



SLOVENSKI STANDARD
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Specification for plugs and socket-outlets for domestic and similar purpose

Spécifications pour les prises de courant pour usage domestiques et analogues

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Ta slovenski standard je istoveten z: IEC 60362-7

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ICS:

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COMMISSION INTERNATIONALE
DE REGLEMENTATION
EN VUE DE L'APPROBATION
DE
L'EQUIPEMENT ELECTRIQUE

INTERNATIONAL COMMISSION
ON RULES
FOR THE APPROVAL
OF
ELECTRICAL EQUIPMENT



SPECIFICATIONS
POUR LES

**PRISES
DE
COURANT**

POUR
USAGES DOMESTIQUES ET
ANALOGUES

SPECIFICATION
FOR

**PLUGS
AND
SOCKET-OUTLETS**

FOR
DOMESTIC AND
SIMILAR PURPOSES

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INTRODUCTION

The International Commission on Rules for the Approval of Electrical Equipment (abbreviated to CEE) is composed of organizations in European countries, which, in the interest of the public, especially with regard to safety, issue rules and regulations for electrical equipment (cables and flexible cords, accessories and appliances) and check compliance therewith as far as such checking takes place.

CEE Specifications are mainly concerned with safety requirements and, while not formally binding on member organizations, the appropriate authorities in their countries are strongly recommended to adopt the CEE Specifications as far as practicable.

Owing to special circumstances, however, some member organizations will not be able to accept all the requirements of these Specifications.

The CEE Specifications are in force in any country only in respect of those items of equipment for which the corresponding national specifications of that country are in agreement with, or are accepted as equivalent to those CEE Specifications.

At the date of issue of this publication, member organizations exist in the following countries: Austria, Belgium, Czechoslovakia, Denmark, Federal Republic of Germany, Finland, France, Greece, Hungary, Italy, Netherlands, Norway, Poland, Portugal, Sweden, Switzerland, United Kingdom and Yugoslavia.

Further information is given in CEE Publication 8, which describes the Aim, Structure and Results of the CEE and gives the addresses of the member organizations, from whom copies of CEE publications may be obtained.

EXPLANATORY NOTES

Different printing types are used in order to distinguish:

the requirements,

the test specifications,

the explanations.

This specification makes reference to the following CEE Publications:

- Publication 2, Specification for Rubber Insulated Cables and Flexible Cords,
- Publication 13, Specification for Polyvinyl Chloride Insulated Cables and Flexible Cords,
- Publication 22, Specification for Appliance Couplers for Domestic and Similar General Purposes.

The Giorgi system of units is used throughout this specification. In this system, the newton (symbol N) is the unit of force; 1 newton is approximately equal to 0.102 kilogramme-force.

§ 1

§ 1. SCOPE

This specification applies to plugs and socket-outlets and to cable couplers, with and without earthing contact, with a rated voltage not exceeding 380 V and a rated current not exceeding 25 A, intended for domestic and similar general purposes, either indoors or outdoors. It also applies to mounting boxes for flush-type socket-outlets.

This specification applies, as far as is reasonable, to single-way socket-outlet adaptors intended to allow a connection to be made between plugs not complying with the Standard Sheets and socket-outlets complying with the Standard Sheets, provided that the safety requirements of this specification are met.

This specification applies to plugs incorporated in cord sets and to plugs and portable socket-outlets incorporated in cord extension sets. It also applies to plugs which are a component of an appliance, unless otherwise stated in the specification for the relevant appliance.

This specification does not apply to:

- plugs and socket-outlets and cable couplers for extra-low voltage,
- appliance couplers,
- fixed socket-outlets combined with fuses, automatic switches, etc.,
- plugs and socket-outlets of groups A and B of IEC Publication 83.

Plugs and socket-outlets and cable couplers complying with this specification are suitable for use at ambient temperatures not normally exceeding 25° C, but occasionally reaching 35 °C.

In locations where special conditions prevail, as in ships, vehicles and the like, and in hazardous locations, for example, where explosions are liable to occur, special constructions may be required.

Requirements for plugs and socket-outlets and cable couplers for extra-low voltage are under consideration.

It follows from this specification that multiway adaptors are not allowed.

§ 2. DEFINITIONS

- a. Where the terms voltage and current are used, they imply the r.m.s. values, unless otherwise specified.
- b. The following definitions apply for the purpose of this specification.

§ 2b

1. A **plug and socket-outlet** is a means enabling the connection at will, of a flexible cable or cord, to fixed wiring. It consists of two parts:
 - a **fixed socket-outlet**, which is the part intended to be installed with the fixed wiring;
 - a **plug**, which is the part integral with, or intended to be attached to, the flexible cable or cord connected to an appliance or to a portable socket-outlet.
2. A **cable coupler** is a means enabling the connection at will, of two flexible cables or cords. It consists of two parts:
 - a **portable socket-outlet**, which is the part integral with, or intended to be attached to, a flexible cable or cord;
 - a **plug**, which is the part integral with, or intended to be attached to, the flexible cable or cord connected to an appliance or to a portable socket-outlet.

The plug of a cable coupler is identical to the plug of a "plug and socket-outlet". A portable socket-outlet has the same contact arrangement as a fixed socket-outlet.
3. A **multiple socket-outlet** is an accessory incorporating more than one socket-outlet.
4. A **rewirable plug or portable socket-outlet** is an accessory so constructed that the flexible cable or cord can be replaced.
5. A **non-rewirable plug or portable socket-outlet** is an accessory so constructed that the flexible cable or cord cannot be separated from the accessory without making it permanently useless.
6. A **cord set** is an assembly consisting of a flexible cable or cord complete with a non-rewirable plug and a non-rewirable connector.
7. A **cord extension set** is an assembly consisting of a flexible cable or cord complete with a non-rewirable plug and a non-rewirable portable socket-outlet.

§ 2b

8. **Rated voltage** denotes the voltage (for three-phase supply, the line voltage) assigned to the plug or the socket-outlet by the maker.
9. **Rated current** denotes the current assigned to the plug or the socket-outlet by the maker.
- c. The term "accessory" is used as a general term covering plugs and socket-outlets.

Throughout this specification, the term "socket-outlet" covers both fixed and portable socket-outlets, except where the reference is specific to one type or the other.

§ 3. GENERAL REQUIREMENT

Accessories shall be so designed and constructed that in normal use their performance is reliable and without danger to the user or surroundings.

In general, compliance is checked by carrying out all the tests specified.

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§ 4. GENERAL NOTES ON TESTS

- a. *Tests according to this specification are type tests.*
- b. *Unless otherwise specified, the samples are tested as delivered and under normal conditions of use, at an ambient temperature of 20 ± 5 °C.*
Non-rewirable accessories other than those incorporated in a cord set or in a cord extension set, must be submitted with a flexible cable or cord at least 1 m long.
- c. *Unless otherwise specified, the tests are carried out in the order of the clauses.*
- d. *Unless otherwise specified, plugs and socket-outlets are tested separately.*
- e. *Unless otherwise specified, the neutral, if any, is treated as a pole.*
- f. *Three samples are subjected to all the tests, with the exception of that of § 25e, for which three additional samples are required.*
- g. *Accessories are deemed not to comply with this specification if there are more failures than that of one sample in one of the tests. If one sample fails in a test, that test and those preceding, which may have influenced the result of that test, are repeated on another set of*

§ 4g

samples of the number specified in sub-clause f, all of which shall then comply with the repeated tests.

In general, it will only be necessary to repeat the test which caused the failure, unless the sample fails in one of the tests of §§ 20 to 22 inclusive, in which case the tests are repeated from that of § 19 onwards.

The applicant may submit, together with the first set of samples, the additional set which may be wanted should one sample fail. The testing station will then, without further request, test the additional samples and will only reject if a further failure occurs. If the additional set of samples is not submitted at the same time, a failure of one sample will entail a rejection.

§ 5. RATING

- a. Accessories shall have voltage and current ratings as shown in the following table.

Type	Nature of supply	Rated voltage V	Rated current A
2 P (plugs only)	⎓ and ~	250	2.5
2 P	⎓	250	10
	~	250	16
2 P + ↓	⎓ ~	250 250	10 16
2 P + ↓	⎓ ~	250 380	16 16
2 P + N 3 P 2 P + N + ↓ 3 P + ↓ 3 P + N 3 P + N + ↓	~	380	16
2 P 2 P + ↓ 2 P + N 3 P 2 P + N + ↓ 3 P + ↓ 3 P + N 3 P + N + ↓	~	380	25

§ 5a

In some countries, the current rating of 10/16 A 250 V accessories is restricted to 10 A

- b. If a 2.5 A 250 V plug is incorporated in a cord set, the connector shall be either a miniature connector or a 1 A connector.
- c. If a portable socket-outlet is incorporated in a cord extension set, its rating shall not be less than that of the plug.

Compliance with the requirements of sub-clauses a to c is checked by inspection of the marking.

§ 6. CLASSIFICATION

Accessories are classified:

1. according to degree of protection against moisture:
 - ordinary accessories,
 - splash-proof accessories,
 - jet-proof accessories;
2. according to earthing facilities:
 - accessories without earthing contact,
 - accessories with earthing contact;
3. according to method of connecting the cable or cord:
 - rewirable accessories,
 - non-rewirable accessories.

In addition, fixed socket-outlets are classified according to method of mounting:

- surface-type socket-outlets,
- flush-type socket-outlets.

Ordinary accessories have no special protection against moisture.

§ 7. MARKING

- a. Accessories shall be marked with:
 - rated current in amperes, except that such marking is optional for plugs incorporated in cord sets,
 - rated voltage in volts,
 - symbol for nature of supply, if the accessory is intended for a.c. only or if the rating is different for a.c. and d.c.,

§ 7a

except that such marking is optional for 10/16 A 250 V accessories,
 maker's name or trade mark,
 type reference,
 symbol for degree of protection against moisture, if applicable.

It is recommended that the current rating should not be marked on plugs incorporated in cord sets.

The type reference may be a catalogue number.

b. Plugs for Class II appliances shall not be marked with the symbol for Class II construction.

c. When symbols are used, they shall be as follows:

amperes A,

volts V,

alternating current ,

direct current ,

splash-proof construction . . .  (one drop in a triangle),

jet-proof construction . . .  (two triangles with one drop in each).

For the marking of rated current and rated voltage, figures may be used alone. The figure for the d.c. current rating, if any, shall then be placed before the figure for the a.c. current rating, and separated from it by a line or dash, these figures being placed before or above that for the rated voltage and separated from the latter by a line.

If the current rating figures are separated by an oblique line, the current and voltage rating figures shall not be separated by an oblique line.

If a symbol for nature of supply is used, it shall be placed next to the marking for rated current and rated voltage.

The marking for current, voltage and nature of supply may accordingly be as follows:

§ 7c

$$10/16 \text{ A } 250 \text{ V} \text{ or } 10-16/250 \text{ or } \frac{10-16}{250},$$

$$25 \text{ A } 380 \text{ V } \sim \text{ or } 25/380 \sim \text{ or } \frac{25}{380} \sim.$$

Ordinary accessories are not marked with any symbol for protection against moisture.

- d. **For fixed socket-outlets, the marking for rated current, rated voltage, nature of supply if necessary, maker's name or trade mark and type reference shall be on the main part of the socket-outlet. Marking other than type reference shall be easily discernible when the socket-outlet is mounted and wired as in normal use, if necessary after removal of the cover.**

Parts, such as cover plates, intended to be sold separately, shall be marked with maker's name or trade mark and type reference.

The symbol for degree of protection against moisture shall be marked on the outside of the enclosure or cover so as to be easily discernible when the socket-outlet is mounted and wired as in normal use.

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The term "main part" means the part carrying the contact members.

Additional type references may be marked on the main part, or on the outside or the inside of the enclosure or cover.

- e. **For plugs and portable socket-outlets, the marking specified in sub-clause a, other than the type reference, shall be easily discernible when the accessory is wired and assembled as in normal use.**

The type reference may be marked on the inside of the enclosure or cover.

- f. **Terminals intended exclusively for the neutral conductor shall be indicated by the letter N.**

Earthing terminals shall be indicated by the symbol \perp

These indications shall not be placed on screws, removable washers or other removable parts.

Terminations for soldered, welded, crimped or similar connections are not required to be marked.

§ 7f

Compliance with the requirements of sub-clauses a to f is checked by inspection, if necessary during the test of § 11b. During the inspection, the plug or socket-outlet is not in engagement with its complementary accessory.

g. Marking shall be indelible and easily legible.

Compliance is checked by inspection and by rubbing the marking by hand for 15 seconds with a piece of cloth soaked with water and again for 15 seconds with a piece of cloth soaked with petroleum spirit.

The type reference may be marked with paint or ink, protected, if necessary, by varnish

A special test for checking the indelibility of the marking of maker's name or trade mark and of nature of supply is under consideration.

§ 8. DIMENSIONS

a. Accessories and mounting boxes shall comply with the appropriate Standard Sheets as specified below:

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2.5 A 250 V two-pole plug for Class II appliances	Sheet XVI,
10/16 A 250 V two-pole socket-outlet without earthing contact	Sheet I,
10/16 A 250 V two-pole plug without earthing contact ¹⁾	Sheet II,
10/16 A 250 V two-pole socket-outlet with earthing contact	Sheet III or V,
10/16 A 250 V two-pole plug with earthing contact	Sheet IV, VI or VII,
10/16 A 250 V two-pole plug for Class II appliances	Sheet XVII,
16 A 250/380 V and 16 A 380 V socket-outlets, with or without earthing contact	Sheet VIII,
16 A 250/380 V and 16 A 380 V plugs, with or without earthing contact	Sheet IX,
25 A 380 V socket-outlets, with or without earthing contact	Sheet X,

¹⁾ Provisionally, plugs generally complying with Standard Sheet II, but having 4 mm pins with adequate resiliency, are allowed in some countries.

§ 8a

25 A 380 V plugs, with or without earthing contact Sheet XI,
 10/16 A 250 V two-pole flush-type socket-outlets, with or without earthing contact Sheet XII or XIV,
 mounting boxes for 10/16 A 250 V two-pole flush-type socket-outlets, with or without earthing contact Sheet XIII or XV,

mounting boxes for 16 A 250/380 V, 16 A 380 V and 25 A 380 V flush-type socket-outlets Sheet XVIII.

Compliance is checked by means of the gauges shown in figures 1 to 14 inclusive and by measurement. Socket-outlets are first subjected to ten introductions and ten withdrawals of a plug complying with the corresponding Standard Sheet.

For dimensions which are, in the Standard Sheets, followed by the letter C and the gauge number, in brackets, compliance is checked only by these gauges.

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Any lead-in groove on the engagement face of socket-outlets must not reduce the length of the unbroken cylindrical part of the holes for the plug pins below the value specified.

The use of the gauges shown in figure 9 for checking the diameter of pins is optional.

The replacement of the designs shown in Standard Sheets VIII to XI inclusive and XVIII is under consideration.

Standard Sheets for mounting boxes with claw fixing, suitable for 10/16 A 250 V multiple socket-outlets or for combinations of socket-outlets and switches, are under consideration.

Figure 5 is under consideration.

Gauges for 16 A 250/380 V, 16 A 380 V and 25 A 380 V accessories are under consideration.

- b. It shall not be possible to engage a plug with:
 a socket-outlet having a different rating, except that a 2.5 A 250 V two-pole plug for Class II appliances shall engage with 10/16 A 250 V two-pole socket-outlets, both with and without earthing contact ¹⁾,

¹⁾ Provisionally, plugs generally complying with Standard Sheet II, but having 4 mm pins with adequate resiliency, shall engage with 10/16 A 250 V two-pole socket-outlets, without earthing contact.

§ 8b

a socket-outlet with a different number of poles,

a socket-outlet with earthing contact, if the plug has no earthing contact and is not a plug for Class II appliances.

It shall be possible to engage 10/16 A 250 V two-pole plugs with earthing contact with 10/16 A 250 V two-pole socket-outlets, both with and without earthing contact.

Compliance is checked by inspection, by manual test and by means of the gauges shown in figures 15 and 16. If necessary, a force of 150 N is applied for not more than 1 minute.

For plugs and socket-outlets with enclosures, covers or bodies of thermoplastic material, the tests are made at an ambient temperature of 35 ± 2 °C, both the accessories and the gauges being at this temperature.

For accessories of rigid material, such as thermosetting resins, ceramic material and the like, conformity to the relevant Standard Sheets ensures compliance with these requirements, so that, in general, the tests by means of gauges will not be necessary

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- c. **Deviations from the dimensions specified in the Standard Sheets may be made, but only if they provide a technical advantage and do not adversely affect the purpose and safety of accessories complying with the Standard Sheets, especially with regard to interchangeability and non-interchangeability.**

Accessories with such deviations shall, however, comply with all other requirements of this specification as far as they reasonably apply.

§ 9. PROTECTION AGAINST ELECTRIC SHOCK

- a. **Socket-outlets shall be so designed that, when they are mounted and wired as in normal use, live parts are not accessible.**

Live parts and earthing contacts of plugs shall not be accessible when the plug is in partial or complete engagement