Pursuant to Article 9(1) and (5), Article 11(5) and for the implementation of Article 12 of the Metrology Act (Official Gazette of the Republic of Slovenia [Uradni List RS] No 26/05 – official consolidated text) the Minister for the Economy, Tourism and Sport is issuing the following

Rules

on metrological requirements for measuring systems for electric vehicles charging equipment

I. GENERAL PROVISIONS

Article 1
(Content)

(1) These Rules lay down the metrological and technical requirements to be met by measuring systems for electric vehicle charging equipment (hereinafter: measuring systems for EVSE), the method of their marking and the procedures for the assessment of conformity and verification and control of measuring systems for EVSE in use.

(2) These Rules are issued pursuant to the notification procedure in accordance with the Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations (OJ L 204, 21.7.1998 p.37), last amended by Regulation (EU) No 1025/2012 of the European Parliament and of the Council of 25 October 2012 on European standardisation, amending Council Directives 89/686/EEC and 93/15/EEC and Directives 94/9/EC, 94/25/EC, 95/16/EC, 97/23/EC, 98/34/EC, 2004/22/EC, 2007/23/EC, 2009/23/EC and 2009/105/EC of the European Parliament and of the Council and repealing Council Decision 87/95/EEC and Decision No 1673/2006/EC of the European Parliament and of the Council (OJ L 316, 14.11.2012, p.12).

Article 2
(Terms and symbols used)

The following terms and symbols when used in these Rules shall have the following meanings:

measuring system for EVSE	a system incorporating all relevant metrological functions associated with the conductive transmission (in either direction) of active electrical energy between EVSE (such as recharging points for electric vehicles) and electric vehicles (such as motor vehicles, locomotives, boats, vessels and aeroplanes) at a given point of transfer;
I	the electric current flowing through the measuring system for EVSE at the point of transfer;
I_{st}	the lowest value specified I, at which the measuring system for EVSE registers electrical energy and, for alternating current, at a power factor $\cos\varphi = 1$ (multi-phase measuring systems with symmetrical load);
I_{min}	Value I, above which the error is within the basic maximum permissible errors (BMPE) (for alternating current, multi-phase measuring systems with symmetrical load);
I_{tr}	Value I, above which the error lies within the minimum BMPE according to the accuracy class of the measuring system for EVSE;
I_{max}	maximum value I, where the error is within the BMPE;

U	for alternating current, the effective value of the electrical voltage supplied to or from the measuring system for EVSE at the point of transfer; for direct current, the value of the electrical voltage supplied to or from the measuring system for EVSE at the point of transfer;
U_n	rated voltage;
f	frequency of voltage supplied to or from the measuring system for EVSE in the case of alternating current measuring systems;
f_n	rated frequency, for alternating current measuring systems;
PF	power factor = cosφ = cosine of the phase difference φ between I and U, for alternating current measuring systems;
harmonic	part of the signal whose frequency is an integer multiple of the fundamental frequency of the input power supplied to the measuring system for EVSE, where the fundamental frequency is usually the nominal frequency f_n, in the case of alternating current measuring systems;
d	distortion factor, which is the ratio between the effective value of the harmonic components and the effective value of the fundamental component, and which is equal to the total harmonic distortion, where the fundamental component is used as the reference value (denominator), for alternating current measuring systems;
MMQ	minimum measured quantity of energy in a transaction for which the manufacturer determines that the measuring system for EVSE will achieve the MPE of the EVSE accuracy class measuring system;
point of transfer	the point at which the electric vehicle is connected to the measuring system for EVSE
measured quantity	is the quantity to be measured
influence quantity	a quantity that is not the measured quantity but that affects the result of measurement
rated operating conditions	the values for the measured and influence quantities making up the normal working conditions of the measuring instrument;
disturbance	an influence quantity having a value within the limits specified in the appropriate requirement but outside the specified rated operating conditions of the measuring instrument. An influence quantity is a disturbance if for that influence quantity the rated operating conditions are not specified
critical change value	failure of the device in the event of a malfunction in which the device appears to be operating correctly but the legally relevant information is incorrect or the deviation of the measurement accuracy exceeds that determined in the tests
direct sales	trading transaction constitutes direct sales if: the measurement result serves as the basis for the price to pay, and at least one of the parties involved in the transaction related to measurement is a consumer or any other party requiring a similar level of protection, and all parties to the transaction accept the measurement results at the time the measurement is completed

climatic environments	are the conditions under which the criteria may be applied
basic maximum permissible error (BMPE)	extreme values of error (indication) of the EVSE when the current (alternating and direct EVSE) and voltage (direct EVSE) vary within the intervals specified by the rated operating conditions and when the EVSE otherwise operates under reference conditions
MPE	maximum permissible error

Article 3

(EVSE with a separately approved electricity meter)

(1) For measuring systems for EVSE, metrological functions may also be ensured by an electricity meter with type approval of the measuring instrument (hereinafter ‘separately approved meter’) that has been tested on the basis of a standard that stipulates at least comparable requirements to these Rules.

(2) The results of this type approval procedure shall be taken into account when carrying out the conformity assessment procedure for the measuring system for EVSE under these Rules.

II. METROLOGICAL AND TECHNICAL REQUIREMENTS

Article 4

(General provisions)

(1) Measuring system for EVSE shall provide a high level of metrological protection so the user can have confidence in the measurement results, and shall be designed and manufactured to a high level of quality in respect of the measurement technology and security of the measurement data.

(2) The solutions adopted in order to meet the requirements shall take account of the intended use of the measuring system for EVSE and any foreseeable misuse thereof.

(3) Measuring system for EVSE shall be designed so as to enable each examination and test prescribed in these rules to be carried out.

Article 5

(Accuracy Class)

(1) The manufacturer must specify the accuracy class of the measurement system for EVSE. Accuracy classes are defined as: Class A, B and C.

(2) The accuracy must be determined at the point of transfer.

(3) If the energy exchanged at the point of transfer is in the form of direct current, the measured quantity must be direct current energy. If the energy exchanged at the point of transfer is in the form of alternating current, the measured quantity must be alternating current active energy.

(4) MPEs are determined as the square root of the sum of the squares of BMPE and permissible error movements in frequency, voltage and temperature changes.

Article 6

(BMPE)

(1) When the current (measuring systems for direct and alternating current) and voltage (measuring systems for direct current) vary within the range of the indicated operating conditions and when the measuring system for EVSE operates under reference conditions, the percentage errors shall not exceed the limits specified in Table 1 for the specified accuracy class.

Table 1

		Basic MPE in percentages under reference conditions and specified load flow ranges		
Current	**Power factor (only for alternating current)**	**A (2 %)**	**B (1 %)**	**C (0,5 %)**
$I_{st} \leq I < I_{min}$	> 0.9	± 25	± 15	± 10
$I_{min} \leq I < I_{tr}$	> 0.9	± 2.5	± 1.5	± 1
$I_{tr} \leq I < I_{max}$	> 0.9	± 2	± 1	± 0.5

(2) The measuring system for EVSE shall not exploit the BMPE or systematically favour any party.

Article 7
(Operational requirements)

(1) The following applies for a measuring system for EVSE that includes a cable with a connector located between the point at which the energy is measured and the point of transfer:

(a) the cable with the connector is not replaceable and is protected by a metrological protection mark; or

(b) if the cable with the connector is intended to be replaceable, while the measuring system for EVSE is metrologically protected, it is necessary that it is:

- specified as replaceable in the type approval certificate and the characteristics of compatible cables with connectors are specified on the measuring system for EVSE,
- marked with the characteristics and unique marking; such markings must also be on the spare pieces, and
- separately protected in such a way that its replacement does not require intervention in the metrologically protected parts of the measuring system.

(2) The replacement of the cable with the connector shall not affect the metrological characteristics of the measuring system for EVSE.

Article 8
(Rated operating conditions)

(1) The manufacturer must specify the climatic, mechanical and electromagnetic environments in which the EVSE measurement system is intended to be used, the power supply and other influence quantities which may affect its accuracy, taking into account the requirements of these Rules.

(2) The manufacturer shall:

- set the upper temperature limit and the lower temperature limit in accordance with Table 2,

Table 2

	Temperature limits		
Upper temperature limits	40 C	55°C	70°C
Lower temperature limits	–10°C	–25°C	–40°C

- indicate whether the criterion is designed for condensing or non-condensing moisture,
- indicate the location for which the measuring instrument is intended, i.e. open or closed

(3) The manufacturer shall specify the indicated operating conditions for the measuring system for EVSE, in particular the values of f_n, U_n, I_{st}, I_{min}, I_{tr} and I_{max}, and, for the DC measuring system, the output voltage range.

(4) For the given current values, the measurement system for EVSE shall meet the conditions set out in Table 3.

Table 3

	class A	class B	class C
I_{st}	< 0.05 · I_{tr}	< 0.04 · I_{tr}	< 0.04 · I_{tr}
I_{min}	< 0.5 · I_{tr}	< 0.5 · I_{tr}	< 0.3 · I_{tr}
I_{max}	> 10 · I_{tr}	> 10 · I_{tr}	> 10 · I_{tr}

(5) The voltage, frequency and power factor ranges within which the measurement system for EVSE must meet the BMPE requirements are listed in Table 1.

(6) The following applies to AC measuring systems:

– the voltage range must be: $0.9 \cdot U_n \leq U \leq 1.1 \cdot U_n$;
– the frequency range must be: $0.98 \cdot f_n \leq f \leq 1.02 \cdot f_n$;
– the power factor range must be: $PF \geq 0.9$;
– the measuring system for EVSE shall operate correctly when the supply voltage distortion is less than 10% and the load current distortion is less than 3% for all harmonic component indices;
– the MMQ area must be: $MMQ \leq 0,1\,kWh$.

(7) The following applies to direct current measuring systems:

– the output voltage range shall be between the minimum and maximum rated output voltage of the measuring system for EVSE;
– the MMQ area must be: $MMQ \leq 1\,kWh$.

(8) The following influence quantities shall be considered in relation with electromagnetic environments:
- voltage interruptions,
- short-term voltage interruptions,
- voltage transients on supply lines or signal lines,
- electrostatic discharges,
- radio frequency electromagnetic fields,
- induced radio frequency electromagnetic fields on supply lines or signal lines and
- surges on supply lines or signal lines.

(9) With regard to electromagnetic environments, consideration should be given to whether measuring systems for EVSE are:

- used in locations with electromagnetic disturbances similar to those in residential, commercial and light industrial buildings (class E1),
- used in locations with electromagnetic disturbances similar to those in other industrial facilities (class E2),

(10) With regard to mechanical environments, consideration should be given to whether the measuring systems for EVSE are:

- used in locations with vibration and shocks of low significance, e.g. for measuring instruments fastened to light supporting structures subject to negligible vibrations and shocks transmitted from local blasting or pile-driving activities, slamming doors, etc. (class M1);
- used in locations with significant or high levels of vibration and shock, e.g. transmitted from machines and passing vehicles in the vicinity or adjacent to heavy machines, conveyor belts, etc. (class M2);
- used in locations where the level of vibration and shock is high and very high, e.g. for measuring instruments mounted directly on machines, conveyor belts, etc. (class M3).

(11) Ambient humidity:

- Depending on the climatic operating environment in which the measuring instrument is intended to be used, the most appropriate test procedure may be either steady-state damp heat (non-condensing) or cyclic damp heat (condensing).
- The damp heat cyclic test is appropriate where condensation is important or when penetration of vapour will be accelerated by the effect of breathing. In conditions where non-condensing humidity is a factor the damp-heat steady state is appropriate.

Article 9
(Permissible effects – general)

(1) The measurement system for EVSE must be designed and manufactured in such a way that critical errors do not occur when exposed to disturbances and that the shift in accuracy does not exceed the values specified in Articles 10 and 11.

(2) Where there is a foreseeable high risk from lightning or where overhead power grids predominate, the metrological characteristics of the measuring system for EVSE shall be protected.

Article 10
(Permissible effects of disturbance)

(1) Within the rated operating conditions and in the presence of disturbances, the legally relevant data must be correct, or the change in accuracy measurements must not exceed 1.0 BMPE, even if the EVSE measurement system appears to be functioning correctly. An operation termination is not a critical error. If the disturbance interrupts the transaction, any of the following shall apply:

(a) the transaction is closed when the disturbance occurs;

(b) after the disturbance has been eliminated, the transaction continues correctly.

(2) When the measuring system for EVSE is intended to be used in a specified permanent continuous electromagnetic field, the permitted performance during the radiated electromagnetic field-amplitude modulated test shall be within the basic MPE.

Article 11
(Permissible effects of influence quantities)

Where the load current is constant at a point within the nominal operating range, with the measuring system for EVSE otherwise operating under reference conditions, and where any single influence quantity varies from the values under reference conditions to the extreme values defined in Tables 4 and 5, the change in error shall be such that the additional percentage error does not deviate from the

change in error values given in Tables 4 and 5. The measuring system for EVSE must continue to operate after each of these tests has been completed.

Table 4

Influence quantity	Current	Limits of the temperature coefficient c (%/K) for the measuring system for EVSE of class			**Type of current**
		A (2 %)	B (1 %)	C (0,5 %)	
Temperature coefficient c in any interval of the temperature range not less than 15 K and not greater than 23 K (i)	$I_{tr} \le I \le I_{max}$	± 0.1	± 0.05	± 0.03	Alternating and direct current

Table 5

Influence quantity	Value	Current	Maximum permissible error change (%) for a measuring system for EVSE of class			Type of current
			A (2 %)	B (1 %)	C (0,5 %)	
Self-heating	constant current at I_{max}	I_{max}	± 1	± 0.5	± 0.25	Alternating and direct current
Conductive disturbances, low frequency	2 kHz – 150 kHz	$I_{tr} \le I \le I_{max}$	± 3	± 2	± 2	Alternating and direct current
Continuous (direct current) magnetic induction of external origin	200 mT at 30 mm from the surface of the magnetic core	$I_{tr} \le I \le I_{max}$	± 3	± 1.5	± 0.75	Alternating and direct current
Magnetic field (alternating current, network frequency) of external origin (ii)	400 A/m	$I_{tr} \le I \le I_{max}$	± 2,5	± 1.3	± 0.5	Alternating and direct current
Radiated RF electromagnetic fields	f = 80 Mhz–6000 MHz, field strength ≤ 10 V/m	$I_{tr} \le I \le I_{max}$	± 3	± 2	± 1	Alternating and direct current
Radio-frequency field induced conductive disturbances (ii)	f = 0.15 MHz – 80 MHz, amplitude ≤ 10 V	$I_{tr} \le I \le I_{max}$	± 3	± 2	± 1	Alternating and direct current
Operation of ancillary devices	Ancillary devices operating with $I = I_{tr}$ and I_{max}	$I_{tr} \le I \le I_{max}$	± 0,7	± 0.3	± 0.15	Alternating and direct current
Voltage changes (ii)	0.9 × U_n up to 1.1 × maximum U_n	$I_{tr} \le I \le I_{max}$	± 1	± 0.7	± 0.2	Alternating current
Mains frequency	Each f_n ± 2 %	$I_{tr} \le I \le I_{max}$	± 0,8	± 0.5	± 0.2	Alternating current

variation (ii)						
Harmonic components in voltage and current circuits (ii)	$d < 5\ \%\ I$ $d < 10\ \%\ U$	$I_{tr} \leq I \leq I_{max}$	± 1	± 0.6	± 0.3	Alternating current
Reversed phase sequence (three-phase alternating current only) (ii)	any replaced phases	$I_{tr} \leq I \leq I_{max}$	± 1.5	± 1.5	± 0.1	Alternating current

Notes to Tables 4 and 5:

(i) In the case of a measuring system for EVSE with a separately approved electricity meter as referred to in Article 3 of these Rules, the temperature test may be limited to checking the correct operation at the extreme temperatures foreseen in the measuring system for the EVSE housing.

(ii) Not required for a measuring system for EVSE with a separately approved electricity meter from Article 3 of these Rules, if the specifications meet or exceed the specifications of the accuracy class specified by the manufacturer.

Article 12
(Basic rules for testing and determination of errors)

(1) Compliance with the requirements referred to in Article 8 of these Rules shall be verified for each relevant influence quantity. These requirements apply when each influence quantity is applied and its effect evaluated separately, all other influence quantities being kept relatively constant at their reference value.

(2) Metrological tests shall be carried out during or after the application of the influence quantity, taking into account those conditions that correspond to the normal state of operation of a measuring system for EVSE when this influencing quantity is likely to occur.

Article 13
(Reproducibility)

The use of the same measured quantity at a different location or by another user, where all other conditions are the same, must give very similar results in successive measurements. The difference between the measurement results should be small compared to the MPE.

Article 14
(Repeatability)

The application of the same measured quantity under the same conditions of measurement shall result in the close agreement of successive measurements. The difference between the measurement results should be small compared to the MPE.

Article 15
(Discrimination and sensitivity)

Measuring system for EVSE shall be sufficiently sensitive and its response threshold shall be sufficiently low for the intended measuring task.

Article 16
(Sustainability)

A measuring system for EVSE shall be designed to maintain an adequate stability of its metrological characteristics over a period estimated by the manufacturer, provided that it is properly installed, maintained and used according to the manufacturer’s instruction when in the environmental conditions for which it is designed.

Article 17
(Reliability)

The measuring system for EVSE must be designed in such a way as to minimise, as far as possible, the influence of errors that would cause inaccurate measurement results.

Article 18
(Suitability)

(1) Measuring system for EVSE shall be suitable for its intended use taking account of the practical working conditions and shall not require unreasonable demands of the user in order to obtain a correct measurement result.

(2) Measuring system for EVSE shall be robust and its materials of construction shall be suitable for the conditions in which it is intended to be used.

(3) Measuring system for EVSE shall be designed so as to allow the control of the measurement tasks after the instrument has been placed on the market and put into use. If necessary, special equipment or software for this control shall be part of the EVSE.

(4) When a measuring system for EVSE has associated software which provides other functions besides the measuring function, the software that is critical for the metrological characteristics shall be identifiable and shall not be inadmissibly influenced by the associated software.

Article 19
(Protection against misuse and unintentional incorrect use)

(1) The measuring system for EVSE must not allow for misuse or unintentional incorrect use.

(2) The metrological characteristics of a measuring system for EVSE shall not be influenced in any inadmissible way by the connection to it of another device, by any feature of the connected device itself or by any remote device that communicates with the EVSE.

(3) A hardware component that is critical for metrological characteristics shall be designed so that it can be protected against corruption or misuse. Security measures foreseen shall provide for evidence of an intervention.

(4) Software that is critical for metrological characteristics shall be identified as such and shall be secured.

(5) Software identification shall be easily provided by the measuring system for EVSE.

(6) Evidence of an intervention into EVSE shall be available at least 3 years after the intervention.

(7) Measurement data and metrologically significant parameters that are stored or transmitted must be adequately protected against misuse and unintentional incorrect use.

Article 20
(Indication of result)

(1) The indication of any result shall be clear and unambiguous and accompanied by such marks and inscriptions necessary to inform the user of the significance of the result. Reading of the presented result shall be easy under normal conditions of use. Additional indications may be allowed provided they cannot be confused with the metrologically controlled indications.

(2) The indication of the result must be protected against accidental deletion or modification.

(3) In the case of hard copy the print or record shall also be easily legible and non-erasable.

(4) The indication of measurement results and other data relevant to the result shall be accessible without tools in one or more of the following ways:

a) metrologically controlled local display, printout or record;

b) remote display,

c) consumer or end user device.

(5) The measurement results displayed must be traceable to a measuring instrument under metrological control. Security measures must enable the detection of unauthorised access.

(6) The displayed measurement results serve as the basis for the calculation of the amount to be paid.

(7) The scale interval for a measured value shall be in the form 1×10n, 2×10n, or 5×10n where “n” is any integer or zero. The unit of measurement or its symbol shall be shown close to the numerical value.

(8) The measured electricity shall be displayed in kilowatt-hours or with a decadent kilowatt-hours multiplier.

Article 21
(Further processing of data for the conclusion of a commercial transaction)

(1) The measuring system for EVSE shall record the measurement result together with the information identifying each transaction in a durable manner.

(2) In addition, permanent evidence of the measurement result and information to identify the transaction shall be available upon request at the moment the measurement is completed.

III. INSCRIPTIONS AND MARKINGS

Article 22
(Markings)

All marks and inscriptions required by any requirement shall be clear, unambiguous, non-erasable and non-transferable.

Article 23
(Identification plate)

The display, either permanently or on request, or the identification plate must show the following information:

- the official mark from the measurement type approval,
- the name of the manufacturer or its registered trademark,
- year of manufacture,
- product type,
- serial number (or identification code),
- voltage range (minimum and maximum output voltage),
- current load of the meter (I_{st}, I_{min}, I_{tr} and I_{max}),
- frequency,
- temperature range,
- accuracy class and
- minimum amount of measurement.

Article 24
(Instructions for use)

(1) The EVSE measurement system must be accompanied by information on its operation. The information shall be in Slovenian, easy to understand and shall, to the extent relevant, include the following:

- rated operating conditions,
- mechanical and electromagnetic environmental classes,
- the upper and lower temperature limits, whether condensation is possible or not, whether the criterion is intended for an open or closed location,

- instructions for installation, maintenance, repairs, permissible adjustments,
- instructions for correct operation and any special conditions of use, and
- conditions for compatibility with interfaces, sub-assemblies or measuring instruments.

(2) For groups of identical measuring systems for EVSE used at the same location, individual instructions for use are not necessarily required.

IV. CONFORMITY ASSESSMENT

Article 25
(Procedures)

The compliance of the measuring system for EVSE with the requirements of Chapters II and III of these Rules shall be confirmed by one of the following procedures chosen by the applicant:

- type approval followed by initial verification or type conformity assessment;
- direct verification of an individual measuring system for EVSE.

Article 26
(Type approval)

(1) Inspections and tests to confirm compliance with the requirements of these Rules as part of the type approval procedure shall be carried out in the manner and under the conditions specified in International Guideline OIML G22 of the International Organisation of Legal Metrology (Organisation Internationale de Métrologie Légale) or in another equivalent manner.

(2) The inspections and tests to verify conformity with the requirements of these Rules as part of the type approval procedure for software of measuring system for EVSE may also be carried out in the manner and under the conditions laid down in WELMEC Guideline 7.2 of the European Cooperation in Legal Metrology (hereinafter: WELMEC 7.2) for measuring instruments with a risk level:

- B for embedded software in a purpose-built EVSE,

- C for EVSE software using a universal device,

or in another equivalent manner.

(3) The reference to OIML G22 is based on the membership of the Metrology Institute of the Republic of Slovenia in the International Organisation of Legal Metrology. OIML G22 is available in English on the website of the International Organization of Legal Metrology.

(4) The reference to WELMEC 7.2 is based on the membership of the Metrology Institute of the Republic of Slovenia in the European Cooperation in Legal Metrology. WELMEC 7.2 in English is available on the website of the European Cooperation in Legal Metrology.

Article 27
(Foreign test reports)

Test reports issued by a conformity assessment body accredited for the relevant field of conformity assessment with regard to 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 (OJ L 218, 13. 8. 2008, p. 30) or the competent authority for type approvals of measuring systems for EVSE in an European Member State shall also be partially or fully accepted and recognised.

Article 28
(Direct verification of individual EVSE)

The inspections and tests to check compliance with the requirements of these Rules as part of the direct verification procedure of an individual measuring system for EVSE shall be carried out mutatis mutandis in accordance with Articles 26 and 27 of these Rules.

Article 29
(Initial verification)

(1) The measuring system for EVSE may be tested by one of the following methods:

a) by checking the starting current and accuracy of the measuring system for EVSE:

- The starting current is checked at I_{st}. The measuring system for EVSE must register at least 75 % of the delivered energy.
- The accuracy test shall be performed at least at two different current levels for the supplied energy, which shall be at least equal to the MMQ.
- If the measuring system for EVSE is capable of operating in both single-phase and three-phase modes, both modes of operation shall be tested in the case of laboratory testing.

or

b) by comparing the measured energy during the test of accuracy of the measuring system for EVSE (charging reading) and the true value of the measured energy measured by the etalon electrical energy meter at charging:

- The length of the test shall be determined according to the resolution of the EVSE. The minimum amount of energy shall not be less than *E*min according to the following equation

$$E_{min} = \frac{1000\,R}{b}\,[Wh]$$

where *R* is the apparent resolution of the measuring system for EVSE expressed in Wh and *b* in BMPE expressed as a percentage (%).

- The relative difference between the registered energy and the energy that passed through the meter, determined by the number of pulses from the test output, is calculated.

(2) The measuring system for EVSE must be heated prior to the test.

(3) The accuracy test of the measuring system for EVSE shall be carried out using the procedure used in the normal operation of the measuring system for EVSE.

(4) Reference conditions for laboratory testing are given in Table 6.

Table 6

Quantity	**AC reference conditions**	**DC reference conditions**
Voltage	U_n *at the intended* installation ±2 %	375 ± 50 V_{DC}, 750 ± 50 V_{DC}
Ambient temperature	23°C ± 5°C	23°C ± 5°C
Frequency	f_n	DC generated by the EVSE device
Wave form	Sinusoidal THD ≤ 2 %	DC generated by the EVSE device
Magnetic induction from an external source at the reference frequency	0 T ≤ *B* ≤ 0.1 mT	0 T ≤ *B* ≤ 0.1 mT
Electromagnetic RF fields 30 kHz - 6 GHz	< 2 V/m	< 2 V/m
Phase sequence for multi-phase EVSE	L1, L2, L3	N/A

Load balancing	Same current in all current circuits ± 5 % and ± 5º	N/A

(5) For field testing, reference conditions are not specified. The MPE is determined by adding to the BMPE from Table 1 the maximum permissible error shift due to temperature dependence of 0.1%/K at ambient temperatures outside the laboratory reference conditions in Table 6 and 0.5%.

(6) The extended measurement uncertainty of the reference test system at a given measured quantity shall not exceed 1/3 of the MPE for measuring systems for EVSE valid at initial verification.

(7) The reference test system used must have sufficient resolution to test the tested measuring system for EVSE.

Article 30
(Declaration of conformity to the type)

Examinations and tests for compliance with the requirements of these rules carried out by the manufacturer within the declaration of type conformity of measuring instrument procedure are carried out mutatis mutandis in accordance with Article Error: Reference source not found of these Rules.

V. REGULAR AND EXTRAORDINARY VERIFICATIONS

Article 31
(Regular and extraordinary verification)

(1) The MPE and the metrological examination procedures for regular and extraordinary verification of a measuring system for EVSE shall be the same as the procedures for initial verification referred to in Article 29 of these Rules.

(2) The extended measurement uncertainty of the test system at a given measured quantity shall not exceed 1/3 of the MPE for measuring system for EVSE valid at regular verification.

Article 32
(Period for regular verifications)

Verification for measuring systems for EVSE is mandatory. The verification period is six years.

VI. VERIFICATION OF MEASURING SYSTEMS FOR EVSE THAT WERE PUT INTO USE BEFORE THE DATE OF ENTRY INTO FORCE OF THESE RULES

Article 33
(Measuring systems for EVSE with a separately approved electric active energy meter for alternating current)

If the metrological functions of measuring systems for EVSE put into use prior to the day of entry into force of these Rules are ensured by a separately approved AC electricity active energy meter with established conformity pursuant to the Rules on measuring instruments, the regular verification deadline and the examination and testing procedure in verification are prescribed in the Rules on verification of electricity meters.

Article 34
(Measuring systems for EVSE with a separately approved DC electricity meter)

(1) If the metrological functions of measuring systems for EVSE put into service before the day of entry into force of these Rules are provided by a separately approved DC electricity meter with established conformity pursuant to the national legislation of another Member State of the European Union or a Member State of the European Free Trade Association or Turkey, and which are lawfully marketed in that country, the regular verification period shall be 6 years.

(2) The Rules on verification of electricity meters with respect to the MPE set out in Table 7 within the operating voltage range specified by the manufacturer shall apply mutatis mutandis to the procedure for inspection and testing during verification.

Table 7

	operating temperatures	operating temperatures	operating temperatures	operating temperatures
	+5°C … +30°C	-10°C … +5°C or +30°C ... +40°C	-25°C … -10°C or +40°C... +55°C	-40°C … -25°C or +55°C... +70°C
$I_{min} \leq I \leq I_{max}$	±3.5 %	±4.5 %	±7 %	±9 %

Article 35
(Measuring systems for EVSE lawfully marketed in another country under national law)

(1) If, on the basis of national metrological legislation, measuring systems for EVSE put into service before the date of entry into force of these Rules are lawfully marketed in another Member State of the European Union or in a Member State of the European Free Trade Association or in Turkey, the period of periodic verification shall be 6 years.

(2) The verification procedure shall be the same as laid down for initial verification in Article 29 of these Rules or as laid down for regular verification in Article 31 of these Rules.

(3) In the verification process, the BMPE for Class A from Table 1 of these Rules shall be used as a starting point.

Article 36
(Other measuring systems for EVSE)

(1) If the measuring systems for EVSE put into service before the date of entry into force of these Rules do not include a separately approved meter as referred to in Articles 33 or 34 of these Rules, nor, in accordance with the provisions of Article 35, are they lawfully marketed in another country on the basis of national metrological legislation, the period of periodic verification shall be 3 years.

(2) The verification procedure shall be the same as laid down for initial verification in Article 29 of these Rules or as laid down for regular verification in Article 31 of these Rules.

(3) In the verification process, the BMPE for Class A from Table 1 of these Rules shall be used as a starting point.

(4) The display, either permanently or on request, or the identification plate must show the following information:
- the name of the manufacturer or its registered trademark,
- year of manufacture,
- product type,
- serial number (or identification code),
- voltage range (minimum and maximum output voltage),
- current load of the meter (I_{min} and I_{max}).

VII. MPE OF MEASURING SYSTEMS FOR EVSE IN USE

Article 37
(MPE of the measuring system for EVSE in use)

(1) The MPE of the measuring system for EVSE in use at the reference conditions in the laboratory specified in Table 6 is 1.5 times the BMPE as specified in Table 1 for the relevant measure class.

(2) The MPE of the measuring system for EVSE in use in the field is determined by adding 1.5 times the BMPE from Table 1 to the maximum permissible error due to temperature dependence of 0.1 %/K at ambient temperatures outside the laboratory reference conditions from Table 6 and 0.5 %.

VIII. TRANSITIONAL AND FINAL PROVISIONS

Article 38
(Restriction on use)

The measuring systems for EVSE referred to in Articles 33, 34 and 36 may be used for a maximum period of 12 years from the entry into force of these Rules.

Article 39
(Entry into force)

These Rules shall enter into force 1 year after their publication in the Official Gazette of the Republic of Slovenia.