



Test Report issued under the responsibility of:



TEST REPORT

IEC 60884-1

Plugs and socket-outlets for household and similar purposes Part 1: General requirements

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Applicant's name..... : METE ENERJI KABLO VE ELEKTRİK MALZEMELERİ SANAYİ
VE TİCARET A.Ş.

Address..... : A.O.S.B. 10007 Sokak No: 34
35620 Cigli – İZMİR Turkey

Test specification:

Standard : IEC 60884-1:2002 (Third Edition) + A1:2006 + A2:2013

Test procedure : CB Scheme

Non-standard test method : N/A

Test Report Form No. : IEC60884_1D

Test Report Form(s) Originator.... : İMQ S.p.A.

Master TRF..... : Dated 2013-08

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Test item description..... : 2-pole socket-outlet

Trade Mark..... : 

Manufacturer..... : METE ENERJİ KABLO VE ELEKTRİK MALZEMELERİ SANAYİ
VE TİCARET A.Ş.

Model/Type reference..... : 4040xxxxxx

Ratings..... : 16 A, 250 V~, IP 44 or IP 54

Testing procedure and testing location:		
<input checked="" type="checkbox"/>	CB Testing Laboratory:	DEKRA Certification B.V.
Testing location/ address		Meander 1051, 6825 MJ Arnhem, The Netherlands
<input type="checkbox"/>	Associated CB Testing Laboratory:	
Testing location/ address		
Tested by (name + signature)		F.P. Swenne 
Approved by (name + signature)		T. Cai 
<input type="checkbox"/>	Testing procedure: TMP	
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: WMT	
Testing location/ address		
Tested by (name + signature)		
Witnessed by (name + signature)		
Approved by (name + signature)		
<input type="checkbox"/>	Testing procedure: SMT	
Testing location/ address		
Tested by (name + signature)		
Approved by (name + signature)		
Supervised by (name + signature)		

List of Attachments (including a total number of pages in each attachment):	
Summary of testing:	
Tests performed (name of test and test clause): All relevant clauses	Testing location: DEKRA Certification B.V. Meander 1051, 6825 MJ Arnhem, The Netherlands
Summary of compliance with National Differences List of countries addressed:	

Copy of marking plate: as an example.

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



404067ST06

2P+⌚

$\frac{16}{250} \sim$

N L



IP 44 or IP 54

Test item particulars	2-pole socket-outlet with side-earthing contacts for build-in purposes
Standard Sheet	III of the CEE 7
Rated current (A) / Rated voltage (V)	16 A 250 V~
Degree of protection against access to hazardous parts and against harmful ingress of solid foreign objects	IP2X / IP4X / IP5X
Degree of protection against harmful ingress of water	IPX0 / IPX4 / IPX5 / IPX6
Provision for earthing	without earthing contact / with earthing contact
Method of connecting the cable	rewirable / non-rewirable
Type of cable	-
Nominal cross-sectional areas (mm²)	-
Type of terminals	screw-type / screwless (rigid) / screwless (rigid and flexible)
Type of connections	soldered / welded / crimped / other
Socket-outlets:	
Degree of protection against electric shock	normal protection / increased protection
Existence of shutters	without shutters / with shutters
Method of application / mounting of the socket-outlet	surface-type / flush-type / semi-flush-type / panel type / architrave-type / portable type / table-type (single/multiple) / floor recessed type / appliance type / special design for build-in purposes
Method of installation	design A / design B
Intended for circuits where	a single earthing circuit provides protective earthing / electrical noise immunity is desired for the earthing circuit
Plugs:	
Class of equipment	0 / I / II
Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement	F (Fail)
Testing	
Date of receipt of test item	2019-07-18
Date (s) of performance of tests	2019-08-14 until 2019-09-17

General remarks:

The test results presented in this report relate only to the object tested.

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"(See Enclosure #)" refers to additional information appended to the report.

"(See appended table)" refers to a table appended to the report.

Throughout this report a ☒ comma / ☐ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60060-2:

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided

☐ Yes

☒ Not applicable

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) : **METE ENERJI KABLO VE ELEKTRİK
MALZEMELERİ SANAYİ VE TİCARET A.Ş.**

A.O.S.B. 10007 Sokak No: 34


35620 Cigli – İZMİR Turkey

General product information:

General product information:


Type / Model	Description	IP	Flange Dimension (mm)
404016xxxx	Panel Mounted socket with side-earthing contacts	44	60x60
404020xxxx		44	75x75
404066xxxx		44	60x60
404070xxxx		44	75x75
404030xxxx		54	60x60
404040xxxx		54	75x75
404067xxxx		54	60x60
404071xxxx		54	75x75
404018xxxx		44	60x60
404022xxxx		44	75x75
404068xxxx		44	60x60
404072xxxx		44	75x75
404031xxxx		54	60x60
404041xxxx		54	75x75
404069xxxx		54	60x60
404073xxxx		54	75x75


404016 [xx] [xx]



Color

wire/screwdriver direction

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
8	MARKING		
8.1	Accessories marked as follows:		
	- rated current (A)	16 A	P
	- rated voltage (V)	250 V	P
	- symbol for nature of supply	~	P
	- manufacturer's or responsible vendor's name		P
	- type reference	4040xxxxxx	P
	- degree of protection (first characteristic numeral) if higher than 2	IP4X	P
	- degree of protection (second characteristic numeral) if higher than 0	IPX4	P
	- degree of protection (first characteristic numeral) higher than 4 for fixed socket outlet in which case the second characteristic numeral shall also be marked	IPX4	P
	- degree of protection (second characteristic numeral) higher than 2 for fixed socket outlet in which case the first characteristic numeral shall also be marked	IP5X	P
	Socket-outlets with screwless terminals marked with the following:		
	- the length of insulation to be removed		N/A
	- an indication of the suitability to accept rigid conductors only (if any)		N/A
8.2	Symbols used: as required in the standard		P
	Marking for the nature of supply placed next to the marking for rated current and rated voltage		P
8.3	Marking of fixed socket-outlets placed on the main part:		
	- rated current, rated voltage and nature of supply		P
	- identification mark of the manufacturer or of the responsible vendor		P
	- length of insulation to be removed, if any		N/A
	- indication of the suitability to accept rigid conductors only for screwless terminals for those socket-outlets having this restriction		N/A
	- type reference		P
	Cover plates necessary for safety purposes and intended to be sold separately: marked with the manufacturer's or responsible vendor's name and type reference		N/A
	IP code, if applicable: marked so as to be easily discernible		P

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Fixed socket-outlets classified according to item b) of 7.2.5: identified by a triangle visible after installation unless they have an interface configuration different from that used in normal circuits		N/A
8.4	Plugs and portable socket-outlets: marking specified in 8.1, other than the type reference, easily discernible		N/A
	Plugs and portable socket-outlets for equipment of class II not marked with the symbol for class II construction		N/A
8.5	Neutral terminals: N	N	P
	Earthing terminals: [earth symbol]		P
	Markings not placed on screws or other easily removable parts		P
	Terminals for conductors not forming part of the main function of the socket-outlet:		
	- clearly identified unless their purpose is self-evident, or		N/A
	- indicated in a wiring diagram fixed to the accessory		N/A
	Identification of such terminals may be achieved by:		
	- their being marked with graphical symbols according to IEC 60417-2 or colours and/or alphanumeric system, or		N/A
	- their being marked with their physical dimensions or relative location		N/A
8.6	Surface-type mounting boxes forming an integral part of socket-outlets having an IP code higher than IP4X, or higher than IPX2, the IP code marked on the outside of its associated enclosure so as to be easily discernible		N/A
8.7	Indication of which position or with which special provision the declared IP of flush-type and semi-flush-type fixed socket-outlets having IP>X0 is ensured		N/A
8.8	Marking durable and clearly legible with normal or corrected vision, without additional magnification. Test: 15 s with water and 15 s with petroleum spirit	Made by moulding	P
9	CHECKING OF DIMENSIONS		
9.1	Accessories and surface-type mounting boxes comply with the appropriate standard sheets and corresponding gauges, if any	Standard sheet III of CEE 7	P
	Insertion of plugs into fixed or portable socket-outlets ensured by their compliance with the relevant standard sheets		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Compliance checked by measurement and by means of gauges with manufacturing tolerances as shown in table 2		P
9.2	It is not possible to engage a plug with:		
	- a socket-outlet having a higher voltage rating or a lower current rating;		P
	- a socket-outlet with a different number of live poles (exception admitted provided that no dangerous situation can arise);		P
	- a socket-outlet with earthing contact, if the existing plug of the present national system is a plug for class 0 equipment;		P
	Engagement of an existing plugs on the present national system for equipment of class 0 or of class I with a socket-outlet exclusively designed to accept plugs for class II equipment		N/A
	Impossibility of insertion checked by applying a gauge, for 1 min, with a force of:		
	- 150 N (rated current $\leq 16A$);		P
	- 250 N (rated current $> 16A$)		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at $(35 \pm 2) ^\circ C$		P
9.3	Deviations from standard sheets made only if they provide technical advantage and do not affect the purpose and safety of accessories complying with standard sheet		P

10	PROTECTION AGAINST ELECTRIC SHOCK		
10.1	Live parts not accessible, even after removal of parts which can be removed without the use of a tool for:		
	Fixed socket-outlets		P
	Plugs when the plug is in partial or complete engagement with a socket-outlet		N/A
	Test with test probe B of IEC 61032		P
	Accessories with elastomeric or thermoplastic material: additional test carried out at $(35 \pm 2) ^\circ C$ with test probe 11 of IEC 61032 (75 N for 1 min)		P
	During the test: accessories not deform and no live parts accessible		P
	Plugs and portable socket-outlets pressed with a force of 150 N for 5 min as shown in figure 8: specimens not show deformation		N/A
10.2	Accessible parts (with exception of small screws and the like for fixing main parts and covers or cover plates): made of insulating material		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Cover or cover plates of fixed socket-outlets and accessible parts of portable socket-outlets: made of metal if the requirements of 10.2.1 or 10.2.2 are fulfilled		N/A
10.2.1	Accessible metal parts or accessible metal parts protected by supplementary insulation made by insulating linings or insulating barriers		N/A
	Insulating linings or insulating barriers cannot be removed without being permanently damaged		N/A
	Insulating linings or insulating barriers cannot be replaced in an incorrect position and, if they are omitted, accessories are rendered inoperable or manifestly incomplete		N/A
	There is no risk of accidental contact between live parts and metal covers or cover plates		N/A
10.2.2	Accessible metal parts are reliably connected, through a low-resistance connection, to the earth during fixing		N/A
10.3	Contact between a pin of a plug and a live socket-contact of a socket-outlet not possible while any other pin is accessible		P
	Compliance checked by manual test and by means of gauges with tolerances as specified in table 2		P
	Accessories with elastomeric or thermoplastic material: test carried out at $(35 \pm 2) ^\circ\text{C}$		P
	Socket-outlets with enclosure or bodies of rubber or polyvinyl chloride: test carried out with a force of 75 N for 1 min		N/A
	Fixed socket-outlets provided with metal covers or cover plates: clearance of at least 2 mm required between a pin and a socket-contact when another pin(s) is(are) in contact with the metal covers or cover plates (mm)..... :		N/A
10.4	External parts of plugs made of insulating material		N/A
	Overall dimensions of rings around pins not exceed 8 mm concentric with respect to the pin		N/A
10.5	Shuttered socket-outlets: live parts not accessible, without a plug in engagement, with the gauges shown in figure 9 and 10		P
	Live contacts automatically screened when the plug is withdrawn		P
	Shutters so designed that a plug is inserted with the same movement in a socket outlet with shutters as in a socket-outlet without shutters		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Means cannot easily be operated by anything other than a plug and not depend upon parts which are liable to be lost		P
	Gauge of figure 9, applied to the entry holes corresponding to live contacts with a force of 20 N, for approximately 5 s, successively in three directions, does not touch live parts		P
	Steel gauge of figure 10, applied to the entry holes corresponding to live contacts with a force of 1 N for approximately 5 s, in three directions, does not touch live parts		P
	Accessories with elastomeric or thermoplastic material: test carried out at $(35 \pm 2) ^\circ\text{C}$		P
10.6	Earthing contacts of a socket-outlet designed that they cannot be deformed by the insertion of a plug		P
	Test plug inserted into the socket-outlet with a force of 150 N for 1 min		
	After this test: socket-outlet still comply with the requirements of clause 9		P
10.7	Socket-outlet with or without lid with increased protection: live parts not accessible		N/A
	Test wire of 1 mm diameter (figure 10) applied with a force of 1 N on all accessible surfaces does not touch live parts		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at $(35 \pm 2) ^\circ\text{C}$		N/A
	Socket-outlet tested without a plug inserted with the lid, if any, open		N/A

11	PROVISION FOR EARTHING		
11.1	Earth connection made before the current-carrying contacts of the plug become live		P
	Current-carrying pins are separated before the earth connection is broken		P
11.2	Earthing terminals of rewirable accessories comply with clause 12		P
	Earthing terminals of the same size as the corresponding terminals for the supply conductors		P
	Earthing terminals of rewirable accessories: internal		P
	Earthing terminals of fixed socket-outlets: fixed to the base or to a part reliably fixed to the base		P
	Earthing contacts of fixed socket-outlets:		
	- fixed to the base, or		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- fixed to the cover (reliably connected to the earthing terminals; contact pieces silver plated or with adequate protection)		N/A
	Parts of earthing circuit in one piece or reliably connected by riveting, welding, or the like		P
11.3	Accessible metal parts of fixed socket-outlets: permanently and reliably connected to the earthing terminal		N/A
11.4	Socket-outlets, having an IP>X0, with enclosure of insulating material and more than one cable inlet, provided with:		
	- an internal fixed earthing terminal, or		N/A
	- adequate space for a floating terminal (test connection using the type of terminal specified by the manufacturer), unless		N/A
	- earthing terminal of socket-outlet itself allows the connection of an incoming and an outgoing earthing conductor		N/A
11.5	Connection between earthing terminal and accessible metal parts: of low resistance		N/A
	Test current equal to 1,5 times the rated current or 25 A (A)		—
	Resistance not exceed 0,05 Ω (Ω)		N/A
11.6	Fixed socket-outlets according to item b) of 7.2.5: earthing socket contact and its terminal electrically separated from any metal mounting means or other exposed conductive parts which may be connected to the protective earthing circuit of the installation		N/A

12	TERMINALS AND TERMINATIONS		
	All the test on terminals, with the exception of the tests of 12.3.11 and 12.3.12, made after the test of clause 16		P
12.1	General		
12.1.1	Rewirable fixed socket-outlets provided with screw-type terminals or with screwless terminals	screw terminals	P
	Rewirable plugs and portable socket-outlets provided with terminals with screw clamping		N/A
	Pre-soldered flexible conductors used: pre-soldered area outside the clamp area of screw-type terminals		N/A
	Clamping means of terminals: not serve to fix any other components		P
12.1.2	Non-rewirable accessories provided with soldered, welded, crimped or equally effective permanent connections (termination)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Screwed or Snap-On connections not used		N/A
	Connections made by crimping a pre-soldered flexible conductor not permitted		N/A
12.2	Terminals with screw clamping for external copper conductors		
12.2.1	Accessories provided with terminals which allows the proper connection of copper conductors as shows in table 3		P
	Rated current (A); Type of accessories	16 A	—
	Type of conductor (rigid / flexible)	rigid	—
	Smallest / largest cross-sectional area (mm ²)	1,5 / 2,5 mm ²	—
	Diameter of the largest conductor (mm)	2,13	—
	Figure of terminal	3	—
	Minimum diameter D (minimum dimensions) of conductor space: required (mm); measured (mm):	2,0 mm, 2,9 mm	P
12.2.2	Terminals allow the conductor to be connected without special preparation		P
12.2.3	Terminals have adequate mechanical strength		P
	Screws and nut for clamping the conductors have metric ISO thread or a comparable thread		P
	Screws not of soft metal such as zinc or aluminium		P
12.2.4	Terminals resistant to corrosion		P
12.2.5	Terminals clamp the conductor(s) without undue damage	See appended table 12.2.5	P
	During the test: conductor not slip out, no break near clamping unit and no damage		P
12.2.6	Terminals clamp the conductor reliably between metal surfaces	See appended table 12.2.6	P
	During the test: conductor not move noticeably		P
12.2.7	Terminals designed or placed that the conductor cannot slip out while the clamping screws or nuts are tightened	See appended table 12.2.7	P
	After the test: no wire of the conductor escaped from the clamping unit		P
12.2.8	Terminals not work loose from their fixing to accessories		P
	Torque test (screws and nuts tightened and loosened 5 times):		
	- rated current (A)	16 A	—
	- copper conductor of the largest cross-sectional area (mm ²) (table 3)	2,5 mm ²	—
	- type of conductor (solid or stranded)	Solid and stranded	—

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Clause	Requirement + Test	Result - Remark	Verdict
	- torque (Nm) (table 6 or appropriate figures 2, 3 or 4)	0,8 Nm	—
	During the test: terminals not work loose and show no damage		P
12.2.9	Clamping screws or nuts of earthing terminals: adequately locked against accidental loosening, not possible to loosen them without the aid of a tool		P
12.2.10	Earthing terminals: no risk of corrosion		P
	Body of brass or other metal no less resistant to corrosion		P
	The body is a part of a frame or enclosure of aluminium alloy: precautions are taken to avoid the risk of corrosion		P
12.2.11	Pillar terminals: distance <i>g</i> no less than the value specified in figure 2: required (mm); measured (mm)		N/A
	Mantle terminals: distance <i>g</i> no less than the value specified in figure 5: required (mm); measured (mm)		N/A
12.3	Screwless terminals for external copper conductors		N/A
12.3.1	Screwless terminals of the type suitable for:		
	- for rigid copper conductors only, or		N/A
	- for both rigid and flexible copper conductors (tests carried out with rigid and then repeated with flexible conductors)		N/A
12.3.2	Screwless terminals provided with two clamping units each allowing the proper connection of rigid or of rigid and flexible conductors having nominal cross-sectional areas from 1,5 up to 2,5 mm ² (table 7)		N/A
	Two conductors to be connected: each conductor introduced in a separate clamping unit		N/A
12.3.3	Screwless terminals allow the conductor to be connected without special preparation		N/A
12.3.4	Parts of screwless terminals intended for carrying current of materials as specified in 26.5		N/A
12.3.5	Screwless terminals clamp specified conductors with sufficient contact pressure without undue damage to the conductor		N/A
	Conductor clamped between metal surfaces		N/A
12.3.6	It is clear how the connection and disconnection of the conductors is to be made		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Disconnection of a conductor require an operation, other than a pull, so that can be made manually with or without a general-purpose tool		N/A
	It is not possible to confuse the opening intended for the use of a tool with the opening intended for the conductor		N/A
12.3.7	Screwless terminals intended for the interconnection of two or more conductors:		
	- the clamping of one of the conductors is independent of the clamping of the other conductor(s)		N/A
	- during the connection or disconnection the conductors can be connected or disconnected either at the same time or separately		N/A
	- each conductor introduced in a separate clamping unit.		N/A
	- it is possible to clamp securely any number of conductors up to the maximum as designed. Number of conductors; Nominal cross-sectional area (mm ²)		N/A
12.3.8	Screwless terminals of fixed socket-outlets: adequate insertion obvious and over-insertion prevented		N/A
12.3.9	Screwless terminals properly fixed to the socket-outlets		N/A
	Not work loose when conductors are connected or disconnected		N/A
	Self-hardening resins used to fix terminals not subject to mechanical stress		N/A
12.3.10	Screwless terminals withstand mechanical stresses occurring in normal use	See appended table 12.3.10	N/A
	During application of the pull conductor not come out of the terminal		N/A
	Additional test with apparatus shown in figure 11	See appended table 12.3.10	N/A
	During the test: conductors not moved noticeably in the clamping unit		N/A
	After these tests: neither terminals nor clamping means have worked loose and conductors show no deterioration		N/A
12.3.11	Screwless terminals withstand electrical and thermal stresses occurring in normal use	See appended table 12.3.11	N/A
	After the test: inspection show no changes		N/A
	Repetition of mechanical strength test according to 12.3.10	See appended table 12.3.11	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	During application of the pull conductor not come out of the terminal		N/A
	Additional test with apparatus shown in figure 11	See appended table 12.3.11	N/A
	During the test: conductors not moved noticeably in the clamping unit		N/A
	After these tests: neither terminals nor clamping means have worked loose and conductors show no deterioration		N/A
12.3.12	Screwless terminals: connected rigid solid conductor remains clamped, even when deflected during normal installation	See appended table 12.3.12	N/A

13	CONSTRUCTION OF FIXED SOCKET-OUTLETS		
13.1	Socket-contact assembly have sufficient resilience to ensure adequate contact pressure on plug pins		P
	Part of socket-contact assembly ensure metallic opposing contacts at least on two sides of each pins		P
13.2	Socket-contact and pin(s) of socket-outlet which are made of copper or copper alloy, as specified in 26.5, are considered as complying with this requirement		P
	The pin(s) of socket-outlets so constructed in such a way that the mechanical strength of the pin(s) does not depend on the plastic material		N/A
	Compliance is checked by inspection and in case of doubt by the tests of 14.2 and Clause 21 on a new set of specimens without plastic		N/A
13.3	Insulating linings, barriers and the like: adequate mechanical strength		P
13.4	Socket-outlets constructed as to permit		
	- easy introduction into the terminal and reliable connection of the conductors in the terminals, except for lead wires of pilot lights		P
	- easy fixing of the main part to a wall or in a mounting box		P
	- correct positioning of the conductors		P
	- adequate space between the underside of the main part and the surface on which the main part is mounted;		N/A
	- adequate space between the sides of the main part and the enclosure (cover or box);		P
	Socket-outlets having screwless terminals, constructed that the connecting and/or disconnecting means of the screwless terminals cannot be activated by the conductors during and after installation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Compliance is checked by inspection and in case of doubt by the following test		N/A
	The test is carried out with a solid copper conductor having the smallest cross-sectional area, as specified in 12.3.2. (mm ²).....:		N/A
	If it is not possible to exert a force onto the connecting/disconnecting device, the product is deemed to comply with the requirements without further tests.		N/A
	During the application of the pull, the conductor do not come out of the screwless terminal		N/A
	In addition socket-outlets classified as design A: permit easy positioning and removal of the cover or cover plate, without displacing the conductors or activating the connecting and/or disconnecting means of screwless terminals.		N/A
	Compliance is checked by inspection and by an installation test with conductors of the largest nominal cross-sectional area specified in Table 3 (mm ²).....:		N/A
13.5	Socket-outlets designed that full engagement of associated plugs is not prevented by any projection from their engagement face		P
	Gap between the engagement face of the socket-outlet and the plug: not exceed 1 mm		P
13.6	Covers provided with bushings for the entry holes for the pins: not possible to remove them from the outside or for them to become detached inadvertently from the inside when the cover is removed		N/A
13.7	Covers, cover-plates or parts of them intended to ensure protection against electric shock:		
	- held in place at two or more points by effective fixings		P
	- fixed by means of a single fixing, for example, by a screw, provided that they are located by another means (for example, by a shoulder)		N/A
	Fixings of covers or cover-plates of socket-outlets of design A serve to fix the main parts: there are means to maintain the base in position, even after removal of the covers or cover-plates		N/A
13.7.1	Covers or cover-plates whose fixings are of the screw-type:		
	Compliance checked by inspection only		P
13.7.2	Covers or cover-plates whose fixing is not dependent on screws and whose removal is obtained by applying a force in a direction approximately perpendicular to the mounting/supporting surface:		

IEC 60884-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance checked, when their removal may give access, with the standard test finger:		
	to live parts: by the test of 24.14 (verification of the non-removal and the removal)		N/A
	to non-earthed metal parts separated from live parts in such a way that creepage distances and clearances have the values shown in table 23: by the test of 24.15 (verification of the non-removal and the removal)		N/A
	only to parts of insulating material, or earthed metal parts, or metal parts separated from live parts in such a way that creepage distances and clearances have twice the values shown in table 23, or live parts of SEL V circuits not greater than 25 V a.c.: by the test of 24.16 (verification of the non-removal and the removal)		N/A
13.7.3	Covers or cover-plates the fixing of which is not dependent on screws and whose removal is obtained by using a tool, in accordance with the manufacturer's instructions given in an instruction sheet or in other documentation:		
	Compliance checked, when their removal may give access, with the standard test finger:		
	to live parts: by the test of 24.14 (verification of the non-removal only)		N/A
	to non-earthed metal parts separated from live parts in such a way that creepage distances and clearances have the values shown in table 23: by the test of 24.15 (verification of the non-removal only)		N/A
	only to parts of insulating material, or earthed metal parts, or metal parts separated from live parts in such a way that creepage distances and clearances have twice the values shown in table 23, or live parts of SEL V circuits not greater than 25 V a.c.: by the test of 24.16 (verification of the non-removal only)		N/A
13.8	Cover-plate intended for a socket-outlet with earthing contact: not interchangeable with a cover-plate intended for a socket-outlet without earthing contact		N/A
13.9	Surface-type socket-outlets: no free openings in their enclosures		N/A
13.10	Screws or other means for mounting the socket-outlet on a surface in a box or enclosure: easily accessible from the front		P
	Fixing means not serve any other fixing purpose		P

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Clause	Requirement + Test	Result - Remark	Verdict
13.11	Multiple socket-outlets with a common base: provided with fixed links for the interconnection of the contacts in parallel		N/A
	Fixing of the links independent from the connection of the supply wires		N/A
13.12	Multiple socket-outlets, comprising separate bases: correct position of each base ensured		N/A
	Fixing of each base independent of the fixing of the combination to the mounting surface		N/A
13.13	Mounting plate of surface-type socket-outlets: adequate mechanical strength		N/A
13.14	Socket-outlets withstand the lateral strain imposed by equipment likely to be introduced into them		P
	Socket-outlets 16A 250V: test made 4 times with the socket-outlet turned through 90°, 5 N for 1 min (device shown in fig. 13)		P
	During the test: device not become disengaged from the socket-outlet		P
	After the test:		
	- no damage		P
	- socket-outlets comply with clause 22		P
13.15	Socket-outlets are not an integral part of lampholders		P
13.16	Surface-type socket-outlets having IP>20 are according to their IP classification when fitted with conduits or with sheathed cables and without a plug in engagement		N/A
	Surface-type socket-outlets having IPX4 and IPX6 have provision for opening a drain hole		N/A
	Socket-outlets with a drain hole: drain hole is not less than 5 mm in diameter, or 20 mm ² in area with a width and a length of not less than 3 mm		N/A
	Drain hole: effective		N/A
	Lid springs (if any): of corrosion-resistant material (bronze or stainless steel)		P
13.17	Earthing pins: adequate mechanical strength		P
	Not solid pins: compliance checked by inspection and by the test of 14.2 made after the tests of clause 21		N/A
13.18	Earthing contacts, phase contacts and neutral contacts :		
	- locked against rotation;		P
	- when the product is ready for the wiring do not possible to be removed without the use of a tool		P

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Clause	Requirement + Test	Result - Remark	Verdict
13.19	Metal strips of the earthing circuit: no burrs which might damage the insulation of the supply conductors		N/A
13.20	Socket-outlets to be installed in a box: designed that the conductor ends can be prepared after the box is mounted in position, but before the socket-outlet is fitted in the box		P
13.21	Inlet openings: allow the introduction of the conduit or the sheath of the cable		N/A
	Surface-type socket-outlets:		
	the conduit or sheath of the cable can enter at least 1 mm into the enclosure		N/A
	inlet opening for conduit entries, or at least two of them if there are more than one, capable of accepting conduit sizes of 16, 20, 25 or 32 according to IEC 60423 or a combination of at least two of any of these sizes		N/A
	inlet opening for cable entries capable of accepting cables having the dimensions specified in table 14 or be as specified by the manufacturer: rated current (A); Limits of external dimensions of cable min/max (mm) :		N/A
13.22	Membranes (grommets) in inlet openings: reliably fixed and not displaced by the mechanical and thermal stresses occurring in normal use		N/A
	Test on membranes subjected to the ageing treatment specified in 16.1 and assembled in the accessories		
	Accessories placed at $(40 \pm 2)^\circ\text{C}$ for 2 h. Force of 30 N applied for 5 s by test probe 11 of IEC 61032. During the test: no deformation		N/A
	Membranes likely to be subjected to an axial pull: axial pull of 30 N applied for 5 s. During the test: membranes not become detached		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
	Test repeated with membranes not subjected to any treatment		N/A
13.23	Membranes in inlet openings: introduction of the cables into the accessory permitted when the ambient temperature is low		N/A
	Test on membranes not subjected to the ageing treatment specified in 16.1 and assembled in the accessories		
	Accessories kept at $(-15 \pm 2)^\circ\text{C}$ for 2 h: possibility to introduce cables of the largest diameter through membranes		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	After the test: no harmful deformation, cracks or similar damage		N/A
14	CONSTRUCTION OF PLUGS AND PORTABLE SOCKET-OUTLETS		N/A
15	INTERLOCKED SOCKET-OUTLETS		N/A
16	RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES, AND RESISTANCE TO HUMIDITY		
16.1	Resistance to ageing		
	Accessories are resistant to ageing		P
	For accessories having a lid, the lid is closed during the test		P
	Portable socket-outlets: the plug of the same system having the same rated current as the socket-outlet inserted into the socket-outlet during the test		N/A
	Accessories subjected to a test in a heating cabinet at $(70 \pm 2) ^\circ\text{C}$ for seven days (168 h)		P
	After the tests, the specimens show:		
	- no crack visible with normal or corrected vision without additional magnification		P
	- no sticky or greasy material		P
	- no trace of cloth (forefinger pressed with 5 N)		P
	- no damage		P
	Portable socket-outlets: contact pressure of the contact assembly checked as specified in subclause 22.2 with the single-pin gauge		N/A
16.2	Protection provided by enclosures		
	Enclosures provide a degree of protection in accordance with the IP designation of the accessory		P
16.2.1	Protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects		
	Accessories and their enclosures provide a degree of protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects		P
	Fixed socket-outlets: mounted as in normal use on a vertical surface		P
	Flush-type and semi-flush type socket-outlets: mounted in an appropriate box according to the manufacturer's instructions	Build in	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Accessories with screwed glands or membranes fitted with flexible cables within the range specified in table 3:		N/A
	- largest cross-sectional area (mm ²); type of cable (table 17)	-	—
	- smallest cross-sectional area (mm ²); type of cable (table 17)	-	—
	Glands tightened with a torque equal to 2/3 of the torque applied during the test of 24.6 (Nm)	-	—
	Screws of the enclosure tightened with a torque equal to 2/3 of the torque given in table 6 (Nm) ..	-	—
16.2.1.1	Protection against access to hazardous parts		
	Appropriate test performed as specified in IEC 60529 (see also clause 10)		P
16.2.1.2	Protection against harmful effects due to ingress of solid foreign objects		
	Appropriate test performed as specified in IEC 60529		P
	Test on accessories with IP5X (considered to be of category 2): dust not penetrated in a quantity to interfere with satisfactory operation or to impair safety		P
	Test on accessories with IP6X (considered to be of category 1): dust do not penetrate		N/A
16.2.2	Protection against harmful effects due to ingress of water		
	Accessories and their enclosures provide a degree of protection against harmful effects due to ingress of water in accordance with their IP classification		P
	Appropriate test performed as specified in IEC 60529 under the following conditions:		
	Flush-type and semi-flush type socket-outlets: fixed in a vertical test wall using an appropriate box according to the manufacturer's instructions	in a box	P
	Accessory suitable to be installed on a rough wall: test wall according to figure 15 is used	panel mounting	N/A
	Surface-type socket-outlets mounted as for normal use in a vertical position and fitted with cables (having conductors of the largest and smallest nominal cross-sectional area given in table 3) or conduits or both in accordance with the manufacturer's instructions:		N/A
	- largest cross-sectional area (mm ²); type of cable (table 17)	-	—
	- smallest cross-sectional area (mm ²); type of cable (table 17)	-	—
	Portable socket-outlets tested on a plain, horizontal surface in a position as in normal use and fitted with flexible cables (having conductors of the largest and smallest nominal cross-sectional area given in table 3) according to table 17:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- largest cross-sectional area (mm ²); type of cable (table 17)	-	—
	- smallest cross-sectional area (mm ²); type of cable (table 17)	-	—
	Screws of enclosure tightened with a torque equal to 2/3 of the torque given in table 6 (Nm)		—
	Glands tightened with a torque equal to 2/3 of the torque applied during the test of 24.6 (Nm)	-	—
	Accessory with drain holes opened during the test: any accumulation of water proved by inspection	-	N/A
	Socket-outlets tested without a plug in engagement		P
	Plugs tested when in full engagement with:		
	- a fixed socket-outlets		N/A
	- a portable socket-outlets		N/A
	of the same system and with the same degree of protection against harmful effects due to ingress of water		—
	Specimens withstand an electric strength test specified in 17.2 which is started within 5 min of completion of the IP test		P
16.3	Resistance to humidity		
	Accessories proof against humidity which may occur in normal use		P
	Compliance checked by a humidity treatment carried out in a humidity cabinet containing air with relative humidity maintained between 91 % and 95 %		P
	Specimens kept in the cabinet for:		
	- two days (48 h) for accessories having IPX0		N/A
	- seven days (168 h) for accessories having IP>X0		P
	After this treatment the specimens show no damage		P
17	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
17.1	Insulation resistance measured 1 min after application of 500 V d.c.	See appended table 17.1	P
17.2	Electric strength: a.c. test voltage applied for 1 min	See appended table 17.2	P
18	OPERATION OF EARTHING CONTACTS		
	Earthing contacts provide adequate contact pressure and not deteriorate in normal use		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Compliance checked by the tests of clauses 19 and 21		P
19	TEMPERATURE RISE		
	Accessories constructed that they comply with the following temperature rise test		P
	Non-rewirable accessories are tested as delivered		N/A
	In the case of multiple socket-outlets, the test is carried out on one socket-outlet of each type and current rating with the test current as specified in Table 20 passed through that one socket-outlet	See appended tables	N/A
	The temperature rise of the terminals, terminations and clamping units according to Figure 44 determined by means of thermocouples do not exceed 45 K	See appended tables	P
19.1	Socket-outlets and plugs are tested as follows:		
	Socket-outlets tested using a test plug with brass pins having the minimum specified dimensions	See appended table 19.1	P
	For this test the temperature rise is measured on the terminals and terminations.		P
	Plugs tested with clamping units having dimensions specified in Figure 44 fitted on each live pin and earthing pin, if any	See appended table 19.1	N/A
	Plugs having lateral earthing contacts and resilient earthing contacts tested using a fixed socket-outlet complying with the standard and having as near to-average characteristics as can be selected, but with minimum size of the earthing pin, if any	See appended table 19.1	N/A
19.2	Fixed socket-outlets of a socket-outlet and fused plug system are tested as follows:		N/A
	a) For a single socket-outlet the plug is inserted into the socket-outlet and 70 % of the test current is passed through the plug	See appended table 19.2	N/A
	The balance of the total test current is passed, simultaneously through a looped connection, connected to the socket-outlet terminals		N/A
	The total nominal load on the supply cable is passed for 60 min	See appended table 19.2	N/A
	b) For a multiple socket-outlet a plug is inserted into one socket-outlet and 70 % of the test current is passed	See appended table 19.2	N/A
	A second plug is inserted into another socket-outlet and the balance of the total test current is passed simultaneously through this plug.....:	See appended table 19.2	N/A
	The total nominal load on the supply cable is passed for 60 min.	See appended table 19.2	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19.3	Portable socket-outlets and rewirable plugs with incorporated components are tested by the following two tests:		
	– with a current which is equal to the test current as indicated in Table 20, for Clause 19	See appended table 19.3	N/A
	– with a current which is equal to the rated current of the portable accessory or the rated current of the component(s), whichever is the lower	See appended table 19.3	N/A
	Non-rewirable plugs with incorporated components are tested by the following two tests:		
	– with a current which is equal to the test current for the combination of the plug and the cable as indicated in Table 20, for Clause 19	See appended table 19.3	N/A
	– with a current which is equal to the test current for the combination of the plug and the cable as indicated in Table 20, for Clause 21, or the rated current of the component(s), whichever is the lower	See appended table 19.3	N/A
20	BREAKING CAPACITY		
	Accessories have adequate breaking capacity		P
	Compliance checked by testing:		
	- socket-outlets;	See appended table 20	P
	- plugs with pins which are not solid	See appended table 20	N/A
	Multiple socket-outlets: test carried out on one socket-outlet of each type and current rating		N/A
	During the test: no sustained arcing occur		P
	After the test:		
	- specimens show no damage impairing their further use;		P
	- entry holes for the pins not show any damage which may impair the safety		P
21	NORMAL OPERATION		
	Accessories withstand without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		P
	Compliance checked by testing:		
	- socket-outlets;	See appended table 21	P
	- plugs with resilient earthing socket-contacts;	See appended table 21	N/A
	- plugs with pins which are not solid	See appended table 21	N/A
	Test performed according to the procedure specified in Figure 43; point of Figure 43 at which the test program has begun (1, 2, 3):	1	—
	Test current passed:		

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Clause	Requirement + Test	Result - Remark	Verdict
	- during each insertion and withdrawal of the plug ($I_n \leq 16A$)		P
	- during alternate insertion and withdrawal, the other insertion and withdrawal being made without current flowing ($I_n > 16A$)		N/A
	Multiple socket-outlets: test carried out on one socket-outlet of each type and current rating		N/A
	During the test: no sustained arcing occur		P
	After the test the specimens do not show:		
	- wear impairing their further use;		P
	- deterioration of enclosures, insulating lining or barriers;		P
	- damage to the entry holes for the pins, that might impair proper working;		P
	- loosening of electrical or mechanical connections;		P
	- seepage of sealing compound		N/A
	Shuttered socket-outlets: gauges of figure 9 and 10 applied to the entry holes corresponding to live contacts do not touch live parts when they remain under the relevant forces	See appended table 21	P
	Temperature-rise test (requirements of clause 19)	See appended table 21	P
	Electric strength (sub-clause 17.2)	See appended table 21	P
	Pins which are not solid: test according to 14.2		N/A
22	FORCE NECESSARY TO WITHDRAW THE PLUG		
	Construction of accessory does allow the easy insertion and withdrawal of the plug, and prevent the plug from working out of the socket-outlet in normal use		P
22.1	Verification of the maximum withdrawal force	See appended table 22	P
22.2	Verification of the minimum withdrawal force	See appended table 22	P
23	FLEXIBLE CABLES AND THEIR CONNECTIONS		
23.1	Rewirable plugs and rewirable portable socket-outlets are provided with a cord anchorage		N/A
	Sheath of flexible cable is clamped within the cord anchorage		N/A
	In non-rewirable plugs and non-rewirable portable socket-outlets the cable is maintained in position and the terminations are relieved from strain and twisting		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Sheath of flexible cable is maintained inside the accessory		N/A
23.2	Pull and torque test		N/A
	Non-rewirable accessories:		
	After the test: displacement ≤ 2 mm	See appended table 23.2	N/A
	No break in the electrical connections		N/A
	Rewirable accessories:		
	After the test: displacement ≤ 2 mm		N/A
	End of conductors not have moved noticeably in the terminals		N/A
	Rewirable accessories having rated current up to and including 16 A:		
	Suitable for fitting with the appropriate cable as shown in table 19		N/A
	Type of flexible cable; number of conductors and nominal cross-sectional area (mm ²):		—
23.3	Non-rewirable plugs and non-rewirable portable socket-outlets are provided with a flexible cable complying with IEC 60227 or IEC 60245		N/A
	Flexible cables have the same number of conductors as there are poles in the plug or socket-outlet		N/A
	Conductor connected to the earthing contact is identified by the colour combination green/yellow		N/A
23.4	Non-rewirable plugs and non-rewirable portable socket-outlets: designed that the flexible cable is protected against excessive bending		N/A
	Guards of insulating material and fixed in reliable manner		N/A
	Flexing test (10.000 flexings)		
	During the test: no interruption of the test current and no short-circuit between conductors	See appended table 23.4	N/A
	After the test: guard no separated from the body, insulation shows no sign of abrasion or wear, broken strands become no accessible	See appended table 23.4	N/A
24	MECHANICAL STRENGTH		
	Accessories, surface mounting boxes, screwed glands and shrouds have adequate mechanical strength		P
24.1	Fixed socket-outlets, portable multiple socket-outlets and surface-type mounting boxes: hammer test described in IEC 60068-2-75 (test EHA), equivalent mass of 250 g	See appended table 24.1	P

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Clause	Requirement + Test	Result - Remark	Verdict
	After the test: no damage, live parts no become accessible		P
24.2	Portable single socket-outlets and plugs: subjected to test Ec: Rough handling shocks, primarily for equipment-type specimens, procedure 2 of IEC 60068-2-31 (tumbling barrel); number of falls.....:		N/A
	After the test:		
	- no part become detached or loosened;		N/A
	- pins no become so deformed that the plug cannot be introduced into a socket-outlet and also fails to comply with the requirements of 9.1 and 10.3;		N/A
	- pins no turn when a torque of 0,4 Nm is applied for 1 min in each direction		N/A
	The shutters of socket-outlets tested again according to Clause 21, from paragraph 19 up to paragraph 24 (only the tests of shutters)		N/A
24.3	Main parts of surface-type socket-outlets: first fixed to a cylinder of rigid steel sheet and then fixed to a flat steel sheet		
	During and after the tests: no damage		N/A
24.4	Portable single socket-outlets, multiple socket-outlets and plugs (elastomeric or thermoplastic material): impact test, weight (1000 ± 2) g, height 100 mm (apparatus shown in fig. 27)		
	Specimens placed in a freezer at (-15 °C ± 2) °C for at least 16 h. After the test: no damage		N/A
24.5	Portable single socket-outlets and plugs (elastomeric or thermoplastic material): compression test, 300 N for 1 min, position a) and b) (apparatus shown in fig. 8)		
	After the test: no damage		N/A
24.6	Screwed glands of accessories having IP>20: torque test (1 min)		N/A
	- diameter of test rod (mm)		—
	- type of material (metal / moulded).....		—
	- torque (Nm)		—
	After the test: no damage of glands and enclosures of the specimens		N/A
24.7	Plug pins provided with insulating sleeves: 20000 movements, 4 N (apparatus shown in fig. 28)		N/A
	After the test: no damage of pins, insulating sleeve not have punctured or rucked up		N/A
24.8	Shuttered socket-outlets: mechanical test carried out on specimens submitted to the normal operation test according to clause 21		
	Force (40 N / 75 N) applied for 1 min against the shutter of an entry hole by means of one pin (N) :	40 N	—
	Pin did not come in contact with live parts		P

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Clause	Requirement + Test	Result - Remark	Verdict
	After the test: no damage		P
24.9	Mechanical test for multiple portable socket-outlet: 8 falls on concrete floor with the specimens arranged as shown in figure 29		
	Rewirable multiple socket-outlets: flexible cable of the smallest cross-sectional area specified in table 3		—
	After the test: no damage, no part have become detached or loosened		N/A
	Accessories having IP>X0 submitted again to the tests as specified in 16.2		N/A
	The shutters of multiple socket-outlets tested again according to Clause 21, from paragraph 19 up to paragraph 24 (only the tests of shutters)		N/A
24.10	Plugs: pull test to verify the fixation of pins in the body of the plug (new specimens)		N/A
	Maximum withdrawal force (table 16) applied for 1 min on each pin in turn, after the specimen has been placed at $(70 \pm 2) ^\circ\text{C}$ for 1 h (N)		—
	After the test: displacement of pins in the body of the plug ≤ 1 mm (mm)		N/A
24.11	Barriers of portable socket-outlets having means for suspension on a mounting surface:		N/A
	Force applied for 10 s against the barrier by means of a cylindrical steel rod (1,5 times the maximum plug withdrawal force in 22.1, table 16) (N)		—
	Rod did not pierce the barrier		N/A
24.12	Portable socket-outlets having means for suspension on a mounting surface (pull test):		N/A
	Pull applied to the supply flexible cable for 10 s (force prescribed in 23.2 for checking the flexible cable anchorage) (N)		—
	During the test: no break of the means for suspension on a mounting surface		N/A
24.13	Portable socket-outlets having means for suspension on a mounting surface (pull test):		N/A
	Pull applied to the engagement face of the socket-outlet for 10 s (maximum withdrawal force specified, for the corresponding plug, in table 16) (N)		—
	During the test: no break of the means for suspension on a mounting surface		N/A
24.14	Forces necessary to retain or remove covers, cover-plates or parts of them (accessibility with the test finger to live parts)		N/A
24.14.1	Verification of the retention of covers or cover-plates (fixed socket-outlets)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Force (40 N / 80 N) applied for 1 min perpendicular to the mounting surface (N) :		—
	Covers or cover-plates did not come off		N/A
	Test repeated on new specimens with a sheet of hard material, (1 ± 0,1) mm thick, fitted around the supporting frame (fig. 31): covers or cover-plates did not come off		N/A
	After the test: no damage		N/A
24.14.2	Verification of the removal of covers or cover-plates (fixed socket-outlets)		N/A
	Force not exceeding 120 N applied 10 times perpendicular to the mounting / supporting surface: covers or cover-plates came off		N/A
	Test repeated on new specimens with a sheet of hard material, (1 ± 0,1) mm thick, fitted around the supporting frame (fig. 31): covers or cover-plates came off		N/A
	After the test: no damage		N/A
24.14.3	Verification of the retention of covers or cover-plates (plugs and portable socket-outlets)		N/A
	Force 80 N applied for 1 min perpendicular to the mounting surface: covers, cover-plates or parts of them did not come off		N/A
	Test repeated with a force of 120 N:		N/A
	Rewirable plugs and rewirable portable socket-outlets: covers, cover-plates or parts of them came off but the specimen showed no damage		N/A
	Non-rewirable, non-moulded-on accessories: covers, cover-plates or parts of them came off but the accessories were permanently useless according to 14.1		N/A
24.15	Force necessary for covers or cover-plates to come off or not to come off (accessibility with the test finger to non-earthed metal parts separated from live parts by creepage distances and clearances according to table 23)		N/A
24.14.1	Verification of the non-removal of covers or cover-plates		N/A
	Force (10 N / 20 N) applied for 1 min in direction perpendicular to the mounting surface (N) :		—
	Covers or cover-plates did not come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 31): covers or cover-plates did not come off		N/A
	After the test: no damage		N/A
24.14.2	Verification of the removal of covers or cover-plates		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers or cover-plates came off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm \pm 0,1 mm thick, fitted around the supporting frame (fig. 31): covers or cover-plates came off		N/A
	After the test: no damage		N/A
24.16	Force necessary for covers or cover-plates to come off or not to come off (accessibility to insulating parts, earthed metal parts, live parts of SELV \leq 25 V a.c. or metal parts separated from live parts by creepage distances twice those according to table 23)		V
24.14.1	Verification of the non-removal of covers or cover-plates		N/A
	Force 10 N applied for 1 min in direction perpendicular to the mounting surface: covers or cover-plates did not come off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm \pm 0,1 mm thick, fitted around the supporting frame (fig. 31): covers or cover-plates did not come off		N/A
	After the test: no damage		N/A
24.14.2	Verification of the removal of covers or cover-plates		N/A
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers or cover-plates came off		N/A
	Test repeated on new specimens with a sheet of hard material, 1 mm \pm 0,1 mm thick, fitted around the supporting frame (fig. 31): covers or cover-plates came off		N/A
	After the test: no damage		N/A
24.17	Test with gauge of figure 32 applied according to figure 33 for verification of the outline of covers or cover-plates: distances between face C of gauge and outline of side under test, not decrease	complying / not complying	—
24.18	Test with gauge according to figure 35 applied as shown in figure 36 (1 N): gauge not enter more than 1mm	complying / not complying	—
24.19	Shroud of portable socket-outlets: compression test (20 \pm 2) N at (25 \pm 5) °C by means of the apparatus shown in figure 38		N/A
	After 1 min and while the shrouds are still under pressure the dimensions did comply with the appropriate standard sheet		N/A
	Test repeated with the specimen rotated 90 °		N/A
25	RESISTANCE TO HEAT		

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Clause	Requirement + Test	Result - Remark	Verdict
25.1	Specimens kept for 1 h in a heating cabinet at $(100 \pm 2)^\circ\text{C}$ for 1 h		P
	During the test: no change impairing their further use and sealing compound, if any, not flow		P
	After the test:		
	- no access to live parts with probe B of IEC 61032 applied with a force not exceeding 5 N		P
	- markings still legible		P
25.2	Parts of insulating material necessary to retain current-carrying parts and parts of the earthing circuit in position, as well as parts of the front surface zone, 2 mm wide, surrounding the phase and neutral pin entry holes: ball-pressure test at $(125 \pm 2)^\circ\text{C}$ for 1 h	See appended table 25.2	P
25.3	Parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though in contact with them: ball-pressure test (1 h)	See appended table 25.3	P
25.4	Portable accessories: compression test (20 N) at $(80 \pm 2)^\circ\text{C}$ for 1 h by means of the apparatus shown in figure 38		
	After the test: no damage		N/A

26	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		
26.1	Connections withstand mechanical stresses		P
	Thread-forming or thread-cutting screws used only if supplied together with the piece in which they are intended to be inserted		N/A
	Thread-cutting screws intended to be used during installation: captive		N/A
	Screws or nuts which transmit contact pressure made of metal and in engagement with a metal thread		P
	Threaded part torque test	See appended table 26.1	P
26.2	Screws in engagement with a thread of insulating material: correct introduction into the screw hole or nut ensured		N/A
26.3	Contact pressure: not transmitted through insulating material other than ceramic, pure mica or other material no less suitable unless there is sufficient resiliency in metallic parts		P
	Connections made by insulation piercing of tinsel cord reliable		N/A
26.4	Screws and rivets locked against loosening and/or turning		P

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Clause	Requirement + Test	Result - Remark	Verdict
26.5	Current-carrying parts (including earthing terminals) have mechanical strength, electrical conductivity and resistance to corrosion adequate:		
	- copper;		N/A
	- alloy with at least 58 % copper for parts made from cold-rolled sheet or with at least 50 % copper for other parts;	> 58 %	P
	- stainless steel with at least 13 % chromium and not more than 0,09 % carbon		N/A
	- steel with electroplated coating of zinc (ISO 2081): service condition ISO no. (1/2/3); IP (X0/X4/X5); thickness (µm) :		N/A
	- steel with electroplated coating of nickel and chromium (ISO 1456): service condition ISO no. (2/3/4); IP (X0/X4/X5); thickness (µm) :		N/A
	- steel with electroplated coating of tin (ISO 2093): service condition ISO no. (2/3/4); IP (X0/X4/X5); thickness (µm) :		N/A
	Current-carrying parts subjected to mechanical wear: not of steel with electroplated coating		P
	Metals having a great difference of electrochemical potential: not used in contact with each other		P
26.6	Contacts subjected to a sliding action are of metal resistant to corrosion		P
26.7	Thread-forming screws and thread-cutting screws are not used for the connection of current-carrying parts		P
	Thread-forming screws and thread-cutting screws used to provide earthing connection: it is not necessary to disturb the connection and at least two screws are used for each connection		N/A
27	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		
27.1	Creepage distances, clearances and distances through sealing compound are not less than the values shown in table 23	See appended table 27.1	P
27.2	Insulating sealing compound does not protrude above the edge of the cavity in which it is contained		N/A
27.3	Surface-type socket-outlets do not have bare current-carrying strips at the back		N/A
28	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT, TO FIRE AND TO TRACKING		
28.1	Resistance to abnormal heat and to fire		

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Clause	Requirement + Test	Result - Remark	Verdict
28.1.1	Glow-wire test according to IEC 60695-2-10 and IEC 60695-2-11	See appended table 28.1.1	P
28.1.2	Plugs with pins provided with insulating sleeves:		
	Test temperature maintained for 3 h by means of the apparatus shown in figure 40 at $(120 \pm 5) ^\circ\text{C}$ / $(180 \pm 5) ^\circ\text{C}$		—
	Impact test according to sub-clause 30.4 (mass 100 g, height 100 mm, 4 impacts): no cracks of the insulating sleeves		N/A
28.2	Resistance to tracking		
	Parts of insulating material retaining live parts in position of accessories having IP>X0: of material resistant to tracking		P
	Tracking test at 175 V with solution A of IEC 60112	See appended table 28.2	P
29	RESISTANCE TO RUSTING		
	Ferrous parts protected against rusting		P
	Test made after having removed all grease using a suitable degreasing agent: 10 min 10 % solution of ammonium chloride, 10 min in a box with air saturated with moisture and 10 min at $(100 \pm 5) ^\circ\text{C}$:		
	No signs of rust		P
30	ADDITIONAL TESTS ON PINS PROVIDED WITH INSULATING SLEEVES		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

12.2.5	TABLE: test with apparatus shown in figure 11 (screw-type terminals)			P
	rated current (A)	16 A		—
	type of conductors	rigid solid / rigid stranded		—
	smallest/largest cross-sectional area per table 3 (mm ²)	1,5 – 2x2,5 mm ²		—
	number of conductors.....	1 / 2		—
	nominal diameter of thread (mm); torque per table 6 (Nm)	3,4 mm; 0,8 Nm		—
Cross-sectional area (mm ²)	Diameter of bushing hole per table 9 (mm)	Height H per table 9 (mm)	Mass (kg)	Remarks
1,5	6,5	260	0,4	P
2,5	9,5	280	0,7	P
supplementary information:				

12.2.6	TABLE: pull test (screw-type terminals)			P
	rated current (A)	16 A		—
	smallest/largest cross-sectional area per table 3 (mm ²)	1,5 / 2,5 mm ²		—
	nominal diameter of thread (mm); torque 2/3 per table 6 (Nm)	3,4 mm; 0,53 Nm		—
Cross-sectional area (mm ²)	Number of conductors	Type of conductors (rigid solid / rigid stranded / flexible)	Pull per table 4 applied for 1 min (N)	Remarks
1,5	1 / 2	solid / stranded	40	P
2,5	1 / 2	solid / stranded	50	P
supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

12.2.7	TABLE: tightening test (screw-type terminals)			P
	rated current (A)	:	16 A	—
	nominal diameter of thread (mm); torque 2/3 per table 6 (Nm)	:	3,4 mm; 0,53 Nm	—
Largest cross-sectional area per table 3 (mm ²)	Permissible number of conductors ⁽¹⁾	Type of conductors (rigid solid / rigid stranded / flexible)	Number of wires and nominal diameter of wires per table 5	Remarks
2,5	1 / 2	rigid solid	1x1,78	P
2,5	1 / 2	rigid stranded	7x0,67	P
supplementary information: ⁽¹⁾ terminals intended for looping-in 2 or 3 conductors				

12.3.10	TABLE: mechanical strength test (screwless-type terminals)			N/A	
	rated current (A)	:	-	—	
	largest/smallest cross-sectional area per table 7 (mm ²)	:	-	—	
Number of connection (after that conductor subjected to a pull of 30 N for 1 min) / disconnection		Type of conductor (solid / rigid stranded / flexible	Cross-sectional area (mm ²)	Remarks	
-		-	-	-	
-		-	-	-	
	TABLE: test with apparatus shown in figure 11			N/A	
Cross-sectional area (mm ²)	Type of conductor (solid / rigid stranded / flexible	Diameter of bushing hole per table 9 (mm)	Height H per table 9 (mm)	Mass (kg)	Remarks
-	-	-	-	-	-
-	-	-	-	-	-
supplementary information:					

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Clause	Requirement + Test				Result - Remark		Verdict
12.3.11	TABLE: electrical and thermal strength test (screwless-type terminals)						N/A
Test a)	Test carried out for 1 h connecting rigid solid conductors:						
	test current per table 10 (A) :				-		—
	nominal cross-sectional area (mm ²) :				-		—
Screwless terminal number		Voltage drop (mV)			Required voltage drop (mV)		
1					≤ 15		
2					≤ 15		
3					≤ 15		
4					≤ 15		
5					≤ 15		
Test b)	Temperature cycles test carried out on terminals subjected to Test a):						N/A
	test current per table 10 (A) :						—
	nominal cross-sectional area (mm ²) :						—
	allowed voltage drop (mV) :				≤ 22,5 mV or 2 times 24 th cycle value (mV)		—
Screwless terminal number		1	2	3	4	5	Remarks
voltage drop after 24 th cycle							
voltage drop after 48 th cycle							
voltage drop after 72 nd cycle							
voltage drop after 96 th cycle							
voltage drop after 120 th cycle							
voltage drop after 144 th cycle							
voltage drop after 168 th cycle							
voltage drop after 192 nd cycle							
12.3.10	TABLE: mechanical strength test (screwless-type terminals)						N/A
	rated current (A) :						—
	largest/smallest cross-sectional area per table 7 (mm ²) :						—
Number of connection (after that conductor subjected to a pull of 30 N for 1 min) / disconnection		Type of conductor (solid / rigid stranded / flexible			Cross-sectional area (mm ²)		Remarks
-		-			-		-
-		-			-		-

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Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: test with apparatus shown in figure 11					N/A
Cross-sectional area (mm ²)	Type of conductor (solid / rigid stranded / flexible)	Diameter of bushing hole per table 9 (mm)	Height H per table 9 (mm)	Mass (kg)	Remarks	
-	-	-	-	-	-	
-	-	-	-	-	-	
supplementary information:						

12.3.12	TABLE: deflection test (principle of test apparatus shown in figure 12a)						N/A	
	Test carried out connecting rigid solid copper conductors:							
	test current (A) (equal rated current) :						—	
	required voltage drop (mV) :			≤ 25 mV			—	
Type of conductor		Smallest			Largest		Remarks	
cross-sectional area per table 11 (mm ²)								
force per table 12 (N)								
screwless terminal number		1	2	3	1	2	3	
starting point (X = deflection original point)		X	X+10°	X+20°	X	X+10°	X+20°	
voltage drop 1 st deflection (mV)								
voltage drop 2 nd deflection (mV)								
voltage drop 3 rd deflection (mV)								
voltage drop 4 th deflection (mV)								
voltage drop 5 th deflection (mV)								
voltage drop 6 th deflection (mV)								
voltage drop 7 th deflection (mV)								
voltage drop 8 th deflection (mV)								
voltage drop 9 th deflection (mV)								
voltage drop 10 th deflection (mV)								
voltage drop 11 th deflection (mV)								
voltage drop 12 th deflection (mV)								
supplementary information:								

14.22	TABLE: Components	N/A
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Clause	Requirement + Test	Result - Remark	Verdict

17.1	TABLE: insulation resistance			P
Item per 17.1	test voltage applied between:	measured (MΩ)	required (MΩ)	
a	Between all poles connected together and the body, with a plug in engagement	> 5 MΩ	5 MΩ	
b	Between each pole in turn and all others connected to the body, with a plug in engagement	> 5 MΩ	5 MΩ	
supplementary information:				

17.2	TABLE: electric strength			P
	rated voltage (V)	250 V~		—
item per 17.1	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)	
a	Between all poles connected together and the body, with a plug in engagement	2000 V	No	
b	Between each pole in turn and all others connected to the body, with a plug in engagement	2000 V	No	
supplementary information:				

19.1	TABLE: temperature rise test for socket-outlets and plugs							
	rated current of accessory (A)			16 A			—	
	type of accessory (non-rewirable / rewirable) ...			rewirable			—	
	nominal cross-sectional area per table 15 (mm ²) :			2,5 mm ²			—	
	type of conductors (rigid solid / rigid stranded / flexible).....			rigid solid			—	
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (Nm			3,4 mm ; 0,53 Nm			—	
specimen	type of flexible cable ⁽¹⁾	number of conductors and nominal cross-sectional area (mm ²) ⁽¹⁾	test circuit (L-L/L-N/L-E)	test current (table 20) for 1 h (A)	measured ΔT (K)	allowed ΔT (K)	ΔT of external parts of insulating material (25.3)(K)	
1,2,3	-	-	L-N	22	25 – 39	≤ 45	< 7	
1,2,3	-	-	L-E	22	28 – 36	≤ 45	< 7	
supplementary information:								
⁽¹⁾ Non-rewirable accessories								

19.2	TABLE: temperature rise test for fixed socket-outlets of a socket-outlet and fused plug system							N/A
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Clause	Requirement + Test	Result - Remark	Verdict

19.3	TABLE: temperature rise test for plugs and portable socket-outlets with incorporated components		N/A
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20	TABLE: breaking capacity							P	
	rating of accessory (A/V)			16 A – 250 V~			—		
	type of accessory (non-rewirable / rewirable) ...			rewirable			—		
	type of flexible cable (non-rewirable accessories)			-			—		
	number of conductors and nominal cross-sectional area (mm ²) (non-rewirable accessories)			-			—		
	nominal cross-sectional area per table 15 (mm ²) :			2,5 mm ²			—		
	type of conductors (rigid solid / rigid stranded / flexible).....			Rigid			—		
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (Nm)			3,4 mm ; 0,53 Nm			—		
	rate of operation (strokes per minute)			30			—		
specimen	test plug (for each type and current rating of socket-outlet)		test voltage (1,1 Vn) (V)	test current (1,25 In) cos φ 0,6 (A)	number of strokes (plugs only)	number of strokes, with shutters – with current ⁽¹⁾	number of strokes, without shutters – with current ⁽²⁾	Remarks	
	pin dimensions (mm)	pin spacing (mm)							
1,2,3	4,8	19,2	275	20	-	100	-	-	P
supplementary information: ⁽¹⁾ starting point 1 or 3 of Figure 43 ⁽²⁾ starting point 2 of Figure 43									

21	TABLE: normal operation							P
	rating of accessory (A/V)		16 A – 250 V~					—
	type of accessory (non-rewirable / rewirable) ...		rewirable					—
	type of flexible cable (non-rewirable accessories)		-					—
	number of conductors and nominal cross-sectional area (mm ²) (non-rewirable accessories)		-					—
	nominal cross-sectional area per table 15 (mm ²) :		2,5 mm ²					—
	type of conductors (rigid solid / rigid stranded / flexible)		Rigid					—

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Clause	Requirement + Test					Result - Remark			Verdict
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (Nm) :					3,4 mm ; 0,53 Nm			—
	rate of operation (strokes per minute) :					30			—
specimen	test plug (for each type and current rating of socket-outlet)		test voltage (Vn) (V)	test current (table 20), cos φ 0,8 (A)	number of strokes (plugs only)	number of strokes, with shutters – with current ⁽¹⁾	number of strokes, without shutters – with current ⁽²⁾	number of strokes, with shutters – without current ⁽³⁾	
	pin dimensions (mm)	pin spacing (mm)							
1,2,3	4,8	19,2	250	16	-	10000	-	-	P
	TABLE: test for shuttered socket-outlets								
specimen	Gauge of figure 9, applied with a force of 20 N, for approximately 5 s, successively in three directions				Steel gauge of figure 10, applied with a force of 1 N for approximately 5 s, in three directions				
1,2,3	Y				Y				P
19	TABLE: temperature rise test								P
specimen	test circuit (L-L/L-N/L-E)		test current (table 20 for clause 21) for 1 h (A)		measured dT (K)		allowed dT (K)		
1,2,3	L-N		16		13 – 18		≤ 45		P
1,2,3	L-E		16		18 – 20		≤ 45		P

17.2	TABLE: electric strength				P
specimen	item per 17.1	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)	
1,2,3	a	Between all poles connected together and the body, with a plug in engagement	1500 V	No	
1,2,3	b	Between each pole in turn and all others connected to the body, with a plug in engagement	1500 V	No	
supplementary information: ⁽¹⁾ starting point 1 or 3 of Figure 43 ⁽²⁾ starting point 2 of Figure 43 ⁽³⁾ starting point 1 or 2 of Figure 43					

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Clause	Requirement + Test	Result - Remark	Verdict

22	TABLE: force necessary to withdraw the plug				P
	Rated current (A)		16 A		—
	Number of poles		3		—
22.1	Verification of the maximum withdrawal force				P
specimen	socket-outlets (multi-pin gauge)		plugs with resilient earthing contact assemblies (single-pin gauge)		
	maximum withdrawal force (N)	the test plug did not remain in the socket-outlet (Y/N)	maximum withdrawal force (N)	the test pin gauge did not remain in the contact assembly	
1,2,3	54	Y	-	-	P
22.2	Verification of the minimum withdrawal force				
specimen	socket-outlets (single-pin gauge)		plugs with resilient earthing contact assemblies (single-pin gauge)		
	minimum withdrawal force (N)	the test pin gauge did not fall from each individual contact-assembly within 30 s (Y/N)	minimum withdrawal force (N)	the test pin gauge did not fall from each individual earthing contact-assembly within 30 s (Y/N)	
1,2,3	2	Y	-	-	P
supplementary information:					

23.2	TABLE: pull and torque test	N/A
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23.4	TABLE: flexing test	N/A
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24.1	TABLE: impact test			P
part of enclosure tested per table 21 (A, B, C, D)		blows per part	height of fall (mm)	comments
A		5	80	P
C		4	160	P
supplementary information:				

25.2	TABLE: ball pressure test of insulating materials			P
	allowed impression diameter (mm)	≤ 2 mm		—
part under test		test temperature (°C)	impression diameter (mm)	
Base		125	< 1	

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Clause	Requirement + Test	Result - Remark	Verdict

supplementary information:

25.3	TABLE: ball pressure test of insulating materials			P
	allowed impression diameter (mm) :	≤ 2 mm		—
part under test		test temperature (°C) ⁽¹⁾	impression diameter (mm)	
cover		79	< 1	
supplementary information: ⁽¹⁾ (70 ± 2) °C / (40 ± 2) °C + highest temperature rise determined during the test of clause 19				

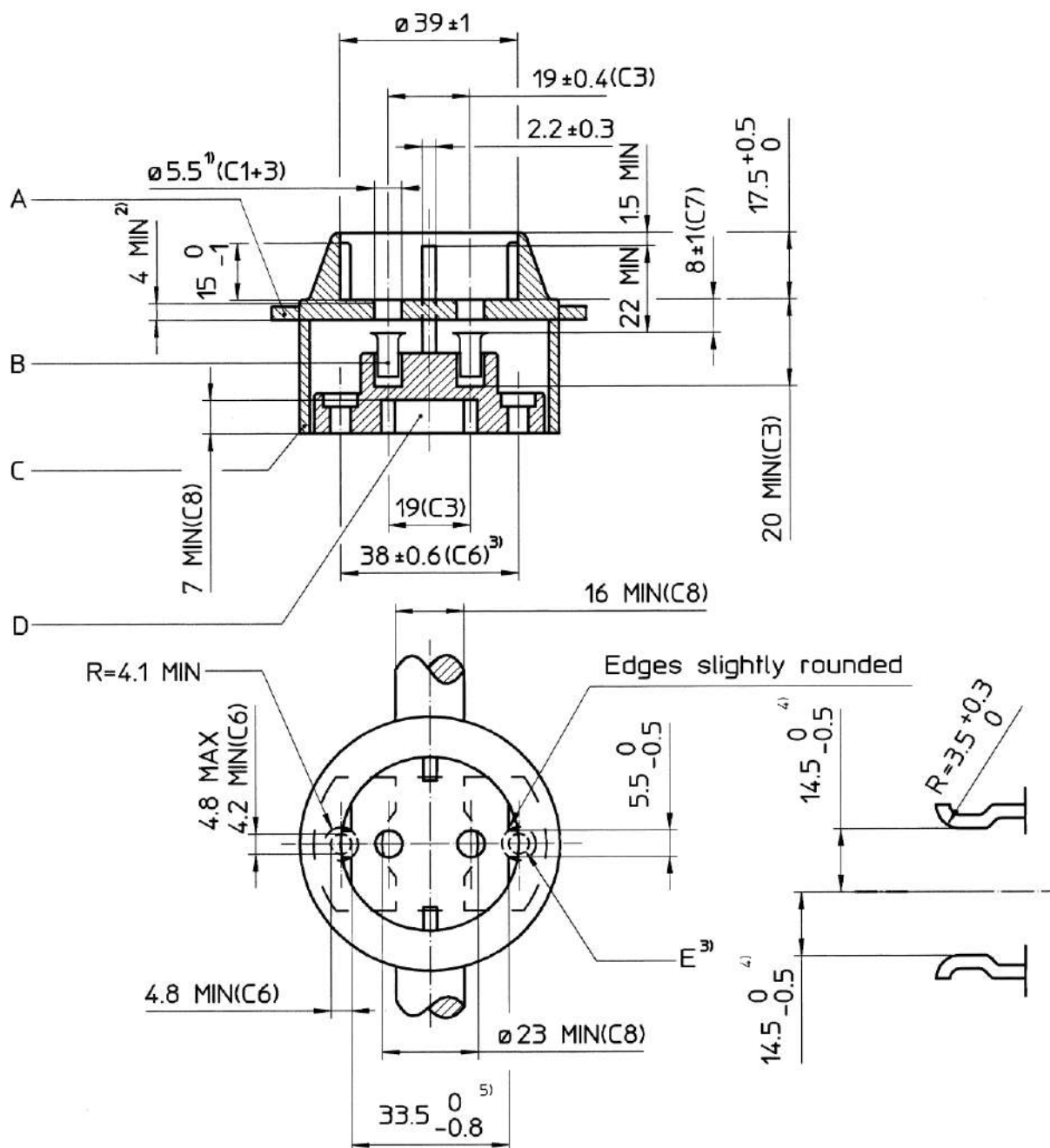
26.1	TABLE: threaded part torque test					P
threaded part identification		diameter of thread (mm)	column number (1, 2 or 3)	applied torque (Nm)	times (5/10)	no damage
terminal screws		3,4	2	0,8	5	P
fixing screws		4,1	2	1,2	10	P
supplementary information:						

27.1	TABLE: creepage distances, clearances and distances through sealing compound						P
	rated voltage (V)	250 V~					—
item per table 23	creepage distance dcr, clearance cl and distance through sealing compound dtsc at/of:	require d cl (mm)	cl (mm)	require d dcr (mm)	dcr (mm)	require d dtsc (mm)	dtsc (mm)
1 and 6	Between live parts of different polarity	≥ 3	> 10	≥ 3	> 10	≥	-
2 and 7	Between live parts and accessible surface of parts of insulating material	≥ 3	> 10	≥ 3	> 10	≥	-
	Between live parts and earthed metal parts including parts of earthing circuit	≥ 3	> 4,2	≥ 3	> 4,2	≥	-
	Between live parts and screws or devices for fixing the base, covers of cover-plates of fixed socket-outlets	≥ 3	> 10	≥ 3	> 10	≥	-
supplementary information:							

28.1.1	TABLE: glow-wire test					P
part under test		material designation	test temperature (°C)	visible flame and sustained glowing (Y/N)	flame and glowing extinction time	ignition of the tissue paper (Y/N)
Base		PA6 V0+20% GF	850	N	N/A	N

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Clause	Requirement + Test		Result - Remark		Verdict
shutter	PA6	650	N	N/A	N
Cover	PA6	650	N	N/A	N
supplementary information:					
28.2	TABLE: resistance to tracking				P
	number of drops	50			—
part under test	material designation		test voltage (V)	flashover / breakdown (Yes/No)	
Base	PA6 V0+20% GF		175	No	
supplementary information:					

16 A/250 V Two-pole socket-outlet with side earthing-contacts



Pictures:



TRF No. IEC60884_1D

