Technical specifications provided for in Article 10(4) of Regulation (EU) 2024/1309 of the European Parliament and of the Council of 29 April 2024 on measures to reduce the cost of deploying electronic communications networks with gigabit speeds, amending Regulation (EU) 2015/2120 and repealing Directive 2014/61/EU (Gigabit Infrastructure Act)

SUMMARY:

1. Introduction....2
2. Definitions....3
3. Scope of application....6
   3.1. Single family houses (SDUs)....6
   3.2. Multi-apartment buildings (MDUs)....6
   3.3. Other types of buildings....7
   3.4. General overview....8
4. Installation: roles and responsibilities....11
5. Geographical differentiation of the technical specifications....12
6. Technical specification of in-building fibre-optic cabling....13
   6.1. General....13
   6.2. Fibre-optic cabling....13
   6.3. ONTP....15
   6.4. Floor boxes....16
7. Technical specification of in-building physical infrastructure....17
8. Technical specification of the building connection point (BAP)....18
   8.1. General....18
   8.2. Multi-operator spice boxess....18
      8.2.1. Technical requirements....18
      8.2.2. Phasing of the installation in the case of multi-operator splice boxes....19
   8.3. ODF....20
   8.4. Dimensioning and space of the BAP....21
9. Entry infrastructure of the building....22
10. Requirements relating to electricity and electromagnetic protection....24
   10.1. Requirements related to electricity....24
   10.2. Electrical and electromagnetic protection....24
11. Installation practices of the interior network....25
12. Testing and inspection of the indoor network....25
13. Documentation....26
   13.1. Documentation of construction....26
   13.2. Inspection or audit reports....27
   13.3. Maintenance and storage of documents....28
14. Definition of Zone I and Zone II....29

1. Introduction

1. This document describes the technical specifications for the implementation of fibre-optic-ready in-building physical infrastructure, the Building Access Point (BAP) and the in-building fibre-optic cabling in accordance with Article 10 of the Gigabit Infrastructure Act (hereinafter GIA)[1].

2. For the sake of completeness, Article 10(1) to (4) of the GIA is quoted below:

1. All newly constructed buildings and buildings undergoing major renovation works, including elements under joint ownership, for which applications for building permits have been submitted after 12 February 2026, shall be equipped with a fibre-ready in-building physical infrastructure and in-building fibre-optic cabling, including connections up to the physical point where the end user connects to the public network.

2. All newly constructed multi-dwelling buildings or multi-dwelling buildings undergoing major renovation works, for which applications for building permits have been submitted after 12 February 2026, shall be equipped with an access point.

3. By 12 February 2026, all buildings, including elements thereof under joint ownership, undergoing major renovations as defined in Article 2, point (10), of Directive 2010/31/EU, shall be equipped with a fibre-ready in-building physical infrastructure, and in-building fibre-optic cabling, including connections up to the physical point where the end user connects to the public network, if that does not disproportionately increase the costs of the renovation works and if it is technically feasible. All multi-dwelling buildings subject to major renovation works shall also be equipped with an access point.

4. By 12 November 2025, Member States shall, in consultation with interested parties and on the basis of industry best practices, adopt the relevant standards or technical specifications necessary for the implementation of paragraphs 1, 2 and 3. Those standards or technical specifications shall allow, in a simple manner, ordinary maintenance activities for the individual fibre-optic cabling used by each operator to provide VHC Network Services, and shall include at least the following:

a) the specifications of the building access point and the specifications of the fibre optic interface;

b) the cable specifications;

c) the socket specifications;

d) the specifications of ducts or micro-ducts;

e) the technical specifications necessary to avoid interference with electrical cabling;

f) the minimum bending radius;

[1] Regulation (EU) 2024/1309 of the European Parliament and of the Council of 29 April 2024 on measures to reduce the cost of deploying electronic communications networks with gigabit speeds (Gigabit Infrastructure Act)

g) technical specifications for the installation of the cabling.

3. The specifications in this document therefore apply to all new buildings and buildings that are the subject of major renovation works[2] for which building permits are requested after 12 February 2026, insofar as no exceptions are provided for by the legislator based on Article 10 §7 and §8 of the GIA. The specifications shall also apply to all buildings subject to major renovation works as defined in Article 2, point 10, of Directive 2010/31/EU[3], where that does not disproportionately increase the cost of the renovation works and where that is technically feasible.

4. The described cabling and equipment within a property or apartment is assumed to support access to very high-capacity networks (hereinafter 'VHCNs'), as defined in the European Electronic Communications Code (Directive (EU) 2018/1972).

2. Definitions

5. This section contains a list of definitions. Some of the definitions below are taken from the GIA, marked with an asterisk. In the event of a difference, the wording of the GIA shall apply.

6. **In-building cabling**: all types of cables at the end-user's location, including elements which are jointly owned, which are intended to provide electronic communications services and which connect the building's access point to the network termination point.

7. **Indoor fibre-optic cabling***: fibre-optic cables at the end user's location, including elements under joint ownership, intended to provide electronic communications services and to connect the building access point to the network termination point.

8. **Interior network:** the entirety of the constructed network of the operator cable(s) up to and including the network termination points, including interior cabling, in-building physical infrastructure and other installed network elements.

9. **#F**: the number of glass fibres to be provided per NTP in the case of indoor fibre-optic cabling. This number depends on the location of the building, see Section Error: Reference source not found.

[2] These are civil-engineering works at the end-user's site that involve structural changes to all or a significant part of the in-building physical infrastructure. The last sentence of recital 48 of the preamble to the GIA also refers in this respect to: '*Major renovations of existing buildings at the end-user's location to improve energy performance pursuant to Directive 2010/31/EU of the European Parliament and of the Council (12) offer the opportunity to also equip those buildings with fibre-ready in-building physical infrastructure, in-building fibre-optic cabling and, for multi-family homes, an access point.*' Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010 on the energy performance of buildings defines a 'major renovation' as follows: 'Art. 2, *10. '"major renovation" means the renovation of a building, where (a) the total cost of the renovation related to the building envelope or the technical building systems exceeds 25% of the value of the building, excluding the land, or (b) more than 25% of the surface area of the building envelope undergoes a renovation.*'

[3] Directive 2010/31/EU of 19 May 2010 on the energy performance of buildings.

10. **Floor box:** intermediate welding box, usually on a floor, which is placed on the route between the entry point of the building and the network connection points in order to efficiently set up the in-building fibre-optic cabling.

11. **In-building physical infrastructure***: physical infrastructure or installations at the end-user's location, including elements under joint ownership, intended to host wired and/or wireless access networks, where such access networks are capable of delivering electronic communications services and connecting the building access point to the network termination point.

12. **Fibre infrastructure integrator (FII):** a fibre optic installer selected to carry out the part of the installation related to the (connections to the) equipment and welding of fibre optic, see Section Error: Reference source not found.

13. **Fibre-optic-ready in-building physical infrastructure*** – in-building physical infrastructure intended to host fibre optic elements.

14. **Entrance infrastructure of the building:** physical infrastructure entering the building to the access point to the building. The entry infrastructure of the building is used by an operator to enter the building and connect to its network on the public domain, by connecting to the access point to the building. The entry infrastructure shall include all specific microducts or similar ducts designed to facilitate the entrance to the operator cable.

15. **Living Unit (LU)**: an individual living unit in a building, such as an apartment or home, which is operated by an operator at the level of its network termination point.

16. **Multidwelling Unit (MDU or apartment building):** a building containing separate residential units for private residents.

17. **Multi-operator splice box (multi-operator welding box):** a housing used to protect and organise fibre optic welding. It ensures a safe environment to join glass fibres, usually through fusion splicing (fusion welding), and ensures sound fibre management and accessibility for multiple operators.

18. **Network termination point (NTP)** means the physical point at which an end-user is provided with access to a public electronic communications network, and which, in the case of networks involving switching or routing functions, is determined by means of a specific network address that may be connected to an end-user's number or name. The network termination point is defined in the BIPT Decision of 26 September 2023 on the identification of the network termination point for broadband services[4], i.e. point A in the figure below:

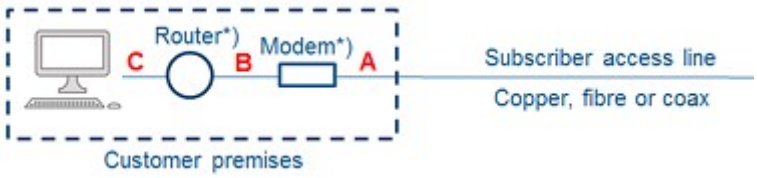


Figure 1: Location of the network connection point

19. **Operator cable**: the cable of an operator entering the building. It connects the operator's distribution network to the indoor cabling at the access point to the building.

20. **Optical Distribution Module (ODM):** the component used in fibre networks to organise and manage optical connections. It acts as a structured interface to connect and distribute glass fibres within a cabinet or rack.

21. **Single Dwelling Unit (SDU)**: a single-family dwelling (home).

22. **Splice box (welding box):** an enclosure used to protect and organise fibre optic welding. It provides a safe environment for joining glass fibres, usually through fusion splicing (fusion welding), as well as a sound management of the fibres.

23. **Building Access Point (BAP)*** means a physical point located inside or outside the building, accessible to undertakings providing or authorised to provide public electronic communications networks, where the network can be connected to the fibre-ready in-building physical infrastructure.

[4] https://www.bipt.be/consumenten/publicatie/besluit-van-26-september-2023-betreffende-de-identificering-van-het-netwerkaansluitpunt-voor-de-breedbanddiensten

3. Scope of application

24. The technical specifications described in this document apply to new buildings and buildings subject to major renovation works, as described in section Error: Reference source not found. Depending on the type of building, other obligations apply, as described below.

3.1. Single family houses (SDUs)

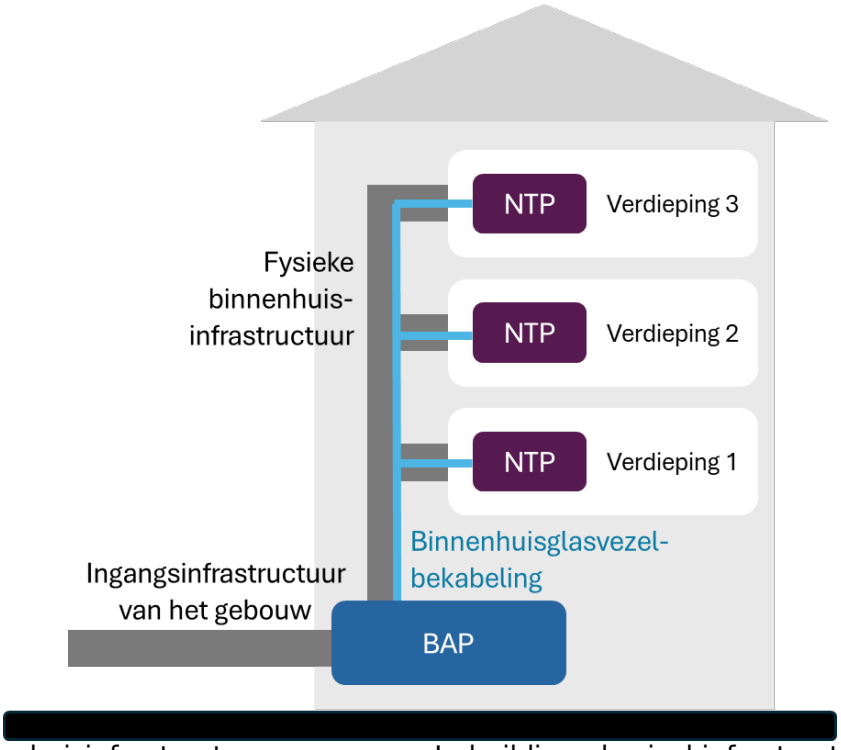
25. In the case of connecting single-family residential buildings (SDUs) to a deployed fibre optic network, the network termination point (NTP) shall be located at the same location as the building access point (BAP). Therefore, fibre-ready in-building physical infrastructure or in-building fibre-optic cabling is not necessary and no technical specifications are imposed. Physical indoor infrastructure or cabling within the SDU can of course be installed at the discretion of the owner, occupant or construction promoter, recommending to follow the principles of the technical specifications described for other types of buildings.

26. For the benefit of the end user, the BAP/NTP of a SDU should be easily accessible to different operators by providing building entry infrastructure that facilitates the installation of one or more operator cables. Therefore, technical specifications apply for the **entry infrastructure of the building**.

3.2. Multi-apartment buildings (MDUs)

27. In the case of apartment buildings (MDUs), technical specifications apply to:

- **in-building fibre-optic cabling,**
- **the in-building physical infrastructure,**
- **the BAP,**
- **the entry infrastructure of the building**.



Fysieke binnenhuisinfrastructuur	In-building physical infrastructure
NTP	NTP
Verdieping 3	Floor 3
Verdieping 2	Floor 2
Verdieping 1	Floor 1
Binnenhuislasvezelbekabeling	Interior optical fibre-optic cabling
BAP	BAP
Ingangsinfrastructuur van het gebouw	Entry infrastructure of the building

Figure 2: Requirements for MDUs

3.3. Other types of buildings

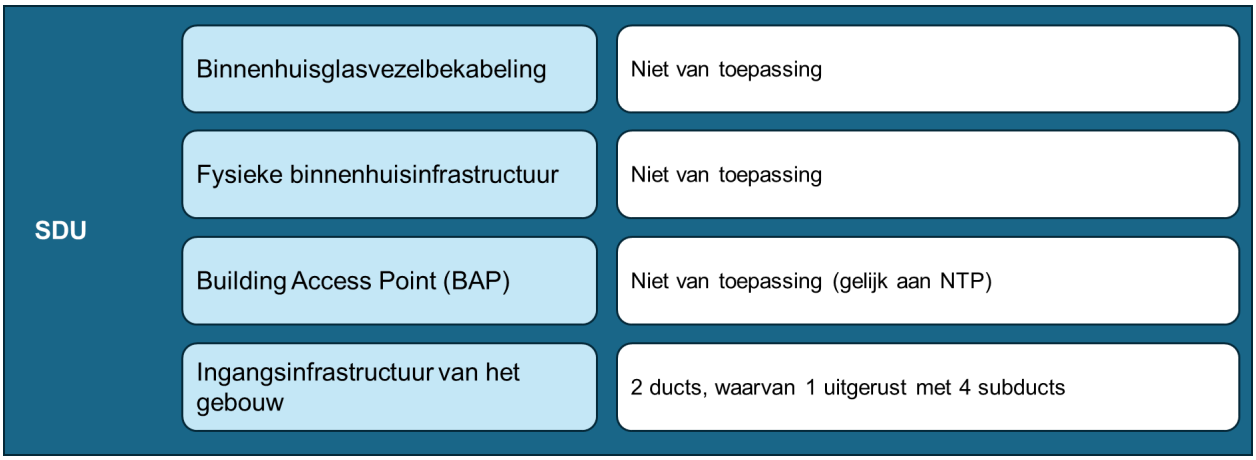
28. In the case of other types of buildings (other than SDUs or MDUs) requiring network termination points (NTPs) (e.g. commercial buildings, mixed-use buildings), technical specifications shall apply to:

- the **in-building fibre-optic cabling**,
- the **in-building physical infrastructure**,
- the **entry infrastructure of the building**.

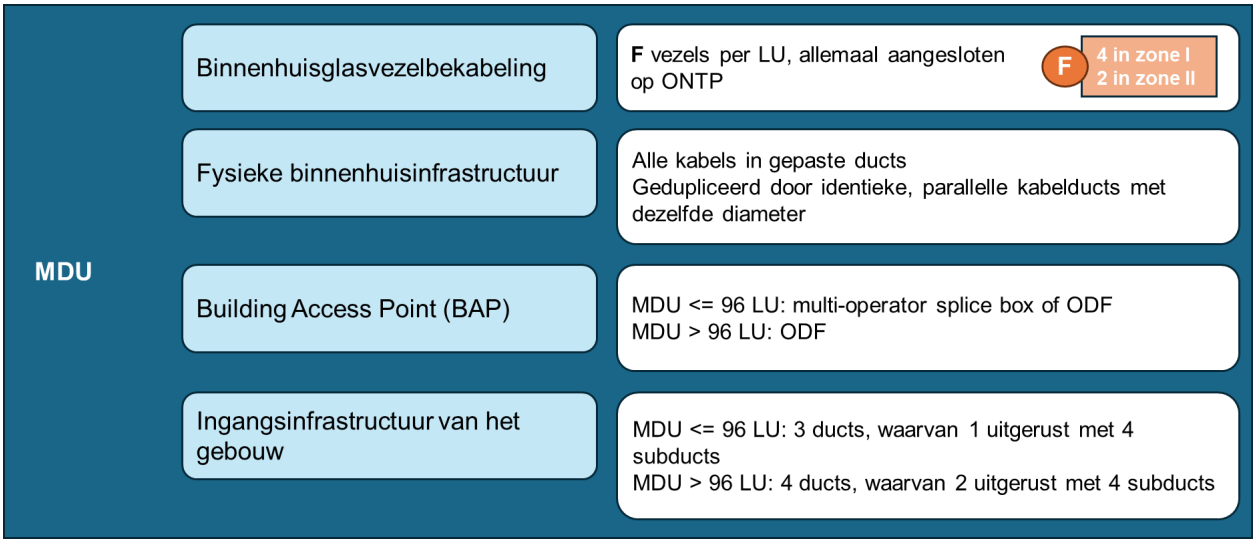
29. There are no specifications for the BAP, but it is strongly recommended to follow the relevant MDU specifications.

3.4. General overview

30. A general schematic overview of the technical specifications is given in the figure below. Further information and details are provided in the sections that follow.



SDU	SDU
Binnenhuisglasvezelbekabeling	In-building fibre-optic cabling
Niet van toepassing	Not applicable
Fysieke binnenhuisinfrastructuur	In-building physical infrastructure
Niet van toepassing (gelijk aan NTP)	Not applicable (equivalent to NTP)
Ingangsinfrastructuur van het gebouw	Entry infrastructure of the building
2 ducts, waarvan 1 uitgerust met 4 subducts	2 ducts, 1 of which shall be fitted with 4 subducts



MDU	MDU
Binnenhuisglasvezelbekabeling	In-building fibre-optic cabling
F vezels per LU, allemaal aangesloten op ONTP	F fibres per LU, all connected to ONTP

F

4 in zone I

2 in zone II

Fysieke binnenhuisinfrastructuur

Alle kabels in gepaste ducts

Gedupliceerd door identieke, parallelle kabelducts met dezelfde diameter

MDU > 96 LU: ODF

Ingangsinfrastructuur van het gebouw

MDU <= 96 LU: 3 ducts, waarvan 1 uitgerust met 4 subducts

MDU > 96 LU: 4 ducts, waarvan 2 uitgerust met 4 subducts

F

4 in zone I

2 in zone II

In-building physical infrastructure

All cables in appropriate ducts

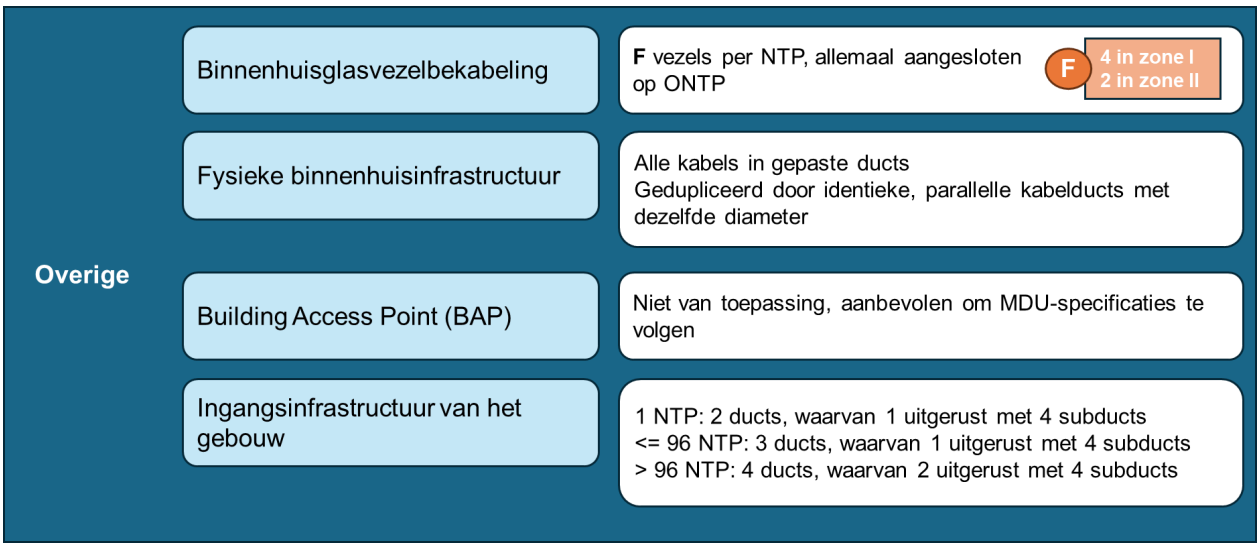
Duplicated by identical parallel cable ducts of the same diameter

MDU > 96 LU: ODF

Entry infrastructure of the building

MDU <= 96 LU: 3 ducts, 1 of which shall be fitted with 4 subducts

MDU > 96 LU: 4 ducts, of which 2 equipped with 4 subducts



Binnenhuisglasvezelbekabeling

F vezels per NTP, allemaal aangesloten op ONTP

F

4 in zone I

2 in zone II

Fysieke binnenhuisinfrastructuur

Alle kabels in gepaste ducts

Gedupliceerd door identieke, parallelle kabelducts met dezelfde diameter

Niet van toepassing, aanbevolen om MDU-specificaties te volgen

In-building fibre-optic cabling

F fibres per NTP, all connected to ONTP

F

4 in zone I

2 in zone II

In-building physical infrastructure

All cables in appropriate ducts

Duplicated by identical parallel cable ducts of the same diameter

Not applicable, recommended to follow

	MDU specifications
Ingangsinfrastructuur van het gebouw	Entry infrastructure of the building
1 NTP: 2 ducts, waarvan 1 uitgerust met 4 subducts	1 NTP: 2 ducts, 1 of which shall be fitted with 4 subducts
<= 96 NTP: 3 ducts, waarvan 1 uitgerust met 4 subducts	— = 96 NTP: 3 ducts, 1 of which shall be fitted with 4 subducts
> 96 NTP: 4 ducts, waarvan 2 uitgerust met 4 subducts	> 96 NTP: 4 ducts, of which 2 equipped with 4 subducts

Figure 3: Schematic overview of the technical specifications by type of building

4. Installation: roles and responsibilities

31. In order to ensure that the installation is carried out qualitatively in a manner aligned with the needs of the telecom operators, the part of the installation related to the equipment and welding (including inspection and testing) of glass fibres should be carried out by a telecommunications installer, hereinafter referred to as “Fibre Infrastructure Integrator” (FII), which is included in the list of authorised FII published by BIPT.

32. The role of the promoter or owner of the building (if applicable according to the type of building, see Section Error: Reference source not found) is to:

    32.1. install the fibre-optic ready-to-use in-building physical infrastructure, including the labels, as described in Section Error: Reference source not found;

    32.2. install the in-building fibre-optic cabling, including the labels, as described in Section Error: Reference source not found, without mounting the ends (as it is the responsibility of the FII;

    32.3. prepare a suitable technical room with sufficient space, as described in Section Error: Reference source not found;

    32.4. install the entry infrastructure of the building;

    32.5. select a FII, which shall perform the tasks described in § Error: Reference source not found below. The selected FII may charge the costs of these activities to the promoter or owner of the building.

    32.6. provide all necessary information and building plans to the FII so that he can prepare the documentation as described in Section Error: Reference source not found.

33. It is strongly recommended that the building promoter or building owner contacts and selects the FII prior to the installation of the fibre-ready in-building physical infrastructure and cabling, in order to determine whether its planned infrastructure, cabling and the dimensions of the technical chamber are sufficient to meet the technical specifications of this document. Example: in the case of large MDUs, floor boxes (see Section Error: Reference source not found) or several BAPs may be necessary, requiring additional space and facilities.

34. The role of the FII is to:

    34.1. install all ONTPs at LU or NTP level, including labels, as described in Section Error: Reference source not found;

    34.2. install the splice boxes or ODFs at BAP level, including the labels, as described in Section Error: Reference source not found;

34.3. installing floor boxes, where appropriate, including the labels, as described in Section Error: Reference source not found;

34.4. perform all welding or installation activities necessary to connect the pre-installed in-building fibre-optic cabling to the ONTPs on one side and to the splice boxes or ODFs on the other side;

34.5. provide documentation, as described in Section Error: Reference source not found;

34.6. carry out all inspections and tests as described in Section Error: Reference source not found.

35. The FII will be responsible for all repairs resulting from deficiencies that would be identified after the installation phase and which are due to errors in that part of the installation under its responsibility.

5. Geographical differentiation of the technical specifications

36. The technical specifications include a geographical differentiation between two configurations, depending on the municipality where the building is located:

36.1. Zone I groups all municipalities where the standard technical specifications apply.

36.2. Zone II groups all municipalities where less stringent technical specifications apply. These are municipalities where there is less chance that more than two fibre-optic networks will be rolled out.

37. The complete list of municipalities and their respective zones can be found in Section 14. The list is compiled on the basis of population density, as a lower value usually leads to higher costs (and thus lower chances) for fibre roll-out. Municipalities with a population density (as of 1 January 2025) of 250 inhabitants or less per square kilometre are considered part of Zone II. All other municipalities are considered part of Zone I.

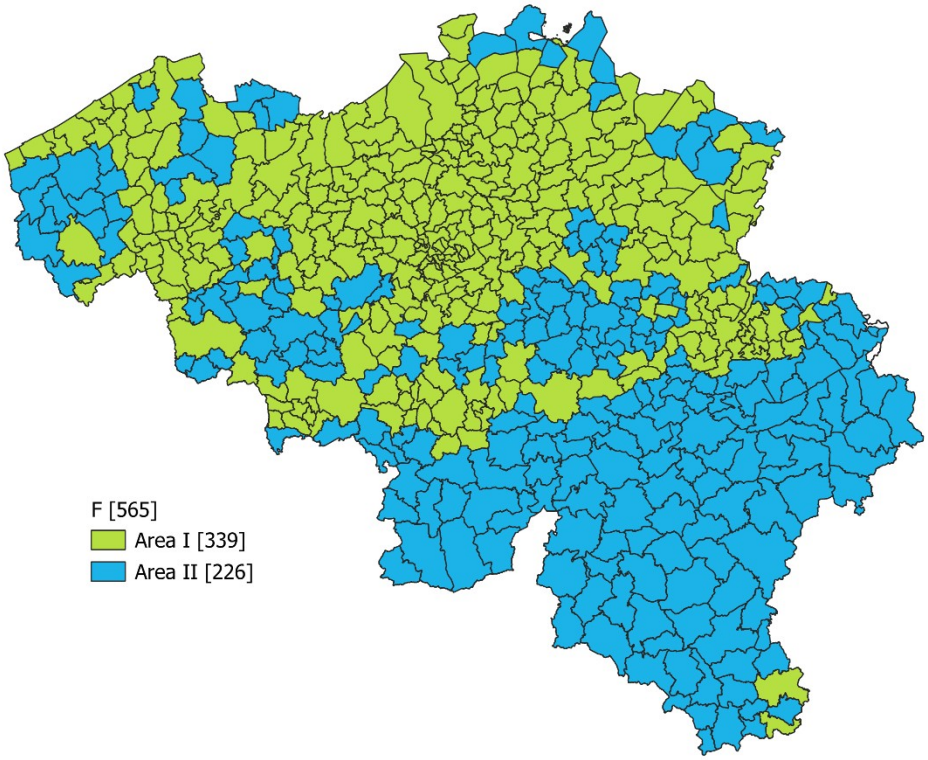


Figure 4: Geographical definition of Zone I and Zone II ('Area I' and 'Area II')

6. Technical specification of in-building fibre-optic cabling

6.1. General

38. Generally speaking, for the buildings where indoor fibre-optic cabling is required, each Living Unit (LU) or location where a NTP is present shall be provided with two (in the case of Zone II[5]) or four (in the case of Zone I) independent, fully welded fibre optic connections arriving from the Building Access Point (BAP). That number of glass fibres is hereinafter referred to as '**# F**'.

Table 1. Definition of #F, the number of glass fibres per LU/NTP

Area	**#F: number of glass fibres per LU/NTP**
Zone I	4
Zone II	2

39. Indoor fibre-optic cabling in MDUs shall have a star network topology, starting from the building access point (BAP), with point-to-point connections (P2P) established between the BAP and each network termination point (NTP). The star network topology concerns the fibre optic, whereby a different configuration for

[5] The definition of the area depends on the municipality in which the building is located. Cf. Error: Reference source not found.

the cables containing multiple fibre optic fibres is not excluded, e.g. due to the use of floor boxes (see Section Error: Reference source not found).

40. In the case of large MDUs and depending on the design of the building, several BAPs may be installed to connect different parts of the MDU (e.g. one per stairwell, one per building in a campus-like layout). In that case, the requirement of a star network topology with each BAP as the starting point shall apply. The number of BAPs should be as limited as possible and preferably limited to one.

41. Types of buildings other than SDUs and MDUs may require specific fibre optic terminations that are outside the scope of this document. However, where a building is wired to operate fibre optic NTPs, the specifications below should be applied as minimum requirements for the dimensioning of these NTPs and the corresponding indoor fibre-optic cabling.

6.2. Fibre-optic cabling

42. A fibre-optic cable typically consists of the following elements:

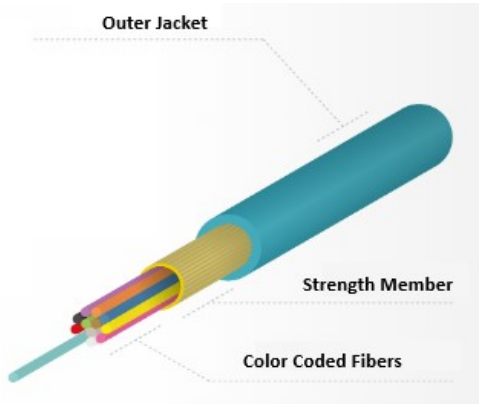


Figure 5: Parts of a fibre-optic cable containing several glass fibres

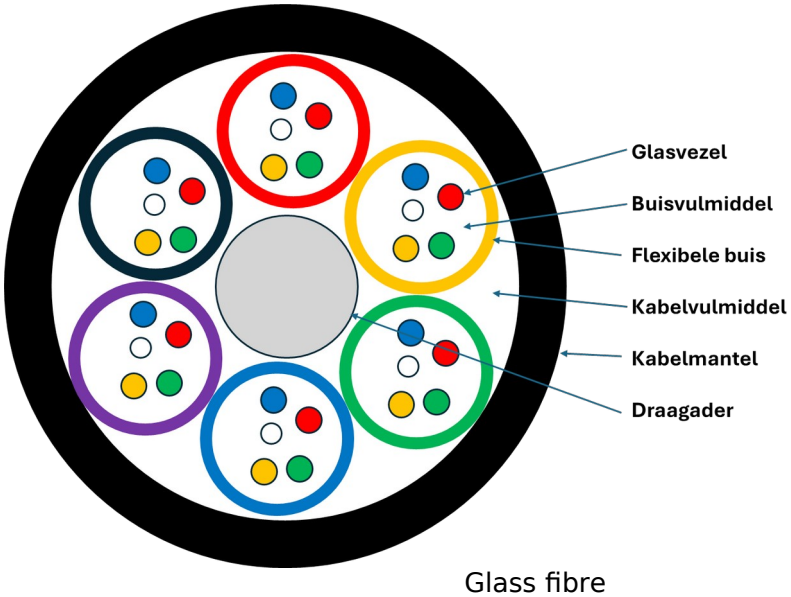
43. The fibre-optic cabling used in the context of the interior fibre-optic cabling shall comply with the following technical specifications:

43.1. the fibre-optic cable shall have a (modular) round monotube construction containing single mode glass fibres of type G.657.A2 with a jacket with a diameter of 250 µm, and the cable shall be dry (not filled with gel) to facilitate proper treatment and installation. The cables shall be tested according to NBN EN 60811-202 and NBN EN 60811-203.

43.2. the fibre optic must be reinforced with “strength members” to ensure appropriate tensile strength and resistance to mechanical stress.

43.3. all cables are of the type Low Smoke Zero Halogen (LSZH).

44. The number of glass fibres per fibre-optic cable shall be a multiple of **#F** (see Error: Reference source not found). Each group of **#F** fibres is bundled into a tube that is colour coded and/or labelled. Also, each of the **#F** fibres in the bundle is assigned a colour code, depending on the operator within the specific building (e.g. blue = Provider A, orange = Provider B), in a consistent way for all (Living) Units.



Glasvezel	Glass fibre
Buisvulmiddel	Tube filler
Flexibele buis	Flexible tube
Kabelvulmiddel	Cable filler
Kabelmantel	Cable sheath
Draagader	Wire bearing

Figure 6: Example of a fibre-optic cable with 6 colour-coded tubes and 4 fibres per tube

45. All cabling must be labelled in a unique way. It should be possible to easily determine which fibre is connected to a specific (Living) Unit and operator at the level of the BAP.

46. In order for the FII to perform the final finish, each fibre-optic cable must have a surplus length of 3 meters at the height of the (Living) Unit, and of 5 meters at the height of the BAP or of the floor box.

6.3. ONTP

47. Each Living Unit (LU) or unit containing a NTP in the case of other types of buildings should have access to **#F** specific glass fibres, all of which should end in a single optical network termination point or Optical Network Termination Point (ONTP) within the unit.

48. The ONTP shall provide physical access to the **# F** fully functional glass fibres, each ending in a separate SC/APC connector with an interface at an angle of 8° (Grade C or better, in accordance with IEC standards). The ONTP may be either pre-wired with “factory-terminated” fibres or designed to take into account field-terminated connectors.

49. The ONTP shall have slots for **# F** single SC/APC connectors. The connectors shall comply with the optical characteristics of NBN EN 61753-1.

50. The ONTP shall allow fibre management while maintaining a minimum bending radius of 15 mm. It shall also provide the possibility of a surplus of length of the fibre of at least 60 cm on either side of each weld.

51. No specific operator mark may be affixed to the ONTP.

52. The connectors shall be positioned vertically on the lower side of the ONTP. It must be possible to connect several connecting cords at the same time. The presence of a connection node must not interfere with the mounting of a connection node on any of the other connectors.

53. On the outside of the ONTP, each connector shall have an internal or external protective mechanism against dust and laser radiation.

54. The ONTP shall be mounted at least 30 cm from the floor (lower side of the ONTP).

55. The ONTP is placed in the (Living) Unit in a place that best ensures its usability for the provision of telecommunications services, e.g.: the main living area of the apartment where good coverage is possible when an operator installs a Wi-Fi router. If a wired LAN network is planned in the (Living) Unit, the ONTP must be located at the point where these UTP cables meet, or at a location where a specific UTP connection is accessible to that point.

56. All ONTPs must be labelled in a unique manner. The connectors on an ONTP are clearly marked in a neutral way: the numbers 1 to **#F**, the letters A to B/D and in primary colours.

57. In an ONTP which has not been used to its maximum extent, the unused connector slots shall be closed. The sealing system shall be easily removable without specific tools. The connectors must be easy to clean and replace over time.

58. The ONTP must be easily fastened and detached to the mounting plate without specific tools, without allowing access to the glass fibres, and as intuitively as possible. During maintenance, it must be possible to remove the ONTP from the wall without access to the glass fibres and without risk of interruption of service.

6.4. Floor boxes

59. Floor boxes (splice boxes on floors) may be installed to efficiently arrange the interior fibre-optic cabling but always taking into account the principle of **#F** fully connected point-to-point connections between the BAP and each (Living) Unit.

60. Each floor box shall comply with EN 50411-2-8 and ensure appropriate mechanical protection, environmental resistance and management of the indoor glass fibres, including inspection of the bending radius as determined by ITU-T L.1001 and IEC/TR 61930. Appropriate reserve storage must be provided to facilitate future maintenance, reconfiguration or welding without compromising optical performance.

61. All floor boxes must be labelled in a unique way. It should be possible to easily determine which fibre is connected to a specific (Living) Unit and floor box.

62. Floor boxes should be placed in places that are easily accessible, and that allow maintenance and repairs.

7. Technical specification of in-building physical infrastructure

63. The indoor fibre-optic cabling should be guided by specific cable ducts (cable trays) that provide sufficient protection and support for the installed fibre optic infrastructure.

64. The ducts shall be appropriately dimensioned on the basis of the external diameter and number of fibre-optic cables installed. The inner diameter should ensure easy installation and avoid excessive tensile forces.

65. The ducts shall be guided and positioned in a manner that complies with the minimum permissible bending radius of the fibre-optic cables, in accordance with EN 50174-2 and the manufacturer's specifications, to prevent signal loss or cable breakage. Bends of 90° should be avoided as much as possible or have a minimum bending radius of 10 times the diameter of the duct.

66. For each cable duct containing in-building fibre-optic cabling, an identical parallel cable duct of at least the same diameter shall be installed. This second duct does not contain fibres at the time of initial construction, but must be able to be reserved for future use, such as repair of cables, maintenance, or for the installation of additional or alternative telecommunications infrastructure. This redundancy measure ensures the resilience of the infrastructure and facilitates future upgrades or reconfiguration without interruption of active services. The reserve duct must be treated the same way as the primary duct and meet the mechanical and environmental protection requirements in EN 50174-2.

67. All ducts must be Low Smoke Zero Halogen (LSZH).

68. The ducts shall be planned, implemented and maintained in such a way that the cables contained therein are protected against mechanical stress (e.g. crushing, pulling, vibration) and climatic exposure (e.g. humidity, temperature fluctuations), especially at the entry points or transition areas.

69. The free ducts shall be equipped with traction wires to facilitate the installation of cables.

70. If fibre-optic cables are installed in shared or adjacent duct systems, consideration should be given to electromagnetic compatibility (EMC). While glass fibres are immune to emissions from parasitic signals, interference from nearby power or data cables may affect associated equipment. Where necessary, cable separation shall be applied in accordance with EN 50174-2, as well as partitioning of ducts or shielding.

8. Technical specification of the building connection point (BAP)

8.1. General

71. The interface between the in-building fibre-optic cabling and an operator's public communications network is located at the Building Access Point (BAP).

72. The Building Access Point (BAP) in MDUs must contain one or more multi-operator splice boxes, which groups all glass fibres from all Living Units (LUs) and gives access per operator to the fibres with the same colour code from each individual Living Unit (LU). An ODF must be installed in larger MDUs with more than 96 Living Units per BAP. This solution may also be used in smaller MDUs instead of multi-operator splice boxes.

73. In the case of large MDUs and depending on the design of the building, different BAPs may be defined to connect different parts of the MDU (e.g. one per stairway, one per building in a campus-like layout). The number of BAPs should be as limited as possible and preferably limited to one.

8.2. Multi-operator spice boxess

8.2.1. Technical requirements

74. A multi-operator splice box provides connections to all **#F** glass fibres of all (Living) Units. The multi-operator splice box must have sufficient capacity to contain at least as many glass fibres as there are (Living) Units, multiplied by **#F**. More than one multi-operator case box may be used to reach the capacity.

75. Each multi-operator splice box must use SC/APC or LC/APC connectors for connection with the operators' equipment.

76. Each multi-operator splice box shall comply with EN 50411-2-8 and ensure appropriate mechanical protection, environmental resistance and internal fibre management, including bending radius inspection as determined by ITU-T L.1001 and IEC/TR 61930. Appropriate reserve storage must be provided to facilitate future maintenance, reconfiguration or welding without compromising optical performance.

77. The multi-operator splice box(es) shall:

    77.1. contain a separate welding compartment and distribution compartment;

    77.2. have sufficient space to accommodate the number of **# F** operators. Each operator must have access to its own fibre optic per (Living) Unit, separate from the cables of other operators;

    77.3. enabling connection between multiple operators and (Living) Units, with a connection via distribution boards;

77.4. if applicable (necessary to achieve the required capacity), make it possible to connect several multi-operator splice boxes with an entrance facilitating the connection of the boxes to the in-building fibre-optic cabling;

78. The separate access per operator shall be clearly marked by using labels in the distribution compartment, both with colour code (equal to the colour coding of the glass fibres) and numbers.

79. In line with the fact that all fibres are provided from each ONTP to the BAP with a colour code according to the operator assigned within the specific building (see Section Error: Reference source not found), each fibre must be terminated at a consistent location in the multi-operator splice box (e.g. the same splice tray or at least connected to a consistent location in the distribution compartment, e.g. per column if a distribution board of **#F** columns is used). All fibres of the same colour must be channelled to and end in a consistent place in the multi-operator splice box.

8.2.2. Phasing of the installation in the case of multi-operator splice boxes

80. In Zone I, the building owner or the construction promoter may decide to fully assemble only 2 of the 4 glass fibres per (Living) Unit in the multi-operator splice box(es) at the time of construction or renovation, pending the glass fibre deployment by more than 2 operators in the vicinity. The remaining installation shall then be carried out when there is a demand from a 3e or 4e operator.

81. If this is chosen:

81.1. the requirement for 4 fibres per (Living) Unit shall continue to apply and all the required in-building fibre-optic cabling and in-building physical infrastructure shall be installed. The same applies to the ONTP, which will still have to be connected to 4 glass fibres.

81.2. Only 2 glass fibres per (Living) Unit are welded and connected to the distribution board in the multi-operator splice box(es). These glass fibres must all have the same two colours. All colour coding and labelling requirements, as described in Section 8.2.1., shall continue to apply.

81.3. The remaining fibre-optic cabling will remain unconnected and must be adequately protected against dust, water and bending.

81.4. Sufficient space shall be provided in the multi-operator splice box(es) to perform the welding and connection of the two remaining glass fibres per (Living) Unit. The connections to the distribution board must be arranged in such a way that they take into account the non-connected glass fibres and allow consistent accessibility (as described in § 79.).

81.5. The space requirements in Section Error: Reference source not found continue to apply to 4 operators.

81.6. All tests and certification related to the testing of fibre-optic cabling (see Section Error: Reference source not found) shall be carried out on the end-to-end connected fibre-optic cabling and this shall be properly documented.

81.7. The installation of missing welds and connections in the multi-operator splice box(es) upon request by a 3e or 4e operator will be completed within 2 months of this operator's request to the building owner or construction promoter. The installation can be carried out by a (newly selected) FII or by the requesting operator, at the expense of the building owner or building promoter, and includes the testing and certification of these new connections, as well as the preparation of the updated documentation.

8.3. ODF

82. In the case of very large apartment buildings (MDUs) with more than 96 Living Units per BAP, or if chosen by the builder or owner of the building as an alternative in smaller MDUs instead of multi-operator splice boxes, all glass fibres must end in an Optical Distribution Frame (ODF) of 19".

83. The ODF should use SC/APC or LC/APC connectors, with a dedicated patch panel per fibre colour (i.e. per telecom provider), in line with the fact that all fibres from each ONTP to the BAP are colour coded according to the operator assigned within the specific building (see Section Error: Reference source not found).

84. The ODF shall have:

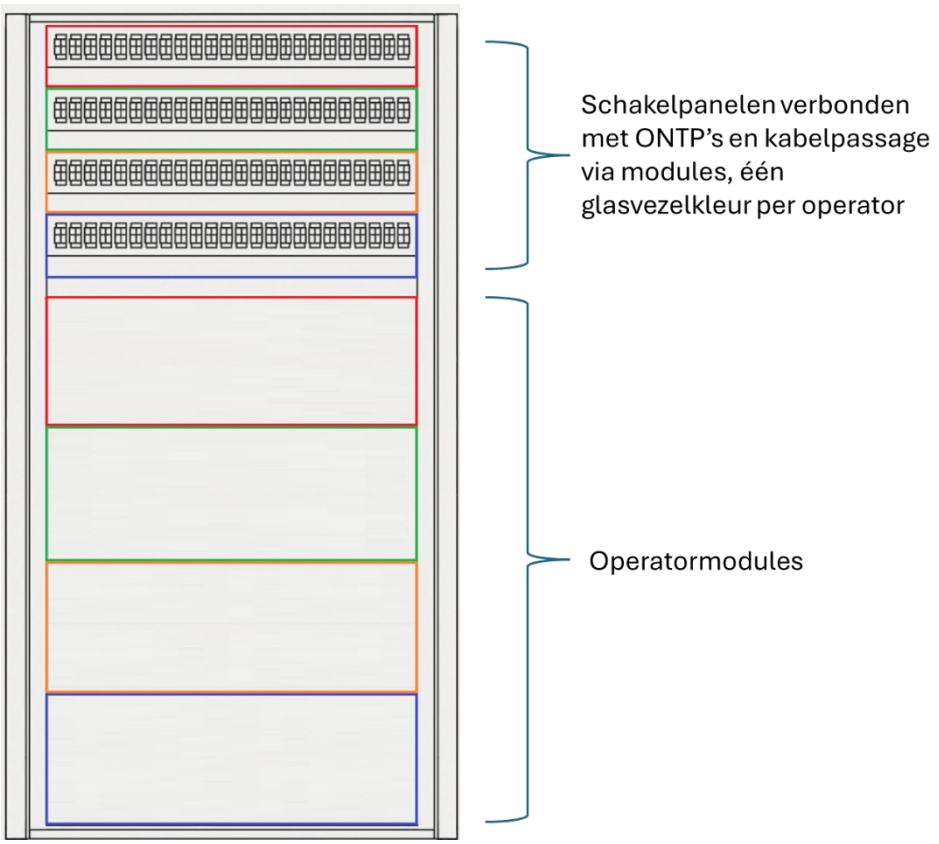
84.1. sufficient capacity to contain all incoming glass fibres from the Living Units;

84.2. physical separation of operator-specific closures to support open access and multi-operator environments;

84.3. appropriate space for current and future connectivity equipment of each telecom provider;

84.4. compliance with EN 50173-1 and EN 50174-2, ensuring appropriate design, labelling, routing, bending radius management, and accessibility for maintenance;

84.5. a design that also supports easy integration of active equipment, jumper management and future expansion without downtime.



Shakelpanelen verbonden met ONTP's en kabelpassage via modules, één glasvezelkleur per operator

Operatormodules

Patch panels connected to ONTPs and cable passage via modules, one fibre colour per operator

Operator modules

Figure 7: Schematic diagram ODF

8.4. Dimensioning and space of the BAP

85. The BAP shall be designed, positioned, dimensioned and implemented in a manner that ensures safe, reliable and future-proof operation of the telecommunications infrastructure. In particular, the following conditions shall be met:

85.1. The BAP shall enable the installation of secure and appropriately dimensioned building entry infrastructure to contain incoming operator cable(s), with appropriate mechanical protection and sealing.

85.2. The size of the allocated space in the BAP is appropriately determined to accommodate:

- depending on the requirements for each type of building, the required multi-operator splice box(es) or an Optical Distribution Frame (ODF) of 19".

- the free space and working area required for **#F** operators to install and maintain their own active equipment. In the case of multi-operator splice boxes, each operator must be able to install its own splice box next to the multi-operator splice box(es). The dimensions

of the free wall space in that respect shall be at least 0.5 meters x 0.5 meters multiplied by the number of multi-operator splice boxes installed per operator, with a free depth of 1 meter.

85.3. The BAP shall ensure direct and accessible connectivity to the in-building fibre-optic cabling and in-building physical infrastructure.

85.4. The environmental conditions of the BAP shall meet the operational needs of the telecom components, including:

- ventilation and temperature inspection (e.g. 5–35°C recommended)
- humidity inspection (≤75% RH, non-condensing)
- appropriate lighting (≥ 300 lux at the level of the equipment)

85.5. a specific storage area (cabinet or shelf) is made available in the BAP for documents relating to the labelling of cables and equipment, as well as other necessary plans or maintenance reports.

85.6. The BAP must include sufficient reserve capacity to accommodate reasonable future needs, including additional operators, equipment or fibre optic closures.

85.7. At least one 230V AC socket shall be installed in the BAP to support installations, testing and maintenance.

9. Entry infrastructure of the building

86. The purpose of building entry infrastructure is to ensure easy accessibility to the building access point (BAP)[6] and to prevent any subsequent uncoordinated and unnecessary excavation or drilling on private property by telecom operators.

87. Construction promoters and project managers are strongly recommended to contact telecommunications operators operating in the vicinity during the design phase or early construction phase to determine the optimal location for the building's entry infrastructure, for example in the case of SDUs where no FII has been selected.

88. Telecom introduction ducts must be installed between a clearly defined and easily accessible point in the private domain (e.g. the boundary of the plot or the collection point of the utilities) and the BAP. These ducts can then be used by any operator to bring its operator cable to the BAP without the need for additional civil-engineering works to enter the building. The location and route of the entry infrastructure of the building shall be clearly documented.

89. This approach is in line with general practice in Flanders, where a group of introduction ducts ('connection curve') is typically installed in single-family houses (SDUs) to include the connections for electricity, gas, water, and telecom in a coordinated and accessible manner.

[6] In the case of SDUs, this is the place of the NTP.

90. The technical specifications for the telecom introduction ducts are as follows:

Type of building	**Number of telecom introductory ducts**	**Of which equipped with at least 4 subducts**	**Minimum diameter of the ducts (outside/ inside)**	**Minimum diameter of the subducts[7] (inside)**
SDU	2	1	50 mm / 45 mm	12 mm
MDU up to 96 Living Units per BAP	3	1	50 mm / 45 mm	12 mm
MDU > 96 Living Units per BAP	4	2	50 mm / 45 mm	12 mm

91. Each building is equipped with the number of ducts as described in the table above, according to the type of building. In the case of mixed-use or other-use buildings, the number of NTPs shall determine the category of building.

91.1. One or two ducts (depending on the type of building) shall contain at least four internal subducts, with the dimensions indicated in the table above;

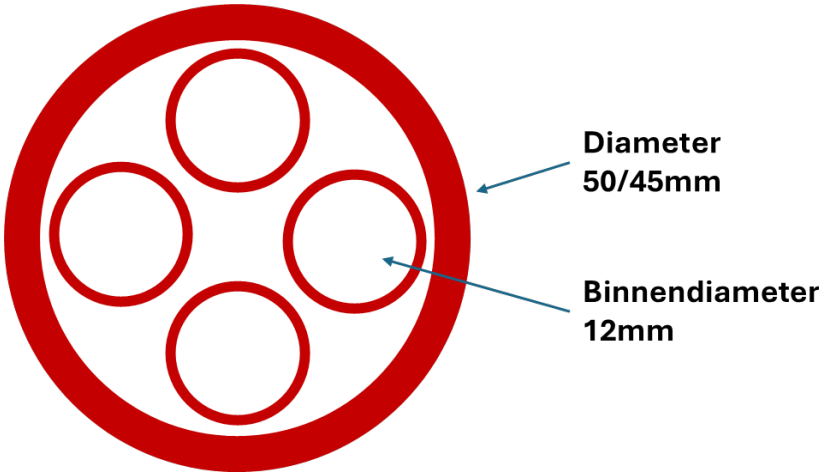
91.2. The (sub)ducts have a smooth wall to minimise friction;

91.3. The free (sub)ducts shall be equipped with traction wires to facilitate the installation of cables.

91.4. The ducts shall not have angles of less than 120 degrees or have a minimum bending radius of 500 mm at 90 degrees.

91.5. The system shall include containment solutions that ensure that the (sub)ducts are water and gas tight to prevent ingress and ensure the integrity of the infrastructure.

[7] The term subducts also includes microducts, and is used as an umbrella term for smaller ducts within a larger duct that are used to lay one cable in.



Diameter	Diameter
50/45mm	50/45mm
Binnendiameter	Inner diameter
12mm	12mm

Figure 8: Illustration of a duct with subducts

10. Requirements relating to electricity and electromagnetic protection

10.1. Requirements related to electricity

92. At least one 230V AC socket shall be installed in the vicinity of each ONTP.

93. At least one 230V AC socket shall be installed in the BAP to support installations, testing and maintenance.

10.2. Electrical and electromagnetic protection

94. Power cables and telecommunications cables - including fibre optic, coax and balanced twisted pair cables (e.g. Ethernet) - shall not be installed in the same (sub)duct.

95. This separation requirement is fundamental to:

- prevent electromagnetic interference (EMI) that affects telecom signals;
- comply with safety and functional separation requirements as set out in EN 50174-2 and EN 50174-1;
- facilitate maintenance and minimise the risk of damage during interventions.

96. Where proximity is unavoidable (e.g. in service ducts or service shafts), the minimum separation distances must be respected, and physical barriers or shielding shall be used in accordance with Table NA.8 of EN 50174-2 (e.g. 50 mm for segregated installation with barrier, up to 200 mm without).

11. Installation practices of the interior network

97. Indoor fibre-optic cabling shall be installed in accordance with the requirements set out in this specification, paying particular attention to the electromagnetic immunity and physical integrity of the cable. The minimum permitted bending radius of the glass fibres, as determined by the manufacturer, shall be strictly respected in order to avoid signal deterioration or physical damage.

98. All passive and active components (e.g. fibre-optic cables, connectors, multi-operator splice boxes, ODF) shall be installed strictly in accordance with the manufacturer's instructions, using the tools and procedures approved and recommended by the manufacturer. Fibre optic connections in the open air or semi-exposed to the elements shall be protected from moisture, condensation and water penetration using appropriate sealing methods (e.g. IP-rated enclosures or gel seals).

99. Upon completion of the installation, the complete in-building fibre-optic cabling shall be fully and accurately documented as described in part Error: Reference source not found of this specification. A physical copy of that documentation – including cable routes, terminal points, splicing data, labelling schemes and test results – shall be stored in the building access point (BAP) in a clearly identified and accessible place (e.g. labelled folder or cabinet).

12. Testing and inspection of the indoor network

100. Before the interior network is put into operation, the conformity, performance and quality of all built or repaired internal networks must be thoroughly tested and inspected. These procedures ensure that the installation complies with the technical requirements described in this specification and is suitable for use.

101. All newly built and restored indoor networks should be subjected to functional testing and visual inspection before being put into operation.

102. The functionality and performance of the fibre optic network shall be verified using calibrated measuring instruments that meet the standards and are used by competent personnel. Measurements shall reflect both optical performance and workmanship before installation.

103. The following elements must be inspected during the quality assurance process:

- physical cable arrangement, routing paths, bending radii and installations in equipment and distribution areas;
- network documentation, including markings, labels and updated ‘as made’ drawings;

- general quality of the installation and compliance with standards of craftsmanship and safety.

104. As a minimum, the following verifications and measurements shall be carried out on the entire in-building fibre-optic infrastructure:

- basic continuity check to confirm the end-to-end connectivity of each fiber;
- OTDR (Optical Time Domain Reflectometer) test at the wavelengths 1310 nm and 1550 nm, in accordance with IEC 61280-4-2, to assess insertion loss, reflection factor and quality of the weld;
- visual inspection of the physical installation (e.g. cable arrangement, cleanliness of the connector, respect of bending, slack management);
- verification of the documentation, to verify that all elements (such as cable IDs, ONTP positions, location of splice boxes) are accurate and consistent with this specification.

105. All test results shall be recorded and included in the final documentation package, as described in Section Error: Reference source not found.

13. Documentation

13.1. Documentation of construction

106. Before the interior network is put into operation, a comprehensive final documentation must be drawn up and handed over to the owner of the building. That documentation should cover all built, rebuilt or repaired indoor networks and should support future use, maintenance, troubleshooting and upgrades.

107. The documentation must include the entire fibre optic network as described in this specification, and - ideally - any other constructed interior networks (e.g. Ethernet, coax or legacy cabling systems). At least the following elements shall be included:

107.1. A description of the types and structure of all constructed interior networks, including:

- cable routing plans and circuit diagrams
- cable numbering plans
- elements of the physical infrastructure (such as ducts, trays, welding)

107.2. a floor plan or sketch clearly indicating the numbering and location of all Living Units (apartments).

107.3. a diagram or situational drawing showing:

- input points for operator cable(s)
- the location and route of the entry infrastructure of the building

107.4. identification and design of all:

- splice boxes, floor boxes, ODFs and ONTPs;
- of which the numbering, structure and physical location per floor

107.5. specification sheets or manuals for all installed passive and active materials and components, such as:

- optical fibre cables
- connectors and switchboards
- ONTPs

107.6. Details of all site-specific fire safety requirements, including measures to slow down fires, conformity with cable classes (e.g. CPR score) and materials used.

13.2. Inspection or audit reports

108. Comprehensive inspection reports shall be drawn up for all installation works related to the in-building network. Those reports shall confirm that the installation complies with all applicable requirements of this Specification.

109. The test report must contain at least the following information:

109.1. the date on which conformity with the technical and installation requirements was verified;

109.2. the name and connection of the person or entity responsible for confirming conformity;

109.3. a report of the inspections carried out, with reference to relevant clauses of this specification (e.g. cable routes, labelling);

109.4. a description of the test equipment and measurement setting during the verification process (e.g. OTDR model, details of calibration);

109.5. the results of all required measurements, including OTDR traces, loss values and any visual inspection findings.

110. The inspection reports together with all supporting documentation described in Error: Reference source not found must be collected and handed over to the building owner or designated project manager before the internal network is put into operation, both as physical and digital copy.

111. The FII responsible for the installation of the network shall keep the inspection reports and all related documentation or certified copies thereof in a secure location for at least ten (10) years after the formal handover of the project to the building promoter. This documentation can be requested by the BIPT.

13.3. Maintenance and storage of documents

112. All documentation related to the interior network shall be updated immediately following a change, extension, repair or reconfiguration of the system. This ensures that the documents always reflect the current state of the network and remain reliable for maintenance and operational purposes.

113. The documentation of interior networks shall be kept for the entire operational lifetime of the network. This includes all original documents, subsequent updates, inspection reports, test reports and “as-made” sketches.

114. The owner of the property or responsible party must ensure that a physical copy of all documents related to the indoor network is securely stored, i.e.:

- in the building access point (BAP), or
- in an alternative safe location in the building where they are readily accessible to telecommunications operators, maintenance staff or authorised inspectors, if required.

115. The owner of the property or responsible party should ensure that a digital copy of all documents related to the indoor network is securely stored and that a backup has been made.

14. Definition of Zone I and Zone II

Municipality	Zone
Aalst	Zone I
Aalter	Zone II
Aarlen	Zone I
Aarschot	Zone I
Aartselaar	Zone I
Aat	Zone II
Affligem	Zone I
Aiseau-Presles	Zone I
Alken	Zone I
Alveringem	Zone II
Amay	Zone I
Amel	Zone II
Andenne	Zone I
Anderlecht	Zone I
Anderlues	Zone I
Anhée	Zone II
Ans	Zone I
Anthisnes	Zone II
Antoing	Zone II
Antwerpen	Zone I
Anzegem	Zone I
Ardooie	Zone I
Arendonk	Zone II
As	Zone I
Asse	Zone I
Assenede	Zone II
Assesse	Zone II
Attert	Zone II
Aubange	Zone I
Aubel	Zone II
Avelgem	Zone I
Awans	Zone I
Aywaille	Zone II
Baarle-Hertog	Zone I
Baelen	Zone II
Balen	Zone I
Boussu	Zone I
Boutersem	Zone I
Braives	Zone II
Brakel	Zone I
Bastenaken	Zone II
Beaumont	Zone II
Beauraing	Zone II
Beernem	Zone II
Beerse	Zone I
Beersel	Zone I
Begijnendijk	Zone I
Bekkevoort	Zone II
Beloeil	Zone II
Bergen	Zone I
Beringen	Zone I
Berlaar	Zone I
Berlare	Zone I
Berloz	Zone II
Bernissart	Zone I
Bertem	Zone I
Bertrix	Zone II
Bevekom	Zone II
Bever	Zone II
Beveren-Kruibeke-Zwijndrecht	Zone I
Beyne-Heusay	Zone I
Bierbeek	Zone I
Bièvre	Zone II
Bilzen-Hoeselt	Zone I
Binche	Zone I
Bitsingen	Zone II
Blankenberge	Zone I
Blegny	Zone I
Bocholt	Zone II
Boechout	Zone I
Bonheiden	Zone I
Boom	Zone I
Boortmeerbeek	Zone I
Borgworm	Zone I
Bornem	Zone I
Bouillon	Zone II
Dalhem	Zone II
Damme	Zone II
Daverdisse	Zone II
De Haan	Zone I

Brasschaat	Zone I
Brecht	Zone I
Bredene	Zone I
Bree	Zone I
Brugelette	Zone II
Brugge	Zone I
Brunehaut	Zone II
Brussel	Zone I
Buggenhout	Zone I
Büllingen	Zone II
Burdinne	Zone II
Burg-Reuland	Zone II
Bütgenbach	Zone II
Celles	Zone II
Cerfontaine	Zone II
Chapelle-lez-Herlaimont	Zone I
Charleroi	Zone I
Chastre	Zone II
Châtelet	Zone I
Chaudfontaine	Zone I
Chaumont-Gistoux	Zone II
Chièvres	Zone II
Chimay	Zone II
Chiny	Zone II
Ciney	Zone II
Clavier	Zone II
Colfontaine	Zone I
Comblain-au-Pont	Zone II
Courcelles	Zone I
Court-Saint-Étienne	Zone I
Couvin	Zone II
Crisnée	Zone II
Municipality	**Zone**
Erpe-Mere	Zone I
Erquelinnes	Zone II
Esneux	Zone I
Essen	Zone I
Estaimpuis	Zone I
Estinnes	Zone II
Étalle	Zone II
Etterbeek	Zone I
Eupen	Zone II
Evere	Zone I
Evergem	Zone I
Faimes	Zone II
Farciennes	Zone I

De Panne	Zone I
Deerlijk	Zone I
Deinze	Zone I
Denderleeuw	Zone I
Dendermonde	Zone I
Dentergem	Zone I
Dessel	Zone I
Destelbergen	Zone I
Diepenbeek	Zone I
Diest	Zone I
Diksmuide	Zone II
Dilbeek	Zone I
Dilsen-Stokkem	Zone I
Dinant	Zone II
Dison	Zone I
Doische	Zone II
Donceel	Zone II
Doornik	Zone I
Dour	Zone I
Drogenbos	Zone I
Duffel	Zone I
Durbuy	Zone II
Écaussinnes	Zone I
Edegem	Zone I
Edingen	Zone I
Eeklo	Zone I
Éghezée	Zone II
Eigenbrakel	Zone I
Elsene	Zone I
Elzele	Zone II
Engis	Zone II
Érezée	Zone II
Municipality	**Zone**
Genepiën	Zone II
Genk	Zone I
Gent	Zone I
Geraardsbergen	Zone I
Gerpinnes	Zone I
Gesves	Zone II
Gingelom	Zone II
Gistel	Zone I
Glabbeek	Zone II
Gouvy	Zone II
Grâce-Hollogne	Zone I
Graven	Zone I
Grimbergen	Zone I

Fauvillers	Zone II
Fernelmont	Zone II
Ferrières	Zone II
Fexhe-le-Haut-Clocher	Zone II
Flémalle	Zone I
Fléron	Zone I
Fleurus	Zone I
Floreffe	Zone II
Florennes	Zone II
Florenville	Zone II
Fontaine-l'Évêque	Zone I
Fosses-la-Ville	Zone II
Frameries	Zone I
Frasnes-lez-Anvaing	Zone II
Froidchapelle	Zone II
Ganshoren	Zone I
Gavere	Zone I
Gedinne	Zone II
Geel	Zone I
Geer	Zone II
Geetbets	Zone II
Geldenaken	Zone II
Gembloux	Zone I
Municipality	**Zone**
Herent	Zone I
Herentals	Zone I
Herenthout	Zone I
Herk-de-Stad	Zone I
Héron	Zone II
Herselt	Zone I
Herstal	Zone I
Herstappe	Zone II
Herve	Zone I
Herzele	Zone I
Heusden-Zolder	Zone I
Heuvelland	Zone II
Hoegaarden	Zone II
Hoei	Zone I
Hoeilaart	Zone I
Holsbeek	Zone I
Honnelles	Zone II
Hooglede	Zone I
Hoogstraten	Zone II
Horebeke	Zone II
Hotton	Zone II

Grobbendonk	Zone I
Haacht	Zone I
Haaltert	Zone I
Habay	Zone II
Halen	Zone I
Halle	Zone I
Hamme	Zone I
Hamoir	Zone II
Hamois	Zone II
Hamont-Achel	Zone I
Ham-sur-Heure-Nalinnes	Zone I
Hannuit	Zone II
Harelbeke	Zone I
Hasselt	Zone I
Hastière	Zone II
Havelange	Zone II
Hechtel-Eksel	Zone II
Heers	Zone II
Heist-op-den-Berg	Zone I
Hélécine	Zone II
Hemiksem	Zone I
Hensies	Zone I
Herbeumont	Zone II
Municipality	**Zone**
Jemeppe-sur-Sambre	Zone I
Jette	Zone I
Juprelle	Zone I
Jurbeke	Zone II
Kalmthout	Zone I
Kampenhout	Zone I
Kapellen	Zone I
Kapelle-op-den-Bos	Zone I
Kaprijke	Zone II
Kasteelbrakel	Zone I
Kasterlee	Zone I
Keerbergen	Zone I
Kelmis	Zone I
Kinrooi	Zone II
Kluisbergen	Zone II
Knokke-Heist	Zone I
Koekelare	Zone II
Koekelberg	Zone I
Koksijde	Zone I
Komen-Waasten	Zone I

Houffalize	Zone II
Houthalen-Helchteren	Zone I
Houthulst	Zone II
Houyet	Zone II
Hove	Zone I
Huldenberg	Zone I
Hulshout	Zone I
Ichtegem	Zone I
Ieper	Zone I
Incourt	Zone II
Ingelmunster	Zone I
Itter	Zone II
Izegem	Zone I
Jabbeke	Zone I
Jalhay	Zone II

Municipality	Zone
Lasne	Zone I
Le Roeulx	Zone II
Lebbeke	Zone I
Lede	Zone I
Ledegem	Zone I
Léglise	Zone II
Lendelede	Zone I
Lennik	Zone I
Lens	Zone II
Leopoldsburg	Zone I
Les Bons Villers	Zone II
Lessen	Zone I
Leuven	Zone I
Leuze-en-Hainaut	Zone II
Libin	Zone II
Libramont-Chevigny	Zone II
Lichtervelde	Zone I
Liedekerke	Zone I
Lier	Zone I
Lierde	Zone I
Lierneux	Zone II
Lievegem	Zone I
Lijsem	Zone II
Lille	Zone I
Limburg	Zone II
Linkebeek	Zone I
Lint	Zone I

Kontich	Zone I
Kortemark	Zone II
Kortenaken	Zone II
Kortenberg	Zone I
Kortrijk	Zone I
Kraainem	Zone I
Kruisem	Zone II
Kuurne	Zone I
La Bruyère	Zone II
La Louvière	Zone I
La Roche-en-Ardenne	Zone II
Laakdal	Zone I
Laarne	Zone I
Lanaken	Zone I
Landen	Zone I
Langemark-Poelkapelle	Zone II

Municipality	Zone
Luik	Zone I
Lummen	Zone I
Maarkedal	Zone II
Maaseik	Zone I
Maasmechelen	Zone I
Machelen	Zone I
Maldegem	Zone I
Malle	Zone I
Malmedy	Zone II
Manage	Zone I
Manhay	Zone II
Marche-en-Famenne	Zone II
Marchin	Zone II
Martelange	Zone II
Mechelen	Zone I
Meerhout	Zone I
Meise	Zone I
Meix-devant-Virton	Zone II
Menen	Zone I
Merbes-le-Château	Zone II
Merchtem	Zone I
Merelbeke-Melle	Zone I
Merksplas	Zone II
Mesen	Zone I
Messancy	Zone II
Mettet	Zone II
Middelkerke	Zone I

Linter	Zone II
Lobbes	Zone II
Lochristi	Zone I
Lokeren	Zone I
Lommel	Zone I
Londerzeel	Zone I
Lontzen	Zone II
Lo-Reninge	Zone II
Lubbeek	Zone I
Municipality	**Zone**
Mortsel	Zone I
Musson	Zone II
Namen	Zone I
Nandrin	Zone II
Nassogne	Zone II
Nazareth-De Pinte	Zone I
Neufchâteau	Zone II
Neupré	Zone I
Niel	Zone I
Nieuwerkerken	Zone I
Nieuwpoort	Zone I
Nijlen	Zone I
Nijvel	Zone I
Ninove	Zone I
Oerle	Zone II
Ohey	Zone II
Olen	Zone I
Olne	Zone I
Onhaye	Zone II
Oostende	Zone I
Oosterzele	Zone I
Oostkamp	Zone I
Oostrozebeke	Zone I
Opwijk	Zone I
Opzullik	Zone II
Orp-Jauche	Zone II
Ottignies-Louvain-la-Neuve	Zone I
Oudenaarde	Zone I
Oudenburg	Zone I
Oudergem	Zone I
Oud-Heverlee	Zone I
Oudsbergen	Zone II
Oud-Turnhout	Zone I
Ouffet	Zone II
Oupeye	Zone I
Overijse	Zone I

Modave	Zone II
Moeskroen	Zone I
Mol	Zone I
Momignies	Zone II
Mont-de-l'Enclus	Zone II
Montigny-le-Tilleul	Zone I
Mont-Saint-Guibert	Zone I
Moorslede	Zone I
Morlanwelz	Zone I
Municipality	**Zone**
Pajottegem	Zone II
Paliseul	Zone II
Pecq	Zone II
Peer	Zone II
Pelt	Zone I
Pepingen	Zone II
Pepinster	Zone I
Péruwelz	Zone I
Perwijs	Zone II
Philippeville	Zone II
Pittem	Zone II
Plombières	Zone II
Pont-à-Celles	Zone I
Poperinge	Zone II
Profondeville	Zone II
Putte	Zone I
Puurs-Sint-Amands	Zone I
Quaregnon	Zone I
Quévy	Zone II
Quiévrain	Zone I
Raeren	Zone II
Ramillies	Zone II
Ranst	Zone I
Ravels	Zone II
Rebecq	Zone I
Remicourt	Zone I
Rendeux	Zone II
Retie	Zone II
Riemst	Zone I
Rijkevorsel	Zone I
Rixensart	Zone I
Rochefort	Zone II
Roeselare	Zone I
Ronse	Zone I
Roosdaal	Zone I
Rotselaar	Zone I

Rouvroy	Zone II
Rumes	Zone II
Rumst	Zone I
's Gravenbrakel	Zone I
Sainte-Ode	Zone II
Saint-Georges-sur-Meuse	Zone I
Saint-Ghislain	Zone I
Saint-Hubert	Zone II
Saint-Léger	Zone II
Saint-Nicolas	Zone I
Sambreville	Zone I
Sankt Vith	Zone II
Schaarbeek	Zone I
Schelle	Zone I
Scherpenheuvel-Zichem	Zone I
Schilde	Zone I
Schoten	Zone I
Seneffe	Zone II
Seraing	Zone I
Sint-Agatha-Berchem	Zone I
Sint-Genesius-Rode	Zone I
Sint-Gillis	Zone I
Sint-Gillis-Waas	Zone I
Sint-Jans-Molenbeek	Zone I
Sint-Joost-ten-Node	Zone I
Sint-Katelijne-Waver	Zone I
Sint-Lambrechts-Woluwe	Zone I
Sint-Laureins	Zone II
Sint-Lievens-Houtem	Zone I
Sint-Martens-Latem	Zone I
Sint-Niklaas	Zone I
Sint-Pieters-Leeuw	Zone I
Sint-Pieters-Woluwe	Zone I
Sint-Truiden	Zone I
Sivry-Rance	Zone II
Sombreffe	Zone II
Somme-Leuze	Zone II
Soumagne	Zone I
Spa	Zone II
Spiere-Helkijn	Zone II
Sprimont	Zone II
Stabroek	Zone I
Staden	Zone II
Stavelot	Zone II
Steenokkerzeel	Zone I
Stekene	Zone I
Stoumont	Zone II
Tellin	Zone II
Temse	Zone I
Tenneville	Zone II
Terhulpen	Zone I
Ternat	Zone I
Tervuren	Zone I
Tessenderlo-Ham	Zone I
Theux	Zone II
Thimister-Clermont	Zone II
Thuin	Zone II
Tielt	Zone I
Tielt-Winge	Zone I
Tienen	Zone I
Tinlot	Zone II
Tintigny	Zone II
Tongeren-Borgloon	Zone I
Torhout	Zone I
Tremelo	Zone I
Trois-Ponts	Zone II
Trooz	Zone I
Tubeke	Zone I
Turnhout	Zone I
Ukkel	Zone I
Vaux-sur-Sûre	Zone II
Verlaine	Zone II
Municipality	**Zone**
Verviers	Zone I
Veurne	Zone II
Vielsalm	Zone II
Villers-la-Ville	Zone II
Municipality	**Zone**
Wielsbeke	Zone I
Wijnegem	Zone I
Willebroek	Zone I
Wingene	Zone II

Villers-le-Bouillet	Zone II
Vilvoorde	Zone I
Viroinval	Zone II
Virton	Zone II
Vleteren	Zone II
Vloesberg	Zone II
Voeren	Zone II
Vorselaar	Zone I
Vorst	Zone I
Vosselaar	Zone I
Vresse-sur-Semois	Zone II
Waasmunster	Zone I
Walcourt	Zone II
Walhain	Zone II
Wanze	Zone I
Waregem	Zone I
Wasseiges	Zone II
Waterloo	Zone I
Watermaal-Bosvoorde	Zone I
Waver	Zone I
Weismes	Zone II
Welkenraedt	Zone I
Wellen	Zone I
Wellin	Zone II
Wemmel	Zone I
Wervik	Zone I
Westerlo	Zone I
Wetteren	Zone I
Wevelgem	Zone I
Wezembeek-Oppem	Zone I
Wezet	Zone I
Wichelen	Zone I

Wommelgem	Zone I
Wortegem-Petegem	Zone II
Wuustwezel	Zone II
Yvoir	Zone II
Zandhoven	Zone I
Zaventem	Zone I
Zedelgem	Zone I
Zele	Zone I
Zelzate	Zone I
Zemst	Zone I
Zinnik	Zone I
Zoersel	Zone I
Zonhoven	Zone I
Zonnebeke	Zone II
Zottegem	Zone I
Zoutleeuw	Zone II
Zuienkerke	Zone II
Zulte	Zone I
Zutendaal	Zone II
Zwalm	Zone II
Zwevegem	Zone I