

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Appliance couplers for household and similar general purposes –
Part 1: General requirements

(standards.iteh.ai)

Connecteurs pour usages domestiques et usages généraux analogues –
Partie 1: Exigences générales

<https://standards.iteh.ai/catalog/standards/sist/9769b0c1-6dd0-4fe3-9dd3-5953351ee36f/iec-60320-1-2021>



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Part 1: General requirements

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CONTENTS

FOREWORD	7
1 Scope	9
2 Normative references	9
3 Terms and definitions	10
4 General requirements	13
5 General notes on tests	14
5.1 General	14
5.2 Test samples	14
5.3 Routine tests	14
6 Standard ratings	15
7 Classification of appliance couplers	15
8 Marking	15
8.1 General	15
8.2 Additional markings	15
8.3 Appliance couplers for class II equipment	16
8.4 Symbols or alphanumeric notations	16
8.5 Legibility of markings	16
8.6 Terminal markings and wiring instructions	16
8.7 Durability	17
8.8 Test and inspection	17
9 Dimensions and compatibility	17
9.1 General	17
9.2 Single-pole connections	17
9.3 Compatibility	17
9.4 Dimensions for standardized appliance couplers	18
9.5 Dimensions for non-standardized appliance couplers	18
10 Protection against electric shock	19
10.1 Accessibility of live parts	19
10.2 Protection against single pole connection	19
10.3 Protection against access to live parts	19
10.4 External parts	19
10.5 Shrouds	19
11 Provision for earthing	19
12 Terminals and terminations	20
12.1 General	20
12.2 Rewirable appliance couplers	20
12.3 Non-rewirable appliance couplers	20
13 Construction	20
13.1 Risk of accidental contact	20
13.2 Contact positions	20
13.3 Parts covering live parts	21
13.4 Pin construction	21
13.4.1 Prevention of rotation	21
13.4.2 Pin retention	21
13.4.3 Non-solid pins	22

13.4.4	Pins for appliance couplers for higher ambient temperatures up to +90 °C	22
13.5	Contact pressure	22
13.6	Enclosure	23
13.6.1	General	23
13.6.2	Rewirable connectors and rewirable plug connectors	23
13.6.3	Non-rewirable connectors and non-rewirable plug connectors	23
13.7	Earth connection	24
13.8	Location of terminals and terminations	24
13.8.1	General	24
13.8.2	Free wire test for rewirable accessories	24
13.8.3	Free wire test for non-rewirable non-moulded-on accessories	24
13.8.4	Free wire verification for non-rewirable moulded-on accessories	25
13.9	Connectors/plug connectors without earthing contact	25
13.10	Fuses, relays, thermostats, thermal cut-outs and switches	25
14	Moisture resistance	25
15	Insulation resistance and electric strength	26
15.1	General	26
15.2	Insulation resistance	28
15.3	Dielectric strength	28
16	Forces necessary to insert and to withdraw the connector/appliance outlet	29
16.1	General	29
16.2	Verification of the maximum withdrawal force	30
16.3	Verification of the minimum withdrawal force	31
17	Operation of contacts	32
18	Resistance to heating of appliance couplers for hot conditions or very hot conditions	32
18.1	General	32
18.2	Heating test for connectors/plug connectors	33
18.3	Heating test for appliance inlets/appliance outlets	34
19	Breaking capacity	34
20	Normal operation	36
21	Temperature rise	36
22	Cords and their connection	37
22.1	Cords for non-rewirable connectors/plug connectors	37
22.2	Cord anchorage	38
22.2.1	General	38
22.2.2	Additional requirements for rewirable connectors and rewirable plug connectors	39
22.2.3	Pull test for cable anchorage	39
22.3	Flexing test	41
23	Mechanical strength	43
23.1	General	43
23.2	Free fall test	44
23.3	Lateral pull test for contacts	44
23.4	Impact test	46
23.5	Deformation test	46
23.6	Pull tests for connectors/plug connectors with a separate front part	47

23.6.1	General	47
23.6.2	Straight pull test	47
23.6.3	Lateral pull test.....	47
24	Resistance to heat and ageing.....	48
24.1	Resistance to heat	48
24.2	Resistance to ageing	48
24.2.1	General	48
24.2.2	Ageing test for elastomeric materials	49
24.2.3	Ageing test for thermoplastic materials	49
24.2.4	Ageing test assessment.....	49
25	Screws, current-carrying parts and connections.....	49
25.1	General.....	49
25.2	Electrical connections	50
25.3	Securement of connections.....	51
25.4	Metallic parts	51
26	Clearances, creepage distances and solid insulation	51
26.1	General.....	51
26.2	Clearances	52
26.2.1	Dimensioning.....	52
26.2.2	Minimum values for clearances.....	52
26.3	Creepage distances.....	53
26.3.1	Dimensioning.....	53
26.3.2	Minimum creepage distances.....	53
26.4	Solid insulation	54
27	Resistance of insulating material to heat, fire and tracking.....	55
27.1	Resistance to heat and fire	55
27.1.1	General	55
27.1.2	Objective of the test.....	55
27.1.3	General description of the test.....	55
27.1.4	Degree of severity	55
27.1.5	Evaluation of test results	55
27.2	Resistance to tracking.....	56
28	Resistance to rusting	56
29	Electromagnetic compatibility (EMC) requirements	56
29.1	Immunity – Accessories not incorporating electronic components	56
29.2	Emission – Accessories not incorporating electronic components	57
Annex A (normative)	Proof tracking test.....	58
Annex B (normative)	Routine tests for factory wired appliance couplers related to safety.....	59
B.1	General.....	59
B.2	Polarized systems: Line (L) and neutral (N) – Correct connection	59
B.3	Earth (PE) continuity	60
B.4	Short-circuit/wrong connection and reduction in creepage distance and clearance	60
B.4.1	Accessible surface safety check	60
B.4.2	Short-circuit/wrong connection.....	60
Annex C (normative)	Test schedule	61
Annex D (informative)	Comparison of typical conductor cross-sectional areas	63

Annex E (normative) Additional tests and requirements for appliance couplers intended to be used in ambient temperatures above +35 °C up to and including +90 °C.....	64
E.1 General.....	64
E.2 General requirements on tests	64
E.2.1 General	64
E.2.2 Test setup	64
E.2.3 Conditions of temperature measurement.....	64
E.2.4 Method of measurement	65
E.3 Markings	65
E.4 Determination of t_a and the rated and derated current in relation to the ambient temperature	65
E.4.1 Determination of the maximum ambient temperature (t_a) for operation of the accessory at the rated current.....	65
E.4.2 Determination of the derated operating currents for ambient temperatures above t_a	66
E.5 Test to evaluate the long-term behaviour of the appliance couplers in ambient temperatures above +35 °C up to and including +90 °C	66
E.5.1 Resistance to heat.....	66
E.5.2 Resistance to ageing	67
E.5.3 Resistance to tracking	68
E.6 Cords and their connections.....	68
Bibliography.....	69
Figure 1 – Intended use of appliance couplers	11
Figure 2 – Device for testing non-solid pins	22
Figure 3 – Apparatus for checking the withdrawal force	30
Figure 4 – Gauge for verification of the minimum withdrawal force	31
Figure 5 – Example of an apparatus for heating test (see 18.2)	33
Figure 6 – Circuit diagram for breaking capacity and normal operation tests	35
Figure 7 – Apparatus for testing the cord anchorage	39
Figure 8 – Apparatus for the flexing test	42
Figure 9 – Example of apparatus for pulling test	45
Figure E.1 – Schematic drawing of a derating curve with an example of a derated current I_d at the operating ambient temperature t_d	66
Table 1 – Position of contacts	20
Table 2 – Maximum diameters of the cords	27
Table 3 – Minimum insulation resistance.....	28
Table 4 – Dielectric strength	29
Table 5 – Maximum and minimum withdrawal forces	30
Table 6 – Ratings for the tests of Clause 19.....	35
Table 7 – Ratings for the tests of Clause 20.....	36
Table 8 – Cords and conductors for the tests of Clause 21	37
Table 9 – Type and nominal cross-sectional area of cords	38
Table 10 – Types of cord for the rewirable connector/plug connector test	40
Table 11 – Applicable tests	44
Table 12 – Values for the lateral pulls applied.....	46

Table 13 – Values for pull forces.....	47
Table 14 – Torque applied for the tightening and loosening test.....	50
Table 15 – Rated impulse withstand voltage for appliance couplers energized directly from the low voltage mains	52
Table 16 – Minimum clearances for basic insulation.....	53
Table 17 – Minimum creepage distances for basic and functional insulation	54
Table B.1 – Test overview.....	59
Table C.1 – Test schedule	61
Table D.1 – Comparison of conductor sizes	63

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IEC 60320-1:2021

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AND SIMILAR GENERAL PURPOSES –****Part 1: General requirements****FOREWORD**

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IEC 60320-1 has been prepared by subcommittee 23G: Appliance couplers, of IEC technical committee 23: Electrical accessories. It is an International Standard.

This fourth edition cancels and replaces the third edition published in 2015 and Amendment 1:2018. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) introduction of necessary tolerances throughout this document;
- b) the heating test from edition 2 is reintroduced in 18.2;
- c) temperature rise added for plug connectors in Clause 21;
- d) change for better readability in 23.3;
- e) updated lateral pull test in 23.6 for connectors/plug connectors with separate front parts;

- f) revision of 24.1 for ball pressure test;
- g) Clause 27 for glow wire test is updated;
- h) revision of Annex C for test sequences;
- i) additional Annex E for additional tests and requirements for appliance couplers intended to be used in ambient temperatures above +35 °C.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
23G/464/FDIS	23G/467/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

A list of all the parts in the IEC 60320 series, under the general title *Appliance couplers for household and similar general purposes*, can be found on the IEC website.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/standardsdev/publications.

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- reconfirmed,
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- amended.

APPLIANCE COUPLERS FOR HOUSEHOLD AND SIMILAR GENERAL PURPOSES –

Part 1: General requirements

1 Scope

This part of IEC 60320 sets the general requirements for appliance couplers for two poles and two poles with earth contact and for the connection of electrical devices for household and similar onto the mains supply.

This document is also valid for appliance inlets/appliance outlets integrated or incorporated in appliances.

The rated voltage does not exceed 250 V (AC) and the rated current does not exceed 16 A.

Appliance couplers complying with this document are suitable for normal use at ambient temperatures not normally exceeding +40 °C, but their average over a period of 24 h does not exceed +35 °C, with a lower limit of the ambient air temperature of –5 °C.

Annex E provides test requirements for derating the operating current of an accessory when used in ambient temperatures above +35 °C up to and including +90 °C.

Appliance couplers are not suitable for: [IEC 60320-1:2021](https://standards.iteh.ai/catalog/standards/sist/9769b0c1-6dd0-4fe3-9dd3-5953351ec56f/iec-60320-1-2021)

- use in place of plug and socket-outlet systems according to IEC 60884-1;
- use in place of devices for connecting luminaires (DCLs) according to IEC 61995 or luminaire supporting couplers (LSCs);
- use in place of installation couplers according to IEC 61535.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-31, *Environmental testing – Part 2-31: Tests – Test Ec: Rough handling shocks, primarily for equipment-type specimens*

IEC 60068-2-60, *Environmental testing – Part 2-60: Tests – Test Ke: Flowing mixed gas corrosion test*

IEC 60068-2-75, *Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests*

IEC 60112:2020, *Method for the determination of the proof and the comparative tracking indices of solid insulating materials*

IEC 60227 (all parts), *Polyvinyl chloride insulated cables of rated voltages up to and including 450/750 V*

IEC 60245 (all parts), *Rubber insulated cables – Rated voltages up to and including 450/750 V*

IEC 60320-3:2014, *Appliance couplers for household and similar general purposes – Part 3: Standard sheets and gauges*
IEC 60320-3:2014/AMD1:2018

IEC 60417, *Graphical symbols for use on equipment* (available from: <http://www.graphical-symbols.info/equipment>)

IEC 60664-1:2020, *Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests*

IEC 60695-2-11:2014, *Fire hazard testing – Part 2-11: Glowing/hot-wire based test methods – Glow-wire flammability test method for end-products (GWEPT)*

IEC 60695-10-2:2014, *Fire hazard testing – Part 10-2: Abnormal heat – Ball pressure test method*

IEC 60730-2-11:2019, *Automatic electrical controls – Part 2-11: Particular requirements for energy regulators*

IEC 60999-1:1999, *Connecting devices – Electrical copper conductors – Safety requirements for screw-type and screwless-type clamping units – Part 1: General requirements and particular requirements for clamping units for conductors from 0,2 mm² up to 35 mm² (included)*

IEC 61032:1997, *Protection of persons and equipment by enclosures – Probes for verification*

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IEC 61058 (all parts), *Switches for appliances*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

appliance coupler

means enabling the connection and disconnection of an appliance or equipment to the supply

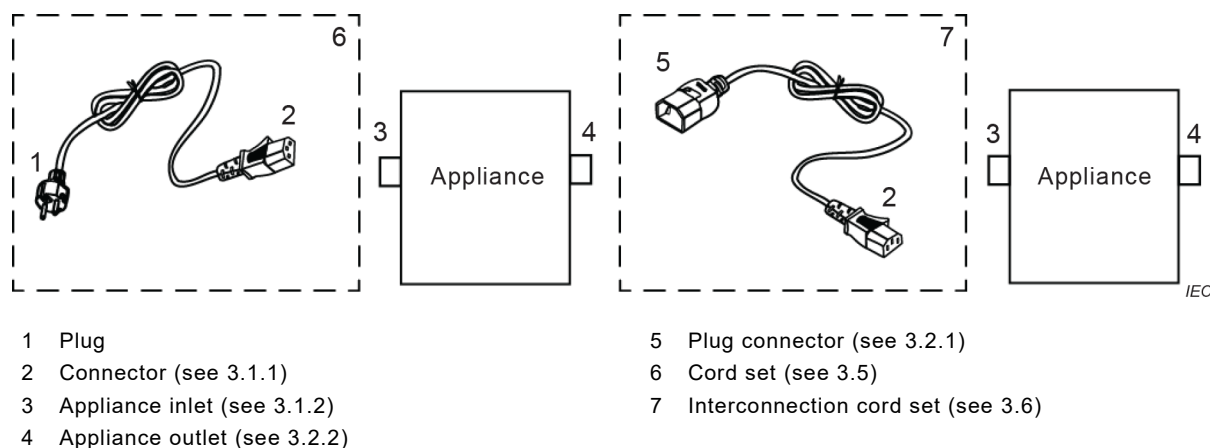


Figure 1 – Intended use of appliance couplers

3.1.1

connector (of an appliance coupler)

part of the appliance coupler integral with, or intended to be attached to, one cord connected to the supply

SEE: Figure 1.

[SOURCE: IEC 60050-442:1998, 442-07-02, modified – "the cord" has been replaced with "one cord" and a reference to Figure 1 has been added]

3.1.2

appliance inlet

part of the appliance coupler integrated as a part of an appliance or incorporated as a separate part in the appliance or equipment or intended to be fixed to it

SEE: Figure 1.

3.2

interconnection coupler

appliance coupler enabling the connection and disconnection of an appliance or equipment to a cord leading to another appliance or equipment

SEE: Figure 1.

Note 1 to entry: An interconnection coupler is a type of appliance coupler.

3.2.1

plug connector

part of the interconnection coupler integral with or intended to be attached to one cord

SEE: Figure 1.

[SOURCE: IEC 60050-442:1998, 442-07-09, modified – "the flexible cable" has been replaced with "one cord" and a reference to Figure 1 has been added.]

3.2.2

appliance outlet

part of the interconnection coupler integrated in or incorporated in the appliance or equipment or intended to be fixed to it, and from which the supply is obtained

SEE: Figure 1.

[SOURCE: IEC 60050-442:1998, 442-07-08, modified – A reference to Figure 1 has been added.]

3.3

rewirable appliance coupler

accessory so constructed that a cable or cord can be replaced

3.4

non-rewirable appliance coupler

accessory so constructed that it forms a complete unit with flexible supply cable or cord after connection and assembly by the manufacturer of the accessory

3.5

cord set

assembly consisting of one cable or cord fitted with one non-rewirable plug and one non-rewirable connector, intended for the connection of an electrical appliance or equipment to the electrical supply

SEE: Figure 1.

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3.6

interconnection cord set

assembly consisting of one cable or cord fitted with one non-rewirable plug connector and one non-rewirable connector, intended for the interconnection between two electrical appliances

SEE: Figure 1

Note 1 to entry: The definition is based on that of IEC 60050-442:1998, 442-07-06.

3.7

integrated appliance coupler

appliance coupler which is formed by the housing or enclosure of the appliance or equipment and that cannot be tested separately

3.8

standardized appliance coupler

appliance coupler with dimensions in accordance with the standard sheets of IEC 60320-3

3.9

non-standardized appliance coupler

appliance coupler with dimensions not in accordance with the standard sheets of IEC 60320-3

3.10

base of a pin

part of the pin where it protrudes from the engagement face

3.11

retaining device

mechanical provision or arrangement which holds a connector in proper engagement with a corresponding appliance inlet and prevents its unintentional withdrawal

3.12**rated voltage** (for accessories)

voltage assigned by the manufacturer for a specified operating condition of an accessory

[SOURCE: IEC 60050-442:1998, 442-01-03]

3.13**rated current** (for accessories)

current assigned by the manufacturer for a specified operating condition of an accessory

[SOURCE: IEC 60050-442:1998, 442-01-02]

3.14**terminal** (for accessories)

part of an accessory to which a conductor is attached, providing a re-usable connection

[SOURCE: IEC 60050-442:1998, 442-06-05]

3.15**termination**

part of an accessory to which a conductor is permanently attached

[SOURCE: IEC 60050-442:1998, 442-06-06]

3.16**thread-cutting screw**

screw having an interrupted thread which, by screwing in, makes a thread by removing material from the cavity

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[SOURCE: IEC 60050-442:1998, 442-06-03]

3.17**type test**

test of one or more devices made to a certain design to show that the design meets certain requirements

3.18**routine test**

conformity test made on each individual item during or after manufacture

[SOURCE: IEC 60050-151:2001, 151-16-17]

4 General requirements

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

A non-standardized appliance coupler shall comply with all safety requirements of this document and shall be tested together with its counterpart.

Compliance is checked by carrying out all the tests specified.