A_v and A_H with floor area greater than 25 m² and occupation greater than 2 persons, the requirements of sectors of high intrinsic risk in type A_H buildings, except note 4 of Table 2.1.2 and paragraph 1.3.2 of Section 5 of Annex II that may not be applied in sectors located in type A_v buildings of the IRSCIEI.
- b. For type A_H with a maximum floor area of 25 m² and maximum occupancy of 2 persons, the requirements of sectors of high intrinsic risk 7 in type B buildings.
- c. For Type B Intrinsic Risk High 8, the requirements of Intrinsic Risk Sectors B High 7.

(d) Evacuation of storages.

It is not necessary to have an independent lobby for evacuation from the storage of chemicals to a different fire sector, provided that the fire door has a fire resistance at least

equal to the constructive component separating sectors, and that it complies with the other evacuation requirements laid down in the fire protection regulations.



In addition to the above requirement for fire resistance of the door, at least one of the following criteria shall be met:

1. The sector of origin has an occupation (P) of up to 25 persons (possibly including also those occupants coming from other areas who need to use the passage through that sector to reach the exit),
2. The free height of the plant in both sectors is equal to or greater than 5 metres.'

Six. Article 20 of ITC MIE APQ-10 shall read as follows:

"The storage compatibility shall be determined in accordance with the specific requirements for each type of hazard (field of application) of the stored products.

The technical measures laid down in the fire protection legislation shall generally be complied with in industrial establishments, taking into account the specific requirements laid down in the following Articles.

1. Evacuation of storages.

It is not necessary to have an independent lobby for evacuation from the storage of chemicals to a different fire sector, provided that the fire door has a fire resistance at least equal to that required for the building element separating sectors, and that it complies with the other evacuation requirements laid down in the fire protection regulations.

In addition to the above requirement for fire resistance of the door, at least one of the following criteria shall be met:

- i. The sector of origin has an occupation (P) of up to 25 persons (possibly including also those occupants coming from other areas who need to use the passage through that sector to reach the exit),
- ii. The free height of the plant in both sectors is equal to or greater than 5 metres.

Closed storage facilities must have at least 2 separate points of access marked.

The evacuation path (bypassing batteries or other obstacles) to a floor exit or building exit shall not exceed 25 metres, applying the other requirements set out in Annex II of the IRSCIEI.

In no case shall the arrangement of the receptacles obstruct normal or emergency exits or hinder access to safety equipment or areas.



A single outlet may be available in storage, even when the sector is of high risk classified according to the RSCIEI, when the area is less than or equal to 25 m² or the distance to reach the outlet from storage is less than 6 m, applying the other requirements laid down in Annex II to the RSCIEI.

The chemical storage fire sectors with a surface area less than or equal to 25 m² or less than 6 m of evacuation path and having a structure, walls, floor and roof independent of the rest of the building containing this sector need not be equipped with temperature control and smoke evacuation systems. The REI of these construction elements shall be as required by the applicable regulations.

2. Fire extinguishing systems;

The fire-extinguishing agent most appropriate to the type of fire in use shall be chosen and shall comply with the requirements laid down in the applicable legislation and in the manufacturer's safety data sheets.

3. Sectors of fire in closed chemical storage.

Sectors of high intrinsic risk may be implemented in buildings of type A_v and of high intrinsic risk 8 in buildings of type A_H or B if the following requirements are met:

a) Intended exclusively for the storage of hazardous chemicals.

b) In buildings of type A_v, A_H and B high intrinsic hazard 8, the structure, including walls and upper enclosures (such as roofs) delimiting the fire sector, shall be independent of the rest of the building so that a potential fire inside the sector does not affect the rest of the building structure.

c) The sector cannot be underfloor, its evacuation height must not exceed 15 metres and the establishment must have an accessible façade of at least 5 metres.

d) At least one equipped fire hydrant (BIE) shall be provided, if its area exceeds 25 m², either internally or externally near the entrance (in small sectors) so that it can reach the whole interior.

e) The maximum area of the sector shall be 100 m², which may be 300 m² for Type A_v and Type A_H and 600 m² for Type B if all of the following systems are available: fixed automatic extinguishing system, fire detection and fire alarm system with both automatic and manual triggering devices (hand operated detectors and push-buttons) and smoke and heat monitoring system according to section 8.3 of Annex III of RSCIEI.



f) For the other requirements set out in Annexes II to IV of the CRSCIEI, the sector shall comply with the requirements corresponding to:

i. for Type A_v and Type A_H with floor area greater than 25 m² and occupation greater than 2 persons, the requirements of sectors of high intrinsic risk in

- Type A_H buildings, except note 4 of Table 2.1.2 and paragraph 1.3.2 of Section 5 of Annex II that may not be applied in sectors located in Type A_V buildings of the Regulation approved by the CRSCIEI,
- ii. for type A_H with a maximum floor area of 25 m² and maximum occupation of 2 persons, the requirements of sectors of high intrinsic risk 7 in type B buildings,
 - iii. for Type B Intrinsic Risk High 8, the requirements for Intrinsic Risk Sectors High B 7

4. Modular containers.

The storage of chemicals in modular containers shall be considered suitable for all types of chemicals in mobile containers, provided that the technical requirements set out in this JTI are met.

The component elements of the modular containers (structure, roof, walls and doors, including other openings and other possible enclosure elements if any) shall be CE marked in accordance with Regulation (EU) 2024/3110 of the European Parliament and of the Council of 27 November 2024 laying down harmonised rules for the marketing of construction products and repealing Regulation (EU) No 305/2011 or, where applicable, in accordance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011, where provided for in that Regulation. Components not covered by the CE marking must comply, as regards their reaction and resistance to fire classification, with the provisions of Royal Decree 842/2013 of 31 October approving the classification of construction products and construction components according to their reaction and resistance to fire properties.

If the container is required to be resistant to fire, the manufacturer shall certify the burning behaviour of the modular assembly from inside and from outside the container.

For non-transitable storage containers, the evacuation measures indicated in the RSCIEI shall not apply and the required manual means of protection (such as BIE or fire extinguishers) shall be installed on the outside of the container. If mandatory, automatic means of protection (such as sprinklers) must also protect the inside of the container.

5. Perimeter separation.



5.1 Open type D storage of non-flammable hazardous chemicals shall be provided with a minimum perimeter separation of 5 metres between the perimeter of the area and the products stored there.

In the case of storage of hazardous chemicals of a height greater than 5 metres, the perimeter spacing indicated above shall be extended to the same distance as that height.

This perimeter separation must be uncovered to allow the rapid dissipation of heat and smoke, unless there is documentary evidence that the cover does not undermine this objective, and that the opening criteria laid down in Annex I to the RSCIEI for type D configurations are met:

5.2 In case the perimeter separation is between two areas of the same establishment:

A) it is permissible for this separation to be divided between the two areas.

B) subdivision elements providing a minimum fire resistance of REI 60, 90 or 120, depending on the area of storage of low, medium or high risk hazardous chemicals respectively, may be substituted on sides where this distance is not met. Where such compartmentalisation is achieved by means of vertical separator elements located within the perimeter of the area, such as walls, these shall have a height of at least 1 metre higher than the height of the stored combustible materials and shall be prolonged by 1 metre in horizontal projection at their lateral ends.

5.3 In the case of perimeter separation between industrial establishments, subdivision elements ensuring a minimum fire resistance of REI 120, 180 or 240, depending on the area of storage of low, medium or high risk hazardous chemicals respectively, may be substituted on the sides where this distance is not met. Where such compartmentalisation is achieved by means of vertical separator elements located within the perimeter of the area, such as walls, these shall have a height of at least 1 metre higher than the height of the stored combustible materials and shall be prolonged by 1 metre in horizontal projection at their lateral ends.

5.4 In any of the above cases, the subdivision elements shall have sufficient mechanical and chemical strength, as justified in the technical document, to withstand storage, fall from some of their receptacles or chemical reactions in case of spillage and with sufficient leakproofness to prevent spillage of liquids to other areas or establishments.

5.5 In the particular case of open type D storages where a part of the perimeter of the area is adjacent to a façade part of its own building, if not proposed



this separation between the façade and hazardous chemicals shall be ensured. This part of the façade shall also have the minimum fire resistance (REI) of REI 60, 90 or 120 depending on the area of storage of low, medium or high risk hazardous chemicals respectively. That façade shall have a height of at least 1 metre above the height of the stored combustible materials and shall have a prolonged horizontal projection of 1 metre at its lateral ends.

5.6 if the façade has a height higher than that indicated, it may not have areas with a fire resistance lower than the REI requested up to at least 5 metres above the height of the chemicals stored. This height may justifiably be reduced to at least 1 metres above the height of the materials, provided that it is justified that due to the characteristics of the stored material (due to its low quantity, low combustibility, layout or other reasons), such separation is sufficient to prevent propagation. In the case of doors on the façade requiring resistance to fire, the same considerations as in footnote 3 of Table 2.1.2 of Annex II to the CRISR may apply.

6. Type C storages

In type C storages, the fire resistance of the structure need not be justified, provided that all of the following requirements are met:

- a) Have a surface of not more than 25 m²,
- b) less than 6 m of escape route to exit to an open space,
- c) maximum occupation 2 persons ($P \leq 2$ persons) and,
- d) they are at least 10 metres apart from other industrial establishments, as well as from the boundaries of parcels that can be built on them and are free of combustible goods or intermediate elements likely to spread the fire. If there are two neighbouring establishments, these 10 metres may be divided between them provided that there is a binding and permanent agreement between them to keep this area free of buildings and combustible goods. On the other hand, vegetation, parked vehicles and other points may exist within 10 metres, provided that the approach roads and manoeuvring spaces provided for in Section 4 of Annex II to the RSCIEI are not adversely affected. In addition, in order to determine the aforementioned distance of 10 metres, the space on the public highway may also be taken into account.

This special feature must be signposted at access points so that the staff of the firefighting and rescue services are aware of it.

For flammable chemicals, the measures set out in Article 21 shall apply.'

Seven. Note (3) to Table II of ITC 10 'Storage in mobile containers' shall read as follows:



“(3) criteria for reducing safety distances:

Halving safety distances: These distances may be halved where at least one of the following measures is complied with:

- a) For all types of storage:
 - i. Where the storage consists of a single stack the capacity of which does not exceed 50 % of the maximum permitted capacity.
 - ii. There are fixed water systems, automatic sprayers or the like where their installation is not mandatory.
- b) For open storages: there are REI walls 90 and 1 m high above the maximum storage level and prolonged by 1 m in horizontal projection at its 2 ends.
- c) For closed storage: the storage walls are at least REI 90.

In cases (a), (b) and (c) described above, where the reduced distance is the distance to extraneous properties, the minimum distance shall be 3 m.

Total reduction of safety distances:

- a) For open storages: The requirements of Article 20(5) shall be followed, taking into account the following: distances between industrial establishments are distances from external properties in Table II and distances between sectors or areas of the establishment are distances from buildings of the same ownership and must also be applied to distances from public transport routes, both in Table II.
- b) For closed storage: these distances may be reduced to zero where at least one of the following measures is complied with:
 - i. Distances to buildings of the same ownership: if a wall with resistance to fire REI equal to that required for fire sectors under applicable fire regulations with a minimum REI of 120 minutes is available.
 - ii. Distances to external properties or public communication routes: if an REI wall equal to those required for adjacent walls under the applicable fire regulations is available, with a minimum REI of 120 minutes.'



Fifth Final Provision. *Competence.*

This Royal Decree, which shall be of a basic nature, is issued under the provisions of Article 149.1.13 of the Spanish Constitution, which confers on the State exclusive powers on the

bases and coordination of the general planning of economic activity, with the exception of Chapter II of this Royal Decree.

Sixth final provision. *Legislative powers.*

The head of the Ministry responsible for industry shall be empowered to:

- a) Issue, within the scope of its powers, the necessary provisions to ensure the proper implementation and application of this Royal Decree.
- b) Amend and update this Regulation and its additional technical instructions in order to keep them constantly adapted to technical progress and the relevant provisions of international or Community law.
- c) To lay down, in the light of technological developments of a general and provisional nature, technical requirements different from those laid down in the Regulation or in its JTIs which enable a level of safety equal to or higher than those laid down above while the Regulation and its JTIs are being amended.
- d) Adopt additional technical instructions to the existing ones covering other types of installations that may arise as a result of advances in technology and new technologies and that fall within the scope of this Regulation.
- e) Adopt by order new technical requirements which, being critical safety requirements, must be applied as a matter of urgency to existing installations or installations in operation.
- f) Adopt new mandatory technical requirements when these are imposed by a European regulation or directive.
- g) Declare that standards issued by European or international standardisation bodies, in so far as they fall within the scope of this Regulation and its accompanying technical instructions, have to be complied with.

Seventh final provision. *Entry into force.*

This Royal Decree shall enter into force six months after its publication in the Official State Gazette.

Done at Madrid,

TO BE SUBMITTED TO THE COUNCIL OF MINISTERS

Madrid,

MINISTER FOR INDUSTRY AND TOURISM



TECHNICAL REGULATION FOR THE SECURITY OF INFRASTRUCTURE AND INSTALLATIONS OF GASEOUS

CHAPTER I

Enforcement – general

Article 1. Subject.

1. The purpose of this Regulation, which falls within the areas established by Law 34/1998 of 7 October 1998 on the hydrocarbons sector and by Law 21/1992 of 16 July 1997 on Industry, is to establish the technical conditions and guarantees that must be met by infrastructure and facilities for the distribution, transport and use of gaseous fuels and gas appliances, with the aim of preserving the safety of persons, the environment and property.

2. The requirements of this Regulation shall apply generally to all installations falling within its scope and, specifically, to those contained in the respective Supplementary Technical Instructions (hereinafter also referred to as ITCs) for each type of installation.

3. Compliance with the requirements laid down in this Regulation in respect of the installations falling within its scope does not exempt compliance with other provisions relating to the same installations and regulating matters other than the subject matter of this Regulation.

Article 2. Scope.

1. This regulation applies to the following installations and equipment:
 - a) Installations for gaseous fuels by pipeline with a maximum design pressure of 16 bar or less and their auxiliary installations, including regulating stations and connections connected to these networks.
 - b) Installations for gaseous fuels by pipeline with a maximum design pressure exceeding 16 bar and their auxiliary installations, including regulating stations and connections connected to these networks.
 - c) Storage and distribution centres for liquefied petroleum gas (hereinafter LPG) containers: Centres for the reception and storage of LPG containers for subsequent distribution and sale to customers in the same centres and at home.
 - d) LPG storage facilities in fixed tanks: Fixed LPG tank installations and all their accessories, which are arranged to supply distribution networks or directly receiving installations.



- e) LNG Satellite Plants: Liquefied natural gas (LNG) storage facilities with joint storage capacity up to 450 m³ and a maximum operating pressure above 1 bar that aim at directly supplying distribution networks or receiving facilities.
- f) Installations for the supply of gaseous fuels for means of transport: Storage and supply facilities for bulk liquefied petroleum gas (LPG), compressed natural gas (CNG), liquefied natural gas (LNG), hydrogen or other gaseous fuels, for use in any means of motor transport.
- g) LPG container storage facilities: Installations consisting of one or more LPG containers and, where appropriate, all the pipes and fittings between the containers and the drop key, including the drop key, with the aim of supplying LPG directly to reception facilities or gas appliances, are regarded as such installations.
- h) Gaseous fuel receiving installations: They consist of all the pipes and fittings included between the drop key, excluding the drop key, and the connecting keys for the apparatus, including the latter, excluding the connecting sections of the apparatus and the apparatus itself. They consist, where appropriate more generally, of an internal connection, a common installation and an individual installation.

Installations supplied by a LPG container with a unit load of not more than 15 kg, connected by a flexible pipe or directly attached to a single apparatus for mobile use, or mobile industrial installations of the folding type supplied by containers of up to 35 kg shall not be regarded as receiving installations.

In installations powered from mobile LPG containers with a unit load of less than 35 kg, they consist of all pipes and fittings between the outlet or piping of the containers or bottles and the connecting keys for the apparatus, including the latter. This installation shall include the regulator (s) necessary for the proper functioning of the installation.

- i) Gas appliances: Appliances burning gaseous fuels.
- j) LPG installations for domestic use in caravans and motor caravans: Installations consisting of one or more LPG containers, pipes, accessories and appliances, including these, for domestic supply in habitable road vehicles. Portable appliances incorporating their own power supply or separate gas containers and appliances external to the vehicle body shall not be considered part of the installation.
- k) Storage, transfer and filling installations for liquefied petroleum gas containers, including plants for the purpose of dispatching LPG in multimodal transport tanks or isocontainers, and excluding plants using the



LPG for different applications for the use of LPG as a fuel, e.g. as a refrigerant.

- 2. With regard to installations, the regulation shall apply to:
 - a) New installations, their modifications and extensions.

- b) Permanent or temporary installations which store, transfer, fill or use gaseous fuels and which are not expressly covered by any other regulation.
- c) All plants which are subject to a change of gas family or type of gaseous fuel.
- d) Installations existing before its entry into force which are subject to modification or extension. If the relevant ITC does not indicate otherwise, this Regulation shall apply only to the modified or extended part, provided that the modification or extension does not affect or modify the safety conditions of the whole installation, in which case the whole installation shall be adapted.

3. The technical criteria applicable to the periodic inspections or checks of installations shall be those set out in the regulations and standards with which they were planned, carried out and, where applicable, approved, with the exception of those safety requirements in which retrofitting of the installation has been made mandatory in the relevant ITC.

4. Installations existing at the entry into force of this Regulation shall be subject to the system of periodic inspections laid down therein as regards their periodicity and the agents involved in each case.

Article 3. *Definitions.*

For the purposes of this Regulation and its JTIs, the following definitions shall apply:

- 1. Accident: An event that causes significant damage, damage to people, property or the environment.
- 2. Internal connection: All pipes and fittings between the drop key, excluding the drop key, and the key (s) of the building, including the key (s), in the case of reception facilities supplied from distribution networks. In the case of individual installations with a meter located at the border of the property, there is no internal connection.
- 3. Type A apparatus: Apparatus not intended to be connected to a duct or to a device for the evacuation of products of combustion to the outside of the room where the room is installed, the oxidising air being taken directly from the room.



- 4. Type B apparatus: An apparatus intended to be connected to a duct or to a device for the evacuation of combustion products to the outside of the room where the room is installed, the oxidising air being taken directly from the room. These apparatus may be of natural or forced draught.
- 5. Appliance type C: An appliance in which the combustion circuit (air intake, combustion chamber and evacuation of combustion products) has no communication with the atmosphere in the room in which it is installed. These apparatus may be of natural or forced draught.
- 6. Safe path of vaporisation: area intended for the evacuation of a LPG spill from a tank with the appropriate slope and levels to avoid a pool fire scenario under a tank.

7. Release to destination An assembly of pipes and fittings attached to each other to permit the movement of gas within them.
8. Isolated channelling: Channelling referred to in the thirty-eighth additional provision of Law 34/1998 of 7 October 2003.
9. Tanker loaders: Installation and associated elements for the loading and unloading of LPG tanks
10. Rail freight: Installation and associated elements for loading and unloading LPG wagons
11. Customer: A natural or legal person who has a contractual relationship with a marketing company.
12. Gaseous fuels: Those listed in the three gas families of reference GAS_012 of the ICG-13 JTI standard table and hydrogen for use as fuel.
13. Normal pressure and temperature conditions: Refers to a temperature of 0 °C (273,15 K) and a pressure of 1 atm (1.01325 bar).
14. 'Periodic inspection' means: Activity examining a facility to verify compliance with the regulations in force on safety and fitness for use. It may take the form of a periodic inspection or periodic review.
15. Depositing: pressure receptacle intended for fixed storage of gaseous fuels. It can be of different geometries, including the usual sphere or cylindrical horizontal axis, cylindrical vertical axis, etc.
16. Heated reservoir: Reservoir with additional thermal insulation. It usually consists of an outer coating of layers or insulating material.



17. Refrigerated tank: A tank fitted with a system for reducing the temperature of the gaseous fuel contained in the tank.
18. Company that retails LPG in bulk by pipeline: A bulk LPG retailer that distributes and supplies LPG from one or more tanks by pipeline to more than one delivery point, which is delivered to the customer in the gaseous phase, and whose consumption is measured by meter for each consumer.
19. Retail sales company for LPG in bulk: Entity referred to in Article 46 of Law 34/1998 of 7 October.
20. Retail marketing company for bottled LPG: Entity referred to in Article 47 of Law 34/1998 of 7 October.
21. Marketing company: Entity referred to in Article 58 (d) of Law 34/1998 of 7 October 2003.
22. Pipeline gas distribution company: An entity aimed at locating gas at consumption points

through pipelines. It includes the companies distributing natural gas and retailing LPG in bulk, both by pipeline.

- 23. Distribution company: Entity referred to in Articles 58 (c) and 77.1 of Law 34/1998 of 7 October.
- 24. Gas installation company: Natural or legal person who carries out the activities of assembly, repair, maintenance and periodic control of gas installations, complying with the requirements laid down in ITC ICG-09 and having submitted the corresponding self-declaration of commencement of activity in accordance with the provisions of that ITC for authorisation.
- 25. LPG wholesale operator: Entity referred to in Article 45 of Law 34/1998 of 7 October.
- 26. Carrier company: Entity referred to in Article 58 (a) of Law 34/1998 of 7 October 2003.
- 27. Certification body: An entity that meets the definition of 'certification body' set out in Article 20 of the Regulation on infrastructure for industrial quality and safety, approved by Royal Decree 2200/1995 of 28 December 2007.
- 28. Connected packaging: In-use or standby packaging.
- 29. LPG container: Mobile LPG containers intended for domestic, collective, commercial and industrial use, which, once their load has been exhausted, must be transferred to a specific plant for filling and subsequent reuse. This definition includes:



pressure cylinders and canisters, as defined in Annex A to the ADR, transposed into Spanish law by Royal Decree 97/2014 of 14 February 2011 regulating the transport of dangerous goods by road in Spanish territory, and complying with Royal Decree 1388/2011 of 14 October 2007 laying down provisions for the implementation of Directive 2010/35/EU on transportable pressure equipment.

- 30. Pack in stock: Packaging that is not in use, but could supply gas to the installation in case of need automatically, which aims to ensure that there is no lack of supply.
- 31. In-use packaging: Packaging which is unloaded at the installation.
- 32. Unconnected packaging: Packaging that is not ready for immediate use.
- 33. Compressor station: An assembly of equipment, piping, control instruments, valves, safety features, auxiliaries and enclosure, installed with the purpose of raising the gas pressure.
- 34. Pressure control or regulation station: An assembly of equipment, piping and fittings, control instruments, valves, pressure regulators, safety elements, auxiliaries and enclosure, installed for the purpose of controlling and maintaining the gas pressure inside or at the outlet of the gas infrastructure.
- 35. Injection/mixing station: An assembly of equipment, piping and fittings, control instruments,

valves, safety features, auxiliaries and enclosure, installed for the purpose of injection and gas mixtures.

- 36. Measuring station: Means all equipment, piping and fittings, control instruments, valves, safety features, auxiliaries and enclosures installed for the purpose of quantifying physical and chemical quantities of gas (concentration of components, for example).
- 37. Separation station: An assembly of equipment, piping and fittings, control instruments, valves, safety features, auxiliaries and enclosure, installed for the purpose of separating the components from the vehicle gases.
- 38. Manufacturer: Natural or legal person responsible for the compliance of a product with the relevant regulatory requirements.
- 39. Impact: Any accident or incident occurring in gaseous fuels infrastructure and installations.



- 40. Incident: An unexpected event or event that could lead to an emergency situation (damage, damage to persons, property or the environment) or that affects the provision of the fuel gas supply service.
- 41. Infrastructure: Set of installations consisting of the pipeline of gaseous fuels itself and its complementary installations.
- 42. Common installation: A set of ducts and fittings comprised between the key to the building, or the drop key if there is no key, excluding the latter, and the user keys, including the latter.
- 43. Supplementary facilities: All elements of a gas infrastructure other than the pipeline itself, such as regulating stations, mixing/injection or measuring stations, separation stations, valve positions, compression stations, and other auxiliary systems, such as operational control telecommunication systems.
- 44. Individual installation: A set of conduits and accessories comprising, as the case may be, the key, where there is a common installation, or the drop key or the building key, where it is supplied to a single user, both excluded, up to and including the connecting keys for the appliances.

1o in installations supplied from mobile LPG containers with a unit load of less than 15 kg, this means all the pipes and accessories between the regulator (s) attached to the containers or bottles, including the latter, and the connecting keys for the apparatus, including the latter.

2° an assembly consisting of a mobile LPG tank with a unit load of not more than 15 kg and a mobile appliance shall not be regarded as an individual installation.

3° in industrial applications (e.g. in blow pipes), an assembly consisting of a mobile LPG tank with a unit load of not more than 35 kg and a mobile appliance shall not be regarded as an individual installation.

45. Direct injection line: Gas pipeline referred to in Article 78 of Law 34/1998 of 7 October.
46. Maintenance: All operations designed to preserve installations or equipment in good condition and functioning so as to prevent their degradation and maintain their operational capacity and safety over time.
47. Means of transport: This means any self-propelled device or appliance intended for the transport of persons or goods. Capable of circulating on public roads or land, both urban and interurban, on roads and land which, without such suitability, are in common use and, in the absence of other regulations, on roads and land



private vehicles which are used by an indeterminate community of users, including devices whose only route of circulation is water, air or a track.

48. Mounding: protection system consisting of an airborne reservoir covered with a slope of earth or other insulating material to protect them from thermal and mechanical shocks, also called semi-buried reservoirs.
49. New network: Gaseous fuel pipeline infrastructure and associated ancillary installations that are included in a specific project submitted to the competent body for authorisation or commissioning in each case. For these purposes, the following are considered to be included:
- a. transmission and distribution networks;
 - b. hotlines in accordance with Article 78 of Ley 34/1998;
 - c. isolated pipelines for renewable gases in accordance with the thirty-eighth additional provision of Law 34/1998.

Extensions of existing networks shall not be considered a new network.

50. Monitoring Body: Entity referred to in Article 15 of Law 21/1992 of 16 July and Section 1 of Chapter IV of Royal Decree 2200/1995 of 28 December. It is understood that the reference to 'inspection body' implies that it is 'authorised to carry out the duties assigned to it in each case'.
51. Gas installer: A natural person who, by virtue of his or her theoretical and practical knowledge of gas industry technology and regulations, and meeting the requirements of ITC ICG-09, is capable of conducting and supervising operations falling within his or her category.
52. Operator of an installation: Natural or legal person owning or benefiting from an installation.
53. User: Natural or legal person who actually uses the gas for consumption.
54. Valve positions: It is defined as the position of valves in a pipeline to the set of valves, auxiliary piping and complementary elements that allow the gas circulating in the pipeline to

be sectioned or by-passed.

55. Rated effective output: Maximum value of useful power indicated by the manufacturer of an appliance, generally expressed in kilowatts (kW).
56. Simultaneous useful power: Total installed power corrected by the simultaneity factor of the installation.



57. Design Pressure: Pressure at which an infrastructure or part of an infrastructure is designed (piping, equipment, valve, etc.). The design pressure shall be equal to or greater than the maximum operating pressure.
58. Operating pressure (OP): Pressure in a system under normal operating conditions.
59. Proof pressure: The pressure to which the piping is actually subjected at the time of the test.
60. Incident pressure (IP): Is the pressure at which a safety device acts in the event of an incident in a system.
61. Maximum Operating Pressure (MOP): Maximum pressure to which a system can be subjected continuously under normal operating conditions, without malfunctioning of any element forming part of the gas infrastructure.
62. Maximum Incident Pressure (MIP): Is the maximum pressure that can be reached in a gas system for a short period of time, limited by the safety devices.
63. Starting of gas-consuming appliances: All the operations necessary to verify that the appliance is operating with the type of gas and pressure for which it was designed and combustion is carried out within the parameters laid down by the manufacturer.
64. LPG pump and compressor room: Installation or unit where LPG pumps and compressors and valves and items necessary for LPG racking operations are located.
65. Integrity management system: A set of activities and appropriate practices whereby a person owning the infrastructure preserves the integrity of the pipeline to ensure the safe and reliable transport of gas.
66. Operation and maintenance management system: Grouping of IT tools and resources that support and systematise the processes for operating and maintaining the assets covered by this Regulation.
67. Operating temperature (OT): Temperature in a system under normal operating conditions.
68. Maritime terminal: Installation and components for the loading and unloading of LPG vessels.
69. Union: An artificial device, technique or device which provides a solution to the continuity of the channelling by linking the different elements of the channelling together.



- 70. Shut-off valve: A component intended to interrupt the flow of gas at the place where it is installed.
- 71. Safe internal escape route: roadway suitable for pedestrians, clear of obstacles, ending at an emergency exit or assembly point.
- 72. Storage area for filled and empty LPG containers: Space for the storage of LPG containers and the vehicle or truck circulation area for the efficient management of LPG containers.
- 73. LPG storage area: In accordance with the provisions of ITC-11, space of the plant where the LPG storage tanks are located with working space for maintenance and inspections.
- 74. LPG container filling area: A facility for packaging filling, comprising all associated phases and operations, from de-palletising to pre-checking, filling, post-checking and final palletising.

Article 4. Gas materials, equipment and appliances.

1. The gas materials, equipment and appliances used in the installations covered by this Regulation must comply with European and, where appropriate, national provisions which do not contradict the above and which are applicable.

In the absence of such provisions, they must comply with the requirements set out in this Regulation and in the JTIs implementing it. Compliance with the requirements laid down must be justified. The justification shall be provided by means of the corresponding certificate and mark of compliance with standards, issued by certification bodies referred to in Chapter III of Royal Decree 2200/1995 of 28 December 2007.

2. They must show in a sufficiently visible and indelible manner at least the identification of the manufacturer, legal representative or person legally responsible for placing on the market, brand and model, specific indications or restrictions on use.

3. They must be accompanied by the particulars and instructions necessary for the specific use of the material or equipment, which must be written in Spanish and may be repeated in other languages.

CHAPTER II

Design, implementation and commissioning of installations

Article 5. General procedure for bringing installations into service.

The commissioning of the installations referred to in this Regulation is subject to the general procedure set out in this Chapter, in accordance with the provisions of



Article 12.3 of Law 21/1992 of 16 July. The specific requirements for the commissioning of each type of installation will be determined in the corresponding JTIs accompanying this Regulation.

Article 6. *Design of facilities.*

1. Technical documentation showing compliance with the regulatory requirements shall be drawn up for each installation. Depending on the characteristics of the installation, as determined by the relevant JTI, the technical documentation shall take the form of a project signed by each qualified technical person, a technical memory which may be signed by the installer in the category indicated by the ICG-09 JTI, or a communication from the operator in accordance with the requirements of the relevant JTI.

2. When it takes the form of a specific project, the necessary coordination with the other building chapters and installations will be maintained so that there is no duplication of documentation.

3. The qualified technical person or the installer, as the case may be, who signs the technical documentation shall be directly responsible for ensuring that it complies with the regulatory requirements.

Article 7. *Administrative Authorisation.*

1. The facilities referred to in this Regulation need an administrative authorisation only when required by Law 34/1998 of 7 October 2003 or its implementing legislation.

2. Where this occurs, and in addition to the procedure laid down in the aforementioned Law and its implementing legislation, the provisions of this Regulation shall apply in addition to it.

Article 8. *Installation work.*

1. Installations covered by this Regulation must be carried out by undertakings determined, in each case, by the relevant ITC.

2. Where gas installations compete with those for other energies or services, the appropriate precautionary measures must be taken, in particular as regards pipelines and distances at crossings and parallels, in accordance with the specific regulations and JTIs applicable to them.

Article 9. *Tests and inspections prior to the commissioning of the facilities.*

1. On completion of the installation, the undertaking which carried out the installation in accordance with Article 8 shall check that the installation has been properly carried out and is operating safely. Where appropriate, the tests specified in the relevant JTI must be carried out.



2. If so stipulated by the relevant ITC, depending on its characteristics and in the manner laid down therein, an inspection of the installation shall be carried out by an inspection body, which shall verify compliance with the relevant safety requirements.

Article 10. *Certificates.*

Once the installation has been completed and, where appropriate, prior tests have been carried out with a favourable result, the following steps must be taken:

- a) An installation certificate shall be issued by the authorised installation company and, where applicable, the tests carried out, stating that it has been carried out in accordance with the provisions of the Regulation and its JTIs and in accordance with the technical documentation. Where appropriate, it shall identify and justify any variations in performance from that provided for in the documentation referred to in Article 6.
- b) Where the relevant ITC in this Regulation so requires, the inspection body carrying out the initial inspection shall issue a certificate of the inspection and, where appropriate, of the tests carried out with a favourable result in both cases.
- c) In addition, in installations needing a project, the project management will issue the corresponding project management certificate, which will state that the project has been carried out in accordance with the initial project and, where appropriate, identify and justify any variations in its execution in relation to its provisions and always in accordance with the requirements of the regulations and the relevant JTIs. It shall also record that the appropriate tests, verifications and inspections have been carried out in each case.

Article 11. *Communication to the Administration.*

1. In order for the operator of the installation to be able to request the supply of gas, proof must be provided to the company distributing or retailing LPG or equivalent that the corresponding documentation has been submitted to the Administration, or a self-declaration where established, in accordance with the terms of this Article, with the exception of the cases referred to in the relevant ITCs.

2. The documentation relating to the installations covered by this Regulation, including the certificates referred to in Article 10, must be generated and sent to the Autonomous Community in which the installation is located, in accordance with Article 14 of Law 39/2015 of 1 October 2015 on the Common Administrative Procedure of Public Administrations.

The competent body of the Autonomous Community shall issue an acknowledgement of receipt of the submission of the documentation, authorising the person concerned to put it into service, without this implying technical compliance on the part of the competent body.



3. The operator of the installation shall be responsible for submitting to the competent body of the Autonomous Community the documentation established in each JTI or the regulatory provisions of the Autonomous Communities and, if not defined, the following:

- a) Identification of the installation indicating the operator of the installation, its location, type and provisional date of commissioning.
- b) Technical documentation
- c) Installation certificate.
- d) Performance test certificate.
- e) Works management certificate, if applicable.
- f) Certificate from the inspection body, if applicable.

4. The operator of the installation shall be responsible for keeping the documentation, as well as any other documentation relating to inspections or maintenance of installations that may be established in each JTI, in a documentary file, preferably in electronic form, throughout the period of operation of the installation.

Article 12. *Commissioning.*

1. For the commissioning of the installation, the person responsible for the installation, as specified by the relevant JTI, shall receive and hold a copy of all the technical documentation referred to in Articles 10 and 11 and shall proceed as indicated in that JTI.

Where the actions described in those articles are necessary and certified, the authorised installation company may, with the knowledge and authorisation of the operator of the installation, request the distribution or marketing company, where appropriate, to supply interim gas in order to carry out operational tests on the installation or the appliances. Responsibility for installation and testing shall lie with the installation company. Following the tests, and if the results of the tests are favourable, the distribution or marketing company may, where appropriate, maintain the provisional supply pending processing of the plant's documentation.

2. Where appropriate, the JTI for each type of installation shall indicate the procedure to be followed for the placing in service of an installation that has been out of service for more than one year. If not specified, the installation shall be considered as new.

3. In order to restore supply to a facility with a terminated contract, the petitioner, as defined in the relevant ITC, must hand over to the person responsible for his



entry into service of a copy of the certificate of periodic inspection without anomalies and in force. Failing this, or where the installation has been out of service for more than one year, the provisions for new installations in the relevant JTI must be followed, except in the cases covered by the relevant JTI.

Article 13. Starting of equipment.

The equipment must be started in accordance with section 5 of ITC-ICG-08.

In all cases, the start-up agent must issue and deliver to the user a start-up certificate in accordance with the model set out in the aforementioned ITC.

CHAPTER III

Regular maintenance and inspections

Article 14. Information for users and operators of installations.

1. In receiving installations, as an annex to the installation certificate delivered to the operator of the gas installation, the authorised installation company must draw up instructions for the correct use and maintenance of the installation.

These instructions shall in any case include a sketch of the layout of the installation indicating its main characteristics (materials, connections, valves, etc.).

2. The marketing undertaking shall provide the owner in writing with the recommendations for use and safety measures for the use of its facilities whenever requested and, in any event, at least every two years, to the holders of the supply contracts corresponding to toll groups RL.1 to RL.3. These recommendations for use and safety measures for the installations shall be easily and immediately accessible by electronic means to the operator and the user of the installation.

Article 15. Maintenance of installations and equipment.

1. The operators or, failing that, the users of the installations shall be required to maintain and ensure proper use of the installations and the gas appliances attached to them, in accordance with the criteria laid down in this Regulation and in their ITCs, so that they are permanently in service with the appropriate level of safety.

It shall do so using the services of a gas installation company or a helpdesk of the appliance manufacturer, as appropriate.



2. Users shall also comply with the safety recommendations communicated to them by the distribution company or the marketing company, where applicable, the installation company and the manufacturer of the equipment, by means of the standards and recommendations issued to the holder, in accordance with Articles 4 and 14 of this Regulation.

Article 16. Regular inspection of installations.

1. Installations covered by this Regulation shall be subject to regular monitoring to be defined in the relevant JTIs. Depending on the type of installation and the operator carrying out the periodic inspection, these may be:

a) Periodic inspections:

1 when carried out on reception facilities (individual or common) supplied from distribution systems (natural gas, hydrogen, LPG or mixtures thereof).

2 where it must be carried out by an inspection body.

b) Periodic reviews: For any other case.

2. The relevant JTI shall determine:

a) The facilities to be subject to periodic inspection or periodic review, as appropriate, and the person or entity competent to carry them out.

b) The criteria for carrying out inspections or reviews.

c) The time limits for carrying out the periodic checks.

3. Certificates shall be issued in respect of the results of the periodic checks.

4. In all periodic inspections, in addition to the provisions of each ITC, account shall be taken of existing additional technical requirements issued under the third transitional provision of this Regulation.

Article 17. Entities involved.

1. It is the duty of the operator of the installation, or, failing that, of the user, to carry out the periodic checks referred to in Article 16, for which purpose they must request the services of one of the entities indicated in the relevant ITC.

2. Periodic inspections of reception facilities (individual or joint) supplied from pipeline distribution networks, in accordance with Law 34/1998 of 7 October 2006, must be carried out by an authorised gas installation company or the pipeline gas distribution company, using its own or external resources.



3. The operator or user of the installation, as the case may be, is responsible for correcting defects and anomalies detected in installations and gas appliances during periodic inspections, using the services of a gas installation company or a manufacturer's technical assistance service, as appropriate.

4. In any event, the owner or user shall be free to choose the undertaking responsible for carrying out the periodic inspection and, subsequently, for carrying out the actions resulting from the results of that inspection.

Article 18. Inspections carried out by a control body.

In cases where the relevant ITC so indicates, periodic inspections must be carried out by an authorised inspection body, in accordance with the criteria laid down therein.

Article 19. Classification of defects in facilities and certificate of inspection.

1. Unless the applicable ITC establishes a different classification, if defects are found at the installation, they shall be classified as follows:

- a) Mild defect: Any person who does not endanger persons or property, does not disrupt the operation of the installations and where the deviation from the regulations is of no significant value to the effective use or operation of the installations.
- b) Serious defect: It does not pose an immediate danger to the safety of persons or property, but may do so as a result of a failure in the installation. This classification also includes a defect which may substantially reduce the capacity of the installation to be used.
- c) Very serious or critical defect: Any person who, for reasons or experience, constitutes an immediate danger to the safety of persons or property. Breaches of safety measures that may trigger the hazards that such measures are intended to prevent are considered to be such breaches.

2. As a result of the inspection, the corresponding certificate will be issued with the result of the inspection, which may be:

- a) Favourable: Where no very serious or serious defect is established. In this case, any minor defects shall be recorded by the holder, with an indication that they must be rectified before the next inspection.
- b) Conditional: Where at least one serious defect or minor defect resulting from another previous inspection is detected and has not been corrected. In this case, the time limit for verifying the correction shall be stated and shall not exceed 2 months.



- c) Negative: When at least one very serious defect is observed. In this case, if immediate correction of the defect is not possible, the installation (s) causing the risk shall be left out of service.

3. In cases where a conditional inspection is carried out and its correction has not been verified within the period indicated and in cases where it is negative, it shall be notified to the competent body of the corresponding Autonomous Community. Additionally, in cases of conditional inspection due to a serious defect, the supply of the affected part shall be cut off and remain secure, i.e. with the appliance key locked and sealed, until the defect has been resolved.

Article 20. Notification to the Administration of inspections carried out by a control body.

1. Under Article 14 (3) of Law 39/2015 of 1 October, the inspection body is required to send the certificate of the periodic inspection to the competent body of the Autonomous Community in which the facility is located, by electronic means, with an electronic signature and stamp with a timestamp.

2. If the outcome of the inspection is favourable, such notification shall be made as soon as possible and in any case within a maximum of 15 days.

3. In the event that the outcome of the inspection is conditional, the remedying of serious defects and minor defects resulting from a previous inspection must be verified by means of a second inspection visit within the deadline for rectification laid down in the previous article, with the control body being responsible for checking that this deadline is not exceeded.

- a) If the shortcomings are rectified before the deadline indicated, this will be recorded and the documentation will be sent to the competent body of the Autonomous Community.
 - b) Once the deadline has passed and the serious shortcomings have not been remedied, the inspection body must issue the certificate with the negative status, issuing a copy for the holder and immediately informing the competent body of the Autonomous Community who will issue the court order. As a result, the installation or part of the installation concerned will be rendered unserviceable and safe.
4. If the result of the inspection is negative, it must be communicated immediately.
- a) Remedying very serious defects requires a new inspection, which must show that the defect has ceased to exist.
 - b) The installation or part of the installation concerned shall be kept out of service until a certificate with a favourable outcome is issued.



Article 21. *Administrative control.*

In accordance with Article 14 of Law 21/1992 of 16 July 2003, the competent body of the Autonomous Community may at any time, either itself or through a control body, check compliance with the safety provisions and requirements laid down in this Regulation and its ITCs, on its own initiative or at the request of an interested party, as well as in cases of significant risk to humans, animals, property or the environment.

CHAPTER IV

Other provisions

Article 22. *Qualification to operate in gas installations and appliances.*

With regard to the authorisation to operate in gas installations and appliances, the following concepts are established:

- a) Gas installation companies. Where required by the relevant additional technical instruction, the installations shall be carried out by gas installation undertakings, authorised to carry out the activity in accordance with ITC ICG-09, without prejudice to their possible design and project management by qualified technical persons.
- b) Gas installers. Gas professionals carrying out activities as gas installers shall comply with the requirements laid down in paragraph 2 of ITC ICG-09 of this Regulation.
- c) Gas appliance starters and fitters. Gas professionals who start up or adapt gas appliances shall comply with the provisions of paragraph 5 of ITC ICG-08.

- d) Own technical staff of distribution companies and companies retailing LPG in bulk by pipeline. Staff qualified for basic operations reserved for distribution companies as referred to in standard GAS_008 of the reference table.

Article 23. *Compliance with requirements.*

1. Installations carried out in accordance with the requirements of this Regulation shall be deemed to provide the minimum safety conditions which, according to the state of the art, are required in order to preserve persons and property when used for their intended purpose. The requirements laid down in this Regulation and its ITCs shall have the status of mandatory minimum requirements, within the meaning of Article 12 (5) of Law 21/1992 of 16 July. Such minima shall be considered to be covered:

- a) By direct application of those requirements.



- b) By application of equivalent safety techniques, such techniques being those that provide at least a level of safety comparable to the above, which must be explicitly justified by the designer of the facility that it intends to use this alternative before the competent body of the Autonomous Community for its approval, before the start of the procedure described in Chapter II.

2. For the purposes of determining liability, the required regulatory framework shall be deemed to have been complied with if it is established that the installations have been carried out in accordance with any of the above alternatives.

Article 24. *Derogations.*

1. Where it is materially impossible to comply with certain requirements of this Regulation, and it is not feasible to comply with them either by applying equivalent safety techniques in the previous Article, an application for a derogation must be submitted to the competent body of the Autonomous Community, prior to the procedure referred to in Chapter II, signed by a technical person entitled to do so, setting out the reasons for the derogation and the measures proposed as compensation.

The competent body may, in any event, request a favourable report from an inspection body or require the compensatory measures to be amended before granting the express derogation authorisation or rejecting the request.

2. As an exception, when requesting an alternative technical solution to the requirements laid down in the Annexes to the Regulation on Fire Safety in Industrial Establishments approved by Royal Decree 164/2025 of 4 March (hereinafter RSCIEI), the procedure for special cases or reasonable adaptations regulated in Articles 5.1.b or 5.3 applied together with the provisions of Articles 10.3 and 11.1.c of the RSCIEI shall be followed. The proposed solutions shall in any case achieve an adequate level of safety, corresponding at least to that required by the CRISIS, by means of engineering and technical analyses justifying the fulfilment of the fire protection objectives.

Article 25. *Temporary installations.*

1. As a general rule, all temporary installations which, due to their characteristics, fall within the scope of this Regulation, must be notified to the competent body of the Autonomous Community or the State, as appropriate, at least 15 days before they are put into service.

To this end, a draft or report signed by a qualified technical person or authorised installation company, as the case may be, shall be submitted, with justification of the safety measures adopted, giving precedence to regulatory compliance with this and other regulations, UNE, UNE-EN, ISO regulations that apply to it, whether in parts or functional modules of the installation.



The competent body shall issue an acknowledgement of receipt of the notification of this facility, which may require any additional information it deems necessary, authorising the person concerned to put it into service, without this implying technical compliance on the part of the administration.

2. Temporary facilities may, as a general rule, remain on site for a maximum of 60 calendar days, after which they must cease operation and be removed from the site.

3. When the temporary installation is required for an operation to remedy a breakdown or emergency, it must be notified to the competent body of the Autonomous Community within 24 hours of its commissioning, together with the report justifying the emergency.

4. Temporary installations installed as a result of an emergency or breakdown shall remain in service for as short a period as possible to remedy the reason for putting them into service, subject always to the previous maximum period of 60 days.

Article 26. *Reference standards.*

1. JTIs may require compliance with standards (UNE or other standards), in whole or in part, in order to facilitate adaptation to the state of the art at any given time. This reference to standards shall be made by means of an alphanumeric code set out in a table contained in ITC ICG-13, hereinafter the table of standards, which shall correspond that alphanumeric reference quoted in the text of the instructions to the corresponding standards, identified by their numbers and titles, and shall include the editions valid for regulatory purposes in each case.

2. When one or more standards are revised by the relevant standardisation body, they may be updated in the list of standards, by decision of the governing body responsible for industrial safety of the Ministry of Industry and Tourism.

To this end, the ICG-13 JTI shall periodically review the standards that have been published since the last update and, where appropriate, amend the ICG- JTI. In the absence of the above express resolution, the edition of the standard shown in the table of standards shall be deemed to meet the regulatory conditions.

The decision referred to above must state the date from which the use of the new edition (s) of the standard will be valid and the date from which the use of the old edition (s) of the standard will

no longer be valid for regulatory purposes. This will allow for a coexistence period during which either version of the standard can be used for the implementation of the installations. In case of incorporation of new standards, installations in operation at the date of applicability of the new standard shall be considered exempted for application purposes.



3. In order to determine the date from which an installation shall be considered to be in operation, the following shall be taken into account:

- a) If the installation requires a project approved by a professional body, or has been submitted and registered with the competent administrative body, the date of approval or registration shall be taken.
- b) If no project is required or its endorsement is not required, the date on which the application for an administrative licence is submitted to the competent administrative body shall be taken into account. The application shall be accompanied by an electronic signature with a timestamp.

4. The decision to update the table of standards may also set the maximum deadline for the implementation of installations in operation at the date of applicability of the new standards or versions.

5. The installation documentation shall include the date from which the installation is in operation.

Article 27. Infringements and penalties.

In relation to the provisions of this Regulation, the system of infringements and penalties provided for in Title V of Law 21/1992 of 16 July and Title VI of Law 34/1998 of 7 October shall apply, without prejudice to the application of the penalties established by the legislation of the Autonomous Communities on industrial safety.

Article 28. Action in the event of accidents.

1. When an accident occurs, the following agents, depending on the type of installation, must notify the accident as soon as possible and always before 24 hours to the competent body of the Autonomous Community, identifying the company with which they have concluded a maintenance contract in those cases where it is mandatory in accordance with the provisions of the ITCs in this Regulation.

- a) Gaseous fuel distribution networks, bulk LPG storage centres or LNG satellite plants connected to distribution networks: pipeline gas distributor or bulk LPG retailer, where applicable.
- b) Reception facilities supplied from:
 - 1° natural gas distribution networks: distribution company.
 - 2° LPG distribution networks: a company that retails LPG in bulk by pipeline.

3rd bulk LPG storage centres: a company retailing LPG in bulk with which the holder has a supply contract.

4th LPG containers: LPG wholesale operator owning the container.



- c) LPG container storage and distribution centres: LPG wholesale operator owning the containers.
- d) LPG storage centre in fixed tanks for own use: a company retailing LPG in bulk with which the holder has a supply contract.
- e) LNG satellite plants not connected to distribution networks: operator of the installation.
- f) Installations at service stations: operator of the installation.
- g) Installations powered by a mobile LPG tank connected by a flexible pipe or directly attached to a single appliance for mobile use which are not regarded as receiving installations for gaseous fuels in accordance with Article 2 (1) (h): LPG wholesale operator owning the container.
- h) Installations for gaseous fuels by pipeline at maximum design pressure exceeding 16 bar: transport company.

2. Once the accident has been notified, the identified agents must submit a report on the accident within no more than 7 days of the date on which it occurred to the competent body of the Autonomous Community, attaching a copy of the relevant information on the installation in their possession (installation certificates, certificates of inspection or periodic review, maintenance reports or contracts, etc.).

3. The content of the report referred to in the previous paragraph shall contain at least the following information:

- a) Town and province.
- b) Date.
- c) Class (deflagration, explosion, poisoning, fire, spillage, gas system damage, etc.).
- d) Possible cause.
- e) Personal injury.
 - 1st number of minor injuries.
 - 2nd number of serious injuries.
 - 3th number of deaths.
- f) Damage to property.
- g) Effect on supply (number of persons affected).

Article 29. *Self-protection plan.*

1. Establishments containing one or more storage facilities for gaseous fuels covered by this Regulation must have an integrated self-protection plan in the following cases:



- a) Establishments covered by Royal Decree 840/2015 of 21 September 2004 approving measures to control major-accident hazards involving dangerous substances.
- b) Activities with substances and mixtures not covered by any of the JTIs in this Regulation: when the quantities exceed the thresholds indicated in point 2 (a) of Annex I to Royal Decree 393/2007 (1) of 23 March approving the Basic Rule on Self-Protection of centres, establishments and premises engaged in activities that may give rise to emergency situations and without prejudice to the provisions of the Autonomous Communities in this regard.
- c) Activities with substances and mixtures covered by one of the JTIs in this Regulation: when they exceed the threshold indicated in point 1 (a) of Annex I to Royal Decree 393/2007 (1) of 23 March, and without prejudice to the provisions of the Autonomous Communities in this regard.

2. This self-protection plan must comply with the requirements of Royal Decree 393/2007 (1) of 23 March and, in the case of establishments affected by the legislation on major accidents, with the requirements of Royal Decree 840/2015 of 21 September. In any event, the provisions of Law 31/1995 of 8 November 1995 on the Prevention of Occupational Risks apply in relation to the establishment of emergency measures and, in particular, the provisions of Article 20 thereof.

3. The staff responsible for implementing these measures must be aware of the self-protection plan and take part in the programmes to maintain its effectiveness and update it. All of this is done in accordance with the provisions of the specific legislation referred to above, which may be applicable.

Appropriate emergency response equipment should be available, including necessary personal protective equipment and first aid equipment.

(1) This standard shall apply until it is replaced by an updated one as laid down in Royal Decree 524/2023 of 20 June 2007 approving the Basic Civil Protection Standard.

Article 30. Prevention of medical conditions by third parties.

1. Where installations for the supply of gaseous fuels by pipeline exist in a municipality, any entity or person wishing to carry out works on the public highway must communicate its intentions and request information from the undertakings distributing and transporting piped gas or the person who owns those pipelines sufficiently in advance of the start of the works. The request for information shall indicate:

- a) Specific location data.



- b) Reason for the request.
- c) Company, body or person requesting it and the necessary contact details (address, e-mail, telephone, fax, etc.) of the applicant.
- d) Scheduled start and end date of work.
- e) Detailed drawings of the work areas, excavation depth and width of the work to be carried out.

2. Upon receipt of the request and no later than 20 days, the owners of these pipelines shall provide the entity or applicant with information on the location of their facilities, as well as the obligations and rules to be respected in their immediate vicinity and the means of communication with the emergency service. The information supplied shall specify the period of validity of the data, which shall not be less than two months from the communication.

The applicant organisation or person may not begin work until it has received and formally accepted this information, and must use it appropriately so as not to damage installations supplying gaseous fuels by pipeline.

Subsequently, the requesting entity or person shall communicate the start of its activities to the gas distribution or pipeline carrier at least 24 hours in advance.

3. If the works proposed by the applicant directly affect the layout or location of the installations supplying gaseous fuels by pipeline, the owners of these pipelines may refuse to carry them out for technical or safety reasons. In the event of disagreement, the decision shall be taken by the competent body. It is for the applicant to prove the need to carry out the work by affecting the gas pipeline.



ADDITIONAL TECHNICAL INSTRUCTIONS

ITC ICG-01. Installations of gaseous fuels by pipeline at maximum design pressure of not more than 16 bar

ITC ICG-02. Storage and distribution centres for liquefied petroleum gas (LPG) containers

ITC ICG-03. Liquefied petroleum gas (LPG) storage facilities in fixed tanks

ITC ICG-04. Satellite Liquefied Natural Gas (LNG) plants

ITC ICG-05. Installations for the supply of gaseous fuels for means of transport

ITC ICG-06. Storage facilities for liquefied petroleum gas (LPG) containers for own use

ITC ICG-07. Gaseous fuel receiving installations

ITC ICG-08. Gas appliances

ITC ICG-09. Persons and undertakings installing gas

ITC ICG-10. Liquefied petroleum gas (LPG) installations for domestic use in caravans and motor caravans

ITC ICG-11. Storage, transfer and filling plants for liquefied petroleum gas (LPG) containers

ITC ICG-12. Installations for gaseous fuels by pipeline at maximum design pressure exceeding 16 bar

ITC ICG-13. List of reference standards

1.



ITC ICG-01

INSTALLATIONS FOR GASEOUS FUELS BY PRESSURE PIPELINE A MAXIMUM DESIGN OF 16 BAR OR LESS;

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1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to lay down the essential technical requirements and minimum safety measures to be observed when designing, constructing and operating installations for gaseous fuels referred to in Article 2 (1) (a) of the Technical Regulation on the Safety of Infrastructure and Installations for Gaseous Fuels.

2. ADMINISTRATIVE AUTHORISATION

Distribution facilities, direct injection lines and isolated pipelines for gaseous fuels shall follow the authorisation regime laid down in Law 34/1998 of 7 October.

In the case of extensions of existing distribution networks, prior administrative authorisation shall be requested on the basis of a general report containing approximate annual forecasts for the construction of distribution facilities.

Within the first quarter of each year, the pipeline gas distribution company must send the competent body of the corresponding Autonomous Community a project containing the technical documentation of the works actually carried out in the previous year, indicating the date of commissioning of each one.



3. DESIGN AND IMPLEMENTATION OF FACILITIES

The facilities shall be designed to provide a secure and continuous supply of gas. The design shall take into account environmental and safety aspects of construction and operation.

Distribution systems must be sized with sufficient capacity to meet the demand of the area and future forecasts of demand in the area covered by them.

The design design and choice of materials to be used in the construction of installations shall take into account the physico-chemical properties of the gaseous fuels or their mixture, the design pressure, the allowable loss of load and the operating and maintenance conditions of the installations.

Installations for the distribution of gaseous fuels by piping shall be designed and operated in accordance with the requirements set out in references GAS_003, GAS_004, GAS_017, GAS_039 and GAS_050 of the table of standards and any other standard applicable to them depending on the design pressure or the nature of the gas.

The premises shall be constructed under the responsibility of the operator using his own staff or staff from elsewhere, ensuring the safety of the staff involved in the work and taking appropriate precautions to avoid affecting other buried premises.

The connection of new distribution facilities to existing ones should be carried out without interrupting supply in existing facilities, where possible.

The execution of special works for crossing or passing on roads, watercourses, railways and bridges shall require the authorisation of the body concerned. Preference shall be given to alternative construction techniques which ensure safety and minimise the impact on the services concerned.

4. PRE-TESTING AND COMMISSIONING

4.1. Preliminary tests

Installations for the distribution of gaseous fuels by pipeline shall be tested in accordance with GAS_019.

Before the installation is put into service, the strength and leakproofness tests provided for in references GAS_003 and GAS_004 of the table of standards shall be carried out, as appropriate depending on the type of installation, in order to check that the installation, materials and equipment comply with the applicable technical requirements, have been properly constructed and meet the leakproofness requirements.

During the preparation and execution of the stress and leakproofness tests, the absence of persons from outside the stress and leakproofness tests shall be ensured in the working area.



The operator of the installations shall inform the competent industrial safety body of the Autonomous Community in which the installation is located, at least three working days in advance, of the date and approximate time at which these tests will be carried out, as well as the characteristics of the installation, its location and the tests to be carried out. Such communication shall be made by electronic means established by the competent body.

The operator of the installations shall communicate the results of the tests to the competent body in the following cases:

- a) New networks, in any case.
- b) Extensions of existing networks and ancillary installations with MOP > 5 bar, in any case.
- c) Extensions of existing networks and ancillary installations with MOP $\leq$ 5 bar, in a significant percentage of the installations, not less than 5 % of the length deployed and of the ancillary installations put into service annually. The choice of the plants included in this percentage will be made by the company, which will follow the criterion that there is variety in the selected plants in terms of location, length of stretch, materials used, type of junction, etc.

As a precondition for commissioning, the distribution company or a control body in the case of owners of direct injection lines and isolated pipelines for gaseous fuels must certify that the prior tests have been carried out correctly by issuing a favourable document which must be included in the project management certificate.

4.2. Putting into service

Only facilities that have successfully passed the previous tests and are listed in the final works certificate may be put into service and, if necessary, when they have received the administrative decision to put them into service.

The gas filling of the distribution installation shall be carried out in such a way as to avoid the formation of an air-to-gas mixture between the flammability limits of the gas. To this end, gas shall be introduced at a rate which reduces the risk of flammable mixture in the contact area or both fluids shall be separated by an inert gas cap or purge piston. The process of purging an installation shall also be carried out in a controlled manner.

The commissioning of an installation shall be carried out by qualified personnel authorised by the pipeline gas distribution company or by the operator of the distribution installation and with the knowledge of the site management.



5. OPERATION AND MAINTENANCE:

Companies distributing gaseous fuels by pipeline and owners of direct injection lines and isolated pipelines for gaseous fuels shall apply the operating and maintenance criteria that are appropriate from the point of view of public safety, in accordance with the provisions and periodic actions laid down in this ITC and in references GAS_003 or GAS_004 of the table of standards. These operations shall be the responsibility of the operator of the installation and shall be carried out by qualified personnel of the operator or others.

The companies distributing piped gas and the owners of direct injection lines and isolated pipelines for gaseous fuels shall make available to the management body responsible for industrial safety of the Ministry of Industry and Tourism and to the competent body of the Autonomous Community that issued the administrative authorisation for the distribution facility a copy of the operating and control procedures for the operating and emergency response centres actually established, and shall notify any changes that may occur.

5.1. Operation centres

Undertakings distributing piped gas shall have operational centres at their premises where they shall have the material and human resources necessary for the normal performance of their control and supervision activities.

This requirement does not apply to distributions supplied from LPG tanks or direct injection lines or isolated pipelines for gaseous fuels, which, depending on their size, must include in the notification of commissioning to the competent body of the Autonomous Community an operating and control plan ensuring an equivalent level of safety.

The main functions of the operation centres shall be at least the following:

1. Monitoring of the network and follow-up of actions in the field. Operating centres shall establish the necessary mechanisms to monitor and maintain within adequate margins the quality parameters of the supply, which shall be at least the pressure in the installations and the concentration of odouriser, where appropriate, in the gas.

Collect and analyse network pressure records as well as possible remotely informed parameters from the regulating stations, verifying the good performance of the distribution network. They shall have tools for operational simulation of distribution systems.



They must also establish the necessary communication procedures with the emergency centre of the pipeline gas distribution company itself, as well as with the transport and marketing companies.

2. Operational planning. Plan appropriate actions to ensure continuity of supply, taking into account the expected growth in demand for the following marketing year. Those actions shall be set out in an operation plan.
3. Analysis of the quality of supply. They shall produce on a monthly basis a quality report on the gas supplied, summarising the results of the measurements made and the data provided

by the transport undertakings for odourisation levels, where applicable, and the average gross calorific value (HCV) of the gas circulating on their networks. To this end, the Technical System Manager shall provide the piped gas distribution company with the PCS values of the gas delivered by the transport company on an hourly basis.

4. Planned actions. They will be responsible for programming and monitoring the actions to be carried out on the main networks.

5.2. Emergency planning and care

The operators of the installations shall have the necessary means to deal with any incidents or breakdowns that may occur.

Have a written emergency plan describing the organisation and operation of own or external human and material resources in normally foreseeable emergency situations. This plan shall cover, inter alia, the following aspects:

1. Purpose and scope of application.
2. Emergency levels.
3. Development of an emergency.
4. Identification of responsible persons.
5. Emergency stages.
6. Notification to the public services (police, firefighters, health services, etc.) as well as to the relevant authorities.
7. Emergency analysis.
8. Dissemination and knowledge of the emergency plan.
9. Means of warning the customers concerned.

In order to deal with possible incidents in their distribution network, undertakings distributing piped gas and isolated pipelines must ensure that there is a telephone and on-site support service in permanent operation. In addition, they shall disseminate sufficiently, through whatever channels they deem appropriate, the means of communication with that helpdesk, so that both their clients and public bodies can easily access them.



These helpdesks must be able to activate the emergency plan if necessary, so that the necessary safety measures are taken in the shortest possible time.

In order to deal with possible safety incidents, such as scent of gas, fire or explosion in users' reception facilities, pipeline gas distribution companies must have their own or contracted emergency response system. Companies distributing piped gas shall pass on to users the costs arising from the permanent availability of this emergency care service, as established by regulation by the competent body of the Autonomous Community where they provide the emergency care service.

Emergency response centres must have written procedures in place that classify warnings by priority and specify the system to be followed in resolving the highest priority levels. In this regard, warnings related to gas leaks and all conditions that could lead to risk situations should be considered as top priority. These procedures shall also specify the quality of service parameters in

accordance with the regulations in force.

Emergency response centres shall have the necessary records at the disposal of the administration regarding the measures taken and the means used to ensure safety in the event of any incident dealt with by the service desk.

In cases where supply disruptions occur that affect the use of gas in the receiving facilities of users, the pipeline gas distribution undertaking shall inform the distribution or marketing undertaking of this circumstance at intervals to be agreed between the parties or laid down by regulation.

5.3. Tightness check

The operator of the network, direct line or isolated pipeline shall check the watertight nature of the installations as set out in reference GAS_003 of the table of standards or, where applicable, the one applicable to it, using a proven system.

Detected leaks shall be classified, according to their significance, into emergency intervention leaks, scheduled intervention leaks and progression monitoring leaks, according to the following factors:

1. Physico-chemical properties of the distributed gas.
2. Operating pressure of installations.
3. Indications of the leak detection system.
4. Proximity of detected leakage to properties and buildings, considering their use.



The documentation relating to these periodic checks shall be kept by the operator of the network, who shall keep it at the disposal of the competent body of the Autonomous Community.

5.4. Maintenance

The operator of the installation must have its own or external maintenance service, with the necessary staff and equipment to ensure the proper functioning of its installations and carry out the regulated periodic checks.

The maintenance service shall take temporary measures in the event of leaks, imperfections or damage compromising the proper functioning of the installations if it is not possible to carry out a final repair when the failure becomes known. The corresponding final repair shall be carried out as soon as possible.

The materials and techniques used in interventions on installations shall comply with the requirements set out in references GAS_003 or GAS_004 of the table of standards.

Following interventions on the network, the on-site tests provided for in the standards referred to in the previous paragraph shall be carried out, except in the case of one-off repairs and short sections, where the watertight nature of all new joints carried out by soap-dissolution or other appropriate method shall at least be verified.

The filling and emptying of gas in a piping shall be carried out in accordance with paragraph 4.2. The resumption of service shall require the network to be purged at its ends where there is a possibility of air having entered the network.

During interventions on the network with possible gas release, the necessary precautionary measures shall be taken, such as gas detection, signalling and control of the work area or removal of potential ignition sources not strictly necessary for the intervention, and the dedicated fire-fighting equipment shall be available at the workplace.

The operator of the installations must contract the services of a control body authorised to certify the conservation status of a sample of the installations subject to maintenance operations, in accordance with the following percentages:

- a) Companies with facilities to which more than 10.000 in-service supply points are connected in the corresponding Autonomous Community: sample of 1 % of maintenance operations carried out in the year at provincial level.
- b) Other companies: sample of 3 % of maintenance operations carried out in the year at provincial level.

The inspection body shall, as a minimum, certify the leakproofness and correct operation of the valves and safety systems of the sample.



In the last quarter of the year, the operators of the installations shall submit to the competent body for industrial safety in the corresponding Autonomous Community the proposal for the plan for the maintenance of installations to be carried out in the following year, as well as the sampling plan to be followed in accordance with the provisions of the previous paragraphs, ensuring that there is variety in the plan in terms of location, age, materials used, types of assembly, etc.

In the first quarter of each year, the operators of the installations shall submit to that competent body a report on the results of the maintenance plan and the sampling carried out in the previous year, attaching to it the certificates issued by the authorised inspection bodies.

5.5. Recording and archiving

The operator of the pipeline shall have detailed cartographic information on the installations, which he shall keep up to date at all times. It shall also keep up-to-date and archived during the operating period the necessary documents relating to:

- a) Administrative authorisation documentation.
- b) Projects for the authorisation of installations, including the results of in-service and commissioning tests (strength and leakproofness).

Similarly, the results of the last two checks and leak checks will be archived.

There shall be a temporary archive, for a minimum period of five years, of the interventions carried out for safety reasons, as well as the actions and means used in emergency situations.

Computer systems, paper format or other systems of sufficient reliability may be used as means of information, recording or archiving.



ITC ICG-02

STORAGE AND DISTRIBUTION CENTRES FOR LIQUEFIED GAS CONTAINERS PETROLEUM (LPG)

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6. TRANSPORT OF LPG CONTAINERS

1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to lay down the essential technical requirements and minimum safety measures to be observed when designing, constructing and operating storage and distribution centres for bottled LPG (hereinafter: centres), as referred to in Article 2 (1) (c) of the Technical Regulation on the Safety of Infrastructure and Installations for Gaseous Fuels.

For the purposes of Article 2 of the Regulation and of this JTI, an increase in storage capacity leading to a change of category shall be regarded as an extension of an existing site.

On the other hand, any changes that may affect the safety conditions, such as changes in the storage areas of filled packaging, are considered as modifications.

Increases in capacity at an existing site which do not entail a change of category or which do not entail a change in the safety conditions of the establishment are not considered to be modifications.

It also includes the technical criteria for transporting LPG containers in private vehicles and for home delivery in addition to the provisions of the European Agreement concerning the International Carriage of Dangerous Goods by Road.



2. ADMINISTRATIVE AUTHORISATION

The construction and design of LPG container storage and distribution centres does not require an administrative authorisation.

3. DESIGN AND IMPLEMENTATION OF THE CENTRES

3.1. Classification of sites

LPG container storage and distribution centres are classified into the following categories according to their nominal total content capacity:

- a) Category 1: From 25.001 kg to 250.000 kg.
- b) Category 2: From 12.501 kg to 25.000 kg.
- c) Category 3: From 1.001 kg to 12.500 kg.
- d) Category 4: From 501 kg to 1.000 kg
- e) Category 5: Up to 500 kg in storage at service stations or in storage in commercial premises.

The nominal capacity of the total LPG content of a given type of container stored in a site shall be determined by the following formula:

$$C_t = C_n \times N \times 0,65$$

With:

CN = Nominal capacity of the packaging concerned.

N = Number of packages of the same type (both filled and empty).

The total capacity shall be the sum of the partial capacities of each packaging type.

3.2. General

The following general provisions shall apply to all storage and distribution centres, with the exception of category 5.

The installations shall be carried out under the responsibility of the operator of the installations and, in the case of LPG wholesale operators, with their own or external personnel.

The storage area for filled packaging must be separated from the storage area for empty packaging and both from places for other services, and all areas must be duly marked.

The area intended for the storage of containers shall be in the open air and shall not have any type of building intended for this purpose other than that of the enclosure, and may, in any case, have a cover as indicated in this section.



The area intended for the storage of filled packaging must be of a single plant which is not underground or the level of which is not below the level of the land surrounding that area. The storage area shall be clearly delineated and arranged so that loading and unloading can easily be carried out by manual or mechanical means.

Provision shall be made for the easy departure of personnel in the event of a casualty, in such a way that the maximum actual travel (bypassing any obstacle) to the outside or to a safe escape route does not exceed 25 metres. This does not apply where the storage surface is less than or equal to 25 m² or where the distance to be covered in order to reach the exit is less than 6 m. In no case shall the packaging be so arranged as to obstruct normal or emergency exits or prevent access to safety equipment or areas.

In the case of open air storage under deck, this shall be light type, made of material of class A2-s3, d0 according to reference GAS_021 of the standard table and shall rest on structures stable to fire R 180 according to reference GAS_013 of the same table.

The storage area of the containers and the area to be covered by the truck in order to load and unload the trucks must have a non-irregular floor which must permit the perfect manoeuvrability of those vehicles and which must be made of materials of Class A2_{FL}.

Containers with a safety valve shall always be placed upright and placed in cages if stored at more than one height.

The centres shall have adequate lighting to ensure at all times correct visibility in the handling of containers and in the manoeuvrability of vehicles.

The electrical installation shall comply with the regulations in force.

In areas intended for the storage of containers, whether filled or empty, all activities involving the presence of free flames or any source of heat liable dangerously to raise the temperature of the containers must be prohibited, as must the presence of any flammable or readily combustible substance.

A notice bearing the following indication or symbols shall be affixed in a visible place of storage: "Flammable gas. No smoking and burning".

Any person entering these rooms must deposit before entry any tools or objects which may produce fire or sparks, such as lighters, matches, etc.

The filling or transfer of LPG from one container to another is prohibited in LPG container storage and distribution centres.

In addition to the installation-specific requirements detailed below, Category 1, Category 2 and Category 3 installations must be protected.



firefighting appropriate to the risk, as laid down in Annexes I to IV to the Regulation on Fire Safety in Industrial Establishments, approved by Royal Decree 164/2025 of 4 March.

With regard to the design, installation and maintenance of the active fire protection installations of the 1th, 2th and 3th category installations, the provisions of the Regulation on fire protection installations, approved by Royal Decree 513/2017 of 22 May, must be followed.

3.3. Category 1, Category 2 and Category 3 storage centres

New centres of these categories may only be established in non-residential areas.

The centres must maintain the minimum internal and external security distances set out in the following table, defined as follows:

Table I: Minimum safety distances

Category	Safety distances (m)	
	(a) Internal safety distance	(b) External safety distance
1TH	6	20
2TH	6	15
3TH	2	10

- a) Internal security distance: this is the area between the boundaries of the area intended for the storage of filled packaging and other buildings associated with the centre intended for secondary uses (changing rooms, offices or other premises).
- b) External safety clearance: this is the area between the boundaries of the area for the storage of filled packaging and the boundaries of ownership outside the centre, as well as roads or public roads that are not exclusively accessible to the centre. They shall be measured between the nearest points on the boundary of ownership between which such distances must be kept and shall be increased by 10 m from the boundary of ownership where these are to:
 - i. Buildings intended for collective use, such as churches, schools, public entertainment halls, hospitals, buildings of artistic interest, such as galleries, museums or the like, hotels, barracks or markets, among others.
 - ii. Railway, tramway or other electrical power lines for means of transport or high-voltage overhead power lines.

The enclosures specific to the centres must be surrounded by enclosures with the following conditions:

- i. It must be placed at least 10 m from the storage area for filled containers.
- ii. It shall be constructed of materials of Class A2-s3, d0 and rest on structures stable to fire R 180.



- iii. The sides of the enclosure leading to public roads or areas normally occupied by persons shall consist of a continuous wall EI 180 with a minimum height of 2.5 m and the remaining sides of the enclosure may be of metal mesh with a minimum height of 2 m, secured by supports firmly fixed to the ground.
- iv. There shall be no gaps in the enclosure wall other than those necessary for the normal operation of the enclosure. The location of these gaps shall be determined in such a way as to ensure the isolation of the centre from other rooms.

Where containers are stored in cages, they shall be arranged in such a way as to be accessible by forklift trucks or other lifting devices suitable for cage movement. Up to four heights may be stored for cages of domestic packaging up to 15 kg with full packaging and up to six heights if empty. In the case of cages of containers weighing more than 15 kg, only full or empty containers may be stored in a single height.

The loading or unloading of containers shall not involve any magnetic lifting device or the use of ropes, chains or slings not suitable for lifting cages with such means and properly attached.

Category 1 centres shall be equipped with a fire alarm system in the fire sectors and shall have their own permanent or contracted surveillance or detection system for monitoring installations outside working hours.

The centres shall have water pipes under minimum pressure of 5 kg/cm², with a number of fire hydrants of type DN25 suitably distributed at a minimum distance of 10 m from the storage area of filled containers. Installations without an external water supply shall be provided with storage tanks and pumping facilities allowing the network to operate for 90 minutes at the indicated pressure.

The minimum number of fire hydrants fitted shall be 6 for category 1 centres and 2 for category 2 and 3a centres. Provided that it is not possible to have a sufficient source of water and, if it considers so, the competent body of the Autonomous Community may authorise that, instead of the pressurised water installation, the supply of fire-extinguishers corresponding to the centre be increased by fifty per cent.

Wherever possible, these installations shall be carried out in agreement with the official fire service of the town in which the centre is located or, failing that, with that of the nearest town.

Centres shall be equipped with a minimum number of mobile, wheeled or hand-held fire extinguishers as follows:

Table II: Minimum number of fire extinguishers

Airport Centre	Number of fire extinguishers		
	50 kg mobile fire extinguisher *	Effectiveness 43A-183B **	Effectiveness 21A —



			113B **
1a (over 75.000 kg).	5, plus 1 per 18.750 kg over 75.000 kg.	7, plus 2 per 18.750 kg over 75.000 kg.	—
1a (from 56.251 to 75.000 kg).	4	6	—
1a (from 37.501 to 56.250 kg).	3	4	—
1a (from 25.001 to 37.500 kg).	2	3	—
2TH	1	2	—
3TH	—	—	5

* LPG compatible extinguishing agent.

* * as referred to in GAS_011 of the standard table.

For the centres referred to above, 43A-183B efficient extinguishers may be replaced by 21A-113B efficient extinguishers, provided that the number of effective extinguishers is at least twice the number of effective extinguishers.

The appliances, equipment and systems of the fire protection installations, as well as the installation and maintenance companies, must comply with the requirements laid down in the regulations in force on fire protection installations when the establishment is put into service.

Fire-fighting equipment and installations must be kept in perfect working order so as to ensure that their purpose is fully effective. Maintenance operations shall be carried out in accordance with the regulations in force on fire protection installations.

Personnel shall be instructed to have appropriate fire hazard and fire-fighting skills and shall be periodically tested at least once a year to verify the good condition of the material and the training of personnel.

The centres must be protected against electric shocks to the atmosphere and transformers or other high-voltage equipment may not be installed inside the enclosure.

These centres must be equipped with external communication.

Motor vehicle centres which are not fitted with a firewall fitting to the exhaust pipe shall not be permitted to enter the enclosure. A poster will be placed at the entrance of the establishment informing of this ban.



3.4. Category 4 storage centres

The storage centre must have an enclosure over its entire perimeter consisting of at least a fence 2 m high, firmly fixed to the ground and constructed in such a way as to prevent the containers from being handled from the outside.

The minimum distance from the perimeter of the storage area to inhabited premises shall be 3 m or 6 m if it is located in a courtyard enclosed on four sides with buildings or walls.

At least two effective 21A-113B fire extinguishers shall be available, each in an easily accessible place.

Category 4 storage facilities attached to service stations must be located outside the service station itself and at a minimum distance of 10 m from the area of the vehicle supply facility, as defined in the MI-IP 04, approved by Royal Decree 706/2017 of 7 July.

“Service station” means the physical space bounded by a perimeter line comprising all of the following facilities and elements:

- a) Pavement between entrance and exit.
- b) The island of separation from the public highway.

- c) Unloading area of the tanker truck.
- d) Area of facilities (storage, ponds, buildings, pumping stations, storage tanks and refuelling area).
- e) Monoliths, information posters and signage.
- f) Water, electrical, compressed air and fire service installations.
- g) Other installations necessary for the supply of motor fuels and petroleum fuels.

3.5. Category 5 storage centres

3.5.1. Storage at service stations

The following may be stored simultaneously at the same service station:

- 1. LPG containers for motor vehicles.
- 2. Non-refillable LPG containers, referred to as 'cartridges', or mobile containers with a capacity of up to 3 kg each, referred to as 'popular'.
- 3. LPG containers with a capacity of up to 15 kg.

In any case, the maximum total storage capacity shall be 500 kg.

The storage centre must meet the following conditions:



- a) Location: Storage in open spaces shall be located in the service station and may be covered by the service station's own deck, and its floor shall not be lower than the level of the surrounding terrain. This location shall not prevent the circulation of vehicles or persons for access to the different services of the service station. Within the commercial premises associated with the service station, the requirements laid down in paragraph 3.5.2 shall be complied with.
- b) Type of construction: Where it has a protective cover, it shall be of material of Class A2-s3, d0, supported by metal, concrete or any other fire-stable material R 180. The surface, which shall be made of materials of Class A2_{FL}, shall in addition have the characteristics of non-absorbent and non-sparking when collisions with metallic objects occur.
- c) Security area: The following minimum safety distances must be observed from the storage limit for packaging:
 - i) 4 m to aeration pipes, cargo nozzles of tanks and public roads.
 - ii) 2 m to kerbs of supply platforms, parking platforms for road tankers, sinks, nozzles and openings at ground level which communicate with lower-level premises.
- d) Fire protection: At least 2 portable fire extinguishers with unit efficiency 21A-113 B shall be provided.

Where containers are stored in cages or display units intended for that purpose, they shall comply with the following conditions:

- e) They shall be constructed of materials of class A2-s3, d0.
- f) They shall have a ventilation surface, both upper and lower, which allows air to aerate

and circulate.

- g) Outside the working hours, they shall not allow the containers to be handled from outside by staff outside the service.

Where different types of packaging are present at the same time, the warehouses shall be separate and each one of them shall fulfil the following conditions:

- h) Storage of LPG containers for motor vehicles: it shall be carried out in cages or display stands specific to them, with a maximum of two heights.
- i) Storage of packages up to 15 kg: it shall be carried out in cages or display stands specific to them, with a maximum of two heights.
- j) Storage of LPG containers and cartridges each with a capacity not exceeding 3 kg: The minimum length shall be that required for placing the packs placed in cages or display cases of four heights, with a distance of 40 cm between them and each of them being able to accommodate three rows of the largest diameter packs.

3.5.2. Warehousing in commercial establishments

Retail establishments may have areas for the storage and sale of LPG in containers with a capacity of less than 15 kg, popular containers and non-refillable cartridges.



The maximum storage limit shall be 500 kg of gas, irrespective of the unit capacity of the containers, which shall comply, as the case may be, with the rules set out below.

3.5.2.1. Storage facilities with a capacity exceeding 150 kg of LPG and a maximum capacity of 500 kg

Such packages shall be placed in a suitably marked area or placed in cages or display units intended for that purpose, in which case they shall comply with the specifications given in section 3.5.1 of this ITC.

The boundaries of areas intended for the display and sale of LPG containers shall be visibly marked.

The areas in which the LPG containers are situated shall be situated on the ground floor, shall not be below the surrounding terrain and shall have at ground level one or more gratings with direct ventilation with a minimum surface area of 400 cm² and may not be more than twice the size of the other.

From the border of the packaging storage area, the following safety distances must be kept in barracks, dormant windows, sewers, communications with staircases, basements or other premises situated at a lower level:

- a) for storage areas in an open location, 4 metres.
- b) for closed storage areas, 8 metres.

A poster shall be placed at the entrance to the establishment indicating by means of text or symbols: "No smoking in marked areas". In addition, one or more posters marked "Smoking

prohibited within 5 m of this area”, of sufficient size and placed in a suitable place to be clearly distinguishable, shall be placed in the area where the LPG containers are located.

The commercial establishment must be separated by hollow free walls from other external premises.

The surface of the storage area for LPG containers shall be of material Class A2_{FL}. If stowed on platforms, these shall be of material class A2-s3, d0.

The ceiling of the commercial establishment, in the area intended for the storage of filled containers, shall be of material of class A2-s3, d0, the structure on which it rests being stable under fire R 180. Otherwise, the area in which the receptacles are located shall be protected at the top by a cover made of material of class A2-s3, d0.

All activities involving the presence of uncontrolled flames or any other source of heat directly radiating on the packaging shall be prohibited.



Three efficient 21A-113B fire extinguishers shall be provided in a location close to the area of display and sale of the LPG containers.

Demonstrations of the operation of appliances that are connected to LPG containers shall be carried out by competent personnel and after appropriate safety measures have been taken.

Only empty containers may be displayed at the windows.

3.5.2.2. Storage facilities with a maximum capacity of 150 kg of LPG

These packages or cartridges shall be placed in a suitably marked area or in cages, which may be located in display units intended for this purpose, in which case they shall comply with the specifications given in section 3.5.1 of this ITC.

Only empty containers may be displayed at windows.

Demonstrations of the operation of appliances that are connected to LPG containers shall be carried out by competent personnel and after appropriate safety measures have been taken.

The area allocated for the storage of containers and cartridges shall be separated from places where uncontrolled flames or sources of heat irradiation may occur which impinge on them. This area shall have the necessary ventilation and in no case shall it be located in basements or semi-basements.

At least 2 m safety distance from the boundary of the packaging storage area must be kept in archetypes, dormant windows, sewers, communications with staircases, basements or other premises situated at a lower level.

A poster shall be placed close to the storage area indicating by means of text or symbols: “No smoking”.

The commercial premises shall be provided with two effective 13A- 55B extinguishers in an easily accessible place.

4. DOCUMENTATION AND PUTTING INTO SERVICE

4.1. Technical documentation

The LPG packaging storage and distribution centres, with the exception of Category 4 and Category 5 LPG containers, shall require a project to be carried out by a qualified technical person, as provided for in Chapter II of the Regulation.

For the 4th and 5th category centres, a technical memory must be drawn up containing at least the details of the operator of the installation and the location of the centre, the safety distances and a descriptive plan of details of the installation, as well as its category and storage capacity.



4.2. Initial inspection

Once the construction has been completed, an inspection must be carried out at any site by an approved inspection body as referred to in Royal Decree 2200/1995 of 28 December 2007.

4.3. Communication and commissioning

The owner of the LPG packaging storage and distribution centre or its legal representative, in new centres, extensions and modifications, once the initial inspection has been completed with a favourable result referred to in paragraph 4.2, must submit the following documentation to the competent body of the Autonomous Community, in accordance with the provisions of Article 11 of the Regulation:

- a) Project or memory, including the descriptive plan.
- b) Initial inspection certificate from the inspection body.
- c) Works management certificate, if applicable.

Storage centres may be put into service once the documentation referred to or, where appropriate, the self-declaration has been submitted to the competent body of the Autonomous Community, without prejudice to the other safety requirements of other applicable regulations.

Submission to the competent body of the Autonomous Community shall entitle the person concerned to put the product into service, without this implying technical compliance on the part of the competent body.

5. MAINTENANCE AND PERIODIC INSPECTION

The owner of a centre shall be responsible for the proper use, maintenance and maintenance of the facilities, elements and equipment that form it.

In addition, the operator of the storage centre shall also be responsible for the inspection of the storage centre every two years for Category 1, Category 2 and Category 3 centres by a control body and every five years for Category 4 and Category 5 centres by a control body.

The inspection body shall check that the total LPG container storage capacity reported is not exceeded and that the conditions and safety measures laid down in the regulations continue to be complied with.

The inspection body shall issue the corresponding inspection documentation, which shall be handed over to the operator of the installation and shall act in accordance with Article 20 of the Regulation.



Irrespective of the above, wholesale LPG operators may carry out the visits they deem appropriate to the centres they supply in order to check the proper functioning, maintenance and maintenance of the facilities. They must immediately report any shortcomings or anomalies detected to the owner of the facilities and notify the corresponding competent body of the Autonomous Community.

LPG may not be supplied to any storage centre if the operator fails to prove to the operator, by means of a copy of the inspection certificate, that the test has been carried out with a favourable result or, if the result is conditional, that there are no serious defects, repeated minor defects or that the regulatory cure period has not been exceeded.

6. TRANSPORT OF LPG CONTAINERS

Containers, whether filled or empty, must be properly secured in their transport cages or properly stowed and measures taken to prevent their movement during transport.

Containers fitted with a safety valve, whether filled or empty, shall always be transported upright in their corresponding transport cages or properly stowed. New or repaired gas-free packaging transported from factory or workshop to the plant may be horizontal.

Vehicles containing LPG containers shall be prohibited from stopping in underground parking spaces, irrespective of their load volume.

Private vehicles carrying LPG containers shall be limited to 2 mobile containers with a capacity of up to 15 kg.

Vehicles intended for home delivery of containers containing LPG shall also comply with the following rules:

- a) The body of a vehicle shall have lateral openings and at the rear of it at the level of the floor of the vehicle for the purpose of easy evacuation of gases in the event of leakage.
- b) Vehicles entering a location containing more than 500 kg of LPG shall be fitted with a firewall fitting to the tailpipe.
- c) Packaging shall be treated with great care both when vehicles are loaded and unloaded and when they are distributed to consumers, avoiding as far as possible collisions and other causes that could affect the normal condition of the vehicles.
- d) It is forbidden to carry persons outside the service personnel in vehicles.
- e) The provision of fire extinguishers in vehicles shall be:
 1. For LDC vehicles equal to or less than 3.500 kg: one 8A-34B efficient extinguisher

- for the cab and one equally effective extinguisher for the load.
2. For vehicles with an LDC greater than 3.500 kg: one efficiency extinguisher 8A-34B for the cab and one efficiency extinguisher 13A-55B for the load.



- f) Transport personnel must be fully aware of the operation and use of the fire-extinguishers.



ITC ICG-03

LIQUEFIED PETROLEUM GAS (LPG) STORAGE FACILITIES IN FIXED RESERVOIRS

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6. CLOSURE AND DECOMMISSIONING OF DEPOTS AND INSTALLATIONS

1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to lay down the essential technical requirements and minimum safety measures to be observed when designing, constructing and operating LPG storage facilities using fixed tanks as defined in Article 2 (1) (d) (hereinafter referred to as installations) of the Technical Regulation on the Safety of Gaseous Fuels Infrastructure and Installations, intended to supply installations for the distribution of gaseous fuels by pipeline or receiving installations.

The installations covered by this ITC comprise all equipment, materials and, where appropriate, vaporisers and pipes between the cargo inlet and the output valves, including the output valves, with maximum total geometric storage capacities of 2.000 and 500 m³ respectively, depending on whether they are carried out in above-ground or buried tanks, defined in accordance with reference GAS_002 of the table of standards.



According to Article 2 of the Regulation, an extension of existing installations is an extension of existing installations if it entails a change of category or an increase in volume of 10 % or more without involving a change of category, which must comply with the provisions of this ITC for new installations.

Likewise, any action that alters safety conditions without affecting the category of the installation is considered to be a modification.

A new project shall not be required for installations that would have required a project for its implementation where the action consists of replacing one reservoir with another of similar characteristics with a volume difference of not more than $\pm 10\%$, the classification of the installation according to its capacity remains unchanged and safety distances are maintained. In this case, the authorised installation company shall issue a report justifying the action, which it shall submit to the competent body of the Autonomous Community together with the other mandatory documentation, which shall include at least:

- a) Manufacturing documentation or certificate of withdrawal from the new tank
- b) Certificate issued by the installer

The change of location of an existing reservoir is for all purposes considered as a new installation.

2. ADMINISTRATIVE AUTHORISATION

LPG storage facilities in fixed tanks shall require administrative authorisation for their construction, modification, operation and closure where provided for in Law 34/1998 of 7 October.

3. DESIGN AND IMPLEMENTATION OF FACILITIES

3.1. Classification of installations

LPG storage facilities in fixed tanks shall be classified according to the sum of the nominal geometric volumes of all their tanks as set out below.

3.1.1. Surface reservoirs

Surface reservoirs are those which are in the open air and whose lowest area of the lower generatrix or wall of the reservoir is above the surrounding floor.

Surface reservoirs	
A-1	Not exceeding 1 m^3
A-5	Greater than 1 m^3 and less than or equal to 5 m^3
A-13¹	Greater than 5 m^3 and less than or equal to 13 m^3



A-35	Greater than 13 m ³ and less than or equal to 35 m ³
A-60	Greater than 35 m ³ and less than or equal to 60 m ³
A-120	Greater than 60 m ³ and less than or equal to 120 m ³
A-500	Greater than 120 m ³ and less than or equal to 500 m ³
A-2.000	Greater than 500 m ³ and less than or equal to 2.000 m ³

¹: recovered deposits between 13 m³ and 13.03 m³ are considered in this category.

3.1.2. Buried tanks

Deposits are considered to be buried deposits situated entirely below ground level, whether natural or artificial, so that the highest area of the generatrix or upper wall of the tank is between 30 and 50 cm from that level.

If a protective housing is provided, it must not project more than 10 cm above ground level.

Buried tanks	
E-1	Not exceeding 1 m ³
E-5	Greater than 1 m ³ and less than or equal to 5 m ³
E-13¹	Greater than 5 m ³ and less than or equal to 13 m ³
E-60	Greater than 13 m ³ and less than or equal to 60 m ³
E-120	Greater than 60 m ³ and less than or equal to 120 m ³
E-500	Greater than 120 m ³ and less than or equal to 500 m ³

¹: recovered deposits between 13 m³ and 13.03 m³ are considered in this category.

3.2. General

The storage facility shall be designed, constructed, assembled and operated in accordance with reference GAS_002 of the standard table. In any case, the minimum safety distances (in metres) laid down in the following tables, measured as specified in the reference indicated in the table of standards, shall be respected, depending on the type of installation:

Classification	Surface installations (A)															
	A-1		A-5		A-13		A-35		A-60		A-120		A-500		A-2.000	
	<i>D_{or}</i>	<i>D_p</i>	<i>D_{or}</i>	<i>D_p</i>	<i>D_{or}</i>	<i>D_p</i>	<i>D_{or}</i>	<i>D_p</i>	<i>D_{or}</i>	<i>D_p</i>	<i>D_{or}</i>	<i>D_p</i>	<i>D_{or}</i>	<i>D_p</i>	<i>D_{or}</i>	<i>D_p</i>
R _L	1,5	1	3	2	5	3	7,5	5	8,5	6,5	10	7,5	15	10	30	20
R _E	3		6		10		15		17		20	10	30		60	



Classification	Buried installations (E)					
	E-1	E-5	E-13	E-60	E-120	E-500
	D_{or}	D_{or}	D_{or}	D_{or}	D_{or}	D_{or}
R _L	1,5	1,5	3	4	5	10
R _E	3	3	6	8	10	20

D_{or} : From holes (distance in metres)

D_p : From walls (distances in metres)

R_L: Distances to property limits (in metres), building openings, fixed ignition sources, fixed combustion engines, public roads, railways or rivers, projection of high-voltage overhead lines, basements, sewers or drains. R_E: Distances (in metres) to openings of educational, sanitary, religious, entertainment or entertainment buildings, aquartelamientos, shopping centres, museums, libraries or public exhibition sites. Service stations. (Storage hydrants and distribution points).

Where it is not possible to comply with those distances, justification shall be given for any variations and for any alternative measures taken in place. These distances may be reduced only under the conditions specified in the reference quoted in the table of standards.

Installations shall be designed and dimensioned in such a way that they have sufficient capacity to meet the maximum flow and current demand with sufficient autonomy.

Plant materials and elements shall comply with the specific provisions applicable to them, in addition to those prescribed in reference GAS_002 of the table of standards.

The installations shall be carried out by a qualified gas installation company, except in the case of installations owned by LPG wholesale operators, which may also be carried out by them.

Likewise, the design, manufacture and conformity assessment of pressure equipment forming part of the storage facility must comply with the provisions of Royal Decree 709/2015, of 24 July, laying down the essential safety requirements for the placing on the market of pressure equipment or, failing that, with the legislation applicable to it when it is placed on the market.

4. DOCUMENTATION AND PUTTING INTO SERVICE

4.1. Installations not requiring a project

Be carried out in accordance with a technical report, providing the main data and design characteristics of the installations, signed by a qualified technical person, or



an installer for the installation of fixed LPG tanks, which shall include at least the following information:

- Details of the holder.
- Details of the gas installation company.
- Location of the installation.

- d) Intended use.
- e) Brief descriptive report.
- f) Justification of the selected deposits and their autonomy.
- g) Diagram of principle and operation, with indication of cutting and protective devices, pipe sections and other elements.
- h) Dimensioned drawing.
- i) Documentation of tanks.
- j) Justification for corrosion protection.
- k) Recommendations for the proper operation of the facility.
- l) Instructions for use, maintenance and emergency.

4.2. Installations in need of a project

A signed draft must be drawn up for each qualified technical person in any of the following cases:

- a) Storage installations supplying installations for the distribution of gaseous fuels by pipeline.
- b) Storage facilities that have a vaporiser, transfer equipment or cargo mouth at a distance buried or that do not run on land of the same property.
- c) Installations with a storage capacity exceeding 13 m^3 or with recovered tanks with a capacity exceeding 13.03 m^3 . Recovered deposits of between 13 m^3 and 13.03 m^3 are considered in this category.
- d) Storage station facilities located in places that are freely accessible to the public. Open access is understood to be as set out in reference GAS_002 of the table of standards.

That draft shall include at least the following:

- a) A report setting out the purpose of the project, the location of the installation, the operator of the installation, the description and supporting calculations, including also the range and protection against corrosion.
- b) Plans including at least the location plan of the LPG station at its location and its surroundings, indicating the access and discharge space for road tankers, the plan for the LPG installation at floor and elevation, including safety distances and installation detail plans, with flow diagram with indication of flows and pressures.



- c) Budget.
- d) Technical and optional specifications.
- e) Instructions for use, maintenance and emergency.

The design of the LPG storage facility shall be drawn up and signed by a qualified technical person, who shall be directly responsible for ensuring that it complies with the regulatory provisions. The installation project in industrial establishments or buildings may be carried out as part of the general building project or as a specific project.

4.3. Reservoirs with additional protection

Where tanks with additional protection are used, the manufacturer or his legal representative shall lodge an application with a control body of his choice in order to assess compliance with the specifications required by the legal provisions governing the tank with additional protection and its compliance with safety levels, in particular corrosion protection.

The application shall include the name and address of the manufacturer or his authorised representative and the following technical documentation, which shall make it possible to assess the performance of the system adopted by the manufacturer for corrosion protection of the container:

- a) A general description.
- b) Conceptual design, manufacturing and diagrams of circuits, sub-assemblies, etc., with explanations and descriptions necessary for their understanding.
- c) Design calculations performed.
- d) Tests intended to be carried out during manufacture.
- e) Report of the tests carried out on a representative specimen of the production.
- f) Means of inspection and review.
- g) Instructions for use and maintenance, as well as recommendations for the user for safety and correct operation.

This technical documentation shall be submitted only once and shall be kept by the manufacturer for a period of 15 years after the last tank with additional protection has been manufactured. The technical documentation submitted will be made available to the competent body of the Autonomous Community.

In the light of the documentation submitted, if it is favourable, the inspection body shall issue the corresponding certificate of conformity in duplicate, giving the warehouse the status of a warehouse with additional protection. The report must be kept by the manufacturer of the tank and must also be submitted to the competent body of the Autonomous Community in which the manufacturer or his authorised representative is located.



4.4. Temporary deposits

Temporary tanks shall only be considered suitable for use if they meet the following requirements:

- a) The temporary installation shall comply with Article 25.
- b) The storage volume shall not exceed 5 m³.
- c) They shall comply with the provisions of Royal Decree 709/2015, of 24 July, or Royal Decree 1388/2011, of 14 October, as applicable.

The protective conditions (temporary fences, capotas, etc.) and regulatory safety distances must be complied with as if they were permanent shells.

The first time that the temporary deposit is used, the same documentation must be submitted to the competent body of the Autonomous Community as for the putting into service of a fixed

deposit.

Each time the interim storage facility is connected to an installation, the competent body of the corresponding Autonomous Community shall be informed of its installation with a certificate from the authorised installation company, including the plan of the new location and the duration of the interim installation.

Once the installation of the reservoir has been completed, the installation company shall carry out a leakproofness test of the reservoir connections and fences, duly documenting the aforementioned operations.

When the interim tank is installed in a temporary installation due to emergency or breakdown, the fuel in the fixed tank which is not in service shall be taken out of the enclosure and only the temporary installation shall be loaded.

4.5. Preliminary tests

If, during the installation phase of the tanks, any defect or anomaly caused by loading and unloading operations for transport is observed at the tanks by the site management or the installer, a pressure test shall be carried out at the site and certified by an approved inspection body. The same test and certification shall be carried out prior to installation where it is found that more than 12 months have elapsed since the last pressure test or 24 months since the factory tests.

Once the works have been completed and the installation assembled, and before it is put into service, the installation company that carried it out (under the supervision of the works, if there has been a project) shall carry out the tests provided for in reference GAS_002 of the table of standards, and the result of those tests shall be recorded in the certificate.



Once the tests referred to in the previous paragraph have been completed, the commissioning of the installation shall require an initial inspection. During this inspection, the tests and verifications set out in reference GAS_002 of the table of standards shall be carried out, and the procedure set out in the inspection standard of the same reference shall be considered valid. These operations shall be carried out by the inspection body, assisted by the installation company and by the project management if a project has been carried out. During the tests, the site management and the installation company must take all necessary precautions to ensure that they are carried out safely in accordance with reference GAS_002 in the table of standards.

4.6. Certificates

The authorised installation company shall complete the relevant installation certificate, which it shall send to the operator of the installation.

In addition, in all cases, the inspection body shall issue an inspection certificate which it shall send to the operator of the installation, the installation company and the site management, if one exists, so that the installation will be put into service if the result of the inspection is favourable.

In the case of a construction project for the installation, the project management shall issue the

corresponding project management certificate to the operator of the installation. It shall include, as an annex, information on the state of the corrosion protection installation and the tank pit filling, test reports and tests carried out, documentation of the tanks, a list of the components of the installation and their characteristics and a documentary justification of compliance with the regulatory safety requirements for the parts and equipment that require it. Where applicable, the variations in the installation in relation to the project shall be justified.

4.7. Communication and commissioning

As indicated in section 2, the operation of the facilities requires prior administrative authorisation when provided for in Law 34/1998 of 7 October.

Once this authorisation has been obtained, if required, in accordance with Article 11 of the Regulation, the following documentation shall be submitted to the competent body of the Autonomous Community prior to the date of first filling:

- a) Installation certificate.
- b) Certificate of inspection.
- c) Technical report or construction project on the installation.
- d) Project management certificate, where a project exists.
- e) Certificate from a qualified technical person showing the ability of the building deck to withstand the loads incurred.
- f) Maintenance contract.



Once the submission has been made to the competent body, the operator of the installation may proceed to request the first filling of the LPG tanks. The company responsible for this first filling must verify that the required documentation for the facility has been submitted to the competent body of the Autonomous Community and that it will be part of the facility's documentation file.

The retail seller of LPG in bulk shall communicate the date of first filling to the operator of the installation.

During the first filling of each tank, the installer's or operator's own staff, as the case may be, shall check that the connections, fences and other installed elements are watertight and that the high filling point of the tank acts when the LPG reaches 85 % of the geometric volume of the tank. The result of these checks shall be included in the installation's documentation file, preferably in electronic form, including the installation's maintenance intervention parts.

5. MAINTENANCE AND PERIODIC INSPECTIONS

5.1. Maintenance

The operator of the installation or, failing that, the user, shall be responsible for the maintenance, maintenance, operation and proper use of the installation, so that it is permanently in service with the appropriate level of safety. They shall also comply with the safety recommendations communicated to them by the retail seller of bulk LPG, where the installation is

not owned by the latter.

This maintenance shall be carried out in accordance with the instructions in the maintenance manual or programme which must exist at the installation and at the intervals indicated therein and which must be available to maintenance undertakings in the most appropriate format.

To this end, they must have a maintenance contract with an authorised installation company that has a permanent emergency service, which will be responsible for maintaining the installations in good working order, with particular control of the following:

- a) Checking, on its visible parts, the correct condition of the outer shell of the shell (it shall maintain a continuous layer without signs of corrosion), pipes, drains, anchors and foundations.
- b) The operation of keys, control and measuring instruments (manometers, levels, etc.), regulators, transfer equipment, vaporisers and other equipment.
- c) Enclosure condition, access door and closing elements. Check the absence of elements outside the storage facility in the storage station area.



- d) The operation of the corrosion protection. With regard to cathode protection, if the installation maintenance manual does not indicate the frequency of this check, the protection potential shall be monitored annually or quarterly in the case of printed current.
- e) Measurement of reservoir earth strength.

There shall be a fixed element for safe access to operable valves, openings and other items normally used in the shell to enable their handling without mobile mechanical means such as portable stairs.

The installation undertaking responsible for maintaining the installation shall record in the intervention section of each visit the general condition of the installation and, where appropriate, any defects observed, repairs carried out and readings of protection potential.

The operator is responsible for keeping the parts involved in the maintenance of the installation until at least the next periodic inspection, as well as the certificate of the last inspection carried out in accordance with the provisions of this ITC.

5.2. Regular inspections

Periodic inspections of installations shall be carried out in accordance with the provisions of reference GAS_057 in the table of standards.

The operator of the LPG storage facility shall be responsible for having the LPG storage facility inspected every five years. This inspection shall in all cases be carried out by an authorised inspection body and shall include the whole of the common receiving installation in those cases where it is not considered to be a distribution network. Their correct tightness and fitness for use must be checked. To this end, the following points will be checked:

1. The existence of the maintenance manual or programme and the servicing of the

maintenance parts of the installation issued since the last periodic inspection.

2. Visual inspection of the installation, with verification of the safety distances indicated in reference GAS_057 of the table of standards.
3. Proper condition and maintenance of fire protection installations.
4. Checking on its visible parts of the correct condition of the outer shell of the shell (it shall maintain a continuous layer without signs of corrosion), piping, drainage, anchorages and foundations.
5. The operation of keys, control and measuring instruments (manometers, levels, etc.), regulators, transfer equipment, vaporisers and other equipment.



6. Enclosure condition, access door and closing elements. Check the absence of elements outside the storage facility in the storage station area.
7. Existence and state of required signs.
8. Check on the proper functioning of the corrosion protection systems and/or the tests indicated by the manufacturer on the tanks with additional protection.
9. Measurement of reservoir earth strength.
10. Gas-phase piping tightness test at operating pressure.
11. Leakproofness test of liquid phase piping, displaced cargo inlet and transfer hoses at 3 bar for 30 minutes which may be reduced to 15 minutes in test sections of less than 20 metres in length.
12. Check for tightness at operating pressure and by means of soap-water or gas detector on the other elements (such as tanks, valves, gauges, purges, accessories or equipment).
13. Correct condition and operation of the safety valve.

The technical criteria for the implementation of points 1 to 8 of the above list for installations existing before the entry into force of this ITC shall be those established in accordance with the regulations in force at the time when they were installed.

The inspection body shall issue the corresponding inspection documentation, which shall be handed over to the operator of the installation and shall act in accordance with Article 20 of the Regulation.

If the inspection reveals that the conditions have changed in relation to the documentation submitted for the commissioning of the facility, the body that carried out the check shall immediately inform the competent body of the Autonomous Community.

The holder must always be in possession of a copy of the certificate of the last inspection carried out, this document being available to the LPG retailer in bulk supplying LPG to the facility concerned at the time and to the competent body of the Autonomous Community.

In any case, the legal person supplying LPG to an installation shall verify that the installation provides proof of the relevant inspection or overhaul in force.



Under Article 46 (3) of Law 34/1998 of 7 October, LPG may not be supplied to any installation if the operator does not prove to the retail LPG marketing company in bulk, by means of the relevant inspection certificate in force, that there are no serious defects and that the deadline for correcting minor defects, where applicable, has not been exceeded.

Likewise, no LPG may be supplied to any installation unless evidence is provided to the retail seller of bulk LPG, by means of the relevant valid certificate of review or report of anomalies, if applicable, that there are no major anomalies in the individual receiving installation fed from that LPG storage facility and that the deadline for correcting secondary anomalies, if applicable, has not been exceeded.

5.3. Pressure tests

A pressure test must be carried out every fifteen years in accordance with the criteria set out in reference GAS_002 of the table of standards for tests and trials, the procedure set out in the inspection standard of the same reference being considered valid.

Mechanical resistance tests shall be carried out on tanks, vaporisers and pipes which may contain a liquid phase. Pressure tests shall be carried out on tanks and, where appropriate, on vaporisers and pipes which may contain a liquid phase. The drain and operation of the safety valves shall also be checked.

The operator of the installation must have the periodic pressure tests carried out by an inspection body which, with the assistance of the company that has signed the agreement to maintain the installation, will carry out the test and issue a test report once the operation has been completed with a favourable result.

An LPG supply may exceptionally be permitted in case it is necessary to carry out the pressure test.

In the case of tanks with additional protection referred to in reference GAS_002 of the table of standards, it is not necessary to discard them, provided that the tests carried out by the manufacturer have given a favourable result. Otherwise, the holder may choose between replacing the shell or repairing the enclosure, or determine in the future and for all purposes that the shell is no longer considered to be a 'tank with additional protection', and may continue to operate as a single wall shell by adding appropriate cathode protection to it. For tanks that do not have additional protection, the competent body of the Autonomous Community may authorise the pressure test to be carried out without the need for the tank to be unburied.

If, during the pressure tests or replacement tests, they do not cause the shell to become inoperative, the necessary steps shall be taken to check the correct setting of the valves.



During the periodic pressure tests during which the tanks are out of service, temporary tanks may be used to service the installation for the minimum period necessary to carry out the pressure test, as specified in paragraph 4.4.

LPG may not be supplied to any installation if, after the time limit for carrying out the periodic pressure test, the holder does not provide proof of compliance by means of a copy of the manufacturer's certificate of suitability or an inspection report from the inspection body.

Fixed LPG surface tanks included in the same production batch shall be exempted from the first periodical hydraulic test for the whole batch. Only one statistical sample of the batch of tanks, to be determined at the request of the manufacturer by an inspection body, shall be tested and carried out as follows:

Tranches per lot		Standard sample — %	Reduced sample — %
Of (number of copies):	a (No of copies):		
10	10	24	12
10	20	20	10
20	40	16	8
40	80	12	6
80	1.600	8	4
1.601	3.200	4	2
Unlimited	Unlimited	2	1

The actual value of the sample would be obtained by rounding to the higher unit than it results from applying the percentage, and may not be less than 8 units.

The reduced sample would apply to tanks of the same type and characteristics built by the same manufacturer and verified by the same procedures during the year preceding the year of testing without presenting any anomalies.

The control body shall determine the number of units to be sampled and the need to carry out or have carried out the tests on the units making up the sample by other control bodies. Once the review of the entire sample has been completed, the manufacturer shall issue, following a favourable report from the inspection body, a certificate of suitability for the batch, at the disposal of the operators of the facilities and the competent body of the Autonomous Community.

If any anomaly is found in one of the tanks in the sample, twice the sample will be reviewed, and if any further anomalies are found, the entire batch will be reviewed.



In the absence of the manufacturer, a competent medical practitioner may request a control body of his free choice to determine the lot size, the tests and the reports necessary for the certification of the suitability of the lot, but shall first provide the control body with the documentation submitted at the time by the manufacturer for the conformity assessment of the LPG tanks.

After the test, a test and compliance certificate shall be sent to each of the tanks in the batch, not only those tested, which shall be part of the facility's documentation file throughout the shelf life of the tank and be available to the administration. This certificate must include at least the identification of the batch, the identification of the warehouse, the date of certification, the result and the inspection body that carried it out.

5.4. Control of corrosion protection

Buried tanks shall be fitted with a cathode protection system unless it is demonstrated that this is not necessary by an aggressive terrain study. The installation company in charge of maintenance of the installation is responsible for carrying out the relevant checks in accordance with the instructions in the maintenance manual or programme which must exist at the installation and with the periodicity indicated therein.

If the maintenance manual does not indicate the frequency of this check, the soil protection potential shall be monitored annually and, where the cathode protection is by printed current, the functioning of the equipment shall be checked every three months.

In installations with tanks with additional protection, since cathode protection is not necessary, checks shall be carried out using the appropriate precision and sensitivity instruments specified by the manufacturer.

All such checks and inspections must be recorded in a register kept by the installation company responsible for maintaining the installation and by the operator of the installation. If any anomaly is found, it must be immediately brought to the attention of the operator of the installation so that it can be rectified in a manner commensurate with its seriousness.

5.5. Reservoirs with additional protection

Tanks buried with additional protection, as defined in reference GAS_002 of the table of standards, may benefit from the maintenance regime indicated here, but prior to being placed on the market, the manufacturer of the tanks must obtain authorisation to classify the tank as a 'tank with additional protection'.



6. CLOSURE AND DECOMMISSIONING OF DEPOTS AND INSTALLATIONS

The closure of LPG storage facilities in fixed tanks shall require administrative authorisation where provided for in Law 34/1998 of 7 October 2007.

An installation may be decommissioned at the express request of the operator, by a decision of the competent body of the Autonomous Community or by cessation of activity.

An installation or individual deposit shall be considered to cease activity if two consecutive years have elapsed without any consumption being made or if there is no maintenance contract for the installation or individual deposit. The holder must have the inert tank within three months of the occurrence of any of these circumstances, except in cases of force majeure, in which case he must inform the competent body of the Autonomous Community.

Where an installation is closed or a depot is taken out of service from an installation, the operator of the installation shall be responsible for instructing an installation company authorised to carry out and certify the inertisation or degassing of the depot or depots in accordance with reference GAS_058 of the standard table. The holder must also submit this certificate to the competent body of the Autonomous Community.



ITC ICG-04

SATELLITE LIQUEFIED NATURAL GAS (LNG) PLANTS

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1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to lay down the essential technical requirements and minimum security measures to be observed when designing, constructing and operating the LNG satellite plants referred to in Article 2 (1) (e) of the Technical Regulation on the Safety of Gaseous Fuels Infrastructure and Installations.

In accordance with Article 2 of the Regulation, any change to or extension of existing installations shall be deemed to be a change of category and must comply with the provisions of this ITC for new installations.

In addition, the following are considered changes to the installation without any change of category:

- a) Switching from one deposit to another.
- b) Change of location of an existing tank.
- c) Installation of new reservoirs.

In all cases, the provisions of paragraph 3 of this ITC must be complied with and, in the case of exchange of existing deposits, the provisions of paragraph 5 must also be complied with.

A new project shall not be required where the action consists of replacing one reservoir with another of similar characteristics, with a difference of not more than $\pm 10\%$ in volume, the classification of the installation according to its capacity remains unchanged and the distances



security; In this case, the project management will issue a report justifying the action, which it will submit to the competent body of the Autonomous Community, together with the other documentation required.

The requirements relating to the maintenance and periodic inspection of installations shall apply to both new and existing installations.

2. ADMINISTRATIVE AUTHORISATION

LNG satellite plant facilities shall require administrative authorisation for their construction, modification, operation and closure when provided for in Law 34/1998 of 7 October.

3. DESIGN AND IMPLEMENTATION OF FACILITIES

3.1. Classification of installations

Satellite plants shall be classified according to the joint storage capacity as follows:

	Capacity in m ³
a 1	Not exceeding 2 m ³
A	Greater than 2 m ³ and less than or equal to 5 m ³
B	Greater than 5 m ³ and less than or equal to 10 m ³
C	Greater than 10 m ³ and less than or equal to 20 m ³
D	Greater than 20 m ³ and less than or equal to 40 m ³
E	Greater than 40 m ³ and less than or equal to 80 m ³
F	Greater than 80 m ³ and less than or equal to 160 m ³
G	Greater than 160 m ³ and less than or equal to 450 m ³

3.2. General

LNG satellite plants shall be designed, constructed and assembled in accordance with reference GAS_001 of the standard table as appropriate.

The following table sets out the minimum safety distances depending on the type of installation, which must be respected:

Total installed capacity	Distances (metres)							
	A1	A	B	C	D	E	F	G
Items to be protected								
Property limits, public roads, roads, railways	2	7	8	9	12	15	25	30
Openings in public concurrent buildings, administrative use,	9	9	12	14	20	24	34	44



teacher, commercial, hospital, etc.

Where it is not possible to comply with those distances, justification should be given for any variations and other measures taken in place. These distances may be reduced only under the conditions specified in the reference quoted in the table of standards.

Assembly shall be carried out by an IG-A authorised company specialising in cryogenicity in the performance of cryogenic work and in pressure equipment.

Likewise, the design, manufacture and conformity assessment of pressure equipment forming part of satellite plants must comply with the provisions of Royal Decree 709/2015, of 24 July, or, failing that, with the regulations applicable to it when it is placed on the market.

The facility must have fire protection appropriate to the risk, in accordance with the provisions of Annexes I to IV to the Regulation on Fire Safety in Industrial Establishments, approved by Royal Decree 164/2025 of 4 March 2004.

With regard to the design, installation and maintenance of active fire protection facilities, the provisions of the Regulation on Fire Protection Facilities, approved by Royal Decree 513/2017 of 22 May 2004, must be followed.

4. DOCUMENTATION AND PUTTING INTO SERVICE

4.1. Technical documentation

The construction of an LNG satellite plant shall require a project prepared by a qualified technical person, which shall include at least the following:

- a) Memo, which shall include the following:
 - 1. Purpose of the project, location and ownership.
 - 2. Implementing legislation.
 - 3. Description of the installation and supporting calculations, including a report justifying whether or not the installation is affected by the regulation of control measures for major-accident hazards involving dangerous substances and, where relevant, the level of concern.
 - 4. Civil engineering.
 - 5. Assembly, testing and commissioning.
- b) Budget.
- c) Technical and optional specifications.
- d) List of drawings (location, safety distances, installation detail drawings, flow diagrams, etc.).
- e) Instructions for use and maintenance.



4.2. Initial inspection and pre-testing

Before the installation is brought into service, the inspection body, assisted by the company responsible for assembling and managing the works, shall supervise the on-site tests provided for in reference GAS_001 of the table of standards, in order to check that the installation, materials and equipment comply with the resistance and watertight requirements.

4.3. Certificates

The authorised undertaking IG-A specialising in cryogenics must issue a certificate for the liquefied natural gas installation.

The inspection body shall issue an inspection certificate which it shall issue to the operator of the installation, to the undertaking which constructed the installation and to the project management.

The project management shall also issue the corresponding works management certificate, which it shall send to the operator of the installation. It shall include as an annex a list of the components of the installation, their characteristics and the certification of the parts and appliances which are required by law. Where applicable, the variations of the installation in relation to the project shall be justified.

4.4. Communication and commissioning

As indicated in paragraph 2, the operation of LNG satellite plant facilities requires prior administrative authorisation when provided for in Law 34/1998 of 7 October.

Once this authorisation has been obtained, if required, in accordance with Article 11 of the Regulation, the following documentation shall be submitted to the competent body of the Autonomous Community prior to the date of first filling:

- a) Construction project for the facility.
- b) Installation certificate from IG-A authorised undertaking specialising in cryogenics.
- c) Favourable inspection certificate issued by the inspection body.
- d) Works management certificate.
- e) Documentation and certification of all pressure receptacles in the installation and their accessories.
- f) Maintenance contract.

Submission to the competent body of the Autonomous Community shall entitle the person concerned to put the product into service, and in no case shall the submission of the documentation imply technical compliance with it by the competent body of the Autonomous Community.



Once the submission has been made to the competent body, the operator of the satellite plant may request the first filling of the LNG tanks.

Before first filling, the distribution company in the case of plants directly supplied to distribution networks or the marketing company in the case of plants directly supplied to receiving facilities must verify that the installation documentation (installation certificate, inspection certificate and works management certificate) is complete and correct and verify that the required documentation has been submitted to the competent body of the Autonomous Community.

4.5. Temporary deposits

The use of the provisional tanks shall be restricted to periodic pressure tests or repairs involving the emptying of the tanks, if this is necessary in order to continue serving the receiving or distribution installation.

Temporary tanks shall only be considered suitable for use if they meet the following requirements:

- a) The temporary installation shall comply with Article 25.
- b) The storage volume shall not exceed 5 m³.
- c) They shall comply with the provisions of Royal Decree 709/2015, of 24 July, or Royal Decree 1388/2011, of 14 October, as applicable.

The protective conditions (temporary fences, capotas, etc.) and regulatory safety distances must be complied with as if they were permanent shells.

The first time that the temporary deposit is used, the same documentation must be submitted to the competent body of the Autonomous Community as for the putting into service of a fixed deposit.

Each time the interim storage facility is connected to an installation, the competent body of the corresponding Autonomous Community shall be informed of its installation with a certificate from the authorised installation company, including the plan of the new location and the duration of the interim installation.

Once the installation of the reservoir has been completed, the installation company shall carry out a leakproofness test of the reservoir connections and fences, duly documenting the aforementioned operations.

The gas load from the fixed storage shall be removed while the interim installation is in operation.



5. MAINTENANCE AND PERIODIC INSPECTIONS

5.1. Maintenance

The distribution company in the case of plants directly supplied to distribution networks or the operator of the facility in all other cases shall be responsible for the maintenance, maintenance, operation and proper use of the facility, so that it is permanently in service with the appropriate level of safety. The operator of the facility shall also comply with any safety recommendations

communicated to him by the marketing company when the facility is not owned by the distribution company.

This maintenance shall be carried out in accordance with the instructions in the installation's maintenance programme or manual, at the intervals indicated therein.

To this end, they must have a maintenance contract concluded with an IG-A authorised company specialising in cryogenicity that has a permanent emergency service, whereby the latter is responsible for keeping the facilities in good working order and carrying out the reviews.

The authorised undertaking IG-A specialising in cryogenicity in charge of maintenance shall record in the intervention section of each visit the general condition of the installation and, if applicable, the defects observed and the repairs carried out.

The operator is responsible for keeping in the installation's documentation file the parts relating to the maintenance of the installation until at least the next periodic inspection and the certificate of the last inspection carried out in accordance with the provisions of this ITC.

5.2. Regular inspections

The operator of an LNG satellite plant shall be responsible for having the facility inspected every five years. This inspection shall include the tests and verifications laid down in reference GAS_001 of the table of standards and must in all cases be carried out by an authorised control body.

The scope of the periodic inspection shall be as indicated below and must be carried out in accordance with the technical criteria explained in reference GAS_057 of the table of standards or the equivalent procedure that may be approved by the competent body of the corresponding Autonomous Community and which must include at least:

1. Check the safety distances according to the standard with which it was registered.
2. Check the absence of non-installation elements within the enclosure.
3. Adequate provision and proper condition of fire protection systems.



4. Check on visible parts. Correct condition of the external coating of the reservoir and piping (it shall maintain a continuous layer without signs of corrosion). Correct state of bedding, drainage, anchorages and foundations.
5. Operation of keys, control and measuring instruments (manometers, levels, etc.), regulators, transfer equipment, vaporisers and other equipment.
6. Enclosure condition, access doors and closing elements. Existence and status of the required signs.
7. Measurement of the resistance of the earth sockets.
8. Control of tightness in gas phase piping at operating pressure.
9. Leak control by gas or soapy water detector on liquid phase lines and on all other elements (vaporisers, valves, filters, purges and junctions).

The inspection body shall issue the relevant inspection documentation, which shall be handed over by the operator of the installation and shall act in accordance with Article 20 of the Regulation.

If the inspection reveals that the conditions of the project have changed, the body that carried out the check shall immediately inform the competent body of the Autonomous Community.

A pneumatic pressure test shall be carried out every fifteen years to avoid introducing moisture into the tank, in accordance with the criteria set out in reference GAS_001 in the table of standards.

The test will be carried out by a control body, assisted by an IG-A authorised company specialising in cryogenicity, which will have to issue a test report once the operation in question has been successfully completed.

6. CLOSURE AND DECOMMISSIONING OF PLANTS

The closure of LNG satellite plant facilities will require administrative authorisation when provided for in Law 34/1998 of 7 October.

An installation may be decommissioned at the express request of the operator, by a decision of the competent body of the Autonomous Community or by cessation of activity.

In the event that a facility does not receive any LNG load for a period of one year or there is no contract for its maintenance, the operator of the facility shall proceed with its inertisation within a maximum period of three months. If this is not the case, proof of the plant's operability must be provided to the competent technical body.

The inertisation process must be carried out using nitrogen or another inert gas and must be carried out by the authorised undertaking IG-A specialising in cryogenicity that carries out maintenance.



of the plant and supervised by an inspection body which will issue a certificate that the operation has been successfully completed, which must be submitted to the competent body of the Autonomous Community.

A plant or one of its tanks which has not previously been inert may not be dismantled.



ITC ICG-05

INSTALLATIONS FOR THE SUPPLY OF GASEOUS FUELS FOR TRANSPORT

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ANNEX: SAFETY DISTANCES AT HYDROGEN FILLING STATIONS

1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to lay down the essential technical requirements and minimum safety measures to be observed when designing, constructing and operating storage and supply facilities for bulk liquefied petroleum gas (LPG), compressed natural gas (CNG), liquefied natural gas (LNG) or hydrogen for use in any means of motor transport, as referred to in Article 2 (1) (f) of the Technical Regulation on the safety of gaseous fuels infrastructure and installations, without prejudice to other supply restrictions that may be laid down in sectoral regulations, for example on the type of tanks.

The provisions of Royal Decree 639/2016 of 9 December 2020 establishing a framework of measures for the deployment of alternative fuels infrastructure must be complied with.

At service stations, the filling of LPG containers is prohibited unless they are part of the gas installation of the means of transport and have the necessary elements for on-site filling such as level gauge, separate filling connection and automatic closing system and comply with the requirements set out in GAS_016.

As indicated in Article 2 of the Regulation, the provisions of this JTI shall apply to newly built supply facilities as well as extensions and modifications of existing ones for both open and restricted access facilities.



For the purposes of the previous subparagraph, an extension or modification of the installation shall mean any change which entails a change to the safety conditions initially laid down.

Restricted access supply facilities are those to which only a limited number of persons have access and which have received specific training under the responsibility of the station operator. All others shall be freely accessible.

Own-use equipment intended for the supply of CNG to means of transport with a maximum throughput of less than 10 m³/h ^{without} intermediate storage shall fall outside the scope of this ITC and its general safety conditions shall be governed by the regulations applicable to it, in particular those relating to the safety of gas appliances, machinery and pressure equipment. For the purposes of installation, commissioning and periodic inspection, they shall be regarded as gas-consuming appliances connected to the receiving installation supplying them with fuel.

2. ADMINISTRATIVE AUTHORISATION

The construction of supply facilities for means of motor transport using gaseous fuels does not require an administrative authorisation.

3. DESIGN AND IMPLEMENTATION OF FACILITIES

Gaseous fuel filling stations shall be designed, constructed, assembled and operated in accordance with the following ITC-ICG-13 table of standards references:

- a) Liquefied petroleum gases (LPG): GAS_007.
- b) Compressed natural gas (CNG): GAS_023.
- c) Liquefied natural gas (LNG): GAS_024. This reference shall also apply to storage in facilities for the direct supply of LNG to ships.
- d) Hydrogen: GAS_027.

For the design and construction of storage facilities related to this type of facility, the project must justify the safety conditions required for them in the implementing rules corresponding to each type of fuel.

LPG service stations shall respect a minimum distance of 3 metres between manholes in buried liquid fuel tanks and gas dispensing appliances.

3.1. Design of hydrogen filling station facilities.

Hydrogen supply installations must comply with the design and performance requirements set out in reference GAS_027 of the table of standards, and the safety of the installation must be justified. With regard to distances, the following shall apply.



For the design of service stations supplying hydrogen meeting the following requirements, the internal distances of the installation, as set out in the Annex to this ITC, shall at least be respected:

- a) Storage capacity greater than 141,6 Nm³ (12.74 kg).
- b) Have piping systems with internal diameters up to 3.'

- c) Have a maximum pressure in the storage or distribution system of up to 1 034.2 bar.

Where the distances resulting from the annex to this ITC cannot be met, the risk analyses defined in reference GAS_027 may be carried out. In this case, the distances and additional safety measures that may be required must have a favourable report from a control body accredited to carry out assessments of the safety reports laid down in Royal Decree 840/2015, of 21 September, approving control measures for major-accident hazards involving dangerous substances, which cannot be the same as the one putting the installation into service.

Facilities that do not meet one or more of the above requirements shall be designed and defined by the appropriate risk analysis using reference GAS_027 of the table of standards.

Installations that do not comply only with requirement (a) of the above list may use the distances in the Annex to this ITC.

Installations that do not comply with points (b) or (c) of the above list must carry out the risk analyses indicated in reference GAS_027. Any additional safety distances and measures that may be necessary must have a favourable report from a control body accredited to carry out assessments of safety reports laid down in Royal Decree 840/2015 of 21 September approving control measures for major-accident hazards involving dangerous substances, which may not be the same as the one putting the installation into service.

Finally, distances to external elements of all installations when public competing places or vulnerable elements are identified, within a radius of 30 metres from the storage units, must be calculated and duly justified by means of the corresponding risk analyses set out in reference GAS_027 of the table of standards and may not under any circumstances reduce safety distances imposed by any other regulatory provision.

This radius of 30 metres may be reduced by a maximum of 50 % if protective walls are available which have the following characteristics:



I) Have no openings or penetrations, unless pipe penetrations through the wall are protected by a fire protection system having the same fire resistance as the wall and which shall be duly justified.

II) Have a minimum fire resistance REI 120.

III) Are at least 0.5 m higher than the maximum height of the storage unit and located between the storage and the vulnerable element so that it completely covers the line of vision of the protected vulnerable element.

Public places of competition or vulnerable elements shall mean, inter alia:

1) Post offices

2) Any commercial establishment open to the public.

3) Hospitals and socio-health centres; Care homes for the elderly; Prisons; Kindergartens, schools; Camping sites.

4) Public premises with large capacity or spaces.

5) Sports facilities with or without capacity.

6) Commercial or leisure centres, restaurants, bars, religious buildings.

7) Meeting rooms as neighbourhood associations.

8) Public parks and gardens.

9) Residential buildings of any kind.

4. DOCUMENTATION AND PUTTING INTO SERVICE

4.1. Technical documentation

The construction of the service station shall require a design, drawn up by a qualified technical person, which shall include at least the following:

- a) Purpose of the project.
- b) Location and ownership.
- c) Author of the project.
- d) Operator of the installation.
- e) Legal provisions applicable.
- f) Description, drawings and supporting calculations of the installation.
- g) Detailed drawings.
- h) Flow, connection and electrical circuit diagrams.
- i) Tests and trials to be carried out.



- j) Operation of the installation.
- k) Operation of the facility.
- l) Maintenance and servicing of the installation.
- m) Safety documentation and emergency plans.
- n) General budget.

4.2. Execution

The construction of the gas installation at the service station shall be carried out by a duly authorised gas installation undertaking.

4.3. Pre-testing and initial inspection

Once the works have been completed and the installation assembled and before it is put into service, the tests provided for in the rules referred to in paragraph 3 of this ITC shall be carried out by the authorised gas installation company, under the supervision of the project management, and

the result shall be recorded in the installation certificate.

Once the tests referred to in the previous paragraph have been completed, the commissioning of the installation shall require an initial inspection. During this inspection, the tests and verifications provided for in the above standards shall be carried out, as appropriate. These operations shall be carried out by an inspection body, assisted by the installation undertaking and the project management. During the tests, the site management and the installation company must take all necessary precautions to ensure that they are carried out safely in accordance with the standards they apply for each of the fuels and their storage.

4.4. Certificates

The gas installation company, duly empowered, shall send the corresponding installation certificate to the operator of the installation.

In addition, once the tests have been completed with a favourable result, the inspection body shall issue an inspection certificate, which it shall send to the operator of the installation, the installation company and the site management.

The project management shall also issue the corresponding works management certificate, which shall be sent by the operator of the installation. It shall include, as an annex, information on the state of the corrosion protection installation and the tank pit filling, records of the tests and trials carried out, a list of the components of the installation and their characteristics, and a justification for the certification of those parts and appliances which are required by law. Where applicable, the variations in the installation in relation to the project shall be justified.



4.5. Communication and commissioning

In accordance with Article 11 of the Regulation, the following documentation shall be submitted to the competent body of the Autonomous Community prior to the date on which the first supply is carried out by the distribution or marketing company, as the case may be:

- a) Installation certificate,
- b) Certificate of inspection.
- c) Construction project for the facility.
- d) Works management certificate.
- e) Maintenance plan, either by external contract or by own means.

Submission to the competent body of the Autonomous Community shall entitle the person concerned to put the product into service, and in no case shall the submission of the documentation imply technical compliance with it by the competent body of the Autonomous Community.

Once the submission to the competent body has been made, the installation shall be deemed to be serviceable, at which point the operator of the installation may contact the marketing or distribution undertaking to request the first supply to the installation.

In the case of hydrogen stations, the notification shall be made prior to the first filling of the installation.

In the case of stations supplied from distribution networks, communication may also cover the reception facility from which it is supplied.

Once it has been submitted to the competent body, the installation shall be deemed to be serviceable, at which point the operator of the installation may carry out the first filling of the installation.

5. MAINTENANCE AND PERIODIC INSPECTIONS

Maintenance and periodic inspections of service stations shall be carried out in accordance with the provisions of the standards referred to in paragraph 3 of this ITC, as appropriate.

The operator of the service station is responsible for ensuring that the facilities included in the service station are at all times in perfect working and maintenance condition. To this end, the operator must periodically carry out the necessary checks and verifications, using the operating staff, to ascertain the condition of the facility at all times.



The operator of the service station shall be responsible for requesting the periodic inspection of the facility every five years from a control body authorised for the type of fuel concerned, which shall issue the relevant inspection certificate.

That inspection shall include all elements forming part of the service station, including storage tanks.

In the case of LPG storage, the provisions of paragraph 5 of ITC ICG-03 shall be followed with respect to maintenance, periodic testing and inspections.

In the case of supply of natural gas through a LNG satellite plant, both compressed (CNG) and liquefied (LNG), maintenance, periodic tests and inspections shall be carried out in accordance with paragraph 5.2 of ITC ICG-04.

In fuel supply installations covered by this JTI, all fuel supply hoses for means of transport shall be replaced at least when the fuel supply standard is specified for each fuel and, failing that, the service life or best-before date specified by the manufacturer shall be respected.

The documentary file to be kept by each service station, preferably in electronic form, shall include the records of all the operations carried out.

That file, which must be accessible at all times to the operator of the station, may be consulted by the competent administrative body where that body considers it appropriate.

All interventions on the premises should be recorded in the documentary file. The latter shall indicate the date, person and action taken. Each intervention shall be signed by the person carrying it out and by the operator of the installation, who shall be responsible for the integrity and

veracity of the data.





ANNEX

Safety distances at hydrogen filling stations

This Annex sets out the safety distances to be observed from the various parts of the installation to the outdoor hydrogen gas distribution and storage units, integrated into hydrogen service stations.

For the purposes of the distance tables in this Annex, a storage unit means one or more interconnected storage containers the assembly of which shall be capable of isolation and depressurisation independent of the process to which they are connected. The elements (valves) providing these isolation and depressurisation capabilities shall be considered as part of the storage unit.

In the specific case where a storage unit consists of several cylinders (cylinders) of gas, they shall all be connected to a common collector which shall be considered as part of the storage unit.

Distances are defined according to the system pressure and the maximum internal diameter of the interconnecting piping system, the latter being defined as the maximum diameter between the shutoff valve of any single container/container and the hydrogen end-user supply valve. To this end, three groups are defined according to the sensitivity of the different elements to hydrogen.

Table 1 shows the minimum distances to the different exposure groups corresponding to the typical maximum internal diameters, according to the different pressure ranges.

Table 1. Minimum distance (D) in metres from external compressed hydrogen storage to exposure groups based on maximum effective pipe diameter (d_{mm}) in mm and different pressure ranges.

	Description	System pressure			
		$1 < P < 17$	$17 < P < 206,8$	$206,8 < P < 517,1$	$517,1 < P < 1034,2$
Exposure group	Air intakes (HVAC, compressors, etc.) Possible openings in buildings and structures (e.g. windows, doors) Ignition sources (e.g. switchboards not suitable for ATEX areas) ⁽¹⁾	$D = 0,0952d$	$D = 0,3168d$	$D = 1,105d - 4,078$	$D = 1,448d - 5,368$
Group 2	Buildings owned by the installation with	$D = 0,1019d - 0,3485$	$D = 0,3384d - 0,4188$	$D = 0,6831d -$ —	$D = 0,9291d - 2,65$



	continuous presence of people (e.g. administrative buildings, offices...)				
	Storage of fuels, liquids or gases.				
	Storage of other hazardous or flammable materials than foreseen in Group 3				
	Car parks and other tracks specific to the installation				
Group 3	Other buildings of the installation without continuous presence of workers.	D = 0,0762 d	D = 0,2636d	D = 0,459d-0,355	D = 0,602d-0,3103
	Heavy wood, coal or other slow-burning solid materials.				
	Non-practicable openings in buildings and structures specific to the installation				

Where 'd' is the maximum internal diameter of the interconnecting piping system in millimetres and 'D' the resulting distance to be maintained expressed in metres to the exposure groups is expressed in m.

Distribution unit means the system downstream of the supply system comprising all the equipment necessary to carry out the refuelling operation of the vehicle, through which fuel is supplied to the vehicle.

The separation distance (D) shall always be measured from the nearest external point of the storage unit surface to the exposure element or area under consideration.

Except for the distance to air inlets which may not be reduced, the distances in Table 1 may be reduced by a maximum of 50 % if protective walls having the following characteristics are available:

- Have no openings or penetrations, unless pipe penetrations through the wall are protected by a fire protection system having the same fire resistance as the wall and which shall be duly justified.;
- Have a minimum fire resistance REI 120;



- (c) Have a height of at least 0.5 m greater than the maximum height of the storage unit and completely cover the line of vision to the protected vulnerable element.

For storage units with pressures equal to or greater than 517.1 bar, the distance to limits of ownership may under no circumstances be less than 15 m unless they have a protection wall with the characteristics of the paragraph above in which case it may be reduced to a maximum of 10 m.

For storage units between 17 and 517.1 bar, the minimum distance to property boundaries, or parcel boundaries, may under no circumstances be less than 10 m.

When the storage system pressure is less than or equal to 17 bar, distances to property boundaries or parcel boundaries shall be permitted from 4 m.

Table 2. Minimum distance (D) from ^{bowel} (1) and compressed hydrogen distribution systems (2) outside other elements of the installation.

Installation elements	Distance (m)
Boundaries of ownership between plots, fencing of the facility	3
Openings in buildings and structures (e.g. windows, doors, doors)	3
Sources of ignition such as electrical switchboards not suitable for ATEX areas	3
Administrative buildings, warehouses, workshops, etc.	3
Car parks, transit zones or waiting areas for vehicles other than those used for supply and belonging to the installation	3
Other parts of the establishment at risk of fire or explosion, e.g. storage of flammable products other than hydrogen	₉ (3)
Systems supplying other liquid or gaseous fuels	1
Storage manholes or ventes of other hydrocarbons	3

Notes:

- (1) According to reference GAS_027 of the standard table.
- (2) According to reference GAS_027 of the table of standards, the distance shall be met at all times and from any point in the external structure of the standard.
- (3) It may be reduced to 4.5 m if they have a protective wall with the characteristics mentioned above.

Under no circumstances may the distances resulting from Tables 1 and 2 contradict greater distances or safety requirements that may result from any other applicable regulations, such as the Technical Conditions Regulation.



safety guarantees in high-voltage electrical installations and their Supplementary Technical Instructions ITC-RAT 01 to 23, approved by Royal Decree 337/2014 of 9 May or the Low-Voltage Electrotechnical Regulation approved by Royal Decree 842/2002 of 2 August.



ITC ICG-06

STORAGE INSTALLATIONS FOR LIQUEFIED GAS CONTAINERS OF THE PETROLEUM (LPG) FOR OWN USE

INDEX

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4. DOCUMENTATION AND PUTTING INTO SERVICE
 - 4.1. Exclusions
 - 4.2. Preliminary tests
 - 4.3. Communication and commissioning
5. MAINTENANCE AND PERIODIC REVIEWS

1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to lay down the essential technical requirements and minimum safety measures to be observed when designing, constructing and operating the storage facilities for own use and LPG supply referred to in Article 2.1 (g) of the Regulation in packaging with a unit load of more than 3 kg intended to supply reception facilities or gas appliances connected by flexible pipe or directly attached to a single appliance for mobile use.

2. ADMINISTRATIVE AUTHORISATION

LPG packaging facilities do not require prior administrative authorisation for their design and construction.

3. DESIGN AND IMPLEMENTATION OF FACILITIES

References to packaging made in this ITC include both full and empty packaging, unless otherwise indicated.

The installation shall be carried out by a duly authorised gas installation company.

Containers fitted with a safety valve must always be placed upright.



The installation and storage of containers in dwellings or premises with a floor lower than the ground level (basement or semi-basement), in staircase boxes and in corridors shall not be permitted.

The installation of bottles should be designed in such a way as to ensure the autonomy and vaporisation capacity of the installation powered by the packaging in use, limiting the need for non-connected packaging.

3.1. LPG installations with containers of a unit capacity not exceeding 15 kg

3.1.1. General conditions

Where the containers are installed outside (terraces, balconies, courtyards, etc.) and the consumer appliances are inside, the installation must be provided inside the dwelling with an easily accessible general gas-cutting key.

The connection of containers and apparatus without a regulator or adaptor interposed is absolutely prohibited, unless the apparatus has been approved to operate under direct pressure, in which case rigid piping must be used for the connection.

If there is more than one packaging connected to the receiving installation by regulators with a shut-off valve, the packaging storage facility shall terminate at a shut-off valve which shall be the user valve of the receiving installation it supplies.

Connections to consumer appliances and receiving installation shall be made according to reference GAS_008 of the standard table.

Pressure regulation from the packaging to consumer appliances shall be carried out in accordance with GAS_008, with regard to the design and construction of reception facilities, and when pressure regulators not exceeding 200 mbar are used, they shall comply with GAS_060.

3.1.2. Limitations on the number of packages

The total storage capacity, obtained as a sum of the unit capacities of all packages, shall in no case exceed 300 kg. In the case of storage in dwellings of any type or in premises, whatever their activity, and located in a residential block at a height, this limitation shall be 150 kg per installation.

In addition, in installations in dwellings in high blocks, the number of non-connected packaging, in each of these installations, may not exceed the number of connected packaging and, in any case, the total number of packaging shall be less than or equal to 6.

No more than two battery packs shall be allowed to be connected inside dwellings.



In the case of premises for industrial use, catering or services, the placing of four battery-connected packaging shall be allowed indoors.

3.1.3. Location of packaging

As a general rule, containers must be placed, wherever possible, on the outside and where this is not possible, ensuring adequate ventilation of the enclosures containing them.

When the packaging is on the outside, it shall, wherever possible, be protected from environmental conditions such as solar radiation, rain or snow. For this purpose, they may be housed in cabinets where, in addition, they meet the ventilation conditions for cabinets set out in point 3.1.4.

The minimum distances between connected packaging and different housing or local elements shall be as follows:

Table 1
Distances between connected packaging and housing or local elements

Element	Distance (m)
Households for solid and liquid fuels and other heat sources	1,5 ¹
Stoves and heating elements	0,3 ²
Switches and electric conductors	0,3
Power sockets	0,5

(1) Where, due to lack of space, this distance cannot be respected, it may be reduced to 0.5 m by fitting robust and effective radiation protection of material class A2-s3, d0, according to reference GAS_061 in the table of standards.

(2) With radiation protection, this distance may be reduced to 0.10 m.

At least 1 m of safe distance from the border of the packaging storage area must be kept in archetypes, dormant windows, sewers, communications with staircases, basements or other premises situated at a lower level.

3.1.4. Ventilation

If it is not possible to store the containers externally, they must be stored in a separate room away from heat sources of all kinds and provided with adequate ventilation.

For the purposes of adequate ventilation for the storage of containers, the enclosures where these containers are stored must have at floor level one or more openings for direct ventilation to the outside or to ventilation courtyards with the following total surfaces, one of the dimensions of the opening being no more than twice the other:



Exceptionally and only when due to the particularities of the enclosure it is not possible to perform these ventilations, indoor storage of up to 60 kg, including full and empty containers, is allowed, provided that gas detection systems are in place in all enclosures where these containers are located.

By way of derogation from the requirement to locate packaging in separate rooms, connected packaging may be located in the same area of use of the gas-fired appliances it feeds. In this case, the ventilation conditions laid down in ITC-ICG 07 must be respected, with a minimum of 125 cm² ventilation, both higher and lower.

Containers stored inside a room that meets the general ventilation conditions may be housed in

1 Up to 60 kg stored in the same enclosure: 125 cm², both upper and lower.

2 More than 60 kg stored in the same enclosure: 300 cm², both upper and lower.

cabinets where these cabinets meet the following conditions.

- 1) Permanently ventilated openings shall be provided at their base or lower floor.
- 2) The free passage surface of the ventilation must be more than 1/100 of the surface of the wall or bottom of the cupboard on which the containers are placed and in such a way that one dimension is not more than twice the other.
- 3) Under no circumstances may the ventilation surface be partially or totally obstructed.
- 4) Access to the cupboard must be guaranteed in conditions of safety, ergonomics and hygiene.

3.2. LPG installations with containers of a unit capacity exceeding 15 kg

3.2.1. General conditions

The total storage capacity, obtained as a sum of the unit capacities of all containers, including both full and empty containers, shall not exceed 1.000 kg.

Packaging which, because of its design and construction, has the appropriate elements for filling on site must comply with the conditions laid down in ITC ICG 03 as regards its classification, design, construction and putting into service.

Packaging will normally be installed in batteries, with one group in service and one group in reserve.

There must be a non-return valve in the connections to the manifold.

Flexible connections shall comply with reference GAS_009 of the Standard Table.

The installations must incorporate an inverter, which must comply with reference GAS_060, performing the first stage of regulation and, if there are no back-up packaging, a regulator performing that first stage of regulation.



Exceptionally, subject to authorisation by the competent body of the Autonomous Community, containers may be invested in facilities using liquid gas.

The pipes, connections, cutting keys and auxiliary elements between the packaging and the receiving installation must comply with the requirements set out for these in reference GAS_002 of the table of standards.

3.2.2. Location of packaging

It shall not be permitted to place them in rooms where forced ventilation ducts are installed, unless such ventilation system is provided with anti-explosive protection mode and the ducts do not pass through other rooms, or the room is equipped with a leakage detection system which operates the equipment for extracting and closing gas outlets from the containers.

The containers shall always be located outside the buildings, protected by a housing that

complies with the specifications detailed in paragraph 3.2.3, except for installations with a total LPG content not exceeding 70 kg, which may be located inside the room where the room complies with the following requirements:

- 1) Volume greater than 1.000 m³ and minimum surface area of 150 m².
- 2) Ventilation apertures with a minimum free area of 1/15 of the room surface, serving any permanent opening (doors, windows, etc.) reaching the floor.
- 3) Fire protection: Two 21A-113B performance extinguishers according to reference GAS_011 of the standard table, which shall be placed in the vicinity of the containers and instead of being easily accessible.

3.2.3. Conditions of the stand

The stand shall be constructed of materials of class A2-s3, d0 and shall have sufficient space and access to perform safely the operations necessary for the proper maintenance and replacement of packaging.

It must have ventilation gaps in high and low areas (less than 15 cm from the floor level and the top of the deckhouse), with a width of at least 1/10 of the surface area of the deckhouse, which may not be more than twice the size of the other.

If the deckhouse is accessible to persons outside the service, the access shall be fitted with a latched door.

The floor of the deckhouse must be slightly inclined outwards.

Decks may be made on the façade of the building, towards the inside of the building, provided that the resistance of walls, floors and roof is in accordance with the fire resistance of the façade prescribed by the legislation in force, that the measurements and conditions of the external decks are preserved and that the direct ventilation surface required of them is doubled.



The distance from in-use and back-up packaging with different elements is specified in the following table:

Table 2
Distances, in metres, between packages and different elements

Element	Total content in kg of LPG in installed containers		
	Up to 70 kg		Exceeding 70 kg
	Without	With	
Households of any kind	> 1,5	> 1,5	> 3
Electrical switches and sockets ⁽¹⁾	> 0,5	> 0,5	> 1,5
Electric conductors ⁽¹⁾	> 0,3	> 0,3	> 1
Electric and positive-ignition engines ^{(1) (2)}	> 1,5	> 1,5	> 3
Register of sewers, drains, etc.	> 1,5	> 0,5	> 2
Basement openings	> 1,5	> 0,5	> 2

(1) If the electrical equipment is not anti-explosive.

(2) Mobile engines (incorporated in vehicles) are not considered as engines for safety distances.

Where the total LPG content exceeds 350 kg, two 21A-113B efficient extinguishers shall be provided, located outside the deckhouse and instead of being readily accessible.

3.3. Change of packaging into bottle batteries

The following precautions shall be taken during changes of packaging:

1. No fire point shall be lit or kept alight.
2. No electrical switch shall be actuated.
3. Engines of any kind shall not be operated.

These instructions shall not be required where the distance between the packaging and the abovementioned items is greater than 20 m if the packaging is located inside premises or 10 m if it is outside, the last two precautions not being necessary if the electric motors and switches are fitted with anti-explosion protective devices.

In the case of battery packs of bottles located in cabinets, the design, dimensions, accesses and location of the cabinets must ensure compliance with the principles of safety, ergonomics and hygiene laid down in Law 31/1995 on the Prevention of Occupational Risks.



4. DOCUMENTATION AND PUTTING INTO SERVICE

4.1. Exclusions

Installations consisting of a single LPG container with a content of less than or equal to 15 kg, connected via a flexible pipe or attached directly to a single mobile gas appliance and those consisting of a single LPG container with a content of less than or equal to 35 kg, connected via a flexible pipe or attached directly to a single mobile gas appliance for industrial use, such as a torch, shall be excluded from this paragraph.

4.2. Preliminary tests

Before putting an LPG packaging facility into service, the installation company must carry out the following tests:

1. Leakproofness test of piping at a pressure of 1,5 times the operating pressure of the installation for 10 minutes with air, inert gas or LPG in the gaseous phase.
2. Checking the tightness of keys and other items at test pressure.
3. Verification of overall compliance, in terms of visible parts, with the provisions identified in this JTI.

During the tests, all necessary precautions must be taken by the installation company, in particular if carried out with LPG:

- a) An outright ban on smoking.
- b) Avoid ignition points as far as possible.
- c) Ensure that there are no nearby points that could cause inflammation in the event of leakage.
- d) Avoid areas of possible gas bagging in case of leakage.
- e) Drain and swim pipes before repair.

Once the tests and verifications specified in the first paragraph have been carried out with a positive result, the installation company must issue the installation certificate according to the ITC-ICG 3 model IRG-07, where reference is made to the storage of packaging and a copy shall be given to the holder.

4.3. Communication and commissioning

No communication to the administration is required. However, both the operator and the installation company shall keep and keep at the disposal of the administration the installation certificate showing the installation of LPG containers and the receiving installation, without prejudice to the provisions of other JTIs. The installation company shall only be required to keep the installation documentation for a period of 10 years.



The preliminary tests and commissioning shall be carried out in conjunction with the receiving installation.

5. MAINTENANCE AND PERIODIC REVIEWS

The operator or, failing that, the user of the LPG packaging facilities shall be responsible for the maintenance and proper use of that facility, in accordance with the criteria laid down in this ITC, so that it is permanently serviceable, with the appropriate level of safety. They shall also comply with any safety recommendations communicated to them by the wholesale operator or LPG trader supplying them.

The operator of the facility must instruct an authorised installation company to review the LPG packaging facilities, coinciding with the periodic review of the receiving facility to which they feed, in accordance with paragraph 5.3 of ITC ICG-07.

The previous review shall not be mandatory for installations excluded under paragraph 4.



ITC ICG-07

GASEOUS FUEL RECEIVING INSTALLATIONS

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1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to lay down the essential technical requirements and minimum security measures to be observed when designing, constructing and operating the reception facilities referred to in Article 2 (1) (h) of the Technical Regulation on the Safety of Gaseous Fuels Infrastructure and Installations, as well as the requirements for the premises containing them.

It also applies to the installation and servicing of gas appliances associated with the installation.

2. ADMINISTRATIVE AUTHORISATION

Installations receiving gaseous fuels do not require administrative authorisation for their implementation.



3. DESIGN AND IMPLEMENTATION OF FACILITIES

3.1. General

Reception facilities with maximum operating pressure up to 5 bar shall be carried out in accordance with reference GAS_008 in the table of standards. In addition, the installation of boilers and gas heaters, both up to 70 kW and type B according to the definitions given in standard GAS_026, is specifically prohibited, except if they are located in premises that meet the requirements set for engine rooms or, in the case of heaters, if they are located in an external area defined according to standard GAS_008. This prohibition does not apply to B3X type equipment.

Reception facilities supplied from networks working at an operating pressure greater than 5 bar shall be carried out in accordance with reference GAS_006 in the table of standards.

Buried sections of reception facilities shall be carried out in accordance with the technical specifications on connections described in reference GAS_003 of the table of standards.

For the design of indoor connections buried, the authorised installation company or the technical person entitled to carry out the project must request information from the distribution company on the type of network material.

3.2. Evacuation of combustion products

In new buildings and rehabilitated buildings, where chimneys for the evacuation of combustion products are provided, they shall be designed and calculated in accordance with the procedures described in references GAS_010 and GAS_020 of the standard table, and the materials shall comply with reference GAS_015 when they are metallic or when they are non-metallic the ones recommended by the equipment manufacturers in their assembly standards, in terms of materials and dimensions.

As a general rule, the evacuation of combustion products shall be carried out by means of a roof. Exceptionally, in the case of watertight or forced draught appliances with a rated effective output of 70 kW or less, as well as natural draught appliances for the production of domestic hot water with a rated effective output of 24.4 kW or less, the products of combustion may be evacuated directly to the outside (façade or ventilation yard), without prejudice to the Regulation on Thermal Installations in Buildings, approved by Royal Decree 1027/2007 of 20 July.

In existing buildings undergoing renovation, if they have an adequate flue for the new appliance to be connected and if it meets the conditions laid down in the regulations in force, the combustion products shall be evacuated via the existing flue.



Ventilation courtyards intended for the evacuation of combustion products from conducted appliances must have at least a floor area, measured in square metres, equal to $0,5 * N_{\tau}$, with a minimum of 4 m^2 , N_{τ} being the total number of rooms capable of containing conducted appliances leading to the courtyard. It may be reduced to a minimum of 3 m^2 when it meets the conditions of reference GAS_008 in the table of standards.

In the case of ventilation yards in new buildings, the minimum floor area shall be $1 \text{ N} \tau$ and always greater than 6 m^2 .

In addition, if the yard is covered on the upper part with a roof, the roof must leave free a permanent surface of communication with the outside of 25 % of its section on the floor, with a minimum of 4 m^2 .

3.3. Engine rooms

Gas-fired boilers for heating or hot water with an effective output of more than 70 kW shall be installed in accordance with reference GAS_005 of the table of standards, as regards the safety requirements for rooms and enclosures housing hot-water or steam boilers.

In addition, direct flame equipment for absorption cooling, as well as equipment for electric power generation or cogeneration, whenever their combined rated effective output exceeds 70 kW, shall be installed in machinery rooms or integrated as stand-alone equipment in accordance with the requirements set out in reference GAS_005 of the standard table.

4. DOCUMENTATION AND PUTTING INTO SERVICE

4.1. Installations in need of a project

The implementation of reception facilities will require a project in the following cases:

- a) Individual installations where their simultaneous useful power, according to reference GAS_008 in the table of standards, is greater than 70 kW.
 - b) Common installations where their simultaneous useful power, according to reference GAS_008 in the table of standards, is greater than 2.000 kW.
 - c) Internal connections, where their simultaneous useful power, according to reference GAS_008 in the table of standards, is greater than 2.000 kW.
 - d) Installations supplied from networks working at an operating pressure greater than 5 bar, according to reference GAS_006 of the table of standards for any type of use and regardless of their useful power.
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- e) Installations using new techniques or materials or which, because of their special characteristics, cannot meet any of the requirements laid down in the applicable legislation, provided that they do not reduce their safety.
 - f) Extensions of the installations indicated above, where the resulting installation exceeds by 30 % the design power of the one initially planned, or where, due to the extension, the above assumptions apply.

The gas installation project shall contain all the descriptions, calculations and drawings necessary for its execution, as well as the recommendations and instructions necessary for its proper operation, maintenance and servicing.

In reception facilities where projects are required, the competent technical person shall issue a project management certificate.

4.2. Tests and verifications for the delivery of the installation

The authorised installation company must carry out a leakproofness test of the receiving installations and safety devices, where they exist, in accordance with reference GAS_006 or GAS_008 of the table of standards, as appropriate, the positive result of which will be indicated in the corresponding installation certificate.

In reception facilities with their internal connections buried, the installation company shall deliver the IRG-1 inland connection certificate indicated in the annex to this ITC to the pipeline gas distribution company before the installation is put into service.

4.3. Installation certificates

Depending on the type of installation or the part of installation concerned, the installation company must complete the relevant installation certificate, as follows, in each case following the model set out in the Annex to this ITC:

- a) Certificate of internal gas connection (IRG-1): The gas connection certificate shall include the corresponding drawings of the installation, specifying the layout, type of material, pipe lengths, diameters, fittings, flow rates provided for each section, the passageway, where applicable, and diagrams necessary to define the installation, and shall make particular mention of the fact that the mechanical strength and leakproofness tests corresponding to GAS_003 of the table of standards have yielded positive results.
- b) Common Gas Installation Certificate (IRG-2): The common gas installation certificate shall include the corresponding drawings of the installation, specifying the layout, type of material, pipe lengths, diameters, adjustment elements or systems, measurement and control, fittings, flow rates provided for each section and the diagrams necessary to define the installation.
- c) Individual Gas Installation Certificate (IRG-3): The individual installation certificate shall include the corresponding sketch of the installation, specifying the layout, type of material, pipe lengths, diameters, elements or systems of adjustment, measurement and control, accessories, connected or intended consumer appliances, indicating their nominal heat consumption and the diagrams necessary to define the installation.



In addition, prior to the putting into service of a reception facility that supplies a new floor building and in the event that the building has chimneys for the evacuation of combustion products, a certification shall be required to prove that the chimneys comply with the provisions of references GAS_010 and GAS_020 of the table of standards as regards their design and calculation, and, as regards materials, with the provisions of references GAS_015 when these are metallic or when they are non-metallic to those recommended by the equipment manufacturers in their assembly standards. If the works management certificate does not include such accreditation, certification by the technical person entitled to be responsible for its construction or by an inspection body is

required.

4.4. Putting into service

In general, for both new installations and installations changing fuel, for the commissioning of a reception facility, the distribution company must check that the keys to the start of individual installations that are not to be commissioned at that time are closed, locked and sealed, as well as the connecting keys for those gas appliances awaiting installation or to be commissioned.

In addition, these keys shall be capped if the individual installation or the corresponding apparatus is awaiting installation.

Installations which are to be put into service must also be purged, ensuring that there is no air-to-gas mixture within the flammability limits at the end of the installation which is to be put into service.

In the case of existing type B natural draught appliances for the reopening of a registered installation or in the event of a change of gas, the necessary measures must be taken to prevent automatically the interaction between the devices for mechanical extraction from the room and the system for the evacuation of combustion products.

4.4.1. Individual reception facilities with home supply contract

In such cases, prior to commissioning, the future holder must sign the subscription policy or supply contract with the marketing company, providing the relevant documentation.



In the case of reception facilities supplied from distribution networks, once the supply contract has been signed, the operator or, where appropriate, the marketing company on its behalf shall request the pipeline gas distribution company to bring the receiving facility into service. This request shall also apply in the event of a change to the installation as defined in paragraph 6.

The pipeline gas distribution company shall, using its own or authorised personnel, carry out the following tests prior to the start of supply:

- a) Check that all required documents have been submitted.
- b) Check that the visible and accessible parts of the receiving installation comply with the applicable regulations.
- c) Check, in the visible and accessible parts, that the premises in which appliances connected to the gas installation are located, including the flue pipes of such appliances, situated in the said premises, comply with the rules.
- d) Check valve manoeuvrability.
- e) Check the correct functioning of the safety devices.
- f) Where the installation incorporates a regulating station, it shall also check the correct functioning of the regulating systems.

Once they have been successfully completed, the piped gas distribution company may bring the gas into service by:

- a) Seal the measuring equipment.
- b) Check the tightness of the installation.
- c) Leave the installation in service if the results of the checks are favourable.
- d) Issue a certificate of prior testing and commissioning (according to the IRG-7.1 model), a copy of which shall be given to the holder or, in his absence, to the user.

In the case of other plants not fed from distribution networks, the company supplying the plant with fuel must carry out the tasks described as preliminary tests and issue the certificate of prior testing and commissioning (model IRG 7.2) in order to be able to supply the plant with gas.

The pipeline gas distribution company or, in the case of plants not fed from distribution networks, the company supplying the plant with fuel, must archive a copy of the installation certificate (model IRG-3) and the corresponding certificate of prior testing and commissioning of the gas installation, which they shall keep at the disposal of the competent body of the corresponding Autonomous Community. The file shall be kept for as long as the installation is kept in service and, in the event of cessation, for not less than five years after the cessation of the installation.



4.4.1.1. Reopening of facilities without supply of more than one year

When facilities that have remained unsupplied for more than one year are reopened, a check shall be carried out on the basis of the regulations in force at the date of their initial entry into service. Retrofitting of the safety conditions of the installation shall be mandatory only where expressly indicated. LPG installations located in basement or semi-basement shall not be allowed to reopen, except where they adapt their safety conditions to the requirements of reference GAS_005 in the table of standards.

For reopening, an installation company must check at least the leakproofness of the installation to the appliances, including the latter, by means of a pressure gauge leakproofness test, the correct functioning of the installation regulation, the correct functioning of the consumer appliances and the evacuation of the LCP, as well as the correct ventilation of the room where the installation is located. After carrying out these checks, the installation company shall issue the certificate of verification according to the model IRG-3. From the issuance of this certificate of verification, it shall be considered as a new entry into service for the purpose of deadlines for inspection or periodic review.

The pipeline gas distribution company or, where applicable, the LPG retail marketing company, shall verify that the facility complies with the regulations applicable to it when it was initially put into service and, where applicable, has been adequate in relation to the technical criteria, safety conditions and guarantees of good service set out in reference GAS_008 of the table of standards. Once these checks have been carried out, it will receive the certificate of verification, issue a certificate of prior testing and commissioning (according to the IRG 7.1 or 7.2 model) and archive this documentation.

For the initial commissioning date of the installation, the date of the initial IRG-3 model or, if not available, fuel tank authorisation, periodic inspection certificate of the fuel gas distributor or invoice

or contract with the energy trading company shall be considered.

4.4.2. Individual reception facilities without a home delivery contract

Upon completion of the installation, the installation company that carried out the installation shall carry out the tests and verifications for the delivery of the installation described in paragraph 4.2 and issue the corresponding installation certificate, which shall be given a copy by the operator.

4.5. Communication to the Administration

In the case of installations requiring a project, before the installation is put into service, the following documentation must be submitted to the competent body of the Autonomous Community, in accordance with the provisions of Article 11:



- a) Identification of the installation indicating the operator of the installation, its location, type and provisional date of commissioning.
- b) Construction project for the facility.
- c) Installation certificates, as set out in section 4.3 of this ITC.
- d) Works management certificate.

Submission to the competent body of the Autonomous Community shall entitle the person concerned to put the product into service, but under no circumstances shall it imply technical compliance by that body.

For installations not requiring a project, no communication is required. However, the pipeline gas distribution company or, in the case of plants not fed from distribution networks, the LPG retail marketing company shall keep at the disposal of the Administration the documentation described in this ITC that is necessary for each plant while it is in service and, at least, for five years after the cessation or cessation of supply.

4.6. Cessation and cessation of supply

In general, both for deregistrations and for cessation of supply, the distribution company or the retail LPG pipeline supplier must ensure that the key to the supply of the individual facilities to be decommissioned or those to which supply is discontinued is closed, blocked, plugged and sealed, where appropriate, and must carry out these tasks by its own means or by means of subcontracting these tasks by third parties qualified for this purpose under the responsibility of the distribution company or the retail pipeline supplier of LPG.

5. REGULAR MAINTENANCE AND CONTROLS

The operator of the installation or, failing that, the user is responsible for the maintenance, maintenance, operation and proper use of the installation in such a way that it is permanently in service, with the appropriate level of safety. It shall also comply with the safety recommendations communicated to it by the company distributing piped gas or retailing LPG and shall maintain the various components of the installation in accordance with the requirements of the manufacturer of the installation.

Modifications to installations must in all cases be carried out by authorised installers, who will issue the corresponding certificate once it has been completed, which will remain in the possession of the user.



5.1. General criteria in periodic checks

As set out in Article 16 of this Regulation, where a periodic inspection is carried out on reception facilities (individual or common) supplied from distribution systems (natural gas or LPG), this shall be referred to as a 'periodic inspection'. Where this is not the case, it shall be referred to as a 'periodic review'.

The periodic inspection of a receiving installation supplied at a pressure of 5 bar or less shall check at least that:

1. The reception installation and the gas circuits of the installed appliances are watertight and in a good state of repair.
2. The appliances burn the gas by producing hygienic combustion, meaning combustion in which the corrected concentration of carbon monoxide in the products of combustion is less than or equal to 1 000 ppm.
3. The ventilation and the minimum volume of the room where the appliances are located are adequate.
4. Combustion products are properly evacuated.
5. The correct operation of gas sensing and shut-down systems to replace rapid ventilation where required.
6. There are no type A or type B gas appliances installed in the bedroom or in a bath or shower room.

In this respect, the procedures in accordance with reference GAS_008 of the table of standards are considered appropriate, as regards basic technical criteria for periodic monitoring.

In the periodic monitoring of existing reception facilities, the technical criteria laid down in the applicable legislation shall be applied when they are put into service or amended, and the procedure laid down in reference GAS_008 of the table of standards shall be considered valid.

Periodic inspection of a reception facility supplied at a pressure greater than 5 bar shall be carried out in accordance with the procedures described in reference GAS_006 of the standard table.

5.2. Regular inspection of reception facilities supplied from distribution networks

It shall be carried out every five years and within the calendar year of expiry of this period from the date of commissioning of the installation or, where applicable, from the last periodic inspection. Authorised gas installation undertakings or undertakings distributing piped gas shall carry out an inspection of the installations received from the operators, passing on to them the cost thereof which, if the inspection is carried out by the distribution undertaking, may not exceed the regulated costs and taking into account the following:



- a) In reception facilities, the inspection shall range from the user key to appliances burning gaseous fuels up to and including 70 kW; excluding those with a power greater than 70 kW.
- b) In centralised heating systems and systems with an installed capacity of more than 70 kW, the inspection shall range from the building key to the connection of gas appliances, including appliances with an effective rated output of 70 kW or less regardless of the total installed capacity.
- c) Generally speaking, regardless of the installed capacity, in installations supplied at a maximum operating pressure of more than 5 bar, the inspection shall range from the drop key to the connection of the gas appliances, excluding the latter.

In addition, authorised gas installation undertakings or undertakings distributing piped gas to whose installations users' individual reception facilities are connected shall inspect the common part of those installations every five years.

In any case, the personnel carrying out the inspection shall be required to be a gas installer under the terms set out in ITC ICG-09.

The general procedure will be as follows:

- a) The pipeline gas distribution undertaking must inform the operator, at least three months in advance, of the obligation to carry out the inspection at its installation. This communication shall state that the inspection may be carried out by an authorised installation undertaking or by the distribution undertaking and shall indicate the final date for carrying out and submitting the certificate of periodic inspection of the installations in the event that the operator decides to carry out the inspection with a gas installation undertaking different from that of the distribution undertaking. This deadline may not be less than 45 calendar days from the date of dispatch of the letter by the distribution company.
- b) The inspection must be carried out by:
 - 1. In the case of an authorised gas installation undertaking, by persons in the same category as those who could carry out the installation or inspection. For individual installations, the qualified installer category should be A, B or C. For common installations, the qualified installer category should be A or B.
 - 2. In the case of a pipeline gas distribution company, by its own staff or under contract to the distribution company. Both contracted and own staff must have the corresponding qualifications as indicated in the previous section (b.1) or be duly certified for this activity by an entity accredited for the certification of persons in accordance with the Royal Decree.



2200/1995 of 28 December 2007. Similarly, the staff recruited must work within an authorised installation company.

c) General procedure for action taken by an installation company authorised to install gas:

1. If, at the choice of the operator, the authorised gas installation company carries out the inspection with a favourable result, it shall issue the corresponding inspection certificate, which shall be signed by the gas installation company and stamped by the responsible installation company. It must hand over a copy to the operator of the installation, keep a copy in its possession and hand over another copy via the electronic application authorised for that purpose to the company distributing the piped gas. The installer shall record the result of the inspection electronically and the application shall automatically provide the installer with an acknowledgement of receipt.
2. If the installation company carries out the inspection and the inspection detects major or secondary anomalies of those indicated in references GAS_006 or GAS_008 of the table of standards, as appropriate, the anomaly report, which includes the minimum data indicated in the annex to this ITC, shall be sent electronically to the piped gas distribution company, and a copy shall be given to the operator of the installation, and the same undertaking or installer that carries out the inspection may not repair the anomalies.
3. In any case, the installation company shall electronically record the outcome of the inspection, and the application shall automatically provide an acknowledgement of receipt to the installation company.

d) General procedure for action taken by pipeline gas distribution company.

1. If the pipeline gas distribution company carries out the inspection at the choice of the operator, it shall give at least 5 days' notice of the date of the inspection visit and request that access to the installation be facilitated on the day indicated.
2. If the result is favourable, the corresponding inspection certificate shall be issued by handing over a copy to the holder and keeping a copy in his possession.
3. If major or secondary anomalies of those indicated in references GAS_006 or GAS_008 of the table of standards, as appropriate, are detected, at the end of the inspection the operator shall be provided with the corresponding anomaly report, which shall include the minimum data indicated in the annex to this ITC, and the same company or installer carrying out the inspection may not repair the anomalies.



4. In the event that the pipeline gas distribution company does not receive the periodic inspection certificate or the installation anomaly report by the deadline indicated in the communication from the pipeline gas distribution company, it shall be understood that the operator wishes the inspection to be carried out by the pipeline gas

distribution company itself, which shall communicate the date and time of the inspection at least five days in advance to the operator. That communication shall include a free customer service telephone number so that the operator of the installation can contact the distribution company in order to agree on an alternative date and time in the event of the operator's unavailability.

5. If it is not possible to carry out the inspection because the operator is absent or, failing that, the user, the undertaking distributing the piped gas shall notify the operator of the date of a second visit. A free customer service telephone number shall be provided so that the operator of the installation can contact the distribution company to agree on an alternative date and time in the event of the operator's unavailability.
 6. In the event that the operator of the facility fails to carry out the periodic inspection by any of the means and time limits laid down in this Regulation, the pipeline gas distribution company or, in the case of LPG distribution networks, the LPG marketing company shall inform the competent body of the Autonomous Community, the operator of the facility, the marketing company that was carrying out the supply, and shall suspend the supply at that point. Each Autonomous Community may establish the terms and conditions for such suspension.
- e) The pipeline gas distribution undertaking shall have a permanently updated database containing, inter alia, the date of the last inspection of the receiving installations and the result thereof, and shall retain that information for 10 years. The whole system must be able to be consulted by the competent body of the Autonomous Community when the latter considers it appropriate.
 - f) When the authorised installation company has resolved the main anomalies that caused the installation to be sealed, it may unseal the installation and leave it operational, informing the channelled gas distribution company by submitting the corresponding proof of the correction of anomalies.

Where the address of the delivery point is different from the address provided for notifications by the operator of the installation, communications shall also be sent to this address.



5.3. Periodic review of reception facilities not supplied from distribution systems

The owners or, failing that, the users of reception facilities that are not supplied from distribution networks are responsible for the correct condition and maintenance of the facilities. They must arrange for their installation to be periodically reviewed using the services of a gas installation company authorised in accordance with ITC ICG-09.

This review shall be carried out every five years and shall range from the user key to the connection of gas-consuming appliances, including appliances with a rated effective output of 70 kW or less, regardless of the total installed power.

In addition to the provisions of section 5.1, the state of cathode protection of buried steel pipes must also be checked.

When the visit produces a favourable result, a periodic review certificate must be completed and delivered to the holder, or in their absence, to the user, following in each case the templates presented in the annex to this ITC for common or individual recipients.

In the event that major or secondary anomalies of those indicated in references GAS_006 or GAS_008 of the table of standards, as appropriate, are detected, at the end of the review, the operator or, in their absence, the user shall be provided with the corresponding anomaly report, which shall include the minimum data indicated in the annex to this ITC.

5.4. Correction of anomalies

The operator or, failing that, the user is responsible for correcting the anomalies detected in the installation (including the underground drop) and in the gas appliances, using the services of a gas installation company or a manufacturer's technical assistance service as appropriate.

The anomaly report shall indicate the following maximum deadlines for its correction, depending on the type of anomaly concerned:

- a) Major anomalies (including all leaks): they must be rectified immediately.

In the event that a major anomaly is detected and not immediately remedied, the gas supply shall be interrupted and the affected part of the installation or equipment, as appropriate, sealed. If the whole or part of the supply is interrupted, the maximum period for cure shall be:



15 working days from the date of the review or inspection.

All leaks detected in gas installations lighter than air shall be considered as a primary abnormality, except for the following cases, in which case they shall be considered as secondary abnormalities:

1. In individual reception facilities, those produced outside without risk.
2. In common reception facilities, those that occur on an external airside with a leak flow of up to 5 litres per hour.

All leaks detected in gas installations heavier than air shall be considered as a major abnormality.

- b) Secondary anomalies:

1. Lack of watertight: they must be remedied within 15 working days.
2. Other anomalies: they must be remedied within six months.

When the secondary anomaly is that it is impossible to check the combustion products of the appliance, when it is type B or C, it will be sufficient to submit the

documentation proving that the analysis of the combustion products has been carried out with a favourable result, carried out by an authorised installation company or the manufacturer's technical assistance service, with an earlier date of no more than six months.

Once the deadlines for remedying the anomalies have passed without them being remedied, the supply will be interrupted, and each Autonomous Community may regulate the specific terms.

Once all anomalies have been resolved, the gas installer or the manufacturer's helpdesk, as appropriate, shall provide the user with proof of the correction of anomalies in accordance with the model included in the annex to this ITC, and shall send a copy to the pipeline gas distribution company in the case of a pipeline gas receiving installation.

The inspection or review shall be deemed to have been favourable when the proof of correction of the anomalies is issued without the need to issue any additional inspection certificate.

6. MODIFICATION OF RECEPTION FACILITIES

Whenever a reception facility is modified, the operator of the facility must inform the company distributing or retailing LPG in bulk or packaged as appropriate. Where this work is to be carried out by an installation company, the latter must provide the necessary documentation and inform the person



holder in writing of the obligation to notify, which may be done by the installation company by express delegation of the owner.

For these purposes, a change in a receiving installation shall mean:

- a) Any modification to the gas installation resulting in a material or layout change of more than 1 metre in length compared to the initial installation.
- b) Any extension of consumption and replacement of equipment by other equipment with different technical characteristics. Changes in type B appliances by type C, increases in the rated thermal input of more than 30 % in relation to the initial potential in appliances of the same type, appliances requiring a change in the system for evacuating the products of combustion, etc. shall be regarded as different technical characteristics.
- c) The cancellation of part of the installation and the corresponding equipment.

Any change in the building resulting in a change in the initial safety conditions of the gas system (accessibility, ventilation, distances, etc.) shall also be understood as a change, even if the receiving system remains unchanged. In this case, the operator shall be responsible for ensuring that the appropriate safety conditions are maintained, which may require supervision by the installation company.

Once the amendment has been notified, the company distributing LPG or, where applicable, the company retailing LPG in bulk or packaged shall carry out the prior tests laid down in the regulations, and the cost shall be passed on in accordance with the relevant sectoral regulations.



ANNEX

Technical documentation of gas receiving installations

The purpose of this Annex is to establish the model forms to be used for construction documentation, checking compliance with standards and commissioning, and the minimum information to be included in the periodic inspection and review reports for gas receiving installations.

The following model documents are established for the documentation of gas installations and appliances and the operations carried out in them:

IRG-1 Indoor gas connection certificate.

IRG-2 Common Gas Installation Certificate.

IRG-3 Individual Gas Installation Certificate.

IRG-4 Certificate of Periodic Review of Individual Installations and Equipment Not Used from Distribution Networks.

IRG-5 Periodic review certificate for common non-distribution system installations.

IRG-6 Evidence of correction of anomalies in gas receiving installations.

It also lays down the minimum information that the following documents must contain:

IRG-7.1 Certificate of prior testing and commissioning of gas installations powered from a distribution network.

IRG-7.2 Certificate of prior testing and commissioning of gas installations not fed from a distribution network.

IRG-8 Common Installation, Individual Gas Installation and Equipment Inspection Certificate (periodic inspection of installations supplied from distribution networks).

IRG-9 Report of anomalies in inspection of common installation, individual gas installation and appliances (periodic inspection of installations supplied from distribution networks).

IRG-10 Report of anomalies in periodic review of individual installations and equipment not fed from distribution networks.

IRG-11 Report of anomalies in periodic review of common non-distribution system installations.



Model IRG-1

CERTIFICATE OF AN INTERNAL GAS CONNECTION

INSTALLATION COMPANY OR CONTRACTOR COMPANY

Name.....NIF.....

Address.....Phone of attention.....

Category.....NOT in the Integrated Industrial Register.....

INSTALLER

Name..... NIF or NIE: (or, failing this,

passport number.....)

Installer category.....

HEREBY DECLARES THAT: Have carried out/modified/extended the following internal connection:

Direction: Street..... number

Population and C.P.....

Design nominal power of the installation

Number of common feeders.....

Type of route: • Air • Buried

That it has been carried out in accordance with the applicable legislation in force, that the leakproofness tests provided for therein have been carried out with satisfactory results and that the operating devices function correctly.

It is accompanied by the following documentation (indicate as appropriate):

- Sketch of the internal drop
- Detailed drawing of the location of the internal floor and grounding connection
- Right of permanent easement of the buried hinterland to the gas distribution company channelled or, where appropriate, the company retailing LPG
- Certificate of the polyethylene welds carried out, issued by the relevant polyethylene welder

The company signing this document guarantees, for a period of five years from the date indicated below, against any shortcomings in the installation carried out as a result of poor performance and any resulting consequences.

Date

Installer's signature and installer's company stamp:

Client's signature:



Model IRG-2

COMMON GAS INSTALLATION CERTIFICATE

AN INSTALLATION COMPANY

Name.....NIF.....

Address.....Helpline.....

Category.....Not in the Integrated Industrial Register.....

INSTALLER

Name..... NIF or NIE: (or, failing this,
passport number.....)

Installer category.....

HEREBY DECLARES THAT: Have carried out/modified/extended the following installation:

Direction: Street..... number floor

Population and C.P.....

Design nominal power of the common installation

Number of individual installations feeding.....

That it has been carried out and complies with all the provisions and regulations of the legislation in force applicable to it, in both materials and ventilations, that the leakproofness tests provided for therein have been carried out with satisfactory results and that the manoeuvring devices function correctly.

It is accompanied by the following documentation (indicate as appropriate):

- Sketch of the common installation
- Other (indicate).....

The company signing this document guarantees, for a period of five years from the date indicated below, against any shortcomings in the installation carried out as a result of poor performance and any resulting consequences.

Date:

Installer's signature and installer's company stamp:

Client's signature:



Model IRG-3

INDIVIDUAL GAS INSTALLATION CERTIFICATE

AN INSTALLATION COMPANY

Name.....NIF.....

Address.....Phone of attention.....

Category.....NOT in the Integrated Industrial Register.....

INSTALLER

Name..... NIF or NIE: (or, failing this,
passport number.....)

Installer category.....

HEREBY DECLARES THAT: Have carried out/modified/verified/extended the following installation:

Direction: Street..... number

staircase.....floordoorpopulation and C.P.....

Plant rated power

That it has been carried out and complies with all the provisions and regulations of the legislation in force or applicable to it, in both materials and ventilations, that the leakproofness tests provided for therein have been carried out with satisfactory results and that the manoeuvring, ventilation and safety devices (evacuation of combustion products, interlocks, safety devices, etc.) function correctly.

That the date of initial realisation is, where applicable:

It is accompanied by the following documentation (indicate as appropriate):

- Installation sketch
- List of installed or planned equipment

Use

- Single household • Commercial
- Collective household • Industrial

GAS APPLIANCES INSTALLED OR PLANNED

Type of equipment	Make/Model	Rated power (kW)



The company signing this document guarantees, for a period of five years from the date indicated below, against any shortcomings in the installation carried out as a result of poor performance and any resulting consequences.

Note: In the case of extension, refurbishment, cancellation or verification of an installation, it is necessary to indicate the date of initial commissioning.

Date:

Installer's signature and installer's company stamp:

Client's signature:



Model IRG-4

PERIODIC REVIEW CERTIFICATE FOR INDIVIDUAL INSTALLATIONS AND EQUIPMENT NOT
SUPPLIED FROM DISTRIBUTION NETWORKS

DETAILS OF OPERATOR AND INSTALLATION:

Name of the user:

Direction:

Population and P.C.:

Policy number:

Type of gas:

Type of feed (natural gas, bulk LPG or bottled LPG):

GAS APPLIANCES INSTALLED

Type of equipment	Make/Model	Rated power (kW)

Ventilations:

Additional data (approximate length, materials...):

DETAILS OF THE INSTALLATION COMPANY:

Company name:

TIN:

Category:

Number in the Integrated Industrial Register:



DETAILS OF THE INSTALLER:

Name:

National Identity Card (DNI) or National Identity Number (NIE): (or, failing that, passport number).

The undersigned CERTIFY, who today

- the individual gas receiving installation described above has been checked in its visible and accessible parts.
- the functioning of the gas appliances connected to the above installation has been checked.
- the safety devices are adequate in compliance with the regulations, are correctly installed, maintained and their correct functioning has been verified.

as a result, no major or minor anomalies were found, in accordance with the UNE standard.
60670.

This certificate is valid for five years from the date indicated below.

Date:

Read the result of the operations

Installer's signature and installer's company stamp

Name and signature of the customer or user



CERTIFICATE OF PERIODIC REVIEW OF A COMMON NON-FIRED INSTALLATION FROM DISTRIBUTION GRIDS

DETAILS OF OPERATOR AND INSTALLATION:

Name of the holder or representative:

Address of the property:

Population AND C.P.:

LPG distributor/marketer:

Type of gas:

Type of feed (natural gas, bulk LPG or bottled LPG):

DETAILS OF THE INSTALLATION COMPANY:

Company name:

TIN:

Category:

Number in the Integrated Industrial Register:

DETAILS OF THE INSTALLER:

Name:

National Identity Card (DNI) or National Identity Number (NIE): (or, in the absence of a passport number.....).

The undersigned CERTIFY, who today

- the common gas reception facility described above has been checked in its visible and accessible parts.

as a result, no major or minor anomalies were found, in accordance with standard UNE 60670.

This certificate is valid for five years from the date indicated below.

Date:

Read the result of the operations

Installer's signature and installer's company stamp

Name and signature of the customer or user



Model IRG-6

PROOF OF CORRECTION OF ANOMALIES IN GAS RECEIVING INSTALLATIONS

DETAILS OF OPERATOR AND INSTALLATION:

Name of the user:

Direction:

Population and P.C.:

Policy number:

Type of gas:

Type of feed (bulk, channelled or packaged):

Type of installation (common or individual):

Company that distributes or sells LPG:

DETAILS OF THE INSTALLATION COMPANY OR HELPDESK:

Company name:

TIN:

Category:

Number in the Integrated Industrial Register:

DETAILS OF THE INSTALLER OR SAT:

Name:

National Identity Card (DNI) or National Identity Number (NIE): (or, in the
absence of a passport number.....).

The undersigned CERTIFY that, as of today, in relation to the inspection/date review..... have been
corrected
the following anomalies detected during this inspection/review, detailed below:

Main anomaly (s) (code and description):



Secondary anomaly (s) (code and description):

Read Date: the result of the operations

Installer's or SAT's signature and entity's stamp

Name and signature of the customer or user



IRG-7.1

CERTIFICATE OF PRIOR TESTING AND COMMISSIONING OF FIRED GAS INSTALLATIONS FROM A DISTRIBUTION NETWORK

It should contain the following information:

- a) Details of the company that distributes or sells LPG in bulk:
 - 1. Name.
 - 2. Steering.
 - 3. Helpline.
 - 4. Company representative.
- b) Details of the gas installation:
 - 1. Supply point identification code for natural gas installations.
 - 2. Policy number for LPG installations.
 - 3. Type of installation.
 - 4. Type of gas.
 - 5. Steering.
- c) Meter details:
 - 1. Series number.
 - 2. Initial reading.
- d) Details of the holder or representative:
 - 1. Name.
 - 2. National Identity Card (DNI) or National Identity Number (NIE) (or, failing that, passport number).
 - 3. Steering.
- e) Other data:
 - 1. Date.
 - 2. Signature of the technical person and stamp of the company distributing or marketing LPG in bulk.
 - 3. Signature of the client or representative.
- f) A statement as follows:

‘The company that distributes or sells LPG in bulk, which is responsible for bringing the installation into service, certifies that the tests and checks indicated by the legislation in force have been carried out, that the results are correct and that the installation remains in service.’



IRG-7.2

CERTIFICATE OF PRIOR TESTING AND COMMISSIONING OF GAS INSTALLATIONS NO SUPPLIED FROM A DISTRIBUTION NETWORK

It should contain the following information:

- a) Details of the marketing company:
 - 1. Name.
 - 2. Steering.
 - 3. Helpline.
 - 4. Company representative.
- b) Details of the gas installation:
 - 1. Insurance number for installations, if applicable.
 - 2. Type of installation.
 - 3. Type of gas.
 - 4. Steering.
- c) Details of the holder or representative:
 - 1. Name.
 - 2. National Identity Card (DNI) or National Identity Number (NIE) (or, failing that, passport number).
 - 3. Steering.
- d) Other data:
 - 1. Date.
 - 2. Signature of the technical person and stamp of the marketing company.
 - 3. Signature of the client or representative.
- e) A statement as follows:

'The marketing company, which is responsible for putting the facility into service, certifies that the tests and checks indicated by the legislation in force have been carried out, that the results of those tests and checks are correct and that the facility remains in service.'



IRG-8

COMMON INSTALLATION, INDIVIDUAL GAS INSTALLATION AND EQUIPMENT INSPECTION CERTIFICATE

(Regular inspection of installations supplied from distribution networks)

It should contain the following information:

- a) User and installation details:
 - 1. Supply point identification code for natural gas installations.
 - 2. Policy number for LPG installations.
 - 3. Name of the user.
 - 4. Steering.
 - 5. A company that distributes or sells LPG in bulk.
 - 6. Type of gas.
- b) Details of the authorised company (installation/distribution company) and authorised person and of the person carrying out the operations:
 - 1. Company name and TIN of the distributing company.
 - 2. Name of the installer.
 - 3. National Identity Card (DNI) or National Identity Number (NIE) (or, failing that, passport number).
 - 4. Type of rating and category of installer.
 - 5. Legal name and TIN of the authorised company.
 - 6. Type of entity and category.
 - 7. Not in the integrated industrial register.
- c) Result of inspection:
 - 1. List of gas appliances present in the receiving installation, with details of type of appliance, make and model, and rated power.
 - 2. Date of report.
 - 3. Status of the installation.
 - i) Without defects
 - ii) With major anomalies: it must provide that part of the installation is sealed if it can be partially cut to ensure the safety of the rest of the installation in accordance with paragraph 5.4 (a) of this ITC.
 - iii) With secondary anomalies
 - 4. Installer's signature and installer's/distributor's stamp, as appropriate.
 - 5. Signature of the client or representative.
 - 6.



IRG-9

REPORT OF ANOMALIES IN INSPECTION OF COMMON INSTALLATION, INDIVIDUAL GAS INSTALLATION AND APPLIANCES

(Regular inspection of installations supplied from distribution networks)

It should contain the following information:

- a) User and installation details:
 - 1. Supply point identification code for natural gas installations.
 - 2. Policy number for LPG installations.
 - 3. Name of the user.
 - 4. Steering.
 - 5. A company that distributes or sells LPG in bulk.
 - 6. Type of gas.
- b) Details of the authorised company (installation/distribution company) and authorised person and of the person carrying out the operations:
 - 1. Company name and TIN of the distributing company.
 - 2. Not in the integrated industrial register.
 - 3. Name of the installer.
 - 4. National Identity Card (DNI) or National Identity Number (NIE) (or, failing that, passport number).
 - 5. Type of rating and category of installer.
 - 6. Legal name and TIN of the authorised company.
 - 7. Type of entity and category.
- c) List of anomalies detected:
 - 1. Major anomalies (code and description).
 - 2. Secondary anomalies (code and description).
 - 3. Deadline for correction of anomalies (where applicable).
- d) Other data:
 - 1. Date of report.
 - 2. Status of the installation.
 - 3. Installer's signature and installer's/distributor's stamp, as appropriate.
 - 4. Signature of the client or representative.
- e) A statement as follows:

'If all the anomalies set out in this report are not remedied within the period indicated, the company distributing or marketing LPG in bulk shall inform the competent body of the Autonomous Community, which may suspend the supply of this facility under the terms and conditions laid down in its legislation.'



IRG-10

REPORT OF ANOMALIES IN THE PERIODIC REVIEW OF INDIVIDUAL GAS INSTALLATIONS AND APPARATUS NOT FED FROM DISTRIBUTION NETWORKS

It should contain the following information:

- a) User and installation details:
 - 1. Policy number.
 - 2. Name of the user.
 - 3. Steering.
 - 4. LPG distributor/merchant.
 - 5. Type of gas.
- b) Details of the authorised installation company and the installer:
 - 1. Name, ID card or EIN (or, failing that, passport number).
 - 2. Company name, TIN.
 - 3. Type of entity.
 - 4. No in the integrated industrial register.
- c) List of anomalies detected:
 - 1. Major anomalies (code and description).
 - 2. Secondary anomalies (code and description).
 - 3. Deadline for correction of anomalies (where applicable).
- d) Other data:
 - 1. Date of report.
 - 2. Status of the installation.
 - 1) With major anomalies: it must provide that part of the installation is sealed if it can be partially cut to ensure the safety of the rest of the installation in accordance with paragraph 5.4 (a) of this ITC.
 - 3. Signature of the installer and stamp of the authorised installation company.
 - 4. Signature of the client or representative.



IRG-11

REPORT OF ANOMALIES IN THE PERIODIC REVIEW OF COMMON NON-POWER PLANTS FROM DISTRIBUTION NETWORKS

It should contain the following information:

- a) User and installation details:
 - 1. Name of the user.
 - 2. Steering.
 - 3. LPG distributor/merchant.
 - 4. Type of gas.
- b) Details of the authorised installation company and the installer:
 - 1. Name, ID card or EIN (or, failing that, passport number).
 - 2. Company name, TIN.
 - 3. Type of entity.
 - 4. Not in the integrated industrial register.
- c) List of anomalies detected:
 - 1. Major anomalies (code and description).
 - 2. Secondary anomalies (code and description).
 - 3. Deadline for correction of anomalies (where applicable).
- d) Other data:
 - 1. Date of report.
 - 2. Status of the installation.
 - 3. Signature of the installer and stamp of the authorised installation company.
 - 4. Signature of the client or representative.



ITC ICG-08

GAS APPLIANCES

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- ANNEX II: Requirements and tests for gas appliances not covered by specific rules ANNEX IV:
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1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to establish the technical and documentary criteria and the essential safety requirements and means of certification to be met by appliances burning gaseous fuels which do not fall within the scope of the specific European Union provisions applicable to them, as referred to in Article 4 of the Technical Regulation on Safety of Infrastructure and Installations for Gaseous Fuels.

It also lays down the requirements for the documentation and commissioning of all gas-consuming appliances.

Starting an appliance means verifying that the appliance, in its final location and installation, operates in accordance with the safety parameters established by the manufacturer.

2. MARKETING

2.1. General conditions

The placing on the market and putting into service of equipment shall be permitted only if, under normal operating conditions, it does not endanger the safety of persons, animals or property.



Equipment which complies with the provisions of this ITC shall not be prohibited, restricted or impeded from being placed on the market or put into service when the ITC applies to it.

Where it is found that, in normal operating conditions, certain appliances present a risk to the safety of persons, domestic animals or property, the competent authority shall take all appropriate measures to withdraw such appliances from the market or to prohibit or restrict their being placed on the market.

Apparatus shall be considered to be in "normal operating condition" if it is simultaneously satisfied that:

- a) They are correctly installed and regularly maintained in accordance with the manufacturer's instructions.
- b) Used with the variation of the Wobbe Index and supply pressure recognised and published in the "Official Journal of the EU".
- c) Are used for their intended purpose.

2.2. Documentation for placing on the market

All appliances shall be placed on the market:

- a) Accompanied by a technical information manual intended for the installer.
- b) Accompanied by instructions for use and maintenance intended for the user.
- c) Bear appropriate warning notices, which shall also appear on the packaging.

These instructions and warnings must be written in Spanish.

2.2.1. Manual of technical information

The technical information manual intended for the installer must contain all the installation, adjustment and maintenance instructions necessary for the proper performance of those functions and for the safe use of the appliance.

The manual shall specify in particular:

- a) The type of gas used.
- b) Supply pressure.
- c) Nominal consumption.
- d) The amount of new air required.
 - 1. For feeding in combustion air.
 - 2. In order to avoid the creation of mixtures with a hazardous content of unburned gas for appliances not fitted with the device referred to in Annex III, section 15, point 2.3 of this ITC.
- e) The conditions under which flue gases are discharged.



- f) For forced air burners and heat generators to be equipped with such burners, their characteristics, mounting requirements, in order to comply with the safety requirements applicable to the finished appliances and, where applicable, the list of combinations recommended by the manufacturer.
- g) Electrical data and a diagram with connecting terminals.
- h) An indication of the regulating apparatus which may be used.
- i) A warning that adjustments and modifications may only be carried out by competent personnel.
- j) A general description of the apparatus including figures for the main parts (subassemblies) which can be disassembled and replaced.
- k) For the calculation of chimneys, the indication of the mass flow of combustion products, in g/s, and their average temperature.
- l) A warning indicating the limitation of use, in the case of equipment intended for use only outdoors or in a sufficiently ventilated place, as appropriate.
- m) Instructions on the operations to adapt the apparatus to the different types of gases, where applicable, and an indication that these may only be carried out by qualified personnel.

2.2.2. Instructions for use and maintenance

The instructions for use and maintenance intended for the user shall include all information necessary for safe use and shall, in particular, draw the user's attention to:

- a) Any restrictions on its use. In particular, they shall include a warning indicating the limitation of use, in the case of equipment intended for use only outdoors or in a sufficiently ventilated place, as appropriate.
- b) It shall deal with ignition manoeuvres, the use of adjustable components, the position and use of accessories.
- c) It shall explain the operations necessary for basic cleaning and maintenance and indicate that it is advisable that it be periodically reviewed by a qualified expert.
- d) Warn against false manoeuvres.

2.2.3. Warnings

Warnings on the apparatus must comply with the requirements of Annex II to this ITC.

Warnings on the packaging shall clearly indicate:

- a) The type of gas.
- b) Supply pressure.
- c) Any restrictions on its use, in particular a warning not to install the appliance in premises that are not sufficiently ventilated, or in the open air, as appropriate.



2.3. Teams

The design and construction of equipment intended for use in an appliance must be such that, when assembled in accordance with the instructions of the manufacturer of that equipment, it functions correctly for its intended purpose.

Equipment shall be supplied with instructions for its installation, adjustment, use and maintenance.

3. CONFORMITY OF EQUIPMENT

The manufacture for the internal market and the placing on the market, import or installation in any part of the national territory of the equipment covered by this ITC must correspond to standard types, in accordance with the requirements laid down in:

1. The applicable Spanish, UNE or UNE-EN, or European, EN standards.
2. In the absence of UNE, UNE-EN or EN standards, the safety requirements set out in Annex III to this ITC shall apply.

The procedures for attesting conformity shall be:

- a) Type-examination in accordance with the procedure described in section 1 of Annex I to this ITC.
- b) The verification of conformity of production in accordance with one of the procedures described in section 2 of Annex I to this ITC.
- c) Unit verification in accordance with the procedure described in section 3 of Annex I to this ITC.

In order to be placed on the market, apparatus shall be subject to the procedure referred to in (a) and one of those referred to in (b) or, alternatively, to the procedure referred to in (c), at the request of the manufacturer or of the person legally representing the manufacturer.

If the manufacturer of an appliance not manufactured in series certifies in his declaration of conformity that it is a gas appliance and implies its certification by a notified body under the European regulation, he shall be exempt from unit verification. A change to the assembly (calder-burner) involving the incorporation of an element that is not included in the manufacturer's certification shall require unit verification.

4. MARKING AND INSTRUCTIONS.

All appliances shall bear in a visible place a data plate which complies with the requirements of Annex II to this ITC and shall be accompanied or accompanied by instructions. The contents of the instructions and the marking on the packaging, if applicable, shall be as indicated in the



rules applicable to them, if they exist, or otherwise at least the one indicated in Annex III of this ITC.

5. STARTING OF GAS APPLIANCES

5.1. Gas Appliance Connection

Gas appliances must be connected to reception facilities in accordance with reference GAS_008 of the table of standards and always by an installer, except where this connection is made through an elastomeric flexible tube with a clamp, exclusively for lighters, bumpers and mobile appliances connected to installations powered by LPG containers, in which case it may be carried out by the user.

Gas appliances not connected to a receiving installation must be connected in accordance with the above reference and may be connected by the user, unless otherwise specified by the manufacturer. Similarly, gas appliances not connected to a receiving installation are covered by the provisions of the same reference as regards the requirements for their location and for the ventilation of the premises where they are used.

In the case of elastomeric flexible tube connections with a clamp, the maximum length of the tube may not exceed 1.5 metres, except in the case of mobile heating appliances, which may not exceed 0.6 metres. If applicable, for mobile devices this shall be as indicated in GAS_008.

5.2. Commissioning, maintenance, repair and upgrading of gas appliances

The starting, maintenance and repair of gas-consuming appliances may be carried out:

- a) In the case of conducted gas appliances (type B and C appliances) with a power output of more than 24.4 kW or gas glass-ceramics from covered fires, commissioning shall be carried out by the manufacturer's helpdesk, provided that it has a certified quality system, or by gas installers meeting the requirements set out in paragraph 4 of ITC ICG-09.
- b) For other appliances, commissioning shall be carried out by the manufacturer's technical assistance service or by a duly authorised gas installation company.

The minimum checks to be carried out for the starting of gas appliances connected to receiving installations shall be those indicated in reference GAS_008 of the table of standards, together with the manufacturer's additional indications.

The fitting of appliances due to a change of gas family may be carried out by the manufacturer's technical assistance department provided that it has a certified quality system or by proposal – rd-ue-2-6a1031ac5a9ed042399183.docx11 February



category A or B gas installers meeting the requirements of paragraph 4 of ITC ICG-09. Components with the same technical characteristics as those approved in the type-certification shall always be used for this purpose.

The operator who starts up a gas appliance must issue and deliver to the holder, where appropriate, a start-up certificate in accordance with the model in Annex IV to this ITC. The owner shall also keep this documentation in the documentation file and keep it at the disposal of the competent body of the Autonomous Community throughout the lifetime of the equipment.

5.3. Documentation for starting industrial gas appliances and recording

In accordance with Article 13 of the Regulation, the owner of the equipment referred to in paragraph 1 of this ITC and included in the following list: those not produced in series, those produced by type examination or those produced in series for industrial use with a power greater than 200 kW; submit the following documents to the competent body of the Autonomous Community in accordance with Article 11 of the Regulation:

- a) Start-up certificate issued by the operator operating a gas appliance, in accordance with the model in Annex IV to this ITC.
- b) Design documentation of the apparatus to be recorded.
- c) Favourable inspection certificate by a control body indicating the place where it is set up.

Submission of this documentation to the competent body of the Autonomous Community will entitle the interested party to start the appliance.

In no case will the submission of the documentation imply technical compliance with it by the competent body of the Autonomous Community.

6. REGULAR INSPECTIONS

The holder of gas appliances not subject to Regulation (EU) 2016/426 of the European Parliament and of the Council of 9 March 2016, which have been certified by the unit verification procedure, shall be responsible for contracting every five years, and within the calendar year, the periodic inspection of the gas appliance to a control body, which shall issue the relevant certificate of inspection.

The holder of all appliances that use gas as a fuel, have been placed on the market, have obtained their conformity through a declaration of Regulation (EU) 2023/1230 of the European Parliament and of the Council of 14 June 2023 on machinery, and repealing Directive 2006/42/EC of the European Parliament and of the Council and Council Directive 73/361/EEC, or equivalent previous legislation, and are required to be registered with the Administration, should contract the periodic inspection by a proposal-rd-ue-2-6a1031ac5a9ed042399183.docx11 February. 161



inspection body every five years from the date on which it was set up or registered with the Administration.



ANNEX I

Procedures for attesting the conformity of appliances burning gaseous fuels

1. Type examination

Type-examination is the procedure whereby an inspection body ascertains and certifies that apparatus representative of the production envisaged meets the requirements and standards applicable to it.

The application for type-certification examination shall be submitted by the manufacturer of the equipment or by his legal representative to a control body. The request shall include:

- a) Name and address of the manufacturer, including the name and address of the legal representative if the application has been lodged by the legal representative.
- b) The design documentation, as specified in paragraph 4. of this annex.

The manufacturer shall make available to the inspection body, as necessary, one or more apparatus representative of the production in question, hereinafter called 'type'. The type may include different product variants, provided that these variants do not have different characteristics as regards the types of risk.

The inspection body shall examine the design documentation and verify that the type has been manufactured in conformity with it, identifying the elements designed in accordance with the relevant provisions of the relevant legislation in force and shall carry out the necessary tests, or have them carried out, in accordance with the relevant accreditation, for the relevant tests, to verify whether the solutions adopted by the manufacturer meet the requirements set out in the relevant legislation or procedures.

Where the type complies with all applicable provisions, the inspection body shall issue a type-examination certificate to the applicant.

The applicant shall inform the inspection body that issued the type-examination certificate of all modifications to the approved type that may affect compliance with the requirements of the applicable legislation in force.

Modifications made to the approved type shall receive additional approval from the inspection body that issued the type-examination certificate where the changes affect those requirements or the prescribed conditions for use of the equipment. This additional approval shall be made in addition to the type-examination certificate.



2. Verification of conformity of production and product

The manufacturer shall take all measures necessary so that the manufacturing process, including final product inspection and testing, ensures homogeneity of production and conformity of the appliances with the type as described in the type-examination certificate.

Verification of conformity of production shall be carried out by an inspection body and by one of the following procedures, at the choice of the manufacturer:

Verification of conformity of production must be carried out before the equipment is placed on the market.

2.1. Declaration of conformity to type (Product examination)

The procedure for declaration of conformity to type is the procedure whereby a manufacturer ensures that appliances conform to the type described in the type-examination certificate by means of periodic examinations of the manufactured appliances carried out by an inspection body.

The application for examination of conformity to type (product examination) shall be lodged by the manufacturer of the apparatus or by his legal representative with a control body.

The inspection body shall carry out unannounced on-site inspections of equipment at intervals not exceeding one year, examine an appropriate number of equipment and carry out or have carried out, on at least one of the equipment selected, the necessary tests in accordance with the requirements of the applicable standards or procedures, in accordance with the relevant accreditation for the relevant tests.

The inspection body shall determine in each case whether the tests are to be carried out in full or in part. Where one or more appliances are rejected, the inspection body shall take appropriate measures to prevent their being placed on the market.

2.2. Declaration of conformity to type (Production or product quality assurance)

The production quality assurance procedure is the procedure whereby a manufacturer ensures the conformity of appliances with the type described in the type-examination certificate by means of a production or product quality system in accordance with the criteria laid down in reference GAS_022 of the table of production or product quality assurance standards specifically applied for the gas appliance concerned.

The quality system shall be assessed and certified by a control body accredited for this task.



2.2.1. Request

The manufacturer or his legal representative shall submit an application for approval of his quality system to an inspection body. The request shall include:

- a) The quality system documentation specific to the manufacture of the appliance

concerned.

- b) The documentation concerning the approved type and a copy of the type-examination certificate.

2.2.2. Evaluation

The inspection body shall assess the quality system documentation sent by the manufacturer, verifying whether it is complete, adjusted for the appliance concerned and up to date.

The inspection body shall decide whether the quality system satisfies all the necessary requirements and shall notify the manufacturer of its decision.

The manufacturer shall inform and send to the inspection body any update to the quality system, for example due to new technologies and new quality concepts, by sending the relevant documentation.

In this case the inspection body shall examine the documentation of the proposed amendments and decide whether the necessary requirements are still fulfilled.

2.2.3. Follow-up.

The purpose of monitoring is to verify that the manufacturer duly fulfils the obligations arising out of the approved quality system.

The manufacturer shall send annually to the inspection body the documentation certifying maintenance of the approved quality system, issued by the certification body of the quality system.

The control body may always, and especially in case of doubt, request the sending of a sample corresponding to the production selected and sampled by the same or another independent body in order to verify compliance with the applicable requirements.

3. Unit verification

Unit verification is the procedure whereby an inspection body checks and certifies that a particular piece of equipment, independently, meets the requirements of the applicable legislation in force.



The application for unit verification examination shall be submitted by the appliance manufacturer or his legal representative to a control body. The request shall include:

1. Name and address of the manufacturer, including the name of his legal representative if the application has been lodged by his legal representative.
2. Destination of the apparatus.
3. The design documentation, as specified in paragraph 4. of this annex.

The Control body

- a) Examine the design documentation and verify that the apparatus has been

manufactured in accordance with that documentation and with the requirements of the relevant legislation in force;

- b) Perform or have performed, in accordance with the relevant accreditation for the performance of tests as appropriate, the tests in accordance with the applicable rules and/or procedures. If the inspection body considers it necessary, the examinations and tests may be carried out after the equipment has been installed.
- c) Where the apparatus complies with all applicable provisions, the inspection body shall issue the certificate of verification of the unit to the applicant.

4. Design documentation

4.1. Design documentation for type examination.

The design documentation shall include the following information:

- a) Brand, model, manufacturer and importing company or person, if applicable.
- b) A general description of the apparatus, including:
 - 1. Description of combustion chamber.
 - 2. Smoke outlet.
 - 3. Equipment category and description of types of gases and operating pressures.
 - 4. Description of burners, injectors, nominal and volumetric or mass consumption.
 - 5. Security features, description, diagrams and weighing values.
 - 6. Elements of regulation, description, schemes and ranges of regulation.
 - 7. Installation data, required distances, connections, location and nominal diameter of the connecting pipe.
 - 8. Materials used.
 - 9. Parts suitable for replacement.
 - 10. Description of the parts and accessories.
 - 11. Schematics of the adjustment and safety system.
 - 12. Drawing of the electrical interior installation of the appliance.
 - 13. Manufacturing drawings, schemes of components, sub-assemblies, circuits, etc., dimensioned and scaled.
 - 14. Descriptions and explanations necessary for the understanding of those elements, including the functioning of the apparatus.
- 15. List of standards applied, if any, either in full or in part.
- 16. Documentation proving compliance with the applicable legislation in force.
- 17. Content and location of the data plate incorporating the equipment.
- 18. A list of the main components of the appliance, indicating the make, model and manufacturer and the corresponding certificates, if any.
- 19. Manuals for technical instructions, instructions for use and maintenance of the apparatus.
- 20. Any other documentation enabling the control body to improve its assessment.



4.2. Design documentation for unit verification.

The design documentation shall include the following information:

- a) Brand, model, manufacturer and importing company or person, if applicable.
- b) Manufacturing number, location of installation, location plan, if applicable.
- c) A general description of the apparatus, including:
 - 1. Description of combustion chamber.
 - 2. Smoke outlet.
 - 3. Category of appliance and description of the type of gas and operating pressure for which the appliance has been adjusted.
 - 4. Description of burners, injectors, nominal and volumetric or mass consumption.
 - 5. Security features, description, diagrams and weighing values.
 - 6. Elements of regulation, description, schemes and ranges of regulation.
 - 7. Installation details, existing distances, connection, location and nominal diameter of the connection pipe.
 - 8. Materials used.
 - 9. Schematics of the adjustment and safety system.
 - 10. General drawings of the assembly and burner, dimensioned and scaled.
 - 11. Diagram of the gas line installed.
 - 12. Descriptions and explanations for the understanding of the functioning of the apparatus and of the elements of regulation and safety.
 - 13. A list of the standards applied, if any, either in full or in part.
 - 14. Documentation proving compliance with the applicable legislation in force.
 - 15. Content and location of the data plate incorporated in the apparatus.
 - 16. A list of the main components of the appliance, indicating the make, model and manufacturer and the corresponding certificates, if any.
 - 17. Manuals for technical instructions, instructions for use and maintenance of the apparatus.



ANNEX II

Data plate for gas appliances

1. Content

Each apparatus shall incorporate a data plate, fixed securely and durably on the apparatus, in a visible and legible manner.

The data plate shall incorporate at least the following information in indelible characters:

- a) The name or trademark of the manufacturer, if any, the name and address of the importing company or person.
- b) The trade name of the appliance (brand and model).
- c) The serial or manufacturing number of the appliance.
- d) The category of the appliance.
- e) The type of gas in relation to the pressure or torque of pressures for which the appliance has been regulated. All pressure indications shall be identified in relation to the index of the relevant category. If the appliance is capable of operating with more than one type of gas and at different supply pressures, only the pressure corresponding to the current setting of the appliance, for the relevant type of gas, shall

- be indicated.
- f) The nominal calorific consumption and, where applicable, the consumption range for adjustable consumer appliances, expressed in kilowatts (kW), over the net calorific value (LCV).
 - g) The nature and voltage of the electric current used and the maximum power absorbed, in volts, amperes, hertzios, and kilowatts, for all intended power supply situations.
 - h) For adjustable rated heat consumption appliances, a space must be provided where the installer can locate the indication of the consumption value for which he has regulated the appliance during start-up.

In addition, appliances shall bear, in a visible and legible manner, the following warning:

‘This apparatus shall be installed in accordance with the rules in force and shall be used only in sufficiently ventilated areas. Consult the instructions before installing and using this appliance.’

In the case of equipment intended for outdoor use only, the following warning shall appear:

‘This appliance is for outdoor use only.’

These warnings may be affixed to the data plate or to a separate data plate.



2. Verification of markings, corrosion and attachment of plate

This procedure determines the physico-mechanical qualities to be required of the markings and characteristic plates of gas-fired appliances, as well as the tests and trials to be carried out on these markings, in order to secure the characteristic plate, its corrosion resistance and the attachment to the appliance, if any.

In such appliances, the nameplates must be firmly attached to the appliance so that they do not become detached.



ANNEX III

Requirements and tests for gas appliances not covered by specific rules

1. Area of application

This Annex sets out the requirements and tests to be required for appliances burning gas as a fuel for which no specific standard exists.

Equipment already type-approved in use using gas as a fuel and intended to use gas from a different family is excluded, provided that it was covered by the initial type-approval.

2. Safety requirements

The obligations laid down in the safety requirements for appliances referred to in this paragraph shall also apply to component appliances where the corresponding risk exists.

2.1. General conditions

Appliances must be so designed and constructed that they operate safely and present no danger to persons, domestic animals or property when used in normal operation, as defined in section 2 of this ITC.

2.2. Materials.

Materials shall be suitable for their intended use and resistant to the mechanical, chemical and thermal conditions to which they have to be subjected.

Those material properties which are important for safety shall be guaranteed by the manufacturer or supplier of the equipment.

2.3. Design and construction

1. Appliances shall be so constructed that, when used under normal operating conditions, there is no malfunction, deformation, breakage or wear likely to impair safety.
2. Condensation produced at the start-up and/or during use shall not affect the safety of appliances.
3. Appliances must be so designed and constructed that the risk of explosion in the event of a fire of external origin is minimised.



4. Appliances shall be so constructed as to prevent the inappropriate entry of water and air into the gas circuit.
5. In the event of normal fluctuation of auxiliary energy, the appliance must continue to operate in complete safety.
6. Abnormal fluctuation or failure of auxiliary energy or its restoration shall not lead to an unsafe situation.
7. Appliances must be so designed and constructed as to prevent risks of electrical origin. This requirement shall be deemed to be met when, within its scope, the safety objectives with regard to electrical hazards laid down in Directive 2014/35/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits, transposed by Royal Decree 187/2016 of 6 May regulating the safety requirements for electrical equipment designed for use within certain voltage limits, are met.
8. All pressurised parts of the appliance shall withstand, without deforming to the point of compromising safety, the mechanical and thermal stresses to which they are subjected. A certificate of compliance must be provided for equipment subject to Directive 2014/68/EU of the European Parliament and of the Council of 15 May 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment, as transposed by Royal Decree 709/2015 of 24 July.
9. The apparatus must be so designed and constructed that failure of one of its safety, control or regulating devices does not constitute a hazard.
10. If an appliance is equipped with safety and adjustment devices, the adjustment devices shall operate without hindering the operation of the safety devices.
11. All components of an appliance which have been installed or adjusted in the appliance at the manufacturing stage and which are not intended to be handled by the user or the installer shall be adequately protected.
12. The control or regulating handles or devices must be precisely identified and must include all relevant information to prevent any false manoeuvre. They shall be designed in such a way as to prevent unintentional manipulation.
13. Appliances must be so constructed that the quantity of gas released from leakage is always safe.



14. Any appliance shall be so constructed that the release of gas during ignition or re-ignition and after flame extinction is sufficiently limited to prevent dangerous accumulation of unburnt gas within the appliance.

15. Appliances intended for use in premises must be fitted with a specific device to prevent dangerous accumulation of unburned gas in the premises. Appliances which do not have such a device should only be used in rooms with sufficient ventilation or for outdoor use only to avoid a dangerous accumulation of unburned gas.
16. Every appliance shall be so constructed that, under normal operating conditions, ignition and re-ignition is smooth and cross-ignition is ensured.
17. All apparatus must be so manufactured as to ensure the stability of the flame under normal conditions of use.
18. For combustion:
 1. All appliances must be so constructed that, under normal conditions of use, there is no unintended escape of combustion products. This is not mandatory for outdoor equipment only.
 2. Appliances connected to a flue for the evacuation of products of combustion shall be so constructed that, in the event of a defective flue draught, no exhaust of products of combustion occurs in dangerous quantities in the room in which they are used which could present a risk to the health of exposed persons depending on the foreseeable exposure time of those persons. This is not mandatory for outdoor equipment only.
 3. The values obtained from the analysis of the products of combustion shall comply with the established limits provided that they are defined in any partial legislation applied, or at the discretion of the accredited body carrying out the tests depending on the use and operating location of the appliance, if applicable.
19. Parts of appliances that are to be close to the ground or other surfaces must not reach temperatures that would endanger their environment.
20. The temperature of the buttons and control devices intended to be handled shall not exceed values which would be dangerous for the user.



3. Tests and trials

In order to comply with the above safety requirements, the necessary tests shall be carried out, as well as the necessary adjustment and adjustment operations to ensure their correct operation and that of all their safety and control devices.

For the performance of these tests and the tolerances to be applied by the accredited body for this purpose, it shall apply, wherever possible, parts of standards the scope, scope and requirements of which it considers may technically be appropriate because of their similarity to the apparatus in question. If this is not possible, the minimum tests shall be as set out below.

3.1. Initial checks

Visually, check:

- a) The absence of abnormal deformations or deterioration which could adversely affect the operation of the equipment.
- b) Verification of marking and instructions.

3.2. Leakproofness test.

The leakproofness of the gas circuit between the valve of the appliance and the burner shall be checked by an appropriate procedure at the maximum working pressure.

It shall also be checked that there is no internal leakage through the cut-off valves.

3.3. Operational tests.

The operating tests of the appliance shall be carried out with the combustion equipment working at the various possible heating consumption rates and the following shall be checked:

- a) Correct operation during ignition, verifying that:
 - 1. The scan of the combustion chamber, if necessary, is effective.
 - 2. Ignition of the ignition flame, if any, is correct.
 - 3. Ignition and interignition of the main burner flames is correct and no abnormal flame stability phenomena occur and no pressure shocks, if any, are detected in the household or in the receiving installation.
 - 4. Programmer sequences and manoeuvres are fulfilled when using automatic or semi-automatic combustion equipment.
 - 5. Maximum safety times do not exceed those laid down.
- b) The correct functioning by verifying:
 - 1. The effectiveness of the flame control device, where such a device exists.
 - 2. The efficiency and the setting pressure of the gas pressure monitoring device, if any.
 - 3. The efficiency and the setting pressure of the air pressure monitoring device, if any.



- 4. The effectiveness of the draught control device in the case of forced draught extraction and the existence and effectiveness of the minimum opening or safety device in the case where the evacuation system is fitted with a manual draught control device.
- 5. The calorific consumption of burners.
- 6. The temperature and analysis of the products of combustion at the rated heat consumption of the burners.
- 7. Maximum safe times for operation of automatic gas pass-through valves when a failure is detected by any of the safety devices.
- 8. After the operation tests have been carried out, a visual check shall be made to ensure that the materials and organs of the apparatus, both the receiver and the combustion equipment, do not exhibit abnormal deformation or deterioration liable to have a negative effect on their operation. This check is to ensure that the performance does not affect the integrity of the equipment.

4. Data plates for apparatus

In such appliances, the nameplates must be firmly attached to the appliance so that they do not become detached.



ANNEX IV

Starting certificate for gas appliances

The gas appliance starting certificate referred to in paragraph 5.3 of this ITC shall contain at least the following information:

- a) Start-up Agent:
 - 1. Name.
 - 2. Steering.
 - 3. TIN.
 - 4. Category (installer, helpdesk, etc.).
- b) Details of the operator of the appliance:
 - 1. Name.
 - 2. Steering.
- c) Details of the apparatus:
 - 1. Type.
 - 2. Make;
 - 3. Model.
 - 4. Power.
 - 5. Manufacturing number.
 - 6. Start-up location.
- d) Tests carried out and their results: It should include the printout of the result of the combustion analysis of the appliance, where applicable.
- e) Other data:
 - 1. Date.
 - 2. Signature of the technical person and company stamp.
 - 3. Signature of the owner of the appliance or representative.



ITC ICG-09

PERSONS AND UNDERTAKINGS INSTALLING GAS

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1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to establish the requirements to be met by gas installers, installation companies and operators responsible for starting and adapting appliances, as referred to in Article 22 of the Technical Regulation on the safety of gaseous fuels infrastructure and installations.

2. GAS INSTALLER

The gas installer is the natural person who, by virtue of his theoretical and practical knowledge of gas industry technology and regulations, is capable of carrying out and supervising operations falling within his category.

The gas installer must carry out his activity within an authorised gas installation undertaking and must comply with and be able to demonstrate to the competent authority, when the latter so requires in the exercise of its powers of inspection, verification and control and for the relevant category set out in paragraph 2.2 of this ITC, one of the following situations:

- a) Have a university degree whose field of competence, legal authority or curriculum covers the subjects covered by this Regulation and its JTIs.



- b)** Have a professional qualification or professional certificate included in the National Catalogue of Professional Certificates, the scope of which corresponds to the subjects covered by this Regulation and its JTIs.
- c)** Have passed a theoretical and practical examination which may be called by each Autonomous Community, if it deems it necessary and at such intervals as it deems appropriate, on the minimum contents set out in Annex I to this ITC.
- d)** Have recognised professional competence acquired through work experience, in accordance with the provisions of Royal Decree 659/2023, of 18 July, implementing the organisation of the vocational training system, in the matters covered by this Regulation and its JTIs.
- e)** Have the professional qualification of gas installer acquired in one or more other Member States of the European Union recognised, in accordance with the provisions of Royal Decree 581/2017 of 9 June transposing into Spanish law Directive 2013/55/EU of the European Parliament and of the Council of 20 November 2013 amending Directive 2005/36/EC on the recognition of professional qualifications and Regulation (EU) No 1024/2012 on administrative cooperation through the Internal Market Information System (IMI Regulation).
- f)** Be certified by an accredited entity for the certification of persons by ENAC or any other national accreditation body appointed in accordance with Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008 setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation (EEC) No 339/93, in accordance with reference GAS_025 of the standard table.

All entities accredited for the certification of persons wishing to award these certifications must include in their certification scheme an evaluation system that includes at least the contents indicated in Annex I to this ITC, as appropriate.

Any of the situations or qualifications provided for in the preceding points applies without distinction to the various categories of gas installer, depending on the accredited knowledge.

In accordance with Law 17/2009 of 23 November 2007, staff qualified by an Autonomous Community may carry out this activity within a licensed installation company throughout Spanish territory, without any additional requirements or conditions being imposed.



g) 1. Operations which may be carried out by gas installers

Persons installing gas, subject to the limitations established according to their category, are deemed to be entitled to carry out the following operations:

2.1.1. In gas installations

- a)** Assembly, modification or extension, overhaul, maintenance and repair of:

1. Installations for the reception of gaseous fuels, including regulating stations and indoor connections buried and parts of installations buried outside the building. This does not apply to welds of polyethylene pipes, which must be carried out by welders of polyethylene gas pipes.
 2. LPG storage facilities in fixed tanks.
 3. Pipelines in distribution networks with a pressure of less than 16 bar.
 4. LPG storage, transfer and filling facilities.
 5. LPG packaging installations for own use.
 6. Installations for the supply of gaseous fuels for means of transport.
 7. LPG installations for domestic use in caravans and motor caravans.
 8. For LNG and hydrogen facilities, a specific rating shall be available.
- b) Verification, by carrying out the regulatory tests and trials, of the facilities carried out, signing the certificates established in the legislation in force.
- c) Commissioning of reception facilities that do not require a home delivery contract.
- d) Inspection of reception facilities supplied from distribution networks, in accordance with the conditions laid down in ITC ICG-07.
- e) Reviews of those installations where this is established by the corresponding JTIs.

2.1.2. In gas appliances

- a) Connection to the gas installation and assembly, in accordance with the regulations in force.
- b) Commissioning of gas, maintenance and repair appliances, in accordance with paragraph 5.2 of ITC ICG-08, except in the case of conducted appliances (type B and C appliances) with an effective power greater than 24.4 kW, covered fire glass-ceramics or the replacement of appliances due to a change of gas family, for which gas installers must additionally comply with the requirements set out in paragraph 4 of this ITC.



h) 2. Categories of persons installing gas

Three categories of gas installers are established:

- a) Category A gas installer (IG-A). Persons installing category A gas may carry out all the operations referred to in paragraph 2.1 in installations and appliances. Within category A, two ratings are established: IG-A specialising in hydrogen (for petrol stations supplying H₂ and industrial facilities supplying H₂) and IG-A specialising in LNG (petrol stations supplying LNG and LNG satellite plants).
- b) Category B gas installer (IG-B). Persons installing category B gas may carry out the operations referred to in paragraph 2.1 in reception facilities and appliances, limited to:
1. Domestic, collective, commercial or industrial reception facilities up to 5 bar maximum operating pressure, both common and individual and whatever the design power, location and family of gas, excluding buried indoor connections and

- parts of the facilities that run buried outside the building.
2. LPG packaging installations for own use.
 3. LPG installations for domestic use in caravans and motor caravans.
 4. Connection and assembly of gas appliances.
 5. Starting, maintenance and repair of non-conducted gas appliances (type A appliances) and conducted gas appliances (type B and C appliances) of useful power up to and including 24.4 kW, which are adapted to the type of gas supplied, with the exception of gas glass-ceramics from covered fires.
 6. Starting, maintenance and repair of conducted gas appliances (type B and C appliances) with an effective power of more than 24.4 kW and gas glass-ceramics from covered fires, which are adapted to the type of gas supplied, meeting specific requirements, as indicated in paragraph 2.1.2.
 7. Adaptation of appliances due to a change of gas family.
- c) Category C gas installer (IG-C). Category C gas installers may perform the operations specified in paragraph 2.1 only in individual reception facilities that do not require gas design or family change and are limited to:
1. Installations with a maximum operating pressure up to 0.4 bar, for domestic use and located exclusively within dwellings.
 2. Connection and assembly of gas appliances.
 3. Starting, maintenance and repair of non-conducted gas appliances (type A appliances) and conducted gas appliances (type B and C appliances) of useful power up to and including 24.4 kW, which are adapted to the type of gas supplied, with the exception of gas glass-ceramics from covered fires.
 4. Starting, maintenance and repair of conducted gas appliances (type B and C appliances) with an effective power of more than 24.4 kW and gas glass-ceramics from covered fires, which are adapted to the type of gas supplied, meeting specific requirements, as indicated in paragraph 2.1.2.



3. GAS INSTALLATION COMPANY

Gas installation undertaking is the natural or legal person who carries out the activities of assembly, repair, maintenance and periodic control of gas installations, in compliance with the requirements laid down in this ITC.

The competences of a qualified gas installation undertaking shall be identical to those indicated in section 2 of this ITC for gas installers of the same category.

3.1. Empowerment

- a. Before commencing their activities as gas installation undertakings, natural or legal persons wishing to establish themselves in Spain shall submit to the competent body of the Autonomous Community in which they are established, which shall be the one where the person concerned has his habitual residence, in the case of natural persons, or where they have their business name, a self-declaration in which the person who owns the undertaking or his legal representative declares:

1. For which category and, where appropriate, speciality the activity will be carried out and, where appropriate, whether it will carry out the activities of starting, maintaining, repairing or adapting equipment.
 2. That it meets the relevant requirements laid down by this ITC, undertakes to maintain them for the duration of the activity and has the documentation to prove this.
 3. It is responsible for ensuring that the installations are carried out in accordance with the standards and requirements laid down in the Technical Regulation on Safety of Infrastructure and Installations for Gaseous Fuels.
- b. Gas installation undertakings legally established for the purpose of carrying out this activity in any other Member State of the European Union and wishing to carry out the activity under the freedom to provide services on Spanish territory shall, prior to the commencement of the activity, submit to the competent body of the Autonomous Community in which they wish to commence their activity a self-declaration in which the owner of the undertaking or its legal representative declares:
1. For which category and, where appropriate, speciality the activity will be carried out and, where appropriate, whether it will carry out the activities of starting, maintaining, repairing or adapting equipment.



2. That it meets the relevant requirements laid down by this ITC, undertakes to maintain them for the duration of the activity and has the documentation to prove this.
3. It is responsible for ensuring that the installations are carried out in accordance with the standards and requirements laid down in the Technical Regulation on Safety of Infrastructure and Installations for Gaseous Fuels.

In order to certify compliance with the requirement for qualified personnel, the declaration must state that the company has the documentation attesting to the qualification of the personnel concerned, in accordance with the legislation of the country of establishment and in accordance with the provisions of European Union legislation on the recognition of professional qualifications, implemented in Spain by Royal Decree 581/2017 of 9 June. The competent authority may verify this capacity in accordance with Article 15 of the aforementioned Royal Decree.

- c. The self-declaration and the relations of the installation companies with the Autonomous Communities shall be submitted in accordance with the terms laid down in Article 11 of the Regulation.

The submission of documentary evidence of compliance with the requirements may not be required together with the self-declaration. However, this documentation must be available for immediate submission to the competent authority when it so requires in the exercise of its powers of inspection, verification and control.

- d. The competent body of the Autonomous Community shall automatically assign an identification number to the undertaking and forward the data necessary for its inclusion in the Integrated Industrial Register, governed by Title IV of Law 21/1992 of 16 July 2003 and

its implementing regulations.

- e. In accordance with Law 21/1992 of 16 July 2007, the self-declaration authorises the gas installation company, for an indefinite period, as soon as it is submitted to the competent administration, to carry out the activity throughout Spanish territory, without any additional requirements or conditions being imposed.
- f. In accordance with the provisions of Article 69 of Law 39/2015 of 1 October 2003, the competent authority may lay down a procedure for the subsequent verification of the declaration made by the person concerned.

In any case, failure to submit the declaration, as well as any material inaccuracy, misrepresentation or omission of information or statements that must appear in the declaration, shall entitle the competent administration to issue a decision, which must be reasoned and after hearing the person concerned, declaring that it is impossible to continue carrying out the activity, without prejudice to responsibilities.



that may result from the actions carried out and from the application of the system of penalties provided for in Law 21/1992 of 16 July.

- g. Any event involving the amendment of any of the information included in the original declaration, as well as the cessation of activities, must be communicated by the person concerned to the competent body of the Autonomous Community where he submitted the declaration of responsibility within one month.

3.2. Requirements for installation companies

Gas installation undertakings shall comply with the following:

- a) Have documentation identifying the gas installation company, which, in the case of a legal person, must be legally constituted.
- b) Have the contracted staff needed to carry out the activity safely, in sufficient numbers and for the time necessary to cover the facilities they have contracted, with a minimum of one gas installer of category equal to or greater than the category of the installation company and with the corresponding specialisation, in the case of category A with the qualification to work with hydrogen or with the qualification to work with LNG.

The requirement in the previous paragraph shall be deemed to be met where the personnel required to carry out the activity are employed through any of the contractual arrangements permitted by law.

- c) Have the technical means necessary to carry out their activity safely.
- d) Undertakings in category IG-A that operate LNG and hydrogen facilities must have a technical manager of the undertaking holding a university degree with specific competence in the matters covered by this Regulation, recruited through any of the

contractual arrangements permitted by law.

The gas installation company IG-A shall be responsible for training its staff to work on this type of technology:

1. For hydrogen (hydrogen specialist IG-A) the training shall be at least:

- I. Working pressures of H₂ plants.
- II. Regulation of installations of H₂.
- III. Combustion of H₂, Flame temperature and pressures.
- IV. Material compatibility for the use of H₂.
- V. Storage and conduction of H₂; specific materials and joints.



VI. Production of H₂: hydrogen production system, distributed facilities

2. For LNG (LNG specialist IG-A) the training shall be at least:

1. Specific materials and connections for cryogenic temperatures.
 11. Working pressures of LNG facilities and knowledge on:
 - a) High pressure installations for natural gas.
 - b) Compression system.
 - c) Vacuum technology
 111. Welding in materials working at cryogenic temperatures. Provide staff with certificates for the performance of permanent unions and the corresponding operating procedures, in accordance with the provisions laid down for undertakings in category EIP-2 of the current Regulation on Pressure Equipment.
- e) They have taken out professional indemnity insurance or other equivalent guarantee against damage they may incur in the course of providing the service, for a minimum amount of EUR 900.000 per claim for category A, EUR 600.000 per claim for category B and EUR 300.000 per claim for category C.

Category A gas installation undertakings operating LNG or hydrogen facilities shall have civil liability insurance or other equivalent guarantee covering the damage they may cause in the provision of the service for a minimum amount of EUR 1 200 000 per claim.

These minimum amounts shall be updated by order of the head of the Ministry of Industry and Tourism, whenever necessary to maintain the economic equivalence of the guarantee and following a report by the Government Executive Committee for Economic Affairs.

The authorised gas installation undertaking may not make available, assign or dispose of installation certificates which it has not carried out itself.

In order to prove that the staff or technical manager required in points 3.2 (b) and 3.2 (d) respectively are employed through any of the contractual arrangements permitted by law, the authorised installation companies must be able to submit, at the request of the competent

administration, documentation justifying the employment relationship between the staff recruited and the company and also between the technical manager, where applicable, and the company, as well as the hours during which they provide their services to the said company.

This requirement shall also be deemed to be satisfied if the above figures bear:



- I. One of the partners of the organisation, when the qualified company is a legal person, provided that it works for the company on a full-time basis, or during the hours during which the company provides its services.
- II. The natural person, where the authorised undertaking is a natural person registered under the special scheme for self-employed persons.

Failure to comply with the requirements, verified by the competent authority and declared by means of a reasoned decision, shall result in the cessation of the activity, unless proceedings can be initiated to rectify errors, without prejudice to any penalties that may arise from the seriousness of the actions carried out.

In this case, the competent authority will open an information file for the operator of the installation, which will have 15 calendar days from the communication to provide the corresponding evidence or discards.

However, in the event of a serious infringement, the competent body of the Autonomous Community may suspend as a precautionary measure, for a period not exceeding three months, the actions of an authorised gas installation undertaking pending the outcome of the case.

The competent body of the Autonomous Community shall immediately notify the Ministry of Industry and Tourism of the temporary disqualification, amendments and cessation of activity referred to in the preceding paragraphs for updating the data in the Integrated Industrial Register, regulated in Title IV of Law 21/1992 of 16 July 2003, as provided for in its implementing regulations.

3.3. Obligations of gas installation companies

The obligations of gas installation undertakings shall be:

- a) Submit the self-declaration as provided for in paragraph 3.1.
- b) Comply with the minimum conditions laid down for the category in which it is registered.
- c) Have professional indemnity insurance or other equivalent guarantee in place at all times.
- d) To employ, for the performance of the work, gas installers of the category, and where appropriate speciality, corresponding to the type of operation to be carried out, who may be assisted by qualified specialist operators, always under the direct supervision of the above. The checks and inspections must always be carried out by authorised installers.
- e) The proper execution, assembly, modification, maintenance, servicing and repair of gas installations, as well as the periodic inspection of gas receiving installations supplied from distribution networks, in accordance with the regulatory requirements.

- f) Carry out the regulatory tests and trials under their direct responsibility or, where appropriate, under the control and responsibility of the project management.
- g) Issue the statutory certificates.



- h) Attend the initial inspections of the facilities established by the Regulation or those carried out by the Administration, if required by the procedure.
- i) To guarantee, for a period of five years, the deficiencies attributed to improper implementation of the operations entrusted to them and the consequences thereof.
- j) Keep available for the competent bodies of the Autonomous Communities a record of the certificates issued and, where applicable, the reports of anomalies issued.
- k) Keep a record of the reports of anomalies issued during periodic checks, available to companies distributing gas or marketing LPG, as appropriate.
- l) Carry out inspections of reception facilities in accordance with a procedure established in advance by the authorised installation company itself.

4. ADDITIONAL REQUIREMENTS FOR INSTALLERS WITH REGARD TO APPLIANCES BURNING GASEOUS FUELS

4.1. Starting, maintenance and repair of gas appliances

In order to be able to carry out its activity, an installer who intends to carry out start-up, maintenance and repair operations for conducted gas appliances (type B and C appliances) of more than 24.4 kW of effective power or gas vitro-ceramics from covered fires, in accordance with the provisions of paragraph 5.2 of ITC ICG-08, must comply with and be able to demonstrate to the competent authority, when the latter so requires in the exercise of its powers of inspection, verification and control, one of the following situations:

- a) Be accredited by the manufacturer for this purpose.
- b) Have a university degree whose field of competence, legal authority or curriculum covers the contents set out in points 1 to 17 of Annex II to this JTI.
- c) Have a professional qualification or professional certificate included in the National Catalogue of Professional Certificates, the scope of which includes the contents set out in points 1 to 17 of Annex II to this ITC.
- d) Have the professional qualification of gas installer recognised, including the qualification as start-up agent, acquired in one or more other Member States of the European Union, in accordance with the provisions of Royal Decree 581/2017 of 9 June, in the areas indicated in points 1 to 17 of Annex II to this ITC.
- e) Be certified by an accredited body for the certification of persons by ENAC or any other national accreditation body appointed for



as laid down in Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008.

All bodies accredited for the certification of persons wishing to award these certifications must include in their certification scheme an evaluation system that includes the contents set out in points 1 to 17 of Annex II to this ITC.

4.2. Adjustment of appliances due to a change of gas family

In order to be able to carry out its activity, a category A or B installer who intends to adapt appliances due to a change in the gas family, in accordance with the provisions of paragraph 5.2 of ITC ICG-08, must comply with and be able to demonstrate to the competent authority, when the latter so requires in the exercise of its powers of inspection, verification and control, one of the following situations:

- a) Be accredited by the manufacturer for this purpose, which explicitly provides for recognition of this capability.
- b) Have a university degree whose field of competence, legal authority or curriculum covers the contents set out in Annex II of this ITC.
- c) Have a professional qualification or professional certificate included in the National Catalogue of Professional Certificates, the scope of which includes the contents set out in Annex II to this ITC.
- d) Have recognised the professional qualification of a gas installer, including the qualification to adapt appliances due to a change of gas family, acquired in one or more other Member States of the European Union, in accordance with the provisions of Royal Decree 581/2017 of 9 June 2007, in the areas indicated in Annex II to this ITC.
- e) Be certified by an accredited body for the certification of persons by ENAC or any other national accreditation body appointed in accordance with Regulation (EC) No 765/2008 of the European Parliament and of the Council of 9 July 2008, which includes the contents set out in Annex II to this ITC.

All bodies accredited for the certification of persons wishing to award these certifications must include in their certification scheme an evaluation system that includes the contents set out in points 1 to 17 of Annex II to this ITC.



ANNEX I

Minimum knowledge required for gas installers

1. Category A installers

1.1. Theoretical and practical knowledge for the category A installer.

1.1.1. Category A installer's theoretical knowledge shall be that of a category B installer and additionally the following:

- a) Physical:
 - 1. Leakage currents.
 - 2. Galvanic currents.
 - 3. Bases and operation of cathode protection (electrodes).
 - 4. Static electricity and its elimination.
 - 5. Earth sockets and measurement.
- b) Chemistry:
 - 1. Corrosion: Classes and causes.
 - 2. Protections: Active and passive.
- c) Materials, joints and accessories.
 - 1. Pipelines: Polyethylene pipe.
 - 2. Joints:
 - i) Types of welding. Depending on the material to be welded and the installation, approval of welder according to GAS_053 standards is required, in case the welder is not qualified as a gas installer.
 - ii) Polyethylene tube joints.
- d) Piping, testing and testing facilities.
 - 1. Piping, testing and testing facilities (Grids and connections).
 - 2. Application to LPG.
- e) Fittings for gas installations:
 - 1. Regulating chambers.
 - 2. Reservoir valves.
 - 3. Three-way valves.
 - 4. Purge valves.
 - 5. Transfer hoses. Couplings. UNE standards.
 - 6. Water pumps: basic knowledge.
 - 7. Compressors: principles of operation and use.
 - 8. Vaporisers.

1.1.2. The practical knowledge for a category A installer shall be that of a category B installer and, in addition, the following:

- a) Polyethylene pipe: cutting, joints. Butt welding and electrofusion – proposal



- b) Piping in a trench.
- c) Application of passive protections (deoxydants, paints, tapes, etc.).
- d) Cathode protection control.
- e) Assembly of LPG tanks and their accessories.
- f) Testing and weighing of a safety valve.
- g) Hydraulic tests.

1.1.3. Practical implementation of an LPG installation by fixed tank and pipeline network to the receiving installation.

1.2. Regulatory knowledge for the category A installer.

- a) Law 34/1998 of 7 October 2007, in particular:
 - 1. Title I 'General provisions'
 - 2. Title III, Chapter III 'Liquefied petroleum gases'
 - 3. Title IV, in particular:
 - i) Chapter I 'General provisions'
 - ii) Chapter II 'Natural gas system'
 - iii) Chapter IV "Regasification, transmission and storage of natural gas"
 - iv) Chapter V "Distribution of gaseous fuels by pipeline"
 - v) Chapter VI "Placing on the market of gaseous fuels"
 - 4. Sixth Additional Provision.
- b) Royal Decree 2200/1995 of 28 December 2015:
 - 1. Standardisation bodies. AENOR. 'Status' of UNE standards. Reference standards. Mandatory rules. Voluntary standards.
 - 2. Accreditation bodies. ENAC. Accreditation of certification bodies and control bodies.
- c) Royal Decree 559/2010 of 7 May 2021.
- d) General Regulation on the Public Service of Gaseous Fuels, approved by Decree 2913/1973 of 26 October 1973, Chapters III and IV, in so far as it does not conflict with the Technical Regulation on the Safety of Gaseous Fuels Infrastructure and Installations.
- e) Regulation on the activity of distribution of liquefied petroleum gases, approved by Royal Decree 1085/1992 of 11 September 2003, Chapter III, in so far as it does not conflict with Law 34/1998 of 7 October 2003.
- f) Technical Regulation for the Safety of Gaseous Fuels Infrastructure and Installations, in particular the following JTIs:
 - 1. ITC ICG-01 "Installations of gaseous fuels by pipeline at a maximum design pressure of 16 bar or less".
 - 2. ITC ICG-03 "Storage facilities for liquefied petroleum gases (LPG) in fixed tanks".
 - 3. ITC ICG-05 "Gaseous fuel supply installations for means of transport".
 - 4. ITC ICG-06 "Installations for own use of liquefied petroleum gas (LPG) containers".
 - 5. ITC ICG-07 "Gaseous fuel receiving installations".
 - 6. ITC ICG-08 "Gas appliances", paragraphs 1, 2, 4 and 5 and Annexes 2 and 4 thereto.



7. ITC ICG-09 "People and companies installing gas".
8. ITC ICG-10 "Liquefied Petroleum Gas (LPG) installations for domestic use in caravans and motor caravans".
- g) Regulation (EU) 2016/426 of the European Parliament and of the Council of 9 March 2016, specifically:
 1. Chapter 1
 2. Chapter III, Articles 16, 17 and 18.
 3. Annexes I and IV.
- h) The European internal market. "New Approach" in European regulation:
 1. Resolution of 7 May 1985 on a new approach to technical harmonisation and standards.
 2. Council Decision 768/2008/EC on a common framework for the marketing of products.
- i) Reference GAS_002, GAS_003, GAS_004, GAS_005, GAS_006 and GAS_008 of the standard table.

2. Category B installers

2.1. Theoretical and practical knowledge for the category B installer.

2.1.1. Category B installer's theoretical knowledge shall be that of a category C installer and additionally the following:

- a) Maths:
 1. Basic operations with whole numbers and decimals.
 2. Negative numbers: operations.
 3. Ladders.
 4. Square powers and roots. Base power 10 and negative exponent.
 5. Regular areas: square, rectangle and triangle.
 6. Irregular areas: triangulation.
 7. Volumes: parallelepiped, cylinders.
 8. Graphic representation.
- b) Physical:
 1. Flow rate: concept and units (m^3/h , kg/h). Venturi effect: applications.
 2. PVT ratios in gases: perfect gas equation. Processing at constant temperature. Conversions to constant volume. Conversions under constant pressure.
 3. Notions of electricity:
 - i) Insulating bodies and conductors.
 - ii) Ohm Act. Joule effect. Examples applied to welding.
 - iii) Leakage currents.
 - iv) Galvanic currents.
 - v) Bases and operation of cathode protection (electrodes).
- c) Chemistry:
 1. Inert gases. Inertisation.
- d) Materials, joints and accessories:



1. Joints:
 - i) Mechanical joints:
 - ii) Threaded: definition and use.
- e) Burners:
 1. Automatic pressurised air burners. Types and description.
- f) Equipment protection and safety devices:
 1. Light sensitive detector organs:
 - i) Photoelectric valves: description and operation.
 - ii) Photoconductive valves: description and operation.
 2. Discharge pipes: description and operation.
 3. Detectors using the conductivity of the flame.
- g) Adaptation of appliances to other types of gas:
 1. Necessary requirements.
 2. Essential operations for the adaptation of cooking appliances.
 3. Essential operations for the retrofitting of hot water production and heating appliances.
 4. Adaptation of industrial equipment.
 5. Checking the functioning of the equipment after adaptation.
- h) Fittings for gas installations:
 1. Pressure-flow limiters.
 2. Investors.
 3. Solenoid valves.
 4. Dielectric seals.
 5. Condensate collection device.
 6. Cylinder couplings.
 7. Lire.
 8. Visual indicators.
 9. Excess flow valves.
 10. Check (non-return) valves.
- i) Layout of installations:
 1. Symbolology of gas, water, and electricity.
- j) Calculation of reception facilities.
 1. Determination of the maximum probable flow.
- k) Mobile LPG containers exceeding 15 kg:
 1. Types: description.
 2. Operation.
 3. Installation (normative).

2.1.2. The practical knowledge for a category B installer shall be that of a category C installer and additionally the following:

- a) Facilities:
 1. Inerting tests.
- b) Equipment:
 1. Dismantling and identification of the key components and devices of different household appliances.



2. Connection and starting of a cooking appliance. Adjustment of primary air from burners and determination of expenditure. Checking the operation of the safety device.
3. Assembly, connection and start-up of an apparatus for producing instantaneous hot water. Identification and adjustment of expenditure. Checking the water flow and useful power of the appliance. Checking the operation of the safety device.
4. Adaptation of cooking appliances to gases of different families. Checking the functioning of appliances with each type of gas.
5. Adaptation of hot water and heating appliances to gases from different families. Checking the functioning of appliances with each type of gas.
6. Reading of apparatus.

2.1.3. Practical implementation of one installation with piped gas and one with LPG cylinders.

2.2. Regulatory knowledge for category B installer – Regulatory knowledge for category B installer shall correspond to regulatory knowledge for category A qualified installer company, with the exception of the following:

- a) Law 34/1998, of 7 October,
 1. Title IV, Chapter IV “Regasification, transmission and storage of natural gas”
 2. Sixth Additional Provision.
- b) The Technical Regulation for the Safety of Gaseous Fuels Infrastructure and Installations, in particular the following JTIs:
 1. ITC ICG-01 “Installations of gaseous fuels by pipeline at a maximum design pressure of 16 bar or less”.
 2. ITC ICG-03 “Storage facilities for liquefied petroleum gases (LPG) in fixed tanks”.
 3. ITC ICG-05 “Gaseous fuel supply installations for means of transport”.
- c) Reference GAS_002 of the standard table.

3. Category C installers

3.1. Theoretical and practical knowledge for the category C installer.

3.1.1. Theoretical knowledge for category C installer.

- a) Maths:
 1. Whole numbers and decimals.
 2. Basic operations with whole numbers and decimals (maximum 4 whole and 3 decimals).
 3. Broken numbers. Reduction from a bankrupt number to a decimal number.
4. Proportionalities.
5. Simple three rule.
6. Percentages.
7. S.I. Longitudinal (m, dm, cm and mm), surface area (m^2 , dm^2 , cm^2 and mm^2) and volumes (m^3 , dm^3 , litre, cm^3 and mm^3).
8. Lines: straight and curved, parallel and perpendicular, horizontal, vertical or inclined.
9. Angle: name. Angular units (sexagesimal system). Right, sharp, obtuse angle.
10. Concept of slope.



11. Polygons: square, rectangle and triangle.
12. Circumference. Circle. Diameter.
13. Volumes: parallelepiped.

b) Physical:

1. Subject matter: particle, molecule, atom. Simple molecule, compound molecule. Simple and compound substance.
2. States concerned: solid state, liquid state, gaseous state. Movement of molecules. Shape and volume. Impact between molecules.
3. Force, mass, acceleration and weight: concepts. Units S.I.
4. Volumetric mass and relative density: concepts. Units S.I.
5. Pressure: concept of pressure, static pressure. Differential pressures. Pascal principle. Units (Pa, bar). Atmospheric pressure. Absolute pressure and relative or effective pressure. Pressure gauges: liquid and metallic. Other pressure units (MCA, mmHg, atm). Loss of load.
6. Energy, power and performance:
 - i) Energy concept. Their classes. S.I. units and equivalences.
 - ii) Concept of Power. Power formula; Units S.I.
 - iii) Concept of Performance. Their expression.
7. Heat: Concept of heat. Units. Specific heat. Heat exchange. Amount of heat. PCS and PCI.
8. Temperature: Concept, measurements, Celsius scale (centigrade).
9. Heat effect: Expansion, sensitive heat, change of condition, melting, solidification, vaporisation, condensation.
10. Heat transmission:
 - i) By driving: conductive, insulating and refractory materials.
 - ii) By convection.
 - iii) By radiation.
 - iv) Infrared, visible and ultraviolet radiation.
11. Flow rate: concept and units (m^3/h , kg/h).
12. Vapour pressure (LPG cylinders).
13. Notions of electricity:
 - i) Tension, resistance. Intensity: concept and units.
 - ii) Power and energy: concept and units.

c) Chemistry:

1. Chemical elements and bodies in combustible gases: nitrogen, hydrogen, oxygen, carbon compounds (CO and CO_2). Hydrocarbons: methane, ethane, propane, butane.



2. Air as a mixture.
3. Commercial combustible gases: families. Manufactured gas, propaned air, methane air, LPG (butane and propane), natural gas: production and characteristics (composition, PCS, relative density, humidity).
4. Combustion: fuel and oxidiser. Combustion reactions. Complete and incomplete combustion. Primary air and secondary air. White and blue flame. Ignition and ignition temperature. Gross calorific value.

d) Materials, joints and accessories:

1. Pipelines:
 - i) Lead pipe. Technical and commercial characteristics.
 - ii) Steel pipe. Technical and commercial characteristics.

- iii) Copper pipe. Technical and commercial characteristics.
- iv) Flexible pipe. Technical and commercial characteristics.
- v) Plastic pipes. Technical and commercial characteristics.
- 2. Joints:
 - 1) Mechanical joints:
 - (1) Flanges: definition and use.
 - (2) Couplings: definition and use.
 - (3) Ermeto or similar: definition and use.
- 3. Types of welding:
 - i) Lead-lead welding:
 - (1) Deoxydants.
 - (2) Alloys for soldering.
 - (3) Propane-butane flaps.
 - (4) Petrol lampboard.
 - ii) Capillary welding: soft and strong.
 - iii) Oxyacetylene welding (bottle + reducers, torch, welding flames, filler, welding systems. Incidents during welding).
 - iv) Electric arc welding. Processing groups: types, electrodes: classes.
- 4. Welded joints:
 - i) Lead lead lead.
 - ii) Lead-copper, bronze or brass.
 - iii) Cobre-copper, brass, bronze.
 - iv) Acero-steel.
 - v) Acero-copper, bronze, brass.
 - vi) Acero-lead (with sleeve).
 - vii) Latón-laton, bronze.
 - (VIII) Bronce-bronze.
- 5. Attachments:
 - i) Of pipes.
 - ii) For pipe fastening (brackets and clamps).
 - iii) Handrails. Façade, interior in sight, roof.
 - iv) Sheaths or cases.
 - v) Mechanical protection of lead pipes.



- e) Piping, testing and testing facilities (Reference GAS_008 of the table of standards).
- f) Metering installations (Reference GAS_008 of the table of standards).
- g) Room ventilation (Reference GAS_008 of the table of standards):
 - 1. Evacuation of burnt gases.
 - 2. Intake of air for combustion.
 - 3. Ventilation.
- h) Burners:
 - 1. General.
 - 2. Atmospheric burners: white flame, blue flame and infrared flame.
 - 3. Description (injector, primary air regulator, mixer or venturi, burner head).
 - 4. Operation (% primary aeration, flame study. Detachment. Return, stability, yellow tips. Factors influencing the stability and appearance of flames).
- i) Equipment protection and safety devices:
 - 1. Definition.
 - 2. Types:

- i) Bimetallic: description and operation.
 - ii) Thermocouples: description and operation.
- 3. Atmosphere analyser: description and operation.
- 4. Thermostats: description and operation.
- j) Ignition devices:
 - 1. Piezoelectric effect.
 - 2. By electric spark.
 - 3. By electrical resistance.
 - 4. Programmed ignition.
- k) Gas appliances:
 - 1. Domestic cooking appliances: types and characteristics. Acceptable connections. Regulating devices. Safety and security devices. Ignition device.
 - 2. Domestic appliances for the production of domestic hot water: instant production equipment and accumulators. Installation conditions. Operating characteristics and adjustment devices. Safety and security devices. Ignition devices.
 - 3. Fixed domestic heating appliances: heating boilers and domestic hot water production. Wall radiators. Warm air heaters. Installation conditions. Performance characteristics. Safety and security devices. Recommendations for implementation. Ignition device.
 - 4. Mobile stoves: types and characteristics. Safety and security devices.
 - 5. 'Popular' apparatus: types and characteristics.
 - 6. Operating pressures of household gas appliances.
 - 7. Checking the functioning of the apparatus.
- l) Fittings for gas installations:
 - 1. Keys: classification and characteristics.
 - 2. Regulators: mission and types.



- 3. Counters: mission and types.
 - 4. Deflectors: mission and types.
 - 5. Leak detectors.
- m) LPG bottle with a content of less than 15 kg.
 - 1. Description and types.
 - 2. Operation.
 - 3. Valves and regulators.
 - 4. Installation (normative).
- n) Layout of installations.
 - 1. Croking.
 - 2. Use of tables and graphs.
 - 3. Gas symbology.
 - 4. Drawings and diagrams of installations.
- o) Calculation of reception facilities.
 - 1. Data requirements:
 - i) Gas characteristics:
 - (1) SCP.
 - (2) Minimum inlet pressure.
 - (3) Loss of permissible load.
 - ii) Gas consumption:
 - (1) Machine power count.
 - (2) Simultaneity coefficient.

- iii) Route of driving:
 - (1) Actual lengths.
 - (2) Equivalent calculation lengths.
- 2. Appendices:
 - i) Gas consumption tables per appliance in m³/h or kg/h.
 - ii) Tables for determining diameters based on:
 - (1) Flow rate.
 - (2) Calculation length.
 - (3) Loss of load allowed for each type of gas.
 - iii) Example of calculation. Method of operation.
- p) Security and emergencies:
 - 1. Risks specific to the gas industry.
 - 2. Fires, deflagrations and detonations. Fire triangle. Classes of fire. Prevention, protection and extinction. Deflagrations.
 - 3. Poisoning of the gas itself. The products of combustion. Symptoms of poisoning and emergency measures.
 - 4. General recommendations. Ventilation and leakproofness. Leak detection. Correction of leaks. Setting of burners.
 - 5. Operation of PCI equipment to extinguish fire cones.
 - 6. First aid.

3.1.2. Practical knowledge for category C installer.

- a) Facilities:
 - 1. Sketch, layout and measurement of pipes.
 - 2. Bending of tubes.



- 3. Cutting of pipes.
 - 4. Welding of copper and lead tubes. Welding of fittings.
 - 5. Grafts and derivations.
 - 6. Mechanical joints: couplings, ermetics or the like, flanges. Threaded joints.
 - 7. Piping and fitting of protections, handrails, pods and sealing.
 - 8. Stress and tightness tests.
 - 9. Evacuations and ventilations. Execution with metal and rigid pipes, flexible pipes and other materials. Mounting of deflectors and windbreaks. Gratings.
- b) Equipment:
 - 1. Identification of the key elements and devices of different household gas appliances.
 - 2. Connection and starting of a cooking appliance. Adjustment of primary air from burners. Checking the operation of the safety device.
 - 3. Assembly, connection and start-up of an apparatus for producing instantaneous hot water. Checking the operation of the safety device.
 - 4. Checking the functioning of individual hot water and heating appliances.

3.1.3. Practical implementation of one installation with piped gas and one with LPG cylinders.

3.2. Regulatory knowledge for category C installer – Regulatory knowledge for category C installer shall correspond to regulatory knowledge for category B installer with the

exception of the following:

- a) Law 34/1998 of 7 October 2003, Title IV.
- b) The Technical Regulation for the Safety of Gaseous Fuels Infrastructure and Installations, in particular the following JTIs:
 - 1. ITC ICG-06 "Installations for own use of liquefied petroleum gas (LPG) containers".
 - 2. ITC ICG-10 "Liquefied Petroleum Gas (LPG) installations for domestic use in caravans and motor caravans".
- c) Reference GAS_005 of the standard table.



ANNEX II

Additional knowledge to installer training for laying running, maintenance, repair and retrofitting of gas appliances

- 1. Classification and types of appliances according to the way combustion products are evacuated: A, B and C (Reference GAS_026 of the Standard Table).
- 2. Types of equipment according to use.
 - a) Cooking appliances.
 - b) Space heaters.
 - c) Apparatus for the production of A.C.S.
 - d) Refrigerating appliances.
 - e) Lighting equipment.
 - f) Washing apparatus.
- 3. Combustion of gas appliances:
 - a) Products of combustion (CoPs).
 - b) Importance of their evacuation.
 - c) Risk to human health.
- 4. Burners:
 - a) General: definition, functions, combustion systems (fuel/oxidiser mixture).
 - b) Types:
 - i) Atmospheric.
 - ii) Pre-mixing by inductive air.
 - iii) Pre-mixing in machines.
 - iv) Free flame.
 - v) Monobloc.
 - vi) Flat flame.
 - vii) Immersion
 - (VIII) Radiating tubes.
 - ix) Infrared radiation.
 - x) High-speed.
 - c) Description: injector, primary air regulator, mixer, venturi, burner head.
 - d) Functioning: percentage of primary air, flame study, detachment, retreat, stability, yellow tips. Factors influencing the stability of the flame.
 - e) Automatic pressurised air burners.
- 5. Safety and security devices:
 - a) Definition.

- b) Types, description and operation.
- c) Safety ignition devices: bimetallic, thermocouple, flame conductivity (ionisation).
- d) Light sensitive detector organs, description and operation: photoelectric cells, photoconductors and discharge tubes.
- e) Atmosphere analyser.
- f) Excess temperature insurance. Thermostats.



- g) Fluid pressure control.
 - h) PdC evacuation device (skip).
 - i) PdC anti-overflow device.
 - j) Insecure against insufficient flow.
 - k) Excess flow insurance (presostato).
6. Analysis of products of combustion and flue gas:
 - a) CO-Ambient.
 - b) Combustion at the outlet of the combustion.
 - c) Instruments for use in measurements.
 7. Performance:
 - a) Sensitive heat losses.
 - b) Losses due to burning.
 - c) Radiation and convection losses.
 8. Operating pressures of equipment.
 9. Checking the functioning of the apparatus.
 10. Basic concepts of electricity:
 - a) Electrical circuit components.
 - b) Power.
 - c) Capacitors.
 - d) Single-phase lines.
 - e) Electrical switchboards for protection and control.
 - f) Asynchronous motors.
 11. Domestic cooking appliances:
 - a) Types and characteristics.
 - b) Connections.
 - c) Regulating devices.
 - d) Safety and security devices.
 - e) Ignition devices.
 - f) Start-up recommendations (ventilation and room conditions, gas characteristics, leakproofness tests and operation test).
 - g) Injector cleaning, key greasing, gasket changes at gas connection connector.
 - h) Gas vitroceramic plates.
 12. Domestic appliances for the production of A.C.S.:
 - a) Instant production apparatus: installation conditions, operating characteristics, adjustment, protection and safety devices, ignition devices, start-up recommendations. Disassemble a piece of equipment: water body, gas body, pilot, burner, combustion chamber, fence and PdC drainage duct. Maximum permitted A.C.S. temperature. More frequent failures and preventive reviews.
 - b) Storage and storage equipment: installation conditions, operating characteristics, adjustment, protection and safety devices, ignition devices, start-up recommendations. Disassemble a piece of equipment: water body, gas body, pilot, burner, combustion chamber, fence and PdC drainage duct. More frequent



13. Fixed domestic heating appliances:

- a) Heating boilers: installation conditions, operating characteristics, adjustment, protection and safety devices, ignition devices, start-up recommendations. Detection of defects in the installation, noise, leakage of water in radiators and in the hydraulic circuit of the boiler. Adjustment of holders. Ambient thermostat: checking their scale and correctness. The expansion cup: what it does, preload pressure and its measurement, problems it causes, substitution.
- b) Heating boilers and A.C.S. production: installation conditions, operating characteristics, adjustment, protection and safety devices, ignition devices, start-up recommendations. Most common problems: circulating pump, three-way valve, water body membrane, presostat, pressure failure sensors, temperature sensors, draught sensors and automatic heating circuit purge.
- c) Condensing apparatus: Boilers and assemblers.
- d) Heat pump.

14. Wall radiators: installation conditions, operating characteristics, adjustment, protection and safety devices, ignition devices, start-up recommendations.

15. Warm air heaters: installation conditions, operating characteristics, adjustment, protection and safety devices, ignition devices, start-up recommendations.

16. Refrigeration and air-conditioning equipment: installation conditions, operating characteristics, adjustment, protection and safety devices, ignition devices, start-up recommendations.

17. Mobile stoves: types and characteristics.

18. Adaptation of appliances to other gas families:

- a) Types of gases and their heat output.
- b) Reasons for retrofitting equipment.
- c) Key operations:
 - i) Dismantling and identification of elements:
 - (1) Materials.
 - (2) Tools needed.
 - (3) Spare parts.
 - ii) Transformation.
 - iii) Checking of equipment after conversion (connection and start-up).



ITC ICG-10

**LIQUEFIED PETROLEUM GAS (LPG) INSTALLATIONS FOR DOMESTIC USE IN
CARAVANS AND MOTOR CARAVANS**

INDEX

1. PURPOSE AND SCOPE

- 2. DESIGN AND IMPLEMENTATION OF FACILITIES
 - 3. DOCUMENTATION AND PUTTING INTO SERVICE
 - 3.1. Preliminary tests
 - 3.2. Certificates
 - 3.3. Putting into service
 - 3.4. Communication to the Administration
 - 4. CONDITIONS OF USE OF THE INSTALLATION
 - 5. MAINTENANCE AND PERIODIC REVIEWS
- ANNEX: Certificate models

1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to lay down the essential technical requirements and minimum safety measures to be observed when designing, constructing and operating LPG installations for domestic use in habitable road vehicles (hereinafter referred to as 'installations'), as referred to in Article 2 (1) (j) of the Technical Regulation on the Safety of Infrastructure and Installations for Gaseous Fuels.

This ITC applies to LPG installations and appliances for domestic use in habitable road vehicles.

Portable appliances that incorporate their own gas supply or separate, external gas containers and appliances into the vehicle body are excluded from the scope.

The requirements relating to the maintenance and periodic inspection of installations shall apply to both new and existing installations.

2. DESIGN AND IMPLEMENTATION OF FACILITIES

Installations shall be designed, constructed and assembled in accordance with reference GAS_016 of the table of standards.

Equipment used in such vehicles shall also comply with the specific regulatory provisions of the European Union applicable to appliances burning gaseous fuels or with the requirements of ITC ICG-08, as appropriate.



The installation shall be carried out by a gas installation company or by the caravan manufacturer himself.

3. DOCUMENTATION AND PUTTING INTO SERVICE

3.1. Preliminary tests

Before putting the installation into service, the installation company shall carry out the tests provided for in reference GAS_016 of the table of standards in order to check that the installation, materials and equipment comply with the strength and tightness requirements.

A pressure gauge in the range 0 to 1 bar, Class 1, 20 mbar scale divisions or a

mannothermograph in the same range shall be used for checking tightness. The test shall be considered satisfactory if no pressure drop is observed after a period of not less than 15 minutes from the time of the first reading.

3.2. Certificates

The installation company shall complete the relevant installation certificate indicated in the annex to this ITC, which it shall send to the operator of the installation.

3.3. Putting into service

Once the installation certificate has been issued, it shall be deemed to be serviceable, at which point the operator of the recreational vehicle installation may request the LPG retailer to supply it.

3.4. Communication to the Administration

No communication is required. However, the holder shall keep and keep at the disposal of the administration the installation certificate reflecting the installation of LPG containers.

4. CONDITIONS OF USE OF THE INSTALLATION

The operating pressure of gas-consuming appliances shall be 30 mbar.

Containers, whether connected to the installation or empty, located inside or outside the habitable volume must be secured, both during use and with the vehicle in motion.

The containers shall be switched off from the installation in long parking places without using the gas installation.

Pipes in the gas installation may not be used as conductors for the earthing installation or for electrical or radio installations.



5. MAINTENANCE AND PERIODIC REVIEWS

The operator or, failing that, the user of the LPG installation shall be responsible for the maintenance and proper use of that installation, in accordance with the criteria laid down in this ITC, so that it is permanently in service with the appropriate level of safety. It shall also comply with any safety recommendations and instructions communicated to it by the installation company in accordance with reference GAS_016 of the table of standards.

The operator of the installation must have the LPG installation and appliances checked every five years by an authorised installation company. The certificate of such a review shall follow the model of the annex to this ITC and shall be required to be carried on the vehicle on which the review was carried out.

If the installation is powered by a refillable tank, the review must check whether the stamping date is in force, in accordance with Royal Decree 1388/2011 of 14 October, and will be classified as a main anomaly if not.



ANNEX

Certificate models

Model IRV-1

CERTIFICATE OF INDIVIDUAL INSTALLATION OF GAS IN RECREATIONAL HABITABLE VEHICLES

The undersigned applicant.....(name), with NIF (tax identification number) or NIE (tax identification number): (or,in your
defect, passport number.....), and with address at.....
(Street, number, town and province)

Mark with a cross or complete as appropriate:

- Category Installation Person.....
Name of the authorised company.....NIF.....
Address.....Phone of attention.....
Category.....NOT in the Integrated Industrial Register.....
- Vehicle manufacturer
- Authorised representative of (manufacturer)

HEREBY DECLARES THAT: Have performed/modified/extended the following installation on the vehicle:

Make (trade name of the manufacturer): Types:
Commercial name (s), if any:
Means of identification of type, if marked on the vehicle:
Category of vehicle (1):
Name and address of manufacturer... ..
Rated output of the installation: Supply pressure of the installation:

That it has been carried out and complies with all the provisions and regulations of the legislation in force applicable to it, in both materials and ventilations, that the leakproofness tests provided for therein have been carried out with satisfactory results, and that the manoeuvring devices function correctly.

It is accompanied by the following documentation (indicate as appropriate):

- Sketch of the individual installation
- List of installed or planned equipment

GAS APPLIANCES INSTALLED OR PLANNED

Type of equipment	Make/Model	Rated power (kW)



The company signing this document guarantees, for a period of five years from the date indicated below, against any shortcomings in the installation carried out as a result of poor performance and any resulting consequences.

Date:

Installer's signature and stamp of the authorised installation company:

Note: Any extension or modification of the recreational habitable vehicle shall be the subject of a new installation certificate.

(1) As defined in Part A of Annex I to Regulation (EU) 2018/858 of the European Parliament and of the Council of 30 May 2018 on the approval and market surveillance of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles



Model IRV-2

CERTIFICATE OF PERIODIC INSPECTION OF INSTALLATIONS AND EQUIPMENT SUPPLIED FROM LPG CONTAINERS IN HABITABLE RECREATIONAL VEHICLES

DETAILS OF OPERATOR AND INSTALLATION:

Name of the holder:

Direction:

Population and P.C.:

Make, type and version of the vehicle:

Means of identification of type:

Supply pressure:

GAS APPLIANCES INSTALLED

Type of equipment	Make/Model	Rated power (kW)
<u>Ventilations:</u>		

DETAILS OF THE AUTHORISED INSTALLATION COMPANY:

Company name:

TIN:

Category:

Number in the Integrated Industrial Register:

DETAILS OF THE INSTALLER:

Name:

National Identity Card (DNI) or National Identity Number (NIE): (or, if not, passport number.....).

The undersigned CERTIFY, who today

- the ventilations, evacuation of combustion products, expiry of components and operating devices of the gas installation referred to in GAS_016 of the



table of standards.

- the tightness of the gas installation has been checked by testing in accordance with the regulations in force (ITC ICG-10)
- the functioning of the gas appliances connected to the installation in question has been checked and the result has been that NO PRINCIPALES NI secondary anomalies are found in accordance with standard GAS_008.
- In the event that the installation is powered by a refillable reservoir, the review found that the stamp date is in force.

This certificate is valid for five years from the date indicated below.

Note: The installer must check the part he certifies.

Date:

Read the result of the operations

Installer's signature and stamp of the authorised installation company

Name and signature of the customer or user



ITC ICG-11

GAS PACKAGING STORAGE, TRANSFER AND FILLING PLANTS PETROLEUM LIQUEURS (LPG)

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1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to lay down the essential technical requirements and minimum safety measures to be observed when designing, constructing and operating storage, transfer and filling plants for liquefied petroleum gas, as referred to in Article 2 (1) (k) of the Technical Regulation on the Safety of Gaseous Fuels



installations using LPG for different applications for the use of LPG as a fuel, for example as a refrigerant.

This ITC sets out the criteria for the periodic inspection, repairs and obligations of users of LPG storage tanks and LPG pipes, and the Pressure Equipment Regulation approved by Royal Decree 809/2021 of 21 September 2007 applies to the rest of the criteria, as well as to the rest of the existing pressure equipment.

This ITC also applies to plants intended for the dispatch of LPG in tanks or isocontainers for multimodal transport.

For installations, this JTI will apply to:

- i. New installations, their modifications and extensions.
- ii. Modifications and extensions of existing installations before their entry into force, in the amended or extended part.
- iii. Installations existing before its entry into force, as regards the inspection regime, although the technical criteria applicable to these inspections will be those corresponding to the regulations under which they were approved.

Any change affecting safety conditions is considered to be a modification of the installation. The reduction of equipment or products, the replacement of products and equipment by other products with similar characteristics or less risky characteristics or the reclassification of chemicals as a result of the application of the legislation in force at any given time on the classification and labelling of chemicals shall not be considered a modification of the installation. However, they will be updated in the installation fiche.

In order to document modifications or extensions, the installation fiche shall be kept up to date and available to the Administration and the authorised inspection bodies.

This form shall contain at least the following information:

- a) Identification of the installation.
- b) Number and individual volume of LPG tanks, in m³.
- c) Number and individual volume of spheres, in m³.
- d) Filling capacity in kg/h.
- e) Description, number and capacity of loaders, in kg/h.
- f) Description of installations subject to industrial safety regulations, e.g. LCV or low voltage installations.
- g) Sketch of the installation.

2. ADMINISTRATIVE AUTHORISATION

Storage, transfer and filling plants for liquefied petroleum gas containers shall follow the authorisation scheme laid down in Law 34/1998 of 7 October 1992.



Irrespective of the authorisation scheme laid down in Law 34/1998 of 7 October, amendments must be notified to the body responsible for industrial safety in the corresponding Autonomous Community before they are put into service.

3. GENERAL PROVISIONS AND CLASSIFICATION

3.1. Enforcement – general

The facilities shall be designed for the purpose of providing a safe operation. The design shall take into account environmental and safety aspects of construction and operation.

The design design and choice of materials to be used in the construction of the facilities shall take into account the physico-chemical properties of LPG, the design pressure and the operating and maintenance conditions of the facilities.

LPG storage, transfer and filling plants may have the following facilities:

- a) LPG storage area
- b) LPG container filling area
- c) Storage area for filled and empty packaging
- d) Tanker loaders
- e) Rail freight
- f) Maritime terminal
- g) LPG pump and compressor rooms
- h) Ancillary and service facilities such as: electrical transformation centre, control room, air compressors, fire defence system, workshops, garages, warehouses, shunting yard, etc.

These areas are defined for the purpose of establishing the safety distances and, where appropriate, design criteria applicable to each area or installation.

The classification of areas with the potential presence of an explosive atmosphere shall be determined by drawing up an explosion protection document in accordance with the criteria laid down in the regulations in force.

The implementation of detailed engineering shall be based on the conclusions of recognised risk studies in the sector.

The filling of LPG pressure receptacles may be carried out only in specially equipped centres having the appropriate procedures and qualified personnel referred to in this ITC.

3.2. Classification of installations

Facilities shall be classified according to the maximum LPG storage capacity in tonnes. The ranking of the centres shall be based on their capacity:



- a) Category I: up to 50 tonnes.
- b) Category II: greater than 50 tonnes up to 200 tonnes.
- c) Category III: more than 200 tonnes.

For the purposes of calculating the installation category, the following shall be considered:

- 1. For tanks, their maximum degree of filling shall be considered according to the criteria set out in standard GAS_059 in the table of standards.
- 2. The individual nominal capacity of the bottled LPG content shall be calculated per filling formula specified in ADR.

The calculation of the nominal capacity of the total LPG content of a given type of containers stored in a site shall be determined by the following formula:

$$C_t = C_n \times N \times 0,65$$

With:

CN = Nominal capacity of the packaging concerned.

N = Number of packages of the same type (both filled and empty).

The total capacity shall be the sum of the partial capacities of each type of packaging and fixed deposit.

4. PROJECT

The project will be composed of the following documents and will include the information indicated, as appropriate in each case:

4.1. Technical memory

The technical report shall contain at least the following items:

- a) Identification of dangerous products to be stored. If the products are known, this identification shall be carried out by providing a list of the product identifiers, in accordance with Article 18 of Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006, and their corresponding classifications resulting from the application of the classification rules of that Regulation. The maximum quantity of each product shall also be provided and the relevant safety data sheets attached.
- b) Description of the type of installation according to the products stored, including but not limited to the following information:



1. Fixed containers: capabilities, dimensions and other specific characteristics, expected operating and maximum pressures and temperatures, security and control equipment, etc.
 2. Mobile containers: types (packages, cartridges, canisters, isocontainers, etc.).
 3. Design and construction regulations and documents proving compliance with the applicable regulations.
 4. Support elements for receptacles: foundations, cradles, cages, platforms, etc.
 5. Accessory constructions: pump rooms, ICD deckhouses, filling houses, auxiliary service enclosures, etc.
 6. Protection systems, equipment and means correctly dimensioned in accordance with the Regulation on Fire Protection Facilities, approved by Royal Decree 513/2017 of 22 May.
 7. Other safety features, describing their characteristics and, where appropriate, material protections against corrosion and/or other dangerous effects.
 8. Handling of stored products: racking elements, their characteristics and sizing, and equipment for moving and placing mobile containers.
 9. Study of the zones, classified according to the Low-Voltage Electrotechnical Regulation in force.
 10. Geographical and topographical aspects of the environment, with particular impact on natural accidents that may present a risk of landslide or water drainage, indicating the protection measures envisaged in such cases.
 11. Most frequent weather conditions, with an indication of the direction and speed of prevailing winds in the storage area.
- c) For receptacles constructed on site, the justification for their design, construction, inspections and tests shall take into account all loads corresponding to the intended use, as well as for other reasonably foreseeable operating conditions. Account shall be taken, inter alia, of the following factors:
1. The internal pressure, static pressure and mass of the substances contained under operating and test conditions.
 2. Ambient temperature and service temperature.
 3. Loads due to wind, snow and seismic actions.
 4. The forces and reaction moments derived from supports, mounting devices, pipes, etc.
 5. Corrosion, erosion, fatigue, etc.
- d) Instructions for the use, preservation and safety of the installation, with regard to persons, property and the environment.
- e) Justification of the environmental instrument to which the installation is subject.

4.2. Blueprints

The drawings shall include at least the following:



- a) A geographical map (preferably on a scale of 1: 25.000 or 1: 50.000) showing the existing storage and communication routes, urban centres and relevant topographical accidents within a circle of radius 10 km, centred on the storage.
- b) General plan of the establishment showing the storage of fixed containers and their pipes and mobile containers, vials, buildings, fixed surface installations, fences and enclosures and safety regulatory distances. This plan may consist of several plans

covering different areas of the establishment.

- c) Detailed drawings of each type of fixed container and of all safety and control systems annexed thereto.
- d) Storage plans including the distribution of containers and the classification of areas.
- e) Diagram of piping/components and instrumentation of storage.
- f) Flow diagram of connections between containers and between containers and loading/unloading areas.
- g) Drawings of the installations showing the layout of the fire network, the location of all fixed fire-fighting equipment and alarm systems, drainage networks and other safety installations.
- h) Drawings of the installations showing the layout of the auxiliary installations (compressed air, hydraulic oleo systems, etc.).

4.3. Calculations

Calculations of production capacity such as pumping and transfer elements, as well as other calculations necessary for their correct design, shall be carried out.

4.4. Self-protection plan

A self-protection plan will be drawn up in accordance with Article 29 of the Regulation.

4.5. Facility maintenance and servicing plan

The operator shall develop a maintenance plan based on recommendations, good practices and operator experience to ensure the safety and operability of the installation, as well as a plan for the review of the installation, which shall complement the regulatory inspection plan described in this JTI.

4.6. Other documents

Any documents that may be specifically provided for in the applicable regulations or supplementary regulations shall be included in the appropriate form. It shall also show compliance with the specifications required by other legal provisions affecting them.



5. DESIGN

5.1. Layout of floor, escape and movement routes and enclosure

The layout of the facility shall minimise the need for access to and passage to the storage area.

Paths and accesses to the installations and escape routes of the plant should be free of any obstacle that would hinder the passage of the plant and could prevent the entry of fire-fighting vehicles.

Provision shall be made for the easy departure of personnel in the event of a casualty, in such a way that the maximum actual travel (bypassing any obstacle) to the outside or to a safe internal escape route does not exceed 25 metres.

In no case shall the arrangement of packaging obstruct normal or emergency exits or prevent access to safety equipment or areas.

Escape routes shall be established allowing at least two escape routes.

The layout of the plant shall be such as to prevent the accumulation of any LPG leakage under tanks. To this end, provision shall be made for the slope of the ground in such a way that the liquid LPG is driven along a safe path of vaporisation for vaporisation outside the vertical projection of the spheres or reservoirs.

Cylindrical reservoirs in the same storage area shall be arranged in such a way that their longitudinal axes do not point towards other reservoirs, filling plants and tank loaders less than 25 metres apart.

If a orientation that avoids a distance of less than 25 metres is not possible, a screen wall shall be placed in front of the reservoir which, in the event of an explosion, avoids any domino effect. The dimensioning and characteristics of the screen wall shall be justified in the design and in no case shall the distance be less than 12.5 metres.

It is mandatory for each sphere or reservoir to have an adjacent access track that facilitates maintenance and allows for the intervention of mobile fire-fighting means.

5.2. Full enclosure

All storage plants must have an outdoor enclosure surrounding all of their facilities.

The sides of the enclosure leading to public roads or areas normally occupied by persons shall consist of a continuous wall EI 180 with a minimum height of 2.5 m. The remaining sides of the enclosure may be of metal mesh with a minimum height of 2 m, secured by supports firmly fixed to the ground.



There shall be no gaps in the enclosure wall other than those necessary for entry and exit and escape routes.

The location of these gaps shall be determined in such a way as to ensure the isolation of the centre from other rooms.

The plant shall have an anti-intrusion protection system in accordance with standard GAS_059 in the table of standards.

5.3. Safety distances

The minimum distances between the various installations making up a storage facility and between these and other external elements may not be less than the values obtained by applying the following procedure:

- In Table III-1, obtain the distance between the two installations to be considered.
- In Tables III-2 and III-3, obtain the possible reduction coefficient based on the overall storage capacity and security measures implemented and apply it to the distance obtained in Table III-1.

In general, the distances in the following table apply:

Table III-1. Generally applicable distances (in metres)

	1. LPG container filling area	2. Pumping rooms and compressors	3. Horizontal spheres and	4. Tank and rail loaders	5. Storage area packaging
1. LPG container filling area					
2. Pumping rooms and compressors.	20				
3. Horizontal spheres and reservoirs	20	(1)	(3)		
4. Tank and rail loaders	20	30	30		
5. Packaging storage areas	6	30	60	60	
6. Administrative and social buildings, laboratories, workshops, warehouses and other independent buildings.	40	20	60	40	20
7. Fire water pumping stations.	30	20	60	30	20
8. Fencing of the plant.	30	15	30	30	20
9. Boundaries of external properties on which it can be built and public communication routes.	60	20	60	60	20
10. External concurrent public premises and establishments.	100	30	100	100	40

(1) No special distance requirement, provided that they are outside the horizontal projection of the tanks

(2) For those tanks that are buried and semi-buried (mounting) or low slope, distances shall be reduced by 50 %.



(3) The minimum horizontal distance between the LPG pressure tanks or between an LPG pressure tank and any other pressurised storage tank for hazardous or flammable materials shall be as follows:

- a) Between two spheres, between two reservoirs with a vertical axis, between two reservoirs with a horizontal axis or between a sphere and a reservoir, half the diameter of the largest container, with a minimum of 1.5 metres.
- b) Distances shall always be measured from the horizontal projection of the end of the container (spheres or reservoirs).

Table III-2. Capacity reduction coefficients

Overall storage capacity of the facility (m ³)			Reduction Coefficient
	$Q \geq$	50.000	
50.000	$> Q \geq$	20.000	0,95
20.000	$> Q \geq$	10.000	0,90
10.000	$> Q \geq$	7.500	0,85
7.500	$> Q \geq$	5.000	0,80
5.000	$> Q \geq$	2.500	0,75
2.500	$> Q \geq$	1.000	0,70
1.000	$> Q \geq$	500	0,65
500	$> Q \geq$	250	0,60
250	$> Q \geq$	100	0,50
100	$> Q \geq$	0	0,40

Table III-3. Reduction coefficient for additional safety measures

Level	Protective measures or systems adopted	Reduction Coefficient
1	One	0,75
1	Two or more	0,50
2	One	0,50
2	Two or more	0,40

In this regard, the additional protective measures or systems adopted may be:

a) Level 1:

1. EI 120 walls between the flame-retardant installations or coating of vessels EI 90.
2. Fixed spray systems, applied by nozzles permanently connected to the fire network, operated in a protected position and accessible during the fire.
3. Other manually operated fixed fire-extinguishing systems specially suited to the protected risk (for example: dry powder or CO₂).
4. Own fire brigade (consisting of personnel specially trained in fire protection through appropriate, regular and demonstrable training) including appropriate means, to be specifically identified, and a self-protection plan, as well as appropriate coordination with a fire service. The location of the plant in an area specifically dedicated to this type of facility (such as flammable and similar areas) and with a minimum distance to urban living areas of 1.000 metres is equivalent to the above. This area must have good road access, a fire service less than 10 kilometres away and an adequate warning system.



5. INN water systems (network, reserve and pumping facilities) with reserve capacity and flow rates 1,5 times those of mandatory design.
6. Have an DCI network for installations that are not obliged to do so. This network shall be capable of delivering a flow of at least 24 m³/h of water for one hour.
7. Have sufficient hydrants to ensure that each point in the risk zone is covered by

- two hydrants, which are also suitably located to act as an alternative in the event of a casualty likely to affect one of them.
8. Fixed automatic detectors with an explosive mixture alarm (directly or by concentration) in the area surrounding the installation.
 9. Other projects of equivalent effectiveness that can reasonably and justifiably be proposed at project level.
- b) Level 2:
1. Fixed pulverised water systems referred to in level 1 equipped with automatic detection and actuation.
 2. Installations which are not required to do so, which have an INN network with an automatic pressurisation pump, supplied exclusively for that purpose and for at least 2 and a half hours with a flow of at least ⁶⁰ m³/h and the minimum pressures indicated below:
 - i) The dynamic pressure of the water at the nozzle tip shall be at least 3.5 bar when the maximum required flow is flowing, if the projection is made with hoses or nozzles.
 - ii) The dynamic water pressure shall be at least 1 bar at the most hydrostatically unfavourable nozzle and in operation if spraying nozzles are directed towards the tank and in any case the one necessary to obtain adequate spraying and coverage, depending on the type of nozzle used.
 3. Fixed monitors with a guarantee of operation during fire to protect the areas surrounding the installation concerned, assuming that the water flow required to supply them is available.

5.4. Deposits

Storage tanks may be overhead, buried or semi-buried (mounting). Optionally, shells may be heated or cooled. Under no circumstances may they be installed inside buildings.

In general, all working areas around the tanks, in particular valve manoeuvring areas, purging and sample area, shall be ergonomically accessible. Particular attention shall be paid to working areas that turn out to be confined spaces in which case specific protection protocols shall be followed.

5.4.1. Construction materials

Containers shall be constructed of material suitable for the storage conditions and the stored product. The selection of the material will be justified in the project.



5.4.2. Design standards

Vessels shall be designed in accordance with the relevant technical regulations in force or, in their absence, with codes or standards of recognised solvency.

In the absence of standards or codes, a design project shall be carried out which shall take into account at least the following aspects:

- a) Total weight filled with water.

- b) Design internal pressure and depression.
- c) Usage overload.
- d) Snow and wind overload.
- e) Seismic actions.
- f) Effects of rain.
- g) Temperature of the product.
- h) Effects of internal and external corrosion.

5.4.3. Manufacturing

Vessels may be of any shape or type, provided that they are designed and constructed in accordance with the relevant technical regulations in force or, in their absence, with codes or standards of recognised solvency. During manufacture, the inspections and tests laid down in the relevant technical regulations in force or, in the absence thereof, the code or standard chosen, shall be followed.

5.4.4. Supports, foundations and anchors

Containers shall be supported on the floor or on foundations in concrete, steel, factory work or piles. Foundations shall be designed to minimise the possibility of uneven settlement and corrosion in any part of the container supported on them.

The supports of the overhead receptacles shall have a fire stability EI-180.

Each container shall be supported in such a way as to avoid unacceptable concentrations of stress in its body.

Where necessary, the receptacles may be attached to the foundations or supports by means of anchorages.

In areas of possible seismic activity, supports and connections shall be designed to withstand the stresses resulting therefrom.

In the case of tanks buried in areas close to the water table, anchorages must be provided to prevent the tank from floating.



5.4.5. Overfill prevention devices

Storage containers shall be fitted with devices to prevent overfilling, which may consist of automatic action or early warning systems and shall be provided with a continuous level measurement system.

5.4.6. Connections

Connections to a receptacle through which the liquid can circulate, other than purge connections, shall be fitted with a VAAR (Remota Activation Isolation Valve) preferably internal and an external manual valve located close to the wall of the receptacle.

Connections below the level of the liquid through which the liquid does not circulate shall be fitted with a watertight closure. A single valve connecting to the outside is not considered to be a watertight closure and must have at least one blank flange or cap at its outlet.

In the case of liquid-phase connections for purging purposes, the connections shall have at least a double valve.

5.4.7. Safety valves

5.4.7.1. Emergency ventur es

Each LPG storage container shall have a constructive shape or device to relieve excess internal pressure caused by an external fire.

Emergency venting may be performed by, inter alia, spring-loaded pressure relief valves, rocking valves, piloted valves or by bursting discs.

Each venting device shall be stamped with the opening pressure and its venting capability in the latter position.

When emergency venting is entrusted to a valve or device, the total emergency capacity shall be sufficient to prevent any excess pressure that may cause the body or bottom of the container, if vertical, or the body and heads, if horizontal, to rupture.

The outlet of all ventur es and their drains shall be arranged in such a way that the discharge, if it ignites, is not liable to cause local overheating or impinges on any part of the container.

In addition, the provisions of Royal Decree 709/2015 of 24 July 2007 must be taken into account.

5.4.7.2. Exhaust pipe in case of venting

The piping system which directs the flow relieved by the venting device shall have the following characteristics:



- a) It shall prevent the inflow of rainwater that could affect the valve either by curvature or by plugs or lids. If caps or the like are used, they shall be secured to prevent accidental falls.
- b) It must have an impediment to the nesting of birds or other foreign bodies inside it which could damage the valve.
- c) If there is no separate drainage in the valve, the drainage system must be equipped with a drainage system that removes rainwater. This drainage must not affect other adjacent equipment.
- d) The discharge point shall be at least 2 metres above the upper level of the shell of the shell or of the working platform of the shell, if any. In any case, they must be free from affection.
- e) The exhaust direction shall be free from interference with other ignition equipment or sources.
- f) Venting pipes shall not be obstructed by mechanisms resulting in an increase in

discharge pressure or by long pipe lines.

- g) Connections to other adjacent receptacles or valves in venting systems shall be avoided.
- h) The relief valve exhaust pipe and its joints or welds shall be made of anti-static and fire-resistant material, preferably metallic.

5.4.7.3. Emergency venting calculation

The calculation of the pressure relief capacity shall be carried out in accordance with standard GAS_028 of the table of standards for the pool fire scenario, consisting of two steps:

1. First, the precise venting needs shall be dimensioned according to the area exposed to fire and the spraying circumstances of the product.
2. Subsequently, the relief capacity of the proposed emergency relief system shall be analysed to ensure that it is sufficient to discharge the required volume of gas under the relevant overpressure conditions.

It is recommended that an additional valve of a similar capacity to the unit valves calculated be fitted so that it can be used as a back-up in the event of failure of one of the valves installed. If such a valve exists, it shall be locked while working as a reserve.

In the case of locking valves prior to safety valves, an locking system shall be provided to prevent accidental locking of the required valves.

5.4.8. *Minimum equipment of tanks*

The minimum openings for shells shall be as follows:

- a) Product input/output.



- b) Gas phase compensation.
- c) Return of liquid product.
- d) Purged.
- e) Safety valves.
- f) Man's mouth.
- g) Instrumentation.

In all cases they shall be of a diameter consistent with the process flows and pressures.

Embryonic joints shall be used for diameters equal to or greater than DN50, which are recommended for joints of lower diameters.

Remote-activation isolation valves shall be installed at the liquid phase hydrants connected to the bottom of the tank.

A low level atmosphere detector system shall be available to detect product leakage or spillage.

The level measurement may consist of one of the following systems:

1. Continuous, remotely readable measuring system: servo-opener, radar, ultrasonic or capacitive rod, etc.
2. Rotating local mechanical system, mechanical float, probes, etc.
3. Electronic level switch, graduated to the maximum product storage level.

There shall be a duplication of measurement of the levels corresponding to the maximum filling laid down.

At least one of these measurement systems shall be connected to a warning equipment in case the maximum storage level is reached.

A system for measuring the internal pressure of the tank, preferably measured on the gaseous phase, shall be provided.

The drainage or drainage system shall be designed or protected by a procedure to prevent accidental continuous opening.

Gradients or piping must be available to evacuate an accidental spillage of the product contained in the reservoir without it being possible for vulnerable equipment to be affected during its journey.

Bearings of ball shells and ball legs shall have a minimum fire stability of 120 minutes by means of their constructional elements or insulation protections.

Occupied buildings and critical equipment in the direction of the generatrix of cylindrical horizontal axis reservoirs shall be minimised in order to protect them from a projection of the funds.



Any leakage points that could result in a fire dart affecting the shell of the shell shall be taken into account, both by minimising or driving the fire darts and by protecting the shell.

5.5. Pipes

5.5.1. General

The design, manufacture, assembly, testing and inspections of LPG piping systems shall be appropriate to the expected working pressure and temperature and to the maximum combined stresses due to pressures, expansion or similar under normal or transient start-up conditions or abnormal emergency situations.

Buried pipes shall only be installed in duly justified exceptional cases.

Where fluid may become trapped between piping equipment or sections and there is a possibility that this fluid may dip or evaporate (e.g. between shut-off valves), a system shall be installed to prevent the attainment of pressures above the design pressures of the equipment or piping whenever the quantity trapped exceeds 5 litres.

In the case of protection by vented thermal relief valves, venting must be conducted in such a

way as to avoid projection on persons or equipment and, under no circumstances, under roof. The material of the vent pipeline shall be fire resistant and shall not generate any accumulation of static loads.

Pipe systems for engines or vehicles, boilers, building services and the like are excluded from the above requirements.

The piping systems through which LPG circulates shall have electrical continuity with earthing, any system ensuring a lower earth resistance value of 20 Ω being valid, except for piping systems with cathode protection.

5.5.2. Materials for pipes, valves and accessories

Pipe, valve and accessory materials shall be appropriate to the pressure and temperature conditions compatible with LPG and designed according to codes of recognised solvency or the principles of good practice.

The valves attached to the receptacles and their connections with a diameter greater than DN 50 (2") shall be of steel or nodular cast iron, unless LPG is incompatible with these materials.

Where valves are installed outside the container, the material shall have a ductility and melting point comparable to steel or nodular cast iron in order to be able to reasonably withstand the stresses and temperatures due to exposure to a fire.



Materials other than steel or nodular cast iron may be used when the valves are arranged inside the container.

The use of other materials shall be justified in the project.

The use of flexible hoses where piping can be fitted is prohibited for more than one month. The use of hoses to replace rigid pipes for repairs or temporary situations must be justified by a risk study and their use limited in time to the execution of the work or repair. The use of hoses should generally be restricted to loading and unloading trucks, ships and railways.

5.5.3. Pipe joints

The joints shall be liquid-tight. Preferably welded joints shall be used. Where necessary, embryonic, threaded or any other appropriate connection to the service may be used. Threaded joints shall be limited to diameters less than or equal to DN 50 (2").

All pipe joints located in hidden or inaccessible places within buildings or structures shall be welded.

5.5.4. Supports

Piping systems shall be adequately supported and protected against physical damage and excessive efforts due to vibration, expansion, shrinkage or settlement.

5.5.5. Protection against external corrosion

Buried steel pipes shall be protected against galvanic corrosion or soil moisture by means of coatings and, where appropriate, cathode protection.

For pipelines running through galleries or tunnels without ventilation, a gas detection system shall be installed.

Aerial pipes shall be painted to protect them against external corrosion and those exposed to sunlight in reflectance colours of 70 % or more.

5.5.6. Calorifuged

Pipes which, in accordance with the design criteria, require it may be heated.

5.5.7. Valves

Piping systems shall have a sufficient number of valves to operate the system properly and protect the assembly. Identification of the position (open/closed) of all valves shall be simple.



All valves shall be made of LPG compatible material.

5.6. Container filling house

5.6.1. Location conditions

The packaging filling house must be built from a single plant and its floor must be at the level of the surrounding external terrain or somewhat higher, never at a lower level. Poorly ventilated spaces below ground level shall be avoided. Underground openings into and out of cables, pipes or the like must be sealed or have a siphonic trap.

The materials used in the construction must be fire-resistant according to standard GAS_059 in the table of standards.

The surface of the working area must be of non-combustible or non-absorbent material and of such a nature that no sparks are produced with the impact and impact of metal objects. It must have anti-slip treatments and static electricity dissipators.

The packaging filling house shall not be adjacent to premises or spaces where activities other than packaging filling are carried out.

Openings which communicate with other premises and with the outside (doors and windows) shall be properly designed so that no damage can be caused to persons, property or property in the event of an accident due to physical impact or fluid expansion. Their access points must enable staff to leave easily in the event of a casualty and be clearly marked. Doors must always open outwards.

There shall be at least two emergency exits. Escape routes inside the packaging filling house shall be clearly marked, taking into account any lighting failure.

On the side enclosures of the container filling house, ventilation gaps at ground level shall be provided in order to facilitate cross-ventilation and shall have a total surface area of at least one tenth of the surface area of the pavement. For the purpose of calculating the ventilation area, only the first metre of height of these gaps shall be counted. These openings may be protected by lames or metal mesh, but none shall be closed to ensure constant ventilation.

5.6.2. Security equipment

Packaging filling vessels must comply with the legal safety requirements in force, in particular Royal Decree 1215/1997 of 18 July 1997 laying down minimum health and safety requirements for the use of work equipment by workers and Royal Decree 681/2003 of 12 June 1997 on the protection of the health and safety of workers exposed to risks arising from explosive atmospheres in the workplace.



The packaging filling house shall be equipped with an alarm system consisting of alarm pushers for each packaging filling circuit and an audible optical alarm system used exclusively for this purpose. The audible warning system shall be provided with an uninterrupted power supply. It must be ensured that the alarm is seen and/or heard inside the craft in working order.

An emergency stop must be carried out on each of the machinery in the container filling house that could cause an entrapment, LPG projection or other type of hazard. The emergency stop button shall be remote from or protected from danger and easily accessible. A general emergency stop of the container filling house shall also be implemented, resulting in the closure of gas inside the container and the de-energisation of all equipment except lighting. The ship's general emergency stop system shall be alarmed. The gas shut-off valve to the filling house shall be protected against improper operation. The valve may only be installed inside the house if it is equipped with a locking thermal system.

A system should be implemented that protects areas and accesses to moving parts by physical barriers or devices that cause the power and gas of such parts to be cut off when they are open or deactivated.

Pipes inside the packaging filling house shall clearly identify their product (s) and use.

5.6.3. Means of fire and explosion prevention and mitigation

Regardless of the portable fire extinguishers to be fitted, the container filling house shall be protected by a fire detection and extinguishing system.

A leakage detection network shall be provided inside the packaging filling house with an alarm communicated to the control system.

A system of electrical continuity and static load dissipation shall be provided.

A system with remotely operated valves shall be provided for the safe interruption of the gas supply to the container filling house.

5.6.4. Operation

During refill of containers, it must be verified that the applicable requirements are met and that the appropriate conditions of use are in place. The reference standard shall be GAS_029 of the Table of Standards and its complementary or related standards.

Staff involved in packaging filling must be properly trained and aware of the operational procedures in place.



Packaging must be handled, stored and used properly, also taking into account the requirements of section 5.7 of this ITC.

For multi-product packaging filling facilities, the residual gas contained in the facility and the impact on the filling grades and qualities of the first packaging produced with the new product shall be considered during the product change in the packaging filling facility.

5.7. Packaging storage area

Areas corresponding to filled, empty and useless packaging must be provided separately and must be clearly separated from other services or facilities.

The area intended for the storage of containers shall be in the open air and shall not have any type of building intended for that purpose other than that of the enclosure enclosure, and may, in any case, have a cover made of fire-resistant material.

Areas for the movement of persons must be clearly marked and must be safe from handling containers and containers and from the circulation of trucks and trucks. For this protection, safety distances or efficient mechanical protections must be established.

The storage area shall be clearly delineated and arranged so that loading and unloading can easily be carried out by manual or mechanical means. The truck positioning area shall be clearly signposted.

In no case shall the arrangement of packaging obstruct normal or emergency exits or prevent access to safety equipment or areas.

The storage area of the containers and the area to be covered by the truck in order to load and unload the trucks must have a continuous and non-irregular floor which allows the perfect manoeuvrability of those vehicles.

The storage area of the containers shall have an adequate lighting system to ensure correct visibility during night-time operations in the handling of the containers and in the manoeuvrability of the vehicles.

Filled containers fitted with a safety valve shall always be placed upright. Containers shall be caged if stored at more than one height. Cages may be stored up to a height which allows their mechanical strength and stability and in a manner compatible with the operation. The mechanical strength of cages shall be estimated by considering the heaviest type of packaging with its degree of filling.

In the area intended for the storage of filled containers, all activities involving the presence of free flames or any source of heat which may



dangerously raise the temperature of containers containing LPG and prohibit the presence of any flammable substance which is not contained or readily combustible. All vehicles entering the container storage area shall be fitted with a firewall fitting to the tailpipe or its own system ensuring

that no incandescent particles are emitted.

5.8. Tanker loaders

A loader may have several loading or unloading stations for road tankers.

It shall be so arranged that any accidental spillage flows rapidly to a safe location outside the vertical projection of the vehicle.

Lorry loaders shall be positioned in such a way that lorries travelling to or from them can do so on free movement paths. The layout shall seek to reduce the internal journeys of tanks in sensitive areas.

Loading and unloading of road tankers shall be carried out with the engine of the truck stationary.

Tankers shall be arranged in the loading unit in such a way that they can leave without manoeuvre. The accesses shall be wide and well signposted.

Waiting tankers must be positioned in such a way that they do not hinder the exit of those loading or unloading or the movement of fire-fighting equipment.

The installation shall have an emergency disconnection system which closes the connections in case of unwanted movements of the tank in both arms and in case of loading/unloading by hose.

Emergency breaking devices must be fitted for both load arms and hoses.

The structure of the load station, installations and pipes shall be electrically interconnected and shall be earthed by a permanent conductor.

If there are several sockets, they shall all be interconnected and form a network.

Next to each loading or unloading position, there shall be a flexible driver permanently connected at one end to the aforesaid ground network and at the other end to a connecting part of sufficient length to connect the mass of the truck tank. This will be a permissive load, so the load cannot start if the truck is not grounded and the load will stop if this connection is lost. Care shall be taken to minimise the possibility of an electric arc occurring when the earth cable connector is connected to the tank.



The racking for the loading or unloading of tanks may be carried out by gravity or by the use of LPG pumps or compressors.

Tanks shall be filled by means of dry couplings at the bottom of the vehicle, preferably by a gaseous return connection. In the absence of a gaseous return connection, an additional system shall be provided in the loader to prevent overpressure in the tank.

Load arms or flexible hoses shall preferably be used for loading. If hoses are used, they shall be periodically reviewed, at least annually, to verify their condition, with written records of the

reviews carried out.

The signs of the load arms shall be maintained in good working order so that they remain watertight in all circumstances and do not suffer from bruising likely to cause the arm to break during product transfer operations.

The loader shall have a double filling control system, a main one by weighbridge or by meter verifying the mass being traversed and a supplementary system to prevent overfilling.

5.9. Railway loaders

A loader may have several loading or unloading stations for tank wagons.

It shall be so arranged as to prevent any accidental spillage from accumulating under the wagon.

The loading and unloading of tank wagons shall be carried out with the tractive machine uncoupled, the brake system activated on all wagons and at least with an additional locking system on the rear and head wagons.

A system shall be installed at the access point that prevents another composition from interfering with the composition it is operating (derailor or equivalent system).

Waiting tank wagons shall be positioned in such a way that they do not hinder the exit of those loading or unloading or the movement of fire-fighting equipment.

The installation shall have a wagon bottom valve anchorage system to close connections in case of unwanted movements of the wagon.

The structure of the load station, installations and pipes shall be electrically interconnected and shall be earthed by a permanent conductor.

If there are several sockets, they shall all be interconnected and form a network.



Adjacent to each loading or unloading position, there shall be a flexible driver permanently connected at one end to the aforesaid lineside and at the other end to a connection part of sufficient length to connect the wagon mass. This will be a permissive load, so the load cannot start if the wagon is not grounded and the load will stop if this connection is lost. Care shall be taken to minimise the possibility of an electric arc occurring when the earth cable connector is connected to the tank.

The racking for the loading and/or unloading of wagons may be carried out by gravity or by the use of LPG pumps or compressors.

The wagons shall be filled by means of dry couplings located at the bottom of the vehicle. Gaseous return connection shall preferably be used. In the absence of a gaseous return connection, an additional system shall be available in the loader to prevent over-pressure in the wagon.

Load arms or alternately flexible hoses shall be used preferably for loading. If hoses are used, they shall be periodically reviewed, at least annually, to verify their condition, with written records of the reviews carried out.

The signs of the load arms shall be maintained in good working order so that they remain watertight in all circumstances and do not suffer from bruising likely to cause the arm to break during product transfer operations.

Emergency breaking devices must be fitted for both load arms and hoses.

The loader shall have a double filling control system, a main one by weighbridge or by meter verifying the mass being traversed and a supplementary system to prevent overfilling.

5.10. Maritime terminal

Standard GAS_059 in the table of standards sets out the design, safety and operational criteria for maritime terminals as implementation recommendations.

5.11. Pumps and Compressors

Means the assembly of elements, pumps, compressors, fences, control elements, etc., for the transfer of LPG for different purposes which are assembled in an enclosure or weathertight.

It shall never be possible to locate the pump area in the vertical projection of the storage elements (e.g. reservoirs).

The shutdown/running actuators of the racking elements (pumps and compressors) shall be clearly marked and protected from the risk of entrapment or projection.



In addition, they shall have an emergency stop system with local and remote activation from the control room or at a distance of not less than 15 m from the area of pumps and compressors.

Where LPG transfer pumps are located inside a house, ventilation gaps at ground level shall be provided in the side enclosures to facilitate cross-ventilation and shall have a total surface area of at least two tenths of the surface of the pavement. For the purpose of calculating the ventilation area, only the first metre of height of these gaps shall be counted. They shall be constructed of walls and ceilings with low mechanical strength which provide low resistance to a possible explosion.

Thermal relief or safety valves with discharge into the atmosphere shall be conducted outside the area of pumps or compressors and vented in a safe place protected from the passage of persons.

Preferably, there will be no pump area below the surrounding terrain, thus facilitating ventilation.

If it is necessary to have racking elements below ground zero, a detection system linked to a safe place extraction system with automatic activation must be available.

The surface shall be made of concrete or other non-combustible construction material and shall have a non-sparking finish in the event of impact with any metallic element.

Pumps and other load elements should be sized to provide the flow appropriate to the capacity of the installation. Both the design of the installation and safety features, tank capacity and pump power should be considered.

The design pressure and construction material of pumps shall be able to withstand safely the maximum pressure that could be developed by the product, transfer, equipment, or both. In pumps and compressors the closure shall be mechanical, single or double.

Pumps and compressors must be protected against reverse flow by check valves at discharge or supply.

5.12. Fire protection in fixed surface installations

5.12.1. General

Installations, equipment and their components intended for fire protection of filling and transfer plants and their associated facilities shall comply with this paragraph.



The facility must have fire protection appropriate to the risk, as laid down in Annexes I to IV to the Regulation on Fire Safety in Industrial Establishments, approved by Royal Decree 164/2025 of 4 March 2004.

With regard to the design, installation and maintenance of active fire protection facilities, the provisions of the Regulation on Fire Protection Facilities, approved by Royal Decree 513/2017 of 22 May 2004, must be followed.

Where specific circumstances render any of the protection systems provided for in this paragraph inappropriate, this must be justified and adequate protection must be provided which is equivalent or more stringent.

Fixed surface storage facilities must be equipped with lightning protection.

5.12.2. Protection with water

Protective measures with water as extinguishing agent shall be established according to the category of storage, as set out in paragraph 3.2.

Category I storages shall have a fire water network with the following characteristics:

- a) The water network, in this case, shall have several fire intakes to ensure immediately and continuously the flow of water required in Table 5.12.2.
- b) The dynamic pressure of the water at the nozzle tip shall be at least 3.5 bar when the maximum required flow is flowing, if the projection is made with hoses or nozzles.
- c) The dynamic water pressure shall be at least 1 bar at the most hydrostatically unfavourable nozzle and in operation if spraying nozzles are directed towards the tank

and in any case the one necessary to obtain adequate spraying and coverage, depending on the type of nozzle used.

Surface storages with category II or higher capacity must be provided with a fire water supply and mains exclusively for this purpose.

Pipe diameters shall be calculated so as to ensure the required flow rates with a minimum gauge pressure at any point of the network of 7 bar.

The net shall be arranged preferably in a ring and shall have cutting valves in sufficient number to isolate any section affected by breakage, the rest of the net being kept under working pressure.

The pipes constituting the fire network shall be made of steel and independent of the water network for industrial use. Where pipes are buried, other pipes shall be permitted.



materials provided that it is justified that they offer adequate mechanical strength. Their sections shall be calculated so as to ensure the required flow rates at each point at a minimum pressure of 7 bar.

The pipe of the fire water network shall, wherever possible, follow the layout of the streets and be adequately protected against impact. In the case of steel, provision shall be made for its external installation in order to facilitate its inspection and maintenance. In any case, pipes shall be protected against corrosion. Where temperatures below 0 °C are expected to persist, it shall be buried or properly protected.

Water supplies to the exclusive fire network may come from:

- a) Natural (e.g. rivers, lakes, sea) or artificial (e.g. canals, reservoirs, wells) inexhaustible sources provided that they are capable of ensuring, at any time of the year, the required flow and time of autonomy and are equipped with the necessary pumping equipment.
- b) Pressure vessels or high storage.
- c) Feeding containers for pumping equipment.

A sufficient volume of water shall be available for the maximum required flow rates in the worst-case scenario and by adding up auxiliary extinguishing means for the complete protection of the area affected by the fire for a minimum period of:

1. 1.5 hours for category I and II storages.
2. For Category III storage, three hours.

When one of the sources of supply is public, precautions shall be taken to avoid possible contamination (e.g. by installing a check valve).

The installation shall be equipped with a pumping system capable of boosting the flow rate resulting from applying Table 5.12.2 to the storage area with the highest demand, plus that required by auxiliary means.

Pumping units shall be provided with separate or duplicated energy sources. The pumping

system must also be designed with the redundancy of equipment in order to mitigate a simple failure.

For category III storages, the minimum flow rate of the installation shall be 100 m³/h.

Table 5.12.2. Assessment of water flow required in case of fire as a function of type of container burnt:

Unit capacity of tank	Containers to be cooled	Minimum water flow rate to be expected
Capacity up to 200 m ³ .	The burnt case and the affected enclosure area of adjacent tanks located less than 10 m from the walls of the burnt case.	3 L/min per m ² of container surface



A capacity exceeding 200 m ³ .	The burnt case and the affected enclosure area of adjacent tanks located less than 30 m from the walls of the burnt case.	10 L/min per m ² of the surface of the receptacles
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Reservoirs with a capacity exceeding 60 m³ shall be equipped with a fixed cooling device supplied by the water network to ensure uniform spraying of the whole surface at the specified flow rate.

Where the pressure in the fire network is to be achieved by pumping, the pumping shall be as specified in standard GAS_030 in the table of standards.

Deposits with a low slope or covered with a fire-resistant insulation of at least R 120 need not be equipped with the fixed cooling device.

Pumping equipment shall be provided with means to maintain the required pressure in the mains automatically when the pressure in the mains is lowered as a result of the opening of a hydrant of fire or any other demanded consumption of the mains.

It shall be feasible to sectorise the cooling installation of an affected adjacent reservoir so that only the envelope surface exposed to radiation is cooled.

Tanks separated by a protective element R 180 or those protected by intermediate tanks between the burnt tank and the tank being assessed shall not be considered to be affected by direct radiation.

5.12.3. Water projection

Water may be designed by fixed spraying installations, monitors, mobile equipment, hand nozzles, nozzles or by a combination of the above.

Hydrants in the fire water network shall be fitted with connection fittings complying with reference GAS_031 of the table of standards and shall be appropriately distributed throughout the plant, in particular in the vicinity of storage, packaging filling and loading areas. In order to be considered as a hydrant protected area or risk, the distance from any point of its limit at ground level to the nearest hydrant shall be less than 40 metres.

Showcases and cabinets containing hoses shall be located at accessible points and shall be of

appropriate size to contain all equipment so as not to interfere with other parts of the installation. They shall be used exclusively for fire-fighting equipment and be clearly marked.

5.12.4. Control of fixed installations

The controls of all fixed fire-fighting installations, including water discharge valves outside the storage area, shall be indicated.



It must be possible to use these controls in all circumstances. For this purpose, they shall be located outside the storage area at a minimum distance of 15 metres from the wall of the tank providing protection.

This distance may be reduced if the controls are placed under the shelter of a fixed and effective fire shield and if appropriate fire protection equipment is available to the personnel operating the controls. The fire shield may consist of a non-combustible obstacle.

5.12.5. Extinguishers

Fire extinguishers of a class appropriate to the risk shall be provided at all accesses to storage, loading, pump rooms, packaging filling and other working areas. In areas handling flammable liquids other than LPG where there may be connections of hoses, valves for frequent use or the like, these extinguishers shall be so distributed that no more than 15 metres is required from the protected area to reach the extinguisher. They will generally be multi-purpose powder, portable or on wheels. CO2 extinguishers should preferably be used in electrical risk areas.

5.12.6. Detection and alarms

Alarm operating positions shall be provided within 25 metres of access to the storage area, pumps or loading and unloading stations.

Alarm operating positions may be replaced by portable transmitters held by guards or service staff or other means of continuous area surveillance (e.g. CCTV).

An audible alarm shall be provided which is perfectly audible throughout the area and different from those intended for other uses (for example, from the warning at the beginning and end of the working day).

An alternative telephone or means of communication with the outside emergency services shall be available in the enclosure.

The need for fire detection systems will be determined by a risk analysis. In this regard, the use of detection systems to automatically activate fire protection systems is permitted.

5.12.7. Auxiliary protective equipment

The following auxiliary personal and collective protective equipment for portable measuring devices for explosive atmospheres, flameproof portable torch and fireproof blanket shall be provided at a minimum, without prejudice to the need for additional means as a result of a risk



5.12.8. *Fired*

Metal supports and structures or critical supports shall have at least a fire resistance R 180. This resistance can be achieved by coating, concrete or other fire-resistant material or by a fixed cooling medium.

Critical support or support refers to support that in case of failure can cause serious damage or risk (e.g. ball legs, columns of buildings of more than one floor, etc.). Installation decks such as those for tank loaders or filling vessels shall not be considered as critical structures.

5.12.9. *Fire protection in other areas*

At least 2 fire hydrants fitted with connecting fittings complying with reference GAS_031 of the table of standards equipped with access from different points shall be available for filling areas, pump area and cargo.

Alternatively, a fixed diluting system may be fitted which, in the case of the filling area, must not be automatically triggered.

In the case of tanker and rail loaders, the means described in the table shall be provided in accordance with the categories set out in paragraph 3.2:

Category	Media
I	BIE 2
II	BIE 2 Sectorising Hydroshields
III	2 BIE Sectorial hydroshields Fixed refrigeration installation

6. IMPLEMENTATION OF THE FACILITIES

The LPG packaging storage, transfer and filling plants shall be designed, constructed and operated in accordance with the provisions of this ITC and the requirements of standard GAS_059 in the table of standards.

The premises shall be constructed under the responsibility of the operator using his own staff or staff from elsewhere, ensuring the safety of the staff involved in the work and taking appropriate precautions to avoid affecting other buried premises.

In cases of extension, modification or transfer, the project shall refer to the extension, modification or transfer and to what is affected as a result, justifying the final situation of the whole.

With regard to the relocation of LPG storage, transfer and filling plants, this should be considered as the partial or complete dismantling of an installation and its assembly in a different location. Where:



- a) Partial dismantling of an installation shall be considered as a modification.
- b) The complete dismantling of an installation shall be considered as deregistration or decommissioning.
- c) The assembly of an installation at a different location shall be considered as a new installation.
- d) The Autonomous Community must be notified of the deregistration of the installation or of a change to it which means that the installation is excluded from the application of this Regulation, accompanied by documentation proving the safety situation and circumstances in which the installation remains.

7. PRE-TESTING AND COMMISSIONING

7.1. Preliminary tests

Before the installation is put into service, stress and leakproofness tests shall be carried out in the presence of a control body as provided for in standard GAS_059 of the table of standards as appropriate depending on the type of installation.

A mechanical strength test shall be carried out at the site certified by a control body when the tanks are changed from their site or if a defect or anomaly caused by transport, installation or handling is observed at the discretion of the site management.

During the preparation and execution of the stress and leakproofness tests, the absence of persons from outside the stress and leakproofness tests shall be ensured in the working area affected by the risk.

Once the tests have been completed with a positive result, their description and results will be included in the project management certificate.

7.2. Putting into service

Only facilities which have passed the previous tests and have submitted the relevant documentation may be put into service.

The gas filling of the storage facility shall be carried out in such a way as to avoid the formation of an air-to-gas mixture between the flammability limits of the gas.

For this purpose, an inert atmosphere shall be formed beforehand or, failing this, the gas shall be introduced at a rate that reduces the risk of flammable mixture into the contact area or the two fluids shall be separated with an inert gas cap or purge piston.

The process of purging an installation shall also be carried out in a controlled manner.

The commissioning of an installation shall be carried out by qualified personnel authorised by the operator of the installation and with the knowledge of the project management.



For the commissioning, extension or modification of the installations, once the construction works have been completed and before they are put into service, the operator shall submit the following documentation to the competent body of the Autonomous Community, in accordance with the provisions of Article 11:

- a) Project of the installation in accordance with paragraph 4 of this JTI signed by a qualified technical person, describing the site and all the constituent elements of the installation.
- b) Final works certificate signed by the qualified technician stating, under his responsibility, that the installations have been carried out and tested in accordance with the project submitted and reflecting any amendments thereto, and that they comply with the requirements of this ITC and standard GAS_059 of the standard table.
- c) Initial certificate of inspection issued by the inspection body.

8. PERIODIC INSPECTION, REPAIRS AND MODIFICATIONS

Periodic checks and repairs of containers, pipes and facilities, including container filling facilities, containing LPG installed in LPG container storage, transfer and filling plants shall be carried out in accordance with the scope of ITC-EP-3 of Royal Decree 809/2021 of 21 September, with the clarifications made in the following paragraphs.

For the purposes of this ITC, vessels and piping shall be classified on the basis of the risk potential classification, defined as the product of the maximum allowable pressure (PS in bar) and the volume (V in m³):

- a) Class 1: Greater than or equal to 1.000.
- b) Class 2: Greater than or equal to 300 and less than 1.000.
- c) Class 3: Greater than or equal to 25 and less than 300.
- d) Class 4: Greater than or equal to 10 and less than 25.
- e) Class 5: Less than 10.

The periodic inspections and tests to be carried out on receptacles shall be carried out on the basis of that classification, by the following agents and at the following maximum intervals:

Container classification	Level of control		
	A	B	C
AGENT AND FREQUENCY OF PERIODIC INSPECTION OF CONTAINERS			
Class 1	Review by own inspector (*) 4 years	Inspection by CB 6 years	Inspection by CB 12 years
Class 2	Review by own inspector/inspector 4 years	Inspection by the CB 8 years	Inspection by CB 18 years
Class 3	Review by	Review by	Not required



Container classification	Level of control		
	A	B	C
	Inspector/own inspector 6 years	Inspector/own inspector 10 years	
Class 4	Review by own inspector/inspector 6 years	Review by own inspector/inspector 12 years	Not required
Class 5	Review by own inspector/inspector 8 years	Not required	Not required

(*) 'own inspector' means: qualified technical personnel or a category A IG-A gas installer designated by the user or contracted person with experience in the periodic inspection of pressure equipment in LPG storage plants.

Piping with a diameter greater than DN 50 and a value of $PS \times DN > 1.000$ must be checked at least at level B by the agents and at the maximum intervals indicated, with level C not being compulsory.

AGENT AND PERIODICITY OF PERIODIC PIPELINE CONTROLS		
Control Level		
A	B	C
Not required	Review by own inspector/inspector 10 years	Not required

Periodic level B and C checks on LPG storage spheres or tanks may be carried out jointly, in which case they shall be carried out at intervals not exceeding 10 years.

The periodic checks shall be carried out in accordance with the criteria set out in Annex I to ITC EP-3 of Royal Decree 809/2021 of 21 September.

In addition to the regular checks, any checks deemed necessary to ensure the integrity of the equipment and facilities must be carried out. Where corrosion or damage is discovered in the periodic checks or in the additional checks carried out by the user, the user's checks at the shutdowns of the facilities shall be used to monitor its progress in order to decide whether a repair should be carried out, in view of the corrosion and condition of the equipment.

Repairs to the tanks and pipelines included in this ITC shall be carried out by companies in category ERP-2, as provided for in Annex I to Royal Decree 809/2021 of 21 September, and with the scope and considerations indicated in Article 7 of ITC EP-3 of the aforementioned Royal Decree.

Amendments to the tanks and pipelines included in this ITC must comply with Article 8 of ITC EP-3 of Royal Decree 809/2021 of 21 September.



The obligations of users with regard to the tanks and pipes included in this ITC shall be those indicated in Article 9 of ITC EP-3 of Royal Decree 809/2021 of 21 September.

The inspection body shall issue the corresponding inspection documentation, which it shall hand over to the operator of the installation and to the administration, where applicable, and shall

act in accordance with Article 20 of this Regulation.

If the inspection reveals that the conditions have changed in relation to the documentation submitted for the commissioning of the facility, the body that carried out the check shall immediately inform the competent body of the Autonomous Community.

The holder must always hold a copy of the certificate of the last inspection carried out, this document being available to the competent body of the Autonomous Community.

9. OBLIGATIONS OF ENTITLED PERSONS

The operator of the installations shall be responsible for compliance with the rules laid down in this ITC and for their correct operation.

The operator of the installation shall be covered by the appropriate insurance policy, guarantee or other equivalent financial guarantee for any civil liability arising from storage, amounting to at least EUR 400.000 per claim. This minimum amount shall be updated by order of the competent administration, whenever necessary to maintain the financial equivalence of the guarantee and following a report by the Government Executive Committee for Economic Affairs. This policy must be taken out when the commissioning is notified.

The inspections and reviews that may be carried out do not at any time exempt the operator from compliance with the obligations imposed on it as regards the status and conservation of the installations and any liability that may result therefrom.

10. INSPECTIONS

The operator shall be responsible for the proper use, maintenance and maintenance of the installations, elements and equipment that form it.

In addition, the operator shall also be responsible for ensuring that the installation is inspected every six years, if possible at the same time as the periodic inspection of level B class 1 equipment, in such a way as to verify that the safety conditions and measures laid down in the regulations continue to be complied with.



The inspection must in all cases be carried out by an approved inspection body and must include the entire plant.

To this end, the following points will be checked:

1. Existence of the maintenance plan and review of the parts of the facility maintenance intervention issued since the last periodic inspection.
2. Visual inspection of the installation, including verification of the safety distances indicated in this ITC.
3. Good condition of fire protection systems.

4. Enclosure condition, access door and closing elements.
5. Existence and state of required signs.
6. Update of the installation fiche.
7. Verification of the performance of the periodic checks defined in section 8 of this ITC by control body in good time and with satisfactory results.

The technical criteria for the implementation of points 1 to 6 of the above list for installations existing before the entry into force of this ITC shall be those established in accordance with the regulations in force at the time when they were installed.

The inspection body shall issue the corresponding inspection documentation, which it shall hand over to the operator of the installation and to the administration, where applicable, and shall act in accordance with Article 20 of this Regulation.

If the inspection reveals that the conditions have changed in relation to the documentation submitted for the commissioning of the facility, the body that carried out the check shall immediately inform the competent body of the Autonomous Community.

The holder must always hold a copy of the certificate of the last inspection carried out, this document being available to the competent body of the Autonomous Community.

Similarly, the operator of the installation shall be responsible for keeping in a documentary file, as provided for in Article 11 of this Regulation, all the information and documentation relating to the installation, including, inter alia: Original draft with possible modifications, reports of previous inspections or records and reports of periodic equipment checks as per point 8 above.



The inspection of fire protection means required in accordance with Annexes I to IV to the Regulation on Fire Safety in Industrial Establishments (RSCIEI) shall be carried out in accordance with Article 13 thereof, as part of the inspection of the gas installation referred to in this paragraph.

The inspection of fire protection equipment (PCI) shall also be carried out as part of the inspection of the installation and in any case in accordance with the provisions laid down in the Regulation on Fire Protection Installations, approved by Royal Decree 513/2017 of 22 May 2004.



ITC ICG-12

INSTALLATIONS FOR GASEOUS FUELS BY PRESSURE PIPELINE A MAXIMUM DESIGN GREATER THAN 16 BAR;

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CHAPTER I: ENFORCEMENT – GENERAL

1. PURPOSE AND SCOPE

The purpose of this Supplementary Technical Instruction (ITC) is to lay down the essential technical requirements and minimum safety measures to be observed when designing, constructing and operating installations for gaseous fuels referred to in Article 2 (1) (b) of the Technical Regulation on the Safety of Infrastructure and Installations for Gaseous Fuels.

Existing gas infrastructures of that type that are converted to vehicular gas other than that originally designed (for example, conversion of an infrastructure that vehicular natural gas to vehicular hydrogen exceeding the percentages of hydrogen authorised for natural gas networks) shall be considered as new installations and, therefore, the provisions of Chapter VI of this JTI shall apply to them.

For onshore pipelines and complementary facilities existing at the date of adoption of this Regulation, the sections indicated in relation to surveillance, inspection, operation and maintenance shall apply.

2. ADMINISTRATIVE AUTHORISATION

The infrastructures covered by this ITC shall follow the authorisation regime laid down in Law 34/1998 of 7 October.

Special works involving the crossing or passing of roads, watercourses, railways and bridges shall be carried out in accordance with the applicable regulations of the body concerned in order to carry out the work with the highest guarantees of safety and regularity of all services.



3. DESIGN AND IMPLEMENTATION OF FACILITIES

3.1. *General*

The infrastructure projects covered by this JTI must comply with the provisions of this Regulation and the technical rules included in addition to it.

The dimensioning of gas infrastructure shall take into account current needs and future demand forecasts for the area covered by the infrastructure.

The choice of materials shall take into account the physico-chemical properties of the gas, the service pressure, the allowable loss of load and the maintenance conditions, as well as any other material that could be significant for the safety of the installation.

When dimensioning the ditches provided for in the project, the necessary and sufficient space must be provided for the construction of the pipeline, the construction of the joints and the installation of the accessories. Where the nature of the land so requires, burials, embankments or other special means of protection shall be used. The bottom of the ditch shall be prepared in such a way that the tube has a firm and continuous support and is free of materials which could damage the pipe or its protection.

Pipe joints and tube fittings shall remain watertight and maintain uniformity of quality throughout the pipe in order to ensure its proper functioning at the maximum operating pressure for which the pipe is designed.

3.2. *Risk analysis and emergency plan*

An analysis and assessment of all risks generated by events associated with the integrity of the installation shall be carried out.

Such a risk assessment shall provide a measure, described as the product of the probability of a given event occurring and its consequences, which shall be taken into account for the design and mitigation of potential damage.

Similarly, on the basis of this risk analysis, the operator of the installation will draw up an emergency plan, which must have the necessary resources of its own or of third parties to mitigate the risks. The purpose of the emergency plan shall be to:

1. Protection of individuals.
2. Protecting the environment.
3. Minimisation of damage to installations.
4. Compliance with legal requirements.

The emergency plan shall be continuously updated and shall include at least the following:



- a) Description of the installations covered by the plan.
- b) Description of the different typologies of scenarios or incidents and possible emergencies.
- c) The organisation of human and material resources.
- d) The procedures for action, coordination and communication between the operators of the facility and the authorities involved for emergency care in the infrastructures that are part of it.
- e) Operational operating procedures, as well as default response for emergencies that may arise in order to be able to mitigate the consequences.

The legislation on emergencies and self-protection that may be applicable to installations must also be complied with.

4. DOCUMENTATION AND PUTTING INTO SERVICE

4.1. *Preliminary tests*

Prior to the commissioning of the installations covered by this JTI, the tests provided for in the various chapters of this JTI, as applicable, shall be carried out.

Without prejudice to the specific provisions laid down in each chapter, the strength or tightness tests may be carried out with water, air or other gaseous fluid appropriate to the test conditions. If the test is carried out with a gaseous fluid at a pressure greater than 1 bar, the presence of persons without a shield in the course of projections caused by any rupture of the piping not buried during pressure setting is prohibited until fifteen minutes after that pressure has been reached.

During the preparation and execution of the tests, the absence of outsiders in the work area must be ensured.

The operator of the installations shall inform the competent body of the Autonomous Community in which the installation is located or of the State, as the case may be, at least three working days in advance of the date and approximate time at which these tests will be carried out. Such communication shall be made by electronic means established by the competent body.

4.2. *Putting into service*

Prior to the commissioning of the facilities, the proper performance of the preliminary tests must be certified by means of a favourable document, which must be included in the works management certificate.

The operator of the installations shall communicate the results of the tests to the competent body of the Autonomous Community in which the installation is located or of the State, as appropriate, in accordance with the provisions of Article 11 of the Regulation.



Facilities may be put into service once the documentation referred to has been submitted to the competent body, without prejudice to the other safety requirements of other applicable regulations.

The commissioning of an installation shall be carried out by qualified personnel authorised by the infrastructure operator or the operator of the installation.

5. OPERATION AND MAINTENANCE:

The operators of these facilities shall have operating centres for their infrastructure, where they shall have the material and human resources necessary for the normal performance of their control and supervision activities.

Its main functions shall include, but are not limited to:

- a) Analysis of the quality of supply, in accordance with the technical management rules of the system.
- b) Control of gas infrastructure and monitoring of actions in the field, establishing the necessary mechanisms to control and maintain the quality of supply parameters within the appropriate margins.
- c) Establishment of the necessary communication procedures with the Control Centre of the Technical System Manager, as well as with distributors and marketers.
- d) Operational planning of the appropriate actions to ensure continuity of supply, taking into account the expected growth in demand for the following marketing year and specifying them in an operational plan.
- e) Planning and monitoring of actions to be carried out on infrastructure.
- f) Collection and analysis of the pressure records of the infrastructure, as well as the possible operational parameters from the facilities of which it is composed, verifying the good behaviour of the infrastructure. Operating centres shall be provided with infrastructure operational simulation tools.

The operator of the installations shall apply the operation and maintenance criteria in accordance with the provisions of this ITC which are appropriate from the point of view of public safety and with the minimum of service interruptions.

The operator of the pipelines shall regularly, and at least once a month, monitor the value of the actual gas pressure at the outlet of the pressure monitoring stations, mixing/injection stations, partitioning or measuring stations and compressor stations, which may be carried out with instrumentation connected to an automatic data acquisition and control system. Instruments shall be properly held.

They may also manage leak control through a risk assessment system based on data analytics of endogenous (construction and operational parameters) and exogenous (environmental and human activity parameters) variables and define the leak control frequency based on this system. A leak check of the



network in networks with a risk assessment system in place and where no risk assessment system is in place, watertight monitoring shall be required every 2 years for category 3a and 4a sites and every 4 years for category 1a and 2a sites.

The operator of the facilities shall maintain the surveillance of their complementary networks and facilities with specialised personnel. It shall also have the necessary emergency means to deal with any incidents or breakdowns that may arise in the normal course of its business.

The repair of leaks or breakdowns in additional networks or installations must be carried out by

trained staff, ensuring that there are no persons outside the service in the working area.

In order to ensure the safety and continued operation of the pipelines, the owner of the pipelines shall organise a maintenance service with the necessary staff and equipment to intervene urgently in the event of incidents and carry out any repairs with the least possible delay, supported by the Operation and Maintenance Management System.

Monitoring of cathode protection shall involve reviewing the protective equipment and monitoring the potential of piping in relation to the ground. Remote monitoring systems may be used for this purpose.

Both the systems associated with the installations (fire-fighting, electrical, heating, anti-intrusion, lighting, etc.) and the pressure equipment to which this ITC does not apply shall be governed by the various regulations applicable to them.

When extending the lifetime of a gas infrastructure, an assessment of that lifetime extension and an assessment of the current integrity of the infrastructure shall be carried out. For this purpose, as a general criterion, the criteria set out in reference GAS_046 of the table of standards shall be followed.

6. DECOMMISSIONING AND DISMANTLING

In accordance with Law 34/1998 of 7 October 2007, the closure of a facility requires an administrative authorisation to be issued by the competent administration, in which a decommissioning obligation may be imposed on its owner.

In that case, the installation must be decommissioned and physically isolated from the system. The abandoned pipeline or section must be previously inert in such a way as to ensure the absence of gas. In any case, the conditions laid down in the corresponding authorisations shall be taken into account. In the case of sections of pipeline to be decommissioned that cross infrastructure such as roads, railways, etc., they may be required to be filled with compact material so that in future they do not give rise to mechanical stability problems on the platforms on which they are built.



Commissioning and decommissioning must be carried out in accordance with the procedure set out in standard GAS_019 of the table of standards and must therefore comply with:

- a) Planning stage: a special operational procedure should be developed, describing the activities to be implemented at both operational and security level.
- b) Insulation: the installation shall be isolated from all sources of gas supply.
- c) Gas purge: the pipeline shall be scanned using one of the techniques described in standard GAS_019 of the standard table.
- d) Sealing of ends.

The temporary decommissioning of a pipeline must be notified to the competent body of the Autonomous Community in which the installation takes place or of the State, as the case may be.

The undertaking that owns the infrastructure must apply for authorisation for permanent decommissioning for technical or economic reasons by submitting the corresponding plan to the Administration that issued the administrative authorisation for commissioning, which may establish and establish the appropriate procedures.

The decommissioning of a pipeline may be permanent or temporary. In the case of permanent decommissioning, no additional activity shall be carried out, unless required by the authority concerned. In the event of temporary decommissioning, and for as long as the pipeline is in this situation, the integrity of the pipeline must be ensured, continuing with non-intrusive maintenance plans and the review of the facility's cathode protection system.

To bring a facility that has been temporarily taken out of service back into service, the procedure set out in standard GAS_019 in the table of standards shall be followed. Before such entry into service, it shall be verified that the work and tests carried out have been properly carried out, in particular those relating to welding, mechanical strength and leakproofness tests, coating and cathode protection.

CHAPTER II: GAS PIPES WITH MAXIMUM OPERATING PRESSURE EXCEEDING 16 BAR

1. PURPOSE AND SCOPE

The purpose of this chapter is to establish the essential technical requirements and minimum safety measures to be observed when designing, constructing, inspecting, testing, operating, monitoring and maintaining gas pipelines for maximum operating pressure above 16 bar.

The provisions of this Chapter shall apply to newly built gas pipelines as well as extensions and modifications of existing pipelines that simultaneously fulfil the following conditions:



- a) Pipeline gas is included in the scope of the regulation.
- b) The material constituting the tubular elements is steel or another material the characteristics of which satisfy the conditions laid down in paragraph 2.6 of this Chapter.
- c) The maximum effective operating pressure exceeds 16 bar.

The provisions of this chapter do not apply to facilities ancillary to the pipeline such as pressure monitoring stations, mixed-injection or measuring stations, compressor stations or separation stations.

2. DESIGN AND IMPLEMENTATION OF FACILITIES

2.1. *Layout and location*

The choice of route will take into account the forecast demand, the characteristics and conditions of the terrain where the pipeline will be located and the other circumstances specific to each project, optimising the routes of the main arteries.

Pipelines shall be buried, except in the cases listed in paragraph 2.3, which may be installed

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outdoors.

The siting and categorisation of pipelines shall be carried out in accordance with reference GAS_032 of the table of standards. Safety zones and design factors shall be in accordance with GAS_033.

Gas pipes with a maximum operating pressure greater than 16 bar shall not, as a general rule, be located in an area with category 4 as defined in reference GAS_032 of the standard table. Where they are located in this area, the integrity of the pipeline must be ensured in accordance with the surrounding conditions.

Devices shall be provided to limit the pressure in the piping to the maximum authorised service values. These devices shall normally be located at the entrances to the relevant network, at compressor stations, storages, pressure monitoring stations, mixing/injection or measuring stations, separation stations, etc.

2.2. Arrangement of valve positions

Sectioning valves shall be fitted to divide pipes into sections at intervals not exceeding the values given in the following table:

Site category	Maximum spacing (km)
1	30
2	20
3	10
4	5



In addition, the volume of gas between two consecutive valves shall not exceed 700.000 m³.

The following additional constraints shall be taken into account:

1. For a category 1 site, the gas volume may be up to 2 000 000 m³, provided that safety in the operation of the pipelines is increased by remote information system with alarm warning for leakage detection and automatic or remote valve actuation from a permanently attended site or by equivalent safety measures, which shall be justified in the relevant design.
2. For hydrogen piping, the spacing between shut-off valves may be modified, provided that the safety of the infrastructure is ensured by an appropriate study.

Devices shall be provided to enable gas to be recovered from the transmission section between two shut-off valves and evacuated to the atmosphere under safe conditions. The location, size and capacity of such devices shall be such that gas can be extracted quickly and safely.

For safe operation, valves shall be installed on the shunting lines. The valve shall be installed as close as possible to the main line.

When fixing the position and spacing between the shut-off valves, the following points shall be taken into account considering the whole position of the valves, i.e. the pipeline shut-off valve itself plus the valves that are part of the shut-off and shut-off/injection node:

- a) Working pressure and pipe diameter.
- b) Number and type of supplies that will be affected by any disconnection.
- c) Special local conditions (account shall be taken of the non-duplication of valves by way of sectioning, shunting, passing special crossings or similar cases, suitably spaced).

Sectioning and shunting valves may be installed overhead or buried or in shells, prioritising the first two. The valves, as well as the pipe adjacent to them, shall be properly supported in order to maintain their alignment with adjacent conducting sections, even in the event of settlement.

The shut-off, shunting and venting valves shall be located in easily accessible locations in order to minimise the intervention time and shall be adequately protected from damage and handling by unauthorised personnel. The operating mechanism for opening and closing the valve shall be easily accessible to authorised personnel.



2.3. Burying depth and protections

Buried pipes shall be so designed that the distance between the upper generatrix of the pipes and the surface of the ground, referred to as the normal depth of burial, is sufficient to protect the pipe from the external mechanical stresses to which it is subjected, due to the loading of the ground and the traffic.

The normal burial depth of the pipes shall be at least 1 metre, except in exceptional circumstances where this is not possible.

Under the railway tracks, the burial depth shall be at least 1 metre, although the depth shall be adjusted in accordance with the applicable regulations of the organism concerned.

Where the pipeline is buried close to other underground works or pipelines, except in exceptional circumstances where this is not possible, a distance of at least 0.40 metres at the crossing points or 0.50 metres on parallel routes shall be provided between the nearest parts of the two installations.

Wherever possible, these distances shall be increased, particularly in the vicinity of major works, so as to reduce the risks inherent in carrying out repair and maintenance work on the neighbouring works for both works.

Where, for justified reasons, the depths specified in this paragraph cannot be complied with and the pipe has not been calculated to withstand the external mechanical stresses to which it will be subjected, protective devices shall be placed between the pipe and the surface of the ground such as to reduce the loads on the pipe to values equivalent to those of the depth originally laid down (for example, by concrete slabs, metal plates or equivalent protective systems).

Where, for justified reasons, the minimum distances between services set out in this paragraph cannot be maintained, elements shall be inserted between the two services to maintain the safety of the pipeline (e.g. screens made of HM-20 concrete or other structurally resistant materials, protecting the pipeline with anti-theft coating, filling with terrain bags, etc.).

The design of pipelines should take into account external loads that may occur on the pipeline, according to environmental characteristics and working conditions, such as, but not limited to:

- a) Live loads, such as the weight of natural gas (considering for the calculation the weight of water), snow, ice and wind, among others.
- b) Cyclic vehicle traffic loads.
- c) Dead loads, such as pipe own weight, coatings, fillings, valves and other unsupported fittings.
- d) Efforts caused by mishandles.
- e) Vibration or resonance.



- f) Efforts caused by settlements or collapse in regions with unstable soils.
- g) Contraction and thermal expansion effects.
- h) Movement of equipment connected to the duct.
- i) Efforts caused by river or pluvial currents.
- j) Efforts made at crossings with communication routes.

At crossings with railways and roads with heavy traffic, the pipeline must be protected by a casing made up of another pipe with a larger diameter which is resistant to the stresses to which it will be subjected.

The ends of the cladding shall be hermetically sealed and shall be fitted with two aeration and venting tubes with outlets arranged in such a way that ingress of water and dirt is not possible and the risks of ignition of the air-to-gas mixtures are minimised.

Alternatively, the space between pipes may be filled with a cement – bentonite mixture to isolate the piping from the outside.

Where the terrain so permits, crossings may be made without cladding, provided that the designer justifies that the pipe has been dimensioned to withstand external actions and that the lining of the duct does not suffer during the construction of the pipe.

If pods are used, the burial depths given above shall be measured from the protective cover generatrix.

Open-air pipelines (overhead pipelines) may be installed in desert, marshy or mountainous regions, where the ground is permanently frozen, in areas likely to be affected by ground movements or landslides, at the crossroads of hydrographic obstacles, as well as to clear factory works (dykes, bridges) or other similar cases.

In the case of projects for the construction of overhead pipelines, the anchors, supports and the pipeline itself must be calculated taking into account the forces, longitudinal and transverse (wind, temperature variations, snow, etc.), which act simultaneously on the pipeline. Piping close to traffic routes must be protected against the possible impact of vehicles running on them.

When passing through hydrographic obstacles, swampy or floodable land, poorly soiled land or mudflats, the stability of the piping at the fixed level shall be ensured and the piping shall not be able to climb towards the surface of the ground or float by means of anchoring or ballasting.

Where necessary, elements limiting the transmission of vibrations and pulsations to the piping system shall be installed upstream and downstream of each compressor.

Where the piping is installed underwater or below the water table, precautions shall be taken to ensure that any currents do not alter the safety conditions; and



stability required for channelling. Crossings with water courses shall be marked by means of the corresponding milestones. In any case, the competent body shall be the one that establishes the technical and administrative constraints for carrying out the cross-check.

2.4. Protection against external corrosion

Underground piping must be protected against external corrosion by means of a continuous coating on a high-density or similar trilayer of polyethylene in such a way that the electrical resistance, metal adhesion, air and water impermeability, resistance to soil chemical agents, plasticity and mechanical strength satisfy the conditions to which the piping is subject.

Immediately before the pipe is dipped, the condition of the casing shall be checked by a soak jump dielectric stiffness detector at least 10 kV or other similar procedure.

At points in the network where metal protective casings or tubes are used, perfect electrical insulation shall be ensured between the duct and the protective casing. The pod may be provided with a cathode protection system that meets the regulatory requirements referred to in this paragraph.

Aerial ducting parts shall be protected against external corrosion by painting, metalising or other appropriate means.

In addition to the external coating, all buried pipes shall be fitted with a cathode protection system meeting the requirements of references GAS_036, GAS_037 and GAS_043 of the standard table.

In cases where stray currents are expected, whether due to proximity to railway lines or other causes, special measures must be taken for the cathode protection of the pipeline, according to the requirements of each case. To this end, the recommendations in references GAS_040 and GAS_045 of the table of standards must be followed.

In cases where the risk of corrosion by alternating current is anticipated, special measures shall be taken on the piping and on the cathode protection system, or by installing mitigation systems according to the requirements of each case. To this end, the recommendations in references GAS_044 and GAS_051 of the table of standards must be followed. Where the pipeline is close to high-voltage installations and it is expected that unacceptable momentary conductive and inductive influences may exist, appropriate mitigation measures shall be taken.

The design of the cathode protection system shall take into account sections where the conduction is installed underwater or underwater.



2.5. *Protection against internal corrosion*

For the purposes of this Chapter, a non-corrosive gas is one which meets at least one of the following conditions:

1. The dew point of the gas is below the piping temperature, throughout the operating period and at all points in the piping.
2. Their physico-chemical properties are similar to those of a gas which has not exhibited appreciable corrosion, under similar conditions and for a period of at least five years.
3. Their non-corrosive character has been established by tests determined by the competent authority for industrial safety.

Although the gas transported is a non-corrosive fluid, it is advisable to internally paint the piping using an epoxy paint system that is shown to be suitable for the gas transported.

If, in accordance with the above, the gas is considered corrosive, it shall be subjected, before being admitted to the piping, to an appropriate treatment to eliminate its corrosive character. If it is not advisable or possible to avoid corrosivity, this characteristic must be taken into account in the design of the pipelines by incorporating at least one of the following solutions:

- a) Protect the inner surface (tubes, joints) from piping by painting or coating that is resistant to corrosive gas action.
- b) Increase tube thickness depending on gas attack on pipe material and estimated pipeline life years.
- c) Dosing inhibitors in the mass of the gas.

In any case, corrosion control test pieces or other suitable devices shall be installed to determine the effectiveness of the measures taken to minimise internal corrosion.

Devices that can be used to measure internal corrosion or inhibitor efficiency include hydrogen probes, corrosion probes, test pieces with weight loss, test impellers and non-destructive test equipment capable of indicating wall thickness loss.

2.6. *Materials*

Carbon steel shall normally be used for the construction of pipelines covered by this Chapter. In any case, the materials used must ensure adequate mechanical resistance to internal pressure and external loads and a level of safety equivalent to that of steel in respect of any aspect regulated in this chapter.



The characteristics of this steel should be such as to ensure appropriate mechanical properties, as specified below and in function of the service (natural gas, hydrogen, biomethane, etc.) for which it is intended. Verification of these properties shall be carried out by means of tests carried out in accordance with the relevant technical regulations.

If materials other than steel are used in the manufacture of tubular components or any other material, special provisions shall be made to ensure, in the piping so constituted, under the same conditions of use (operating pressure, category of location, nature of the work or other) and having regard to the methods of construction involved, a level of safety at least equal to that which would result from the use of steel.

2.6.1. Tubes

The calculation of the thickness of steel pipes shall be made in accordance with reference GAS_014 in the table of standards.

The maximum allowed working design factors shall be in accordance with references GAS_032 and GAS_033 in the standard table.

The maximum permissible lateral voltages for tube metal shall be fixed as shown in the table below according to the yield strength and the location categories defined in reference GAS_032 of the standard table.

Site category	Design factor	Corresponding value of maximum permissible transverse voltage (δ_e)
1	0,72	$0,72 \times \delta_e$
2	0,60	$0,60 \times \delta_e$
3	0,50	$0,50 \times \delta_e$
4	0,40	$0,40 \times \delta_e$

Note:

1. For the application of these provisions, the management plans in force at the time of calculating the pipeline shall be taken into account.
2. ΔE = Specified minimum elastic metal limit, at design temperature, in N/m^2 (MPa), determined according to references GAS_042 and GAS_047 in the table of standards or other recognised standards ensuring similar minimum safety conditions.
3. For hydrogen service, the design factor shall not exceed the value recommended in GAS_014.

The chemical composition of the steel must be such as to ensure good weldability on site.

The chemical composition of the steel, the processes to which the raw material has been subjected and the shape of the tube must be such as to ensure adequate tenacity at the temperature of the piping.



The tubes can be seamless (SMLS), welded without high frequency induction material input (EW-HFW) or welded with material input (either longitudinal SAWL or helicoidal SAWH).

In the case of welded tubes, the strength of the welded tube must be equal to or greater than that of the base metal of the tube.

Tubes shall be in accordance with technical specifications describing the quality and properties of the base material, the manufacturing process of the tubes, dimensional tolerances, permissible defects and the tests, tests and controls to be carried out on the base metal, work-in-progress and finished products. Those specifications shall also describe the conditions of receipt and marking.

References GAS_042 and GAS_047 in the table of standards or other recognised standards guaranteeing similar minimum security conditions shall be adopted as the basis for these technical specifications.

The construction of the pipeline must be carried out in suitable and suitably equipped facilities in accordance at least with references GAS_042 and GAS_047 in the table of standards or other standards of recognised standing that guarantee similar minimum safety conditions.

All pipes shall undergo the factory inspections provided for in the technical specifications referred to above, which must include at least:

1. Inspection by an appropriate non-destructive procedure (for example: ultrasound, induced currents, magnetoscope), which checks that there are no internal defects and no rolling defects in the base metal. This control is not required for tubes having a transverse working voltage, calculated at the maximum operating pressure, equal to or less than 20 per 100 of the yield strength and a nominal diameter equal to or less than 200 mm.
2. Non-destructive inspection of welding, if any, over its entire length by an appropriate procedure, such as ultrasound, magnetoscopy, X-ray, gamma-ray or other.
3. Non-destructive tests carried out by volumetric methods on the welding of the tube (if any) at both ends, in order to detect defects which are not tolerated from a safety point of view. This control is optional for electrically resistance-welded tubes.
4. Hydraulic test which subjects the material to a transverse voltage between 95 per 100 and 100 per 100 of the specified minimum yield strength. In the case of tubes with a diameter of 200 mm or less, the test pressure may be reduced to that corresponding to the transverse voltage of 60 per 100 of the specified minimum elastic limit provided that the transverse voltage caused by the maximum operating pressure does not exceed 20 per 100 of the elastic limit.



The test time shall be in accordance with the specifications used and may in no case be less than five seconds.

The factory test pressure shall be calculated as indicated by the corresponding design and manufacturing code of the pipe.

The relative elongation of the metal of the tubes shall not be less than the value determined in the standard used as a basis for the technical specifications.

The ratio between the elastic limit and the breaking strength of the pipes must be equal to or less than that indicated in references GAS_042 and GAS_047 of the table of standards (the one

applicable to the manufacture of the pipe) or other recognised standards guaranteeing similar minimum safety conditions.

The checks and tests relating to the determination of the relative elongation, the elastic limit and the breaking strength of the metal of the pipes shall be carried out as indicated in the standard used as a basis for the technical specifications.

Fracture tenacity may be determined by strength tests or by another appropriate procedure, it being compulsory to determine this tenacity in tubes operating at voltages higher than 20 per 100 of the yield strength, and shall be carried out at 0 °C in accordance with a recognised standard. These tests may be carried out at a lower temperature if so agreed for the project in question, but in that case at least the same required tenacity values for 0 °C must be obtained.

The manufacturer of the pipes shall issue certificates stating:

5. Material quality (chemical composition, mechanical characteristics, dimensional tolerances and permissible defects).
6. Manufacturing procedure and acceptance rules for welding in the case of welded tubes.
7. Checks, tests, trials and their results carried out by the manufacturer in order to ensure a quality appropriate to the use required under this JTI.

These certificates must make it possible to ascertain the characteristics of each supply.

If materials other than steel are used in the manufacture of tubular components, special provisions shall be made to ensure that the pipes so constituted, under the same conditions of use (operating pressure, category of location, nature of the work or other) and taking account of the relevant methods of construction, are at least as safe as would be the case with the use of steel.

2.6.2. Valves and other auxiliary elements and accessories

Valves shall comply with reference GAS_048 of the table of standards or other recognised standards ensuring similar minimum safety conditions. Your body



it shall always be made of steel which can be easily welded on site in cases where the joint with the piping is made by welding.

The other auxiliary components (filters, siphons, scrapers, pressure limiting devices, etc.) and accessories (shapes, flanges, etc.) shall be made of steel; this material shall be readily weldable on construction site in cases where the pipe is joined by welding.

Other auxiliaries and accessories shall preferably comply with a recognised standard defining their main characteristics and the tests to be carried out.

Where valves, other auxiliaries and accessories do not conform to a recognised standard, the manufacturer shall demonstrate by calculation or testing of a prototype that the material of the body works with a safety level equal to or higher than that required for the tubular elements of the piping and that it fulfils the specific intended function. In such cases, the body of the prototype shall

be subjected to a hydraulic test carried out by the manufacturer at a pressure of 150 per 100 of the maximum operating pressure.

All fittings shall be subjected to at least one non-destructive test (ultrasound, radioscopy, magnetoscopy, penetrating liquids), except for fittings with a nominal diameter of 200 mm or less, which shall be checked by sampling. This test must also not be carried out on flanges that comply with recognised standards or on a tube that has passed the tests as a piping material and undergoes a curving process to be used as an accessory in the installation.

In the case of auxiliaries, they shall be hydraulically tested at 150 per 100 of the maximum operating pressure. If this test may adversely affect the internal organs of the auxiliary component, the test shall be carried out only on the body of the auxiliary component.

All welds in auxiliaries or fittings shall be inspected by some non-destructive method (ultrasonic, radioscopy, magnetoscopy, penetrating liquids or equivalent).

The manufacturer shall issue certificates for the auxiliaries or accessories supplied by him stating that the characteristics of the materials and the tests to which they have been subjected are appropriate for the use required under this Chapter.

Pipes with a pressure greater than 60 bar of effective pressure must be designed and constructed to permit the passage and execution of internal inspections using instrumented devices.

Exceptions are made for diameters for which no such instrumented devices exist, direct lines, as well as pipes in compressor stations and in pressure monitoring stations, mixed-injection or measuring stations and separation stations.



Supports and anchors in an exposed pipe must be constructed of durable, non-combustible material and designed and installed to prevent decoupling and allow the pipe to expand and shrink freely, ensuring the condition of the service.

If materials other than steel are used in the manufacture of valves and accessories, special provisions shall apply in order to guarantee the performance to which the use of steel would give rise.

2.7. Construction

The assembly of the various components of the piping (pipes, fittings and auxiliaries) during the construction of the piping shall preferably be carried out by means of butt welding.

The mechanical characteristics of the welding must not be less than those of the metal of the tubes.

Welding procedures (type and diameter of electrodes, number of passages, current intensity, etc.) shall be approved according to reference GAS_052 of the table of standards or other standards of recognised standing ensuring similar minimum safety conditions.

Welders must be suitably qualified and trained in accordance with reference GAS_053 of the table of standards or other recognised standards ensuring similar minimum safety conditions.

Flange joints shall be limited to the connection of certain special parts or appliances (insulating joints, pressure relief devices or similar accessories, and in particular cases valves).

Threaded joints shall be limited to attachments of auxiliaries with diameters less than 40 mm.

The materials used in the manufacture of joints must be sufficiently resistant to the physico-chemical properties of the gas carried and any condensates contained therein and must ensure that their initial sealing qualities are preserved.

Butt-welded joints shall be checked by means of non-destructive volumetric tests (radiography or ultrasound) in a ratio of 100: 100 and over their entire length.

Where volumetric tests are not possible on butt welds, they shall be replaced by appropriate non-destructive tests.

Welds which are not butted shall be checked by an appropriate non-destructive procedure.



All joint welds shall be visually inspected.

The acceptance criteria for non-destructive tests shall be in accordance with reference GAS_054 in the table of standards.

Alternatively, the user may specify other Technical Critical Assessment (ECA) methods based on documented Function Suitability Estimates (FFS) according to reputable international standards (ASME, BS, etc.) or appropriate tests.

For non-destructive tests not included in reference GAS_054 of the table of standards, the criteria included in the relevant reference standard shall be considered.

Changes of direction of the pipeline may be made using:

- a) Curves with a large radius of curvature, greater than 20 times the external diameter of the original pipe, drawn from straight curved (not folded), factory-worked (cold or hot curved) or worksite (cold curved only) tubes.
- b) Factory-produced curves with a small radius of curvature.

Curves with a large radius of curvature worked at the factory or on the site from straight pipes which have satisfied the tests prescribed in paragraph 2.6.1 above shall be exempt from further tests.

Factory-produced curves with a small radius of curvature shall meet the requirements of paragraph 2.6.1.

The use of welded curves of straight elements is not permitted.

When a drill is carried out, both in a new installation and in a pressure line, the attachment area

must be reinforced in accordance with reference GAS_049 or GAS_050 of the table of standards or other rules of recognised standing ensuring similar minimum safety conditions.

The bottom of the ditch shall be prepared in such a way that the tube has a firm and continuous support and is free of materials which could damage the pipe or its protection.

The same consideration shall be given to filling materials which may come into contact with the pipe.

Once installed in the trench and before carrying out the acceptance tests, the inside of the pipe shall be carefully cleaned and any foreign body removed from the pipe.

The monitoring and control of the installation of the pipes, the performance of the joints and the tests and trials to be carried out shall be carried out by the owner of the gas infrastructure or by a specialist company designated by him.



Based on the assessment of the probability of corrosion, a temporary cathode protection system may be required to be installed when the ducts are buried and prior to the activation of the main (permanent) cathode protection system.

2.8. *Other features*

2.8.1. Trace marking

In areas of site category 1 and 2, the alignment of the pipeline shall be indicated by indicating poles or other similar system. In site category 3 and 4 areas it shall be sufficient to install an appropriate system to indicate the existence of the buried gas pipe.

2.8.2. Protection of accessible parts

All accessible parts of the pipeline shall be protected against tampering by personnel external to the person owning the infrastructure.

In the case of protection by fencing or nearby, the height shall be not less than 3 metres and the distance to the point nearest to the installation shall be not less than 2 metres.

2.8.3. Fire protection

The emergency plans provided for in Chapter I, paragraph 3.2, of this ITC must cover the fire-fighting extinguishing elements existing in the installations.

The contingency plan shall indicate the required training and training for intervention teams. Practical drill exercises will be carried out to verify the effectiveness of the plan and the means envisaged.

For interventions in the network with possible gas outlet, the person owning the infrastructure shall take the necessary precautionary measures, such as detection of gas presence, signalling and control of the work area, removal of potential ignition sources not strictly necessary for the intervention or having specific extinguishing equipment available at the workplace to minimise the

risk of fire or explosion arising from the possible presence of gas.

2.8.4. Special locations

In the case of infrastructure running parallel to or in the vicinity of pipelines, high-voltage power lines, telephone lines, railways, roads or the like, watercourses and water infrastructures, mining operations, etc., the additional precautions deemed necessary by the competent body of the Administration must be taken to ensure that the gas pipeline can be laid, repaired or replaced without



interrupt the other service and minimise the risks that may exist in such operations.

3. IN-SERVICE AND COMMISSIONING TESTS

3.1. *On-the-job tests*

Before being put into service, the pipeline shall undergo the tests defined in this paragraph, either in its entirety or in sections.

3.1.1. *Mechanical strength test*

A mechanical strength test shall be carried out under the conditions set out in the following table, according to the site category established in the pipeline project:

Site category	Test fluid	Proof Pressure	
		Minimal	Maximu
1	Water	1,1 MOP	PPF
	Air	1,1 MOP	1,1 DP
	Gas	1,1 MOP	1,1 DP
2	Water	1,25 MOP	PPF
	Air	1,25 MOP	1,25 DP
3	Water	1,5 MOP	PPF
4	Water	1,5 MOP	PPF

Where

MOP: Maximum operating pressure.

DP: Design pressure (or calculation pressure).

PPF: Factory test pressure.

As a particular requirement applicable to hydrogen pipelines, the tests shall be carried out at a minimum pressure of 0,15 times the design pressure (DP) plus the maximum incident pressure (MIP) $[0,15 \times DP + MIP]$ for site categories 1a and 2a, and at a minimum pressure of 1,5 times the MOP for categories 3a and 4a.

By way of exception and subject to the express authorisation of the competent body, where appropriate, the provisions of this table relating to categories 3 and 4 shall not apply in any of the following cases:

a) If, at the time of the stress test:

1. The soil temperature at the depth of the pipeline was less than or equal to 0 °C or could fall to that temperature before the end of the test.



2. Not enough water of satisfactory quality is available.

- b) If the relief of the region crossed is such that carrying out the hydraulic test would require the piping to be divided into an excessive number of sections.

In such cases, the endurance test shall be carried out with air at a pressure of 1,1 times the maximum operating pressure.

All stress tests, without exception, shall last for six hours from the moment the test pressure has stabilised.

3.1.2. *Leakproofness test*

Where the strength test has been carried out with water, the leakproofness test shall be carried out either with air or gas at a pressure equal to or greater than five bar or with water, in which case it shall be carried out at the test pressure laid down for the mechanical strength tests carried out with water in the relevant category of location (table in paragraph 3.1.1.).

Where the strength test has been carried out with air or gas, the leakproofness test shall be carried out with the same fluid at a pressure as close as possible to, and not more than 1,1 times, the maximum authorised operating pressure.

In any case, the duration of the test shall be at least 24 hours from the time of stabilisation of the temperature of the fluid.

Piping may only be brought into service if the strength and tightness tests have been satisfactory.

3.2. *Putting into service*

Where technically necessary, the piping shall be dried before it is put into service.

If toxic, flammable or otherwise dangerous fluids are used for cleaning or drying pipes, all precautionary measures recommended by the supplier shall be taken in order to avoid their specific risks to the installation itself, to persons, to the environment or to external properties.

Where gas is filled from the piping, this shall be done in such a way as to avoid the formation of an air-to-gas mixture between the flammability limits of the gas. To this end, gas shall be introduced into the end of the piping at a rate which reduces the risk of flammable mixture in the contact area or the two fluids shall be separated by an inert gas cap or purge piston.

In piping to be designed and constructed to permit the passage and execution of internal inspections by means of instrumented devices as reflected in paragraph



3.2.1. an internal inspection shall be carried out, where technically possible, on the relevant pipeline section, confirming the appropriate operational conditions, using smart tools that allow both manufacturing or construction anomalies to be identified and a baseline for subsequent inspections to be established.

Commissioning of the cathode protection system should take place as soon as possible after burial of the pipeline.

The commissioning must result in a fully functional cathode protection system that can be used as a reference for monitoring and inspection.

A commissioning report should describe the results of the measurements, all changes made to the designed equipment and all elements that are useful for the subsequent evaluation of the effectiveness of the cathode protection.

4. OPERATION AND MAINTENANCE:

4.1. *Enforcement – general*

The owner of the infrastructure shall establish in writing or in a computerised management system an operation, maintenance, monitoring, inspection and control plan in accordance with the provisions of this ITC.

The owner of the infrastructure shall have the human and material resources, owned or contracted, to enable it to carry out properly the operation, maintenance, surveillance, inspection and control of the installations in accordance with the provisions of this ITC. A part of these activities may be carried out remotely by means of a supervisory control and data acquisition system (SCADA).

The operator of the infrastructure shall take the necessary precautions and measures to ensure the safe operation of the pipelines:

- a) Monitoring their condition.
- b) Carrying out systematic leak review campaigns.
- c) Monitoring in the most appropriate way (not necessarily continuous), verifying the levels of methane emissions in the different infrastructures and establishing appropriate repair schedules.
- d) Carrying out maintenance in a safe and efficient manner.
- e) Efficiently and responsibly controlling incidents and emergency situations.

4.2. *Monitoring, review and control*

The operator of the infrastructure shall have a monitoring, control and review programme, which may be managed through a risk assessment system based on:



data analytics of endogenous variables (construction and operational parameters) and exogenous variables (environmental and human activity parameters) appropriate to the existing conditions of the entire route through which the pipeline runs in order to identify signs of leaks, construction activities and other factors that could affect safety and operation, in accordance with the following paragraphs.

A review of the site category shall be carried out every 10 years, on which the monitoring, review and control frequencies set out in this paragraph shall be adapted.

Two types of eye surveillance of the piping shall be carried out. A general, called type A, whose primary purpose is to identify external actions that may affect the network, and a more detailed, called type B, whose primary purpose is to examine the network in order to identify possible anomalies.

Type A surveillance is intended to monitor the general condition of the route so that the entire route is observed. It may be carried out by aerial, satellite, land vehicle, walking or a combination of these means, so that the entire route is observed.

The purpose of type B surveillance is to monitor the condition of the track and to ensure that it is accessible by means of a direct review of the track. It shall be carried out on foot or on any other vehicle which allows the vehicle to travel directly on the trace and at a maximum speed which guarantees the quality of the surveillance.

Both surveillances may be carried out using any mobility or monitoring technology that ensures the same objective and degree of surveillances.

The leak review shall be performed with a flame ionisation detector or other equally effective systems. If gas is found to be present, in order to ensure the safety of the environment, it shall be checked again with other, more sensitive scales and even with an explosimeter if deemed appropriate.

The default frequencies for surveying and leak checking are as follows:

Last site category review	1	2	3	4
Type A surveillance	Every six months	Every six months	Every three	Every three
Type B surveillance	Each year	Every six months	Every six months	Every six months
Leak review	Every 4 years	Every 4 years	Every two years	Every two years



The frequencies described in the table above may be amended by those established by the owner of the infrastructure in the event that a risk model is available based on data analytics of both endogenous and exogenous variables present on the entire route along which the pipeline runs, including submerged areas. The relevant administration must be informed of this risk model.

In the case of non-pigable pipeline sections, provision should be made for regular monitoring of

casing failures at a frequency defined by the risk model, with a maximum interval of 10 years until a direct assessment of the anomalies detected is carried out on an intermediate basis.

Manoeuvrability shall be checked and any leakage from line valves shall be reviewed at least once a year.

The operators of the infrastructure shall regularly, at least once a month, monitor the value of the gas pressure in their networks. These measurements shall normally be carried out at pressure, mixed-injection, partitioning or measuring stations and at compression stations, and may be carried out using remote monitoring systems.

Monitoring of the channelling potential of the cathode protection system should be carried out on an annual basis and the protective equipment should be serviced every three months (performance check). The frequency of the checks and revisions indicated by the infrastructure operator may be reduced if the cathode protection system is controlled by remote surveillance, as set out in reference GAS_043 of the table of standards, provided that the number and distribution of remote surveillance facilities, as well as the monitoring and inspection plans carried out on the cathode protection systems of the various sections of the pipe, are sufficient to detect equipment failures or degradation of the effectiveness of cathode protection.

Monitoring, inspection and maintenance must be carried out in accordance with both validated procedures and procedures carried out by competent personnel in the field of cathode protection.

A documentary record shall be kept of the description of the results of the measurements, the relevant regulatory actions to achieve the necessary changes and all those elements that are useful for the subsequent evaluation of the effectiveness of the cathode protection.

The surface condition of all airborne parts and air-burial transitions of piping on 100 % of its surface shall be monitored at least every three years, with passive protection repaired if necessary.

Between the third month and the year of commissioning of the pipeline, a coating analysis should be carried out in order to detect possible defects caused during burial of the pipeline.



Any channelling section where anomalies have been detected (loss of material due to corrosion, rubbing, etc.) shall be assessed by applying suitability criteria for function (FFS) based on regulations or technical codes of recognised standing and international accreditation (ASME, API, BS, etc.). If as a result of the assessment the abnormality is not acceptable, the section shall be repaired, replaced or operated at a lower maximum operating pressure to meet the relevant suitability criterion.

4.3. *Interventions in pipelines*

Sections of piping which have deteriorated for any reason and have therefore become unsafe shall be repaired, replaced, decommissioned or operated at reduced service pressure in accordance with paragraph 4.2.

The operator of the network shall check the tightness of the installations as set out in reference GAS_014 of the table of standards, with systems proven to be effective in detecting, checking and finally repairing leaks.

Detected leaks shall be classified, according to their significance, into emergency intervention leaks, scheduled intervention leaks and progression monitoring leaks, according to the following factors:

1. Physico-chemical properties of the gas transported.
2. Operating pressure of installations.
3. Indications of leak detection system (not necessarily continuous).
4. Proximity of detected leakage to installations.

The documentation relating to these periodic checks shall be kept by the operator of the network, who shall keep it at the disposal of the competent body concerned.

In the event of a leak, the owner of the infrastructure must identify the temporary and permanent repair systems to be applied and the maximum time limits for action. In any event, the operator of the infrastructure shall take temporary measures in the event of leaks, imperfections or damage that compromise the necessary pipeline service if it is not possible to carry out a definitive repair when the failure becomes known.

As soon as possible, the operator of the infrastructure shall carry out the corresponding final repair for both emergency intervention leaks and all other leaks, whether from scheduled intervention or fugitive emissions.

Interventions in pipelines will be carried out with staff specialised in the type of operation to be carried out.

The materials used in pipeline interventions shall comply with the requirements set out in this JTI.



Final repairs to the pipeline shall be carried out by a means that guarantees the integrity of the pipeline for a period equal to or longer than the operational life.

In the event of a repair of a section of pipeline involving the replacement of existing pipeline and involving more welds than those required for insertion, the new section must have been previously tested in accordance with section 3 of this ITC.

Welds carried out in the repair shall be checked by non-destructive tests as indicated in paragraph 2.7.

Where operating personnel are required to work on piping sections that cross or approach a high-voltage overhead power line at a horizontal distance less than the height of the electrical cables from the ground, they shall be provided with statutory insulating garments or shall first ground the piping.

Where gas is emptied from a piping, precautions similar to those referred to in paragraph 3.2 shall be taken.

On pipeline sections requiring special maintenance work resulting from the identification of anomalies or incidents, the following shall be verified:

- a) Air sections:
 - i. Condition of mechanical protection of the pipeline.
 - ii. Painting and coating status of the pipeline.
 - iii. Conditions for pipe supports, if any.
 - iv. The inspection should be comprehensive, in particular in buried air transition areas.
- b) Watercourse crossings:
 - i. Stability of the fund and its margins.
 - ii. Condition of the pipeline and its cover.
 - iii. Verification of the effects of flooding on bottom and margin stability.
- c) Crosses with pods:
 - i. Integrity of the pod.
 - ii. Contact of the cladding with the tube.
- d) In areas at risk of slipping:
 - i. Inclinometers or other monitoring devices.
 - ii. Settlements due to mining activities or additional charges on the ground such as for the construction of motorways, railways, etc.

4.4. *Operation centre*

The operator of the infrastructure shall establish at least one continuously attended operating centre for the purpose of receiving warnings, both from own and external personnel, regarding anomalies, leaks or pipeline incidents. To this end, it shall notify the



public entities, emergency services (such as police or firefighters) and users shall establish the company's warning telephone number and shall establish outreach measures for the general public, such as warnings, indicators distributed along the route in site category 1 and 2 areas or other information systems through the usual media.

4.5. *Integrity management*

The owner of the infrastructure must develop an integrity management system for the pipelines according to reference GAS_038 of the Standard Table.

The integrity management system should identify the threats to which the different pipeline sections are exposed, and should include the following elements:

- 1. Identification of all areas with their associated threats.
- 2. Integrity condition assessment plans, including:
 - a) Identification of all the risks associated with the integrity of each section of the pipeline, including an assessment of the risk, timing of the assessment plans with a view to implementing and identifying both preventive and mitigating measures.

- b) Selected methods for assessing the integrity condition.
 - c) Planning and periodicity of the conduct of the various inspection and test operations related to the integrity condition.
 - d) Procedure to ensure that safety and environmental risks are minimised in the implementation of the plan.
3. Identification of the measures to be taken to correct the unacceptable integrity conditions, verified in the development of the assessment plans.
 4. Procedure for ensuring the incorporation of proposals for improvement.
 5. Identification of additional protection measures to be put in place to ensure the protection of sections with a high risk.

For the assessment of the integrity condition, the operator of the infrastructure may apply one or more of the following methods:

- a) Use of intelligent piping interior inspection tools with the capability to detect metal losses from external and internal corrosion, mechanical damage, cracks, construction or manufacturing anomalies, geometric deformations, etc.
- b) Mechanical strength tests, as set out in this JTI.
- c) Direct and indirect titration inspection methods with external corrosion detection capability, coating state, stress corrosion cracking, etc.
- d) Other methods based on inspection and testing techniques deemed appropriate for achieving the objectives to be achieved.



4.6. *Archive*

The operator of the infrastructure shall have at his disposal detailed map information of the installations, which shall be continuously updated.

It shall also keep up-to-date and archive during the period of operation the necessary documents relating to:

- a) Pipeline projects.
- b) Piping location plans.
- c) Administrative authorisation documentation.
- d) Projects for the authorisation of installations, including the results of in-service and commissioning tests (strength and leakproofness).

Similarly, the results of the last four surveillances, reviews and controls specified in section 4.2 shall be kept on file.

There shall be a temporary archive, for a minimum period of five years, of the interventions carried out for safety reasons, as well as the actions and means used in emergency situations.

Computer systems, paper format, or other systems of sufficient reliability may be used as means of information, recording or archiving.

CHAPTER III: PRESSURE MONITORING STATIONS, MEZCLA-INYECTION, MEASURED AND SEPARATION AND REVERSE FLOW INSTALLATION

1. PURPOSE AND SCOPE

This chapter applies to newly constructed pressure monitoring, mixing/injection, measuring and separation stations intended to operate at an inlet pressure greater than 16 bar. In addition, within the scope of this chapter are reverse flow installations, including compression equipment, which allow gas to be incorporated into a pressure network of more than 16 bar from a lower pressure network.

The design, construction and operation of pressure monitoring stations, mixed-injection stations, partitioning stations or measuring stations must be carried out in accordance with the most purified technique at the time, in particular with a view to ensuring the safety of persons and the preservation of the environment, as well as the safety of the vicinity of the station.

This Chapter deals exclusively with recommendations and measures relating to the specific techniques of the gas industry with a view to the safety of persons, the environment and the goods concerned.



In this regard, the design, construction and operation and maintenance of the facilities shall be carried out taking into account, as appropriate, references GAS_018, GAS_034 and GAS_039 in the table of standards.

2. DESIGN AND IMPLEMENTATION OF FACILITIES

2.1. *Layout and location*

Pressure, mixed-injection, measuring and separation monitoring stations covered by this chapter may be installed outdoors, in enclosed premises at ground level or underground. The location shall be chosen in such a way as to be easily accessible.

Outdoor stations, if located in areas accessible to the public, shall be surrounded by a metal wall or near metal wall at least 3 metres high.

The distance between any part of these stations and the fence or wall shall be at least 2 metres, although it shall be justified that this selected minimum distance guarantees the safety of persons and installations based on reference GAS_041 in the table of standards.

If the station is located in a location belonging to the owner of the infrastructure and is not accessible to the public, a free area of 2 metres in width shall be maintained around the station and no combustible material shall be located in that area.

If the station is located in a closed room, only the equipment necessary for the station's own operation shall be installed there.

In a surface pipe requiring access for maintenance, the lower part of the pipe must have a

minimum height of 0.65 metres above floor level and, in accordance with this height, construct the supports.

Each pressure monitoring station shall be required to have an emergency bypass, at least for networks with a maximum operating pressure greater than 60 bar.

In order to prevent the formation of explosive atmospheres by accidental accumulation of gas, the premises where pressure monitoring stations, mixing/injection, partitioning or measuring stations are located must have independent ventilation air inlets and outlets so that any gas/air mixtures can be scanned.

Consideration shall be given to the elements necessary to prevent the gas temperature at the outlet of the station from affecting the piping or its coating. Account shall also be taken of any gas or water condensation resulting from compression.



2.2. Devices for decommissioning

All pipes arriving at or leaving the pressure control station, mixing, measuring and separating must be capable of being isolated from outside the station and at a safe distance from it.

2.3. Technical rules for the establishment of gas pipelines

All pipes in pressure monitoring, mixing/injection, measuring and separating stations and connecting pieces to main pipes shall preferably be of steel and the transverse stresses due to internal pressure shall not exceed 50 per 100 of the elastic limit depending on the minimum thickness specified for the material.

If materials other than steel are used in the manufacture of tubular elements, small instrumentation, regulation and control ducts or any other, special provisions shall be made to ensure, in such installations, under the same conditions of use (operating pressure, category of location, nature of the work or other) and having regard to the methods of construction involved, a degree of safety at least equal to that which would result from the use of steel.

These materials must comply with a recognised standard such as UNE, UNE-EN, DIN, ISO, CEN, ASTM and others accepted by the Spanish authorities on the basis of equivalent safety criteria.

2.4. Miscellaneous pipelines

All pipes other than main gas pipes (in general, those connecting to shunting and control instruments) shall be designed, installed and tested in such a way that their level of safety is similar to that of the rest of the installation and they are fitted with shut-off valves to enable the instruments to be maintained without interruption in supply.

2.5. Corrosion and overpressure control

Steel pipes installed in the air inside stations shall be protected from atmospheric agents by painting, metallisation or other appropriate procedure. Once the station has been installed and put

into service, the status of the corrosion protection shall be reviewed at least once a year.

Each pressure control station, mixed-injection, measurement and partitioning shall be provided with safety devices to prevent the operating pressure from rising along the piping in the event of a failure of the pressure regulator, following the recommendations of reference GAS_018 of the standard table.



2.6. Evacuation of liquid products

Suitable liquid separators shall be provided where the presence of condensable vapours or liquid product stops is foreseeable under the pressure and temperature conditions considered, and in quantities likely to impair the proper functioning of regulators, meters and safety devices.

2.7. Dust evacuation

Suitable filters shall be installed where there is a possibility of accumulation of dust in quantities likely to impair the correct functioning of regulators, meters or safety devices.

2.8. Prevention of icing or hydration

Where there is a possibility of icing or hydrating, gas and anti-icing devices or other appropriate measures shall be provided. Where heat exchangers are used for the heating of gas, particular care shall be taken to prevent the penetration of gas into the heating device circuit.

2.9. Regulated access areas.

Smoking shall be prohibited in all areas of pressure monitoring stations, mixing, injection, partitioning or the extent to which a possible gas leak constitutes a risk of fire or explosion.

These areas and regulated access points must be duly signposted.

2.10. Electrical installation

All the electrical system located within the area classified as being at risk of explosion shall comply with the provisions of Instruction ITC-BT-29 of the Low-Voltage Electrotechnical Regulation, approved by Royal Decree 842/2002 of 2 August.

In order to prevent the creation of static electricity sparks, all metallic parts of the station shall be bonded to earth and electrically insulated from the inlet and outlet pipes of the station in order not to disturb the sputtering protection of the network.

2.11. Fire-fighting and other safety measures

The facility must have fire protection appropriate to the risk, in accordance with the provisions of Annexes I to IV to the Regulation on Fire Safety in Industrial Establishments, approved by Royal Decree 164/2025 of 4 March 2004.

At least the following fire-fighting means shall be installed:



1. Fire extinguishers: fire extinguishers shall be installed in such a way that the maximum horizontal travel from any point of the installation to the fire extinguisher does not exceed 15 metres.
2. Fire detection and alarm: a fire detection system shall be installed in the boiler room and control room. A fire control and alarm unit shall be provided.

Furthermore, regulating stations buried or located inside rooms must have a suitable gas detection system that allows the early detection of gas leaks inside the installation.

The evacuation requirements laid down in the regulations applicable to installations must also be complied with.

3. ON-THE-JOB TESTS

In general, a hydraulic test shall be carried out at a pressure of 1,3 times the maximum operating pressure. For hydrogen this pressure shall be 1,5 times the MOP.

If the hydraulic test cannot be carried out, the test shall be carried out with air or gas at a pressure of at least 1,1 times the maximum operating pressure.

In addition, a leakproofness test of 6 hours shall be carried out with air or gas at a pressure of at least 1,1 times the maximum operating pressure.

Equipment or accessories which cannot be tested on site must have been tested on the factory at a pressure equal to or greater than the above.

4. OPERATION AND MAINTENANCE:

The programmes established by the owner of the infrastructure, for the operation and maintenance of pressure monitoring stations, mixed-injection, partitioning or measuring stations must include at least:

- a) Inspection and periodic testing of safety valves.
- b) The maintenance and inspection of fire-fighting facilities in accordance with the Regulation on fire-protection facilities, approved by Royal Decree 513/2017 of 22 May 2007.
- c) Inspection of the conservation status of all elements of the station against corrosion.
- d) Functional testing of pressure control systems.
- e) Metrological checks of measuring equipment as set out in Chapter 2 of the Technical System Management Standards (NGTS).
- f) The other systems of these facilities shall be subject to the inspections and controls indicated in the relevant regulations.



- g) Compliance with maintenance programmes established in other applicable industrial safety regulations, such as pressure equipment, storage of chemicals, etc.

The frequency of these inspections and tests shall be at least once a year, except for equipment covered by specific regulations. In such cases, the periodicities indicated therein shall be taken into account.

This programme must be amended whenever operational experience so warrants or whenever changes to the operation of installations so require.

CHAPTER IV: COMPRESSOR STATIONS

1. PURPOSE AND SCOPE

This Chapter applies to compressor stations which are part of a main gas transmission network.

The design, construction and operation of compressor stations must be carried out according to the state of the art, with particular attention to ensuring the safety of persons and the environment, as well as the safety of the vicinity of the station.

This paragraph refers exclusively to recommendations and measures referring to the specific techniques of the gas industry, with a view to the safety of the persons and goods concerned.

In this regard, the design, construction and operation and maintenance of compressor stations shall be carried out taking into account reference GAS_035 of the table of standards.

2. DESIGN AND IMPLEMENTATION OF FACILITIES

2.1. Layout and location

The location of compressor stations shall be chosen in such a way as to be easily accessible.

Provision must be made around the pressurised parts of the compressor station, streets or a minimum space of 2 metres free, to allow machinery access in maintenance and emergency response.

Compressor stations shall be sufficiently distant from neighbouring properties which are not under the control of the person owning the infrastructure (or separated by a firewall) in order to minimise the risks of spreading a fire on the neighbouring property to the station. This distance must be at least 5 metres, 2 of which must be free in accordance with the previous paragraph and 3 of which must not contain flammable materials.



2.2. Construction of compressor station building

The compression station building housing gas pipelines or equipment containing gas shall be constructed of non-combustible materials and shall have at least two safety exits for each operating area, for basements if any, and for any passageway or platform 3 metres or more in height.

Individual access passageways to machinery shall not require both exits.

The maximum distance between any point in the service area and an emergency exit must not exceed 25 metres, measured along the axis of the corridors or access corridors to the machinery.

These emergency exits shall be provided with doors which are free of all obstacles and shall be so located as to provide adequate access to a safe area.

Door latches and handles shall be capable of being easily opened without locking from inside. All doors on an axle supported by an external wall shall open outwards.

2.3. Station ventilation

In order to avoid the formation of explosive atmospheres due to the accidental accumulation of gas, the premises where compressor stations are located must be well ventilated, with separate ventilation air inlets and outlets.

2.4. Fenced areas

Every vicinity which may prevent persons from leaving a gas compression station in the event of an emergency shall be provided with at least two doors. These doors shall be designed and located in such a way as to give the possibility of exit to a safety zone. Such doors situated 60 metres or less from a building or a compression station installation where an emergency situation may occur shall not be locked or shall be capable of being opened from inside without a lock.

2.5. Identification of valves and piping

The valves provided for in the event of an emergency and the control devices installed shall be clearly identified. Important gas pipelines shall be identified by conventional signs or colours indicating their function.

2.6. Fluid evacuation

Where condensable vapours or other products are expected to be present in the gas in sufficient quantities and in such a way that they can liquefy under the expected operating pressures and temperatures, the suction duct for each stage (or to each unit in the case)



centrifugal compressors) shall be protected by separators against draining liquids into the compressor.

Each fluid separator used for this purpose shall be equipped with manually operated devices to allow the evacuation of accumulated fluids.

Alternatively, automatic fluid drainage devices or automatic compressor shut-off devices or overlevel alarms shall be used where fluid tow may occur, including in compressors.

2.7. Technical specifications for the positioning of gas pipelines

Pipes in the compressor station (with the exception of instruments, controls and sampling) connecting the compressors to the main pipes, including the joints to these pipes, shall preferably be made of steel and the calculated transverse tension, for the internal gas pressure and the minimum wall thickness, shall not exceed 50 per 100 of the specified minimum elastic limit of the material. Any reduction in this yield strength due to an increase in the operating temperature shall be taken into account.

If materials other than steel are used in the manufacture of tubular elements, small instrumentation, regulation and control ducts or any other, special provisions shall be made to ensure, in such installations, under the same conditions of use (operating pressure, category of location, nature of the work or other) and having regard to the methods of construction involved, a degree of safety at least equal to that which would result from the use of steel.

These materials must comply with a recognised standard such as UNE, UNE-EN, DIN, ISO, CEN, ASTM and others accepted by the Spanish authorities on the basis of equivalent safety criteria.

2.8. Installation of gas pipelines

Gas pipes in compressor stations shall comply with the other sections of this ITC.

2.9. Miscellaneous pipelines

All pipes other than the main gas pipes (in general, those connecting to manoeuvring and control instruments) shall be designed, installed and tested in such a way that their safety level is similar to that of the rest of the installation, with locking valves being fitted to enable the instrumentation and measuring devices to be maintained without interruption of service.



2.10. Corrosion control

Steel pipes installed in the air inside stations shall be protected from atmospheric agents by painting, metallisation or other appropriate procedure. If the gas is corrosive, material capable of withstanding the action of the gas or protecting the inside of the tubes shall be used. Once the station has been installed and put into service, the status of the corrosion protection shall be reviewed at least once a year.

2.11. Compressor station equipment

Drainage devices for liquid or solid elements, such as liquid separators, unless they are constructed of internal circular seamless pipes and fittings, shall be constructed in accordance with the provisions of Royal Decree 809/2021 of 21 September. Separators constructed from seamless inner tube and fittings shall be so calculated that the transverse stress due to internal pressure and corresponding to the minimum wall thickness does not exceed 50 per 100 of the specified minimum elastic limit for the material.

The equipment for the operation of gas compressors may be electric motors, gas engines or gas turbines.

Air compressors and air storage containers must be constructed and equipped in accordance with the Pressure Equipment Regulation, approved by the aforementioned Royal Decree.

If dust accumulations are expected which may influence the correct operation of the compression station, separator filters shall be installed.

These filters must be wrapped in accordance with the rules laid down in the first paragraph of this section. In areas where there is a risk of explosion, electrical equipment and cables shall be installed in accordance with Royal Decree 681/2003 of 12 June. Places where an explosive atmosphere may occur shall be equipped with certified lighting, according to the relevant area classification, and other independent emergency power supplies which automatically supply the light required in the event of failure of the normal power supply.

2.12. Station emergency stop devices

Each compressor station shall be equipped with a device by which all gas compression equipment can be taken out of service in an emergency.

The station emergency stop device may be operated from any one of at least two operating points. They shall be located outside the station, preferably in the vicinity of the exit doors installed in the fences, but not more than 150 metres from the



station boundaries. Drainage pipes shall be conducted to a location where the evacuation of condensates does not create a danger to the compression station or the surrounding area.

The closing position of valves isolating the mains station shall be clearly indicated by the indicators on the valves.

2.13. Stopping machines in the event of speeding

Any machine operating a compressor, with the exception of induction or synchronous electric motors, must be fitted with an automatic device designed to cause the unit to shut down before the speed of the actuating machine or of the actuated machine exceeds the maximum safety level specified by the manufacturers of each of them.

2.14. Pressure limitation at compressor stations

Safety valves or other appropriate protective devices shall be installed at the station impulse to ensure that the pressure in the station network and in the equipment does not exceed the pressure expected in the design.

Purge piping installed to evacuate the gas by safety valves into the atmosphere and exhaust piping shall be directed to locations where the gas can discharge into the atmosphere without risk.

Compressor stations shall be provided with safety devices to prevent the pressure from

exceeding the maximum incident pressure (MIP) as set out in GAS_018 and GAS_035.

2.15. Safety during repairs

Provision must be made to prevent the accidental arrival of gas in machinery while maintenance work is being carried out on it or on machines operated by it.

Provision must also be made to prevent starting air or gas entering compression units while maintenance work is being carried out on these machines or on equipment operated by them.

2.16. Control of gas intended for combustion

An automatic device shall be provided for each engine or gas turbine whose function is to cut off the passage of gas when the engine or turbine is shut down.



2.17. Faults in cooling and greasing system

Gas compressors shall be fitted with stopping or alarm devices designed to operate in the event of failure of the cooling or greasing system.

2.18. Odourisation

The gas used for the needs of the compressor station itself shall be odourised as required by the relevant implementing legislation.

2.19. Fire-fighting and other safety measures

The facility must have fire protection appropriate to the risk, in accordance with the provisions of Annexes I to IV to the Regulation on Fire Safety in Industrial Establishments, approved by Royal Decree 164/2025 of 4 March 2004.

With regard to the design, installation, maintenance, commissioning and periodic inspections of active fire protection facilities, the provisions of the Regulation on fire protection facilities, approved by Royal Decree 513/2017 of 22 May 2004, must be followed.

Furthermore, compressor stations shall have an adequate gas detection system to enable the early detection of gas leaks within the installation.

The evacuation requirements laid down in Royal Decree 164/2025 of 4 March 2007 must also be complied with.

2.20. Storage of combustible materials

Smoking shall be prohibited in all areas of the compression station where the possible existence of a leak or the presence of gas constitutes a risk of fire or explosion.

These areas and all regulated access areas shall be clearly marked as “no smoking”. In areas where smoking is permitted, these should be indicated by a conspicuous indication.

The necessary protective measures against electric shocks to the atmosphere shall be taken in

accordance with the conditions of location and type of installation.

2.21. *Ventees*

Where the installation requires gas vents for starting a gas turbine, these shall be located in the part furthest from the enclosure and at least 25 m from compressors, electrical installations, overhead lines (aviation) or railways (rail) and ignition sources.



The vent height shall be calculated to ensure the correct diffusion of the gas into the air, avoiding the formation of gas clouds.

3. ON-THE-JOB TESTS

Gas pipelines within a compressor station shall be tested after assembly in accordance with this ITC. Exceptionally, piping elements or assemblies where it is not possible to verify the test after assembly may be tested before installation.

In general, a hydraulic pressure test shall be carried out after assembly at a pressure at least equal to 1,5 times the maximum operating pressure. The duration of this test shall not be less than 24 hours.

If the circumstances make the hydraulic test impossible, after informing the competent authority, the test shall be carried out with air or gas at a pressure at least equal to 1,25 times the maximum operating pressure.

4. OPERATION AND MAINTENANCE:

The programmes established by each person owning the infrastructure for the operation and maintenance of compressor stations must include at least:

- a) Inspection and periodic testing of safety valves.
- b) Inspection and periodic testing of fire-fighting equipment.
- c) Inspection of the conservation status of all elements of the station against corrosion.
- d) The actuating systems and compressors themselves shall be subject to functional inspections and checks in accordance with the maintenance plans established by the equipment manufacturer or the person owning the infrastructure. The frequency of such inspections and tests shall be appropriate to the operating hours. In the absence of an inspection plan, at least the reviews shall be annual.
- e) The other systems of these facilities shall be subject to the inspections and controls indicated in the relevant regulations.
- f) Periodic testing of gas leak detection systems and associated cutting equipment.

This programme must be amended whenever experience gained on the holding so warrants or whenever changes to the operation of the installations so require.

CHAPTER V: SUBMARINE PIPELINES (OFF-SHORE)

1. PURPOSE AND SCOPE

This Chapter applies to offshore gas infrastructure for a maximum operating pressure exceeding 16 bar.



For the purposes of this Chapter, the pipeline itself, the piston reception trap including its tubulids, the trap inlet bypass to the first cut-off valve, pressure balancing lines and venting lines shall be part of the underwater infrastructure. The following figure illustrates the constituent elements of the undersea pipeline.

2.



DESIGN AND IMPLEMENTATION OF FACILITIES

2.1. General

Infrastructure shall be designed to provide a secure and continuous supply of gas. The design shall take into account environmental and safety aspects of construction and operation.

The design design and choice of materials to be used in the construction of the infrastructure shall take into account, inter alia, the physico-chemical properties of the gas, the design pressure, the allowable loss of load and the operating and maintenance conditions of the installations.

Submarine gas infrastructure shall be designed and implemented in accordance with the requirements set out in reference GAS_055 of the table of standards and those related thereto.

The design should take into account all factors that may influence the pipeline, such as, but not limited to:

- a) Functional loads: weight, external hydrostatic pressure, hydrodynamic forces during installation, internal pressure, fluid temperature, wave, currents, platform movement, bed depth, etc.



- b) Environmental loads: wind, hydrodynamics, ice, seismicity, etc.
- c) Loads during construction: piling of pipes, loads during transport of pipes, static and dynamic loads during installation, hydraulic test, etc.
- d) Interference loads: impact of nets during trawling, etc.
- e) Accidental loads: extreme wave, boat impact, iceberg, infrequent internal overpressure, sea-bed movement, explosion, etc.

The premises shall be constructed under the responsibility of the operator using his own staff or staff from elsewhere, ensuring the safety of the staff involved in the work and taking appropriate precautions to avoid affecting other buried premises.

2.2. Layout and location

To select the route, inspections of the corridor and the surrounding seabed must be carried out to identify and locate geological characteristics, the presence of obstacles such as shipwrecks, etc. Once the route has been selected, meteorological data will be collected and the geotechnical study will be carried out.

Underwater gas infrastructure shall generally be buried only at coastal landing sites or in areas where particular environmental conditions so require.

Where appropriate, areas with limitations on fishing, anchoring and, in general, limitations on activities that may pose a potential danger to the safety of the installation may be agreed with the competent authorities.

2.3. Design manuals

The following manuals will need to be developed at the design stage:

- a) Contingency plan.
- b) Operation manual.
- c) Inspection and maintenance manual.
- d) Repair manual.

3. IN-SERVICE AND COMMISSIONING TESTS

3.1. Preliminary tests

Before the installation is put into service, stress and leakproofness tests shall be carried out and all those provided for in reference GAS_055 of the table of standards and those relating thereto shall be carried out in order to verify that the installation, materials and equipment comply with the applicable technical requirements, have been properly constructed and meet the leakproofness requirements.

During the preparation and execution of the stress and leakproofness tests, the absence of persons from outside the stress and leakproofness tests shall be ensured in the working area.



Once the tests have been completed with a positive result, their description and results will be included in the project management certificate, which will draw up the project management.

3.2. Putting into service

Only facilities which have passed the previous tests may be put into service.

Gas filling of the gas infrastructure shall be carried out in such a way as to avoid the formation of an air-to-gas mixture between the flammability limits of the gas in question (natural gas, biomethane, hydrogen, or mixtures between them). To this end, gas shall be introduced at a rate which reduces the risk of flammable mixture in the contact area or both fluids shall be separated by an inert gas cap or purge piston.

The process of purging an installation shall also be carried out in a controlled manner.

The commissioning of an installation shall be carried out by qualified personnel authorised by the owner of the infrastructure and with knowledge of the project management.

4. OPERATION AND MAINTENANCE:

The owners of the gas infrastructure shall apply the operating and maintenance criteria that are appropriate from the point of view of public safety, in accordance with the provisions and periodic actions set out in this chapter and in reference GAS_055 of the table of standards. These operations shall be the responsibility of the operator of the installation and shall be carried out by qualified personnel of the operator or others.

The owners of the infrastructure shall make a copy of the operating procedures of the operating centres and emergency response centres actually established available to the management body responsible for industrial safety of the competent ministry and to the competent body of the Autonomous Community that issued the administrative authorisation for the gas infrastructure.

4.1. Incident and breakdown care

The owners of the infrastructure shall have the necessary means to deal with any incidents or breakdowns that may occur.

In order to deal with possible incidents in the gas infrastructure, the owners of the infrastructure must ensure that there is a telephone helpline and on-site assistance service in permanent operation. In addition, they shall disseminate the helpdesk sufficiently, using such channels as they deem appropriate.

These helpdesks must be able to activate the emergency plan if required, so that the necessary safety measures are taken in the period



as short a time as possible. It shall include, in addition to what has been stated above, the means of giving notice to the interested parties concerned.

In order to deal with possible safety incidents, the owners of the infrastructure must have their own or contracted emergency response system.

Emergency response centres must have written procedures in place that classify warnings by priority and specify the system to be followed in resolving the highest priority levels. In this regard, warnings related to gas leaks and all conditions that could lead to risk situations should be considered as top priority.

These procedures shall also specify the quality of service parameters in accordance with the regulations in force.

Emergency response centres shall have the necessary records at the disposal of public administrations regarding the measures taken and the means used to ensure safety in the event of any incident dealt with by the service desk.

4.2. Tightness check

The operator of the network shall check the watertight nature of the installations using a proven system.

Detected leaks shall be classified, according to their significance, into emergency intervention leaks, scheduled intervention leaks and progression monitoring leaks, according to the following factors:

- a) Physico-chemical properties of the gas transported.
- b) Operating pressure of installations.
- c) Indications of the leak detection system.
- d) Proximity of the detected absconding to third parties, considering their use.

The documentation relating to these periodic checks shall be kept by the operator of the network, at the disposal of the competent body of the Autonomous Community.

4.3. Maintenance

The operator of the infrastructure must have its own or third-party maintenance service with the necessary staff and equipment to ensure the proper functioning of its facilities and to carry out the regulated periodic checks.

The coverage status of the pipes and any changes to the nearby marine environment should be verified. In particular, intersections with other electrical and telecommunications pipelines or cables should be monitored.



Maintenance interventions resulting from such surveillance should be aimed primarily at stabilising the pipeline at the bottom and protecting it against possible interference with human

activities (traversing, commercial, recreational, etc.).

The owner of the infrastructure shall develop an integrity management system in accordance with reference GAS_056 of the standard table. This programme should identify the threats to which driving is exposed and, based on these, identify the associated risks, define an integrity assessment programme based on the conditions and characteristics of each installation, select inspection methods and apply the necessary preventive measures to mitigate those risks.

For the assessment of integrity, the operator of the infrastructure shall apply one or more of the following methods:

- a) Internal inspection of piping with tools capable of detecting metal losses by external and internal corrosion, mechanical damage, cracks, construction or manufacturing anomalies, geometric deformations, etc.
- b) Underwater inspection (shallow waters and deep waters) using different equipment (e.g. ROV) to check the condition of the cathode protection system (anodes), identification of damage or cracks in the lining of ballast concrete, impact damage, buckling, displacements, crossings with other third-party installations, existing vanes, monitoring the condition of previous repairs, among others.
- c) Other methods based on inspection and testing techniques deemed appropriate to ensure the integrity of the pipeline.

The materials and techniques used for interventions on installations shall comply with the requirements set out in the applicable reference standards.

Following interventions on the infrastructure, the in-work tests set out in the reference standards shall be carried out on the affected party.

The owner of the infrastructure must have an emergency repair plan in place. This plan aims to pre-define possible activities, materials, equipment and costs in the event of damage to the undersea pipeline. This plan should make it possible to provide an organised response to an emergency, minimising the impact on the environment, maintaining the safety standard, reducing costs and time.

4.4. Recording and archiving

The operator of the infrastructure shall have at his disposal detailed map information of the installations, which shall be continuously updated.

It shall also keep up-to-date and archive during the period of operation the necessary documents relating to:

- a) Pipeline projects.
- b) Piping location plans.
- c) Administrative authorisation documentation.
- d) Projects for the authorisation of installations, including the results of in-service and commissioning tests (strength and leakproofness).



Similarly, the results of the last four surveillances, reviews and controls specified in section 4.2 shall be kept on file.

There shall be a temporary archive, for a minimum period of five years, of the interventions carried out for safety reasons, as well as the actions and means used in emergency situations.

Computer systems, paper format, or other systems of sufficient reliability may be used as means of information, recording or archiving.

In any case, at least the recommendations included in reference GAS_055 of the table of standards and those related to it shall be taken into account.

CHAPTER VI: REPURPOSING OF PIPELINES FOR PURE HYDROGEN VEHICLES AND NG-H₂ MIXTURES

Repurposing of pipelines shall follow the indications set out in reference GAS_014 of the table of standards.

The channelling of gaseous hydrogen or a mixture of hydrogen and natural gas may lead to the entry of atomic hydrogen into steels, which may affect the mechanical properties of the pipeline. Therefore, before injecting, the operator of the pipeline shall consider the possible implications on the integrity of the pipeline.

For each pipeline to be repurposed and consequently authorised, it will be necessary to draw up a procedure which will be subject to approval by the competent authority. This procedure shall consider at least the following:

- a) Risk assessment, aimed at determining the range of potential impact of the hydroduct (onshore) and those aspects associated with safety depending on the percentage of the natural gas/hydrogen mixture (gas leak detection systems, ATEX zones, incidents, etc.).
- b) Drafting of a written procedure summarising the steps taken for the infrastructure conversion study. That procedure shall specifically include the following list of documents:
 1. Quantitative risk analysis.
 2. Written procedures for an emergency plan.
 3. Failure and accident investigation plan with associated analysis procedures.
4. Training programmes for the staff of the operator of the infrastructure, aimed both at this emergency plan and at other areas of prevention (accidental ignition by various operations, etc.).
- c) Coordination programme with administrations for the implementation of both the emergency plan and a social education programme to raise awareness both among communities around the infrastructure and among the general public regarding the recognition and information of risk situations.
- d) Maintenance of records of studies, inspections, tests, repairs, replacements and alterations carried out on the existing pipeline.
- e) Collection and analysis of certificates and records of all infrastructure elements (pipe,



- welding, valves, equipment, cathode protection, ILI inspections, etc.).
- f) Review of site categories.
 - g) Review of the depth of burial of the pipeline, identifying those points whose coverage, measured from the upper generatrix of the pipeline, is less than 1 metre. If minor cover is found, measures should be considered to reduce the risk to the level of the rest of the driving.
 - h) A measure of pipeline thickness along the pipeline, provided that the pipeline can be inspected internally.
 - i) Description of the methodology for assessing the integrity of the infrastructure to be repurposed.
 - j) Mechanical performance tests, e.g. tenacity, girth welds fatigue behaviour and the tube itself (welding, thermally affected area and base material), meeting the minimum requirements laid down in reference GAS_014 of the table of standards or other rules of recognised standing guaranteeing similar minimum safety conditions, or, failing this, studies to demonstrate the suitability of the installation.
 - k) Determination of MAOP for the new infrastructure.
 - l) Infrastructure integrity assessment.



ITC ICG-13

LIST OF REFERENCE STANDARDS

Reference	Standard, title and editions (*)
GAS_001	UNE 60210 Satellite Liquefied Natural Gas (LNG) plants. EDIC. 2018; 2018/1M: 2024
GAS_002	UNE 60250 Storage facilities for liquefied petroleum gases (LPG) in fixed tanks for consumption at reception facilities. EDIC. 2008
GAS_003	UNE 60310 Gaseous fuel piping with a maximum operating pressure greater than 5 bar and less than or equal to 16 bar. EDIC. 2022; 2022/1M: 2023
	UNE 60311 Gaseous fuel piping with a maximum operating pressure not exceeding 5 bar. EDIC. 2022; 2022/1M: 2023
GAS_004	UNE 60312 Regulating stations for the distribution of gaseous fuels with an inlet pressure not exceeding 16 bar. EDIC. 2022; 2022/1M: 2023
GAS_005	UNE 60601 Rooms for self-contained heating or cooling or cogeneration machinery and equipment using gaseous fuels. EDIC. 2013
GAS_006	UNE 60620-1 Installations receiving natural gas supplied at pressures greater than 5 bar. Part 1: General. EDIC. 2021
	UNE 60620-2 Installations receiving natural gas supplied at pressures greater than 5 bar. Part 2: Internal connections and internal distribution lines. EDIC. 2021
	UNE 60620-3 Installations receiving natural gas supplied at pressures greater than 5 bar. Part 3: Regulating and measuring stations. EDIC. 2021
	UNE 60620-4 Installations receiving natural gas supplied at pressures greater than 5 bar. Part 4: Regulatory groups. EDIC. 2021
	UNE 60620-5 Installations receiving natural gas supplied at pressures greater than 5 bar. Part 5: Basic technical criteria for the regular monitoring of receiving facilities in service. EDIC. 2021
GAS_007	UNE 60630 Design, construction, assembly and operation of LPG service stations for motor vehicles.



	EDIC. 2017
GAS_008	UNE 60670-1 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 1: General. EDIC. 2023
	UNE 60670-2 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 2: Terminology. EDIC. 2023
	UNE 60670-3 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 3: Piping, components, fittings and their joints. EDIC. 2023
	UNE 60670-4 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 4: Design and construction. EDIC. 2023
	UNE 60670-5 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 5: Enclosures for the installation of gas meters. EDIC. 2023
	UNE 60670-6 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 6: Requirements for the configuration, ventilation and evacuation of combustion products in rooms intended to contain gas-fired appliances. EDIC. 2023; 2023/1M: 2024
	UNE 60670-7 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 7: Installation and connection requirements for appliances to gas. EDIC. 2023
	UNE 60670-8 Gas receiving installations supplied at a maximum operating pressure not exceeding 5 bar. Part 8: Leakproofness tests for delivery of the receiving facility. EDIC. 2023
	UNE 60670-9 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 9: Tests prior to supply and commissioning. EDIC. 2023
	UNE 60670-10 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 10: Verification of the maintenance of the safety conditions of the equipment in its installation. EDIC. 2023
	UNE 60670-11 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 11: Operations at in-service reception facilities. EDIC. 2023
	UNE 60670-12 Gas receiving installations supplied at maximum operating pressure



	(MOP) not exceeding 5 bar. Part 12: Basic technical criteria for the regular monitoring of receiving facilities in service. EDIC. 2023
	UNE 60670-13 Installations receiving gas supplied at a Maximum Operating Pressure (MOP) less than or equal to 5 bar. Part 13: Basic technical criteria for the periodic inspection of gas-fired appliances in service reception facilities. EDIC. 2023
GAS_009	UNE-EN 16436-1 Elastomer and plastic hoses and tubes used for propane, butane and their vapour mixtures. Part 1: Hoses and tubes. EDIC. 2014 + A3: 2021
	UNE-EN 16436-2 Elastomer and plastic hoses and tubes and their assemblies used for propane, butane and their vapour mixtures. Part 2: Assemblies with joining accessories. EDIC. 2019
GAS_010	UNE 123001 Calculation, design and installation of modular chimneys. EDIC. 2012
GAS_011	UNE-EN 3-7 Portable fire extinguishers. Part 7: Characteristics, performance requirements and test methods. EDIC. 2004 + A1: 2008
GAS_012	UNE-EN 437 Test gases. Test pressures. Categories of equipment. EDIC. 2022
GAS_013	UNE-EN 1363-1 Fire-resistance tests. Part 1: General requirements. EDIC. 2021
GAS_014	UNE-EN 1594 Gas infrastructure. Piping with a maximum operating pressure exceeding 16 bar. Functional requirements. EDIC. 2024
GAS_015	UNE-EN 1856-1 Chimneys. Requirements for metal fireplaces. Part 1: Modular fireplaces. EDIC. 2010
GAS_016	UNE-EN 1949 Specifications for the installation of LPG systems for domestic use in recreational habitable vehicles and for accommodation in other vehicles. EDIC. 2022
GAS_017	UNE-EN 12007-1 Gas supply systems. Piping with a maximum operating pressure not exceeding 16 bar. Part 1: General functional requirements. EDIC. 2013
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GAS_057	UNE 192009-3 Procedure for regulatory inspection. Installations for gaseous fuels. Part 3: Installations for the storage of liquefied petroleum gases (LPG) in fixed tanks. EDIC. 2018; 2018/1M: 2022
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GAS_058	UNE-EN 13109 LPG equipment and accessories. LPG tanks and drums. Elimination. EDIC. 2011
GAS_059	SOP 60230 Plants for the storage, transfer and packaging of liquefied petroleum gases
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