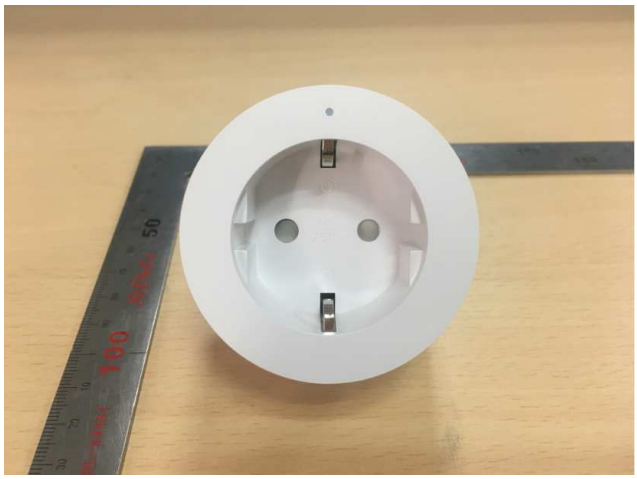
Prüfbericht-Nr.: *Test Report No.*:	**50283429 001**	**Auftrags-Nr.:** *Order No.*:	244152828	Seite 1 von 55 *Page 1 of 55*
Kunden-Referenz-Nr.: *Client Reference No.*:	N/A	**Auftragsdatum:** *Order date*:	24.06.2019	
Auftraggeber: *Client*:	Lumi United Technology Co., Ltd / F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China			
Prüfgegenstand: *Test item*:	Smart Plug			
Bezeichnung / Typ-Nr.: *Identification / Type No.*:	SP-EUC01			
Auftrags-Inhalt: *Order content*:	Type test			
Prüfgrundlage: *Test specification*:	EN IEC 61058-1:2018 EN 61058-1-1:2016			

Wareneingangsdatum: *Date of receipt*:	24.06.2019
Prüfmuster-Nr.: *Test sample No.*:	A000951316 001-030
Prüfzeitraum: *Testing period*:	24.06.2019 – 06.08.2019
Ort der Prüfung: *Place of testing*:	TÜV Rheinland (Shanghai) Co., Ltd.
Prüflaboratorium: *Testing laboratory*:	TÜV Rheinland (Shanghai) Co., Ltd.
Prüfergebnis*: *Test result**:	Pass



geprüft von / *tested by*:			**kontrolliert von /** *reviewed by*:		
04.09.2019	Doom Zhu / PE		04.09.2019	Yi Zeng / TC	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*:
This report was created for type test of above mentioned product.
There is no deviation between IEC 61058-1:2016 and EN IEC 61058-1:2018, IEC 61058-1-1:2016 and EN 61058-1-1:2016. Therefore, report template IEC61058_1G are adopted as test reports.

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery*:	Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Test Report issued under the responsibility of:

TÜVRheinland®

Test report
IEC 61058-1
Switches for appliances
Part 1: General requirements

Report reference No. ..... :	50283429 001
Date of issue ..... :	See cover page
Total number of pages ..... :	See cover page
Name of Testing Laboratory preparing the Report ..... :	**TÜV Rheinland (Shanghai) Co., Ltd.**
Applicant's name ..... :	Lumi United Technology Co., Ltd
Address ..... :	F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China
Test specification:	
Standard ..... :	IEC 61058-1:2016
Test procedure ..... :	Type test
Non-standard test method……..:	N/A
Test Report Form No. ..... :	IEC61058_1G
Test Report Form(s) Originator.... :	Intertek Semko AB
Master TRF ..... :	2018-08-31

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report..

Test item description .....:	Smart Plug	
Trademark .....:	Aqara	
Manufacturer.....:	Same as applicant	
Model/type reference .....:	SP-EUC01	
Rating .....:	250VAC 10A 50/60Hz	
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
☒ **Testing Laboratory..... :**	**TÜV Rheinland (Shanghai) Co., Ltd.**	
Testing location/ address ..... :	No.177, Lane 777, West Guangzhong Road, Jing'an District, Shanghai China	
Tested by (name, function, signature) ..... :	See cover page	
Approved by (name, function, signature)..... :	See cover page	
☐ **Testing procedure: CTF Stage 1:..... :**		
Testing location/ address ..... :		
Tested by (name, function, signature) ..... :		
Approved by (name, function, signature)..... :		
☐ **Testing procedure: CTF Stage 2:..... :**		
Testing location/ address ..... :		
Tested by (name + signature) ..... :		
Witnessed by (name, function, signature)..... :		
Approved by (name, function, signature)..... :		
☐ **Testing procedure: CTF Stage 3..... :**		
☐ **Testing procedure: CTF Stage 4..... :**		
Testing location/ address ..... :		
Tested by (name + signature) ..... :		
Witnessed by (name, function, signature)..... :		
Approved by (+ signature)..... :		
Supervised by (+ signature)..... :		

List of Attachments:

Attachment 1: Additional tests according to IEC 60884-2-5:2017 for use in conjunction with IEC 60884-1:2002+A1:2006+A2:2013 (70 pages)

Attachment 2: Additional tests according to NP 1260-1:2016 for use in conjunction with IEC 60884-2-5:2017 (58 pages)

Attachment 3: Additional tests according to UNE 20315-2-5: 2008 used in conjunction with UNE 20315-1-1:2009(including Erratum: 2011) and UNE 20315-1-2: 2009 (41 pages)

Tests performed (name of test and test clause):	**Testing location:**
All applicable tests were performed. Appendix 1: Additional tests according to IEC 61058-1-1: 2016 (page 49-55, 7pages)	TÜV Rheinland (Shanghai) Co., Ltd. No.177, Lane 777, West Guangzhong Road, Jing'an District, Shanghai China

Summary of compliance with National Differences (List of countries addressed):

☒ **The product fulfils the requirements of EN IEC 61058-1:2018. There is no deviation between IEC 61058-1: 2016 and EN IEC 61058-1:2018.**

Copy of marking plate:
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.

On back view:

On side view:

The following manufacturer info is indicated on the manual:

Lumi United Technology Co., Ltd

F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China

Test item particulars.....:	See page 7-9
Classification of installation and use.....: **Supply Connection .....:**	Portable type Direct plug-in
Possible test case verdicts: • test case does not apply to the test object.....: • test object does meet the requirement.....: • test object does not meet the requirement.....:	 N/A Pass (P) Fail (F)
Testing: Date of receipt of test item .....: Date(s) of performance of test.....:	 24.06.2019 24.06.2019 to 06.08.2019
General remarks:	
"(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 IECEE 02:	
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) .....:	SUNWODA Electronic Co., Ltd. Sixth Branch Northeast of Intersection of Keyu Road, and Tongguan Road, Gongming Street, Guangming New District , Shenzhen City , Guangdong Province, P.R. China

General Product Information and other remarks:

Remote controlled adaptor, 10A 250VAC 50/60Hz, Max. 2300W, IP20, with CEE7 standard sheet VII plug and standard sheet III shuttered outlet, with solid plug pins, with an electronic switch which can be either switched on/off by integrated button or be remote controlled through App.

Critical component list:

Object / Part No.	Manufacturer/ trademark	Type/ model	Technical data	Standard	Mark(s) of conformity
Button, base and plug body	LG CHEM (GUANGZHOU) ENGINEERING PLASTICS CO LTD	LUPOY EF-1006F(m)	PC, UL file: E248280, V-0	EN IEC 61058-1 EN 61058-1-1	Tested with appliance
Shutter body & Shutter box	Sinoplast Group Ltd	HT-AG30	PA, UL file: E335478, V-0, all color.	EN IEC 61058-1 EN 61058-1-1	Tested with appliance

Object / Part No.	Manufacturer/ trademark	Type/ model	Technical data	Standard	Mark(s) of conformity
Socket contact tube, Earthing pin of socket & Earthing contact of plug	Jun Zhun Precision Metal Co., Ltd	C5191	Copper content: 92%-92.5%	EN IEC 61058-1 EN 61058-1-1	Tested with appliance
Plug pins	Jun Zhun Precision Metal Co., Ltd	C2680	Copper content: 64%-68%	EN IEC 61058-1 EN 61058-1-1	Tested with appliance
Relay	Xiamen Hongfa Electroacoustic Co., Ltd.	HF32FV -G	250VAC 10A	EN 61810-1	VDE
Thermal link	Suzhou Walter Electronic Co. Ltd.	TE94	250V 10A,94℃	IEC/ EN 60691	VDE
Varistor	HuiZhou Lien Shun Electronic Co., Ltd.	10D471 K	Supply voltage: 270V Max. continuous voltage: 300V	IEC-EN 61051-1 IEC 61051-2 IEC 61051-2-2	VDE
Fusing Resistor	Uniroyal Electronics Industry Co., Ltd.	FKN041 0SJ220 GRA050	22 Ω,1W, UL file: E245468	EN IEC 61058-1 EN 61058-1-1	Tested with appliance
PCB	KINGBOARD LAMINATES HOLDINGS LTD	KB-616(X)	V-0, UL file: E123995	EN IEC 61058-1 EN 61058-1-1	Tested with appliance
Mylar	Shenzhen Jintelli Paper Products Co., Ltd.	-	PET, thickness:0,35mm	EN IEC 61058-1 EN 61058-1-1	Tested with appliance

Test items particulars:	
Type reference (*3.1.8 and 3.1.9*) ..... :	☐ unique (U.T.) ☒ common (C.T.)
Type of switch (*3.3.1 to 3.3.9*) ..... :	☐ incorporated ☒ integrated ☐ rotary ☐ lever ☐ rocker ☒ push-button ☐ cord-operated ☐ push-pull ☐ biased switch ☒ other: Remote controlled
Operation of the switch (*3.4.1 to 3.4.4*) ..... :	☒ **actuation** – of the actuating member by human activity ☐ **indirect actuation** – of the actuating member indirectly ☒ **actuating member** – pulled, pushed, turned or otherwise influenced to cause an operation ☐ **actuating means** – part between the actuating member and the contact mechanism
Connections to the switch (*3.5*) ..... :	☐ external conductor ☐ integrated conductor
Terminals and terminations (*3.6.1 to 3.6.8*) .... :	☐ terminal:
	☐ screw type terminal (*7.20.12*)
	☐ screw less terminal (*Push-in terminals / 7.20.13*)
	☐ termination:
	☐ flat quick-connect termination (*7.20.14*)
	Tab terminals: ☐ 2.8 x 0.5 mm ☐ 2.8 x 0.8 mm ☐ 4.7 x 0.5 mm ☐ 4.7 x 0.8 mm ☐ 6.3 x 0.8 mm ☐ 9.5 x 1.2 mm
	Female connector: ☐ 2.3 x 3.8 mm ☐ 2.9 x 6.0 mm ☐ 3.5 x 7.8 mm ☐ 4.0 x 11.1 mm
	☐ solder (*7.20.15*)
	☐ PCB (*Printed Circuit Board*)
	☐ special declared type:
Relating to insulation (*3.7.8 to 3.7.11*)..... :	☐ a class 0 appliance; ☒ a class I appliance; ☐ a class II appliance; ☐ a class III appliance
CTI (V) (*3.7.12*)..... :	N/A
PTI (V) (*Annex C*) ..... :	175
Material group (*20.4.11*) ..... :	☐ I ☐ II ☒ IIIa ☐ IIIb
Pollution, micro inside the switch (*3.8.1*) ..... :	☐ 1 ☒ 2 ☐ 3
Pollution, macro outside the switch (*3.8.2*) ..... :	☐ 1 ☐ 2 ☐ 3
Nature of supply (*7.1.1 to 7.1.3*)..... :	☒ AC ☐ DC ☐ both AC and DC
Type of load – A.C. circuits (*IEC 61058-1-1:2016, Table 102*) ..... :	☒ Substantially resistive ☐ General purpose load ☐ Resistive and/or motor ☐ Circuit for specific load of motor with a locked rotor ☐ Circuit for an inductive load ☐ Resistive and capacitive ☐ Tungsten filament lamp load ☐ Circuit for specific lamp load ☐ Specific declared

Type of load – D.C. circuits. (*IEC 61058-1-1:2016, Table 103*) ..... :	☐ Substantially resistive ☐ Tungsten filament lamp load ☐ Resistive and capacitive load ☐ Circuit for specific lamp load ☐ Declared specific load
Ambient temperature (*7.3*) ..... :	☒ 7.3.1: ~~0 °C ≤ T ≤ 55 °C~~ (0-35°C,integrated into adaptor) ☐ 7.3.2: not classified as 7.3.1 and 7.3.3 ☐ 7.3.3: accessible member and parts 0 °C ≤ T ≤ 55 °C and other parts of the switch not within 0 °C ≤ T ≤ 55 °C
Ambient temperature, actuating member (°C) :	~~0 °C ≤ T ≤ 55 °C~~
Ambient temperature, other parts (°C) ..... :	~~0 °C ≤ T ≤ 55 °C~~
Number of cycles (*7.4*) ..... :	1E4
IP number (*7.5 and 7.6*) ..... :	IP20
Glow wire temperature (°C) (*7.11*) ..... :	☐ 650 ☐ 750 ☒ 850 ☐ 960
Rated Impulse Voltage U_{imp} (V) (*7.12*) ..... :	2500V
Over voltage category (*7.13*)..... ;	☐ Category I; ☒ Category II; ☐ Category III
Disconnection (*3.4.5 to 3.4.9 and 7.14*) ..... :	☐ disconnection ☒ micro-disconnection ☐ electronic-disconnection ☐ full-disconnection ☐ all-pole disconnection (*7.16.4*) ☐ combination declared
Coating for rigid printed board (*7.15*) ..... :	☐ type 1 ☐ type 2
According to type and/or connection of switches (*7.16*) ..... :	☒ 7.16.1 number of poles: 1 ☒ 7.16.2 number of ways: 1 ☐ 7.16.3 polarity reversal ☐ 7.16.5 number of non-switchable through connections:
Type of circuit (*7.16.6 according to code of switch type given in Table 2*) ..... :	☒ 1.2 ☐ 2.2 [1.2] ☐ 3.2 ☐ 4.2 ☐ 1.3 ☐ 2.3 ☐ 3.3 ☐ 4.3 ☐ 1.4 [1.2] ☐ 2.4 [1.3] ☐ 3.4 ☐ 4.4 ☐ 1.5 [1.2] [1.4] ☐ 2.5 ☐ 3.5 ☐ 4.5 ☐ 1.6 ☐ 2.6 ☐ 3.6 ☐ 1.7 ☐ 2.7 ☐ 3.7 [3.3] ☐ 1.8 ☐ 2.8 ☐ 3.8 ☐ Special ☐ 2.9 ☐ 3.9 [3.3]
According to configuration of switching device Electronic switch with (*7.17.1 – 7.17.5*)..... :	☐ SD without mechanical switching device; ☐ SD with series mechanical switching device; ☐ SD with parallel mechanical switching device; ☐ SD with series and parallel mechanical switching device; ☐ only mechanical switching device without SD. SD to be provided in the end application
Mechanical switch with (*7.17.6 – 7.17.7*) ..... :	☐ or without electronics, which does not impact the safety of the switch; ☒ electronics, which impacts the safety of the switch

According to duty type (*7.18*) ..... :	☒ S1 – continuous duty ☐ S2 – short-time duty with defined ON and OFF ☐ S3 – intermittent periodic duty with defined ON and OFF ☐ as declared for a specific application
Linkage between contact and actuator speed (*7.19*) Speed of contact closure ..... :	☐ or opening is **dependent** on the actuator speed ☒ and opening is **independent** of the actuator speed
According to the type of terminals (*7.20*) for ... :	☐ unprepared conductors (*7.20.1*) ☐ prepared conductors (*7.20.2*) ☐ flexible stranded conductors (7.20.3) ☐ rigid stranded conductors (*7.20.4*) ☐ solid conductors (*7.20.5*)
	☐ conductor size range according to Table 4 (*7.20.6*) ☐ a declared limited conductor size range (*7.20.7*) ☐ only one conductor (*7.20.8*) ☐ the interconnection of two or more conductors (*7.20.9*) ☐ assembling one time (*7.20.10*) ☐ assembling and disassembling more than one time (*7.20.11*) ☐ welding or ridged terminals (*7.20.16*) ☐ wires for connections (*7.20.17*) ☐ piercing conductors (*7.20.18*) ☐ declared by the manufacturer (*7.20.19*)
Type of built in protection (*7.21*)..... :	☒ Built in protection provided; ☐ None provided
Type of forced cooling (*7.22*)..... :	☒ Not requiring forced cooling. ☐ Forced cooling required, with description of forced cooling.
According to the capacitor provided with the switch (*7.23.1 – 7.23.5*) ..... :	☐ Capacitor class X1 ☐ Capacitor class X2 ☐ Capacitor class X3 ☐ Capacitor class Y2 ☐ Capacitor class Y4

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict

8	**MARKING AND DOCOMENTATION**		P
8.1	**Switch information**		
8.1.1	The switch manufacturer provide adequate information to ensure that the:		
	• appliance manufacturer can select and install a switch; • end user can use a switch as intended by the switch manufacturer; • corresponding tests can be performed in accordance with this standard		P
	Information is provided in one or more of the following ways, as in Table 3.		
8.1.2	By switch marking.	☒ Ma	P
8.1.3	By documentation.	☒ Do	P
	Documentation available in any suitable format.		P

Table 3 No.	**Switch information** Characteristic	Means of information: ☒ C.T. ☐ U.T.			P
1	**SWITCH IDENTIFICATION**				
1.1	Manufacturer's name or trade mark.				P
1.2	Type reference.				P
2	**SWITCH ENVIRONMENT/MOUNTING**				
2.1	Degree of protection provided for the switch when mounted according to documentation.	IP	20	code of IEC 60529	N/A
2.2	Degree of protection against electric shock, from outside an appliance.	a class I appliance			P
2.3	Method of mounting and actuating the switch.				P
	Method of providing earthing if appropriate.				N/A
	Method(s) of mounting and orientation(s) declared.				P
2.4	Pollution degree micro.	2			P
2.5	Pollution degree macro.				N/A
3	**TEMPERATURE**				
3.1	Ambient temperature limits if ≠ 0 – 55°C.		°C		N/A
4	**ELECTRICAL LOAD / CONNECTION**				
4.1	Rated voltage or voltage range.	250	V		P
4.2	Nature of supply.	AC			P
4.3	Frequency or frequency range.	50/60	Hz		P
4.4	The rated current and the electrical load type.	See page 2 “*Rating*”.			P
4.5	For switches for more than one circuit, the current applicable to each circuit and to each terminal.				P

IEC 61058-1				
Clause	Requirement - Test	Result - Remark		Verdict
	If these are different from each other, then it shall be made clear to which circuit or which terminal the information applies.			N/A
4.6	Rated impulse withstand voltage.		V	N/A
4.7	Overvoltage category.	II		P
4.8	Duty-type and relevant (ON/OFF-time)	S1		P
4.9	Type and/or connection of switch.	1.2		P
4.10	Configuration of switching device:			P
5	**TERMINALS / CONDUCTORS**			
5.1	All terminals suitably identified			N/A
	☐ or their purpose self-evident ☐ or the switch circuitry visually apparent			N/A
	For terminals intended for the connection of supply conductors, the identification may take the form	☐ of a letter L, ☐ a number ☐ or of an arrow		N/A
5.2	Terminals for earthing marked with the protective earth symbol			N/A
5.3	The method of connection and disconnection for push-in terminals.			N/A
5.4	The type of conductor to be connected to the terminal.	☐ solid, ☐ stranded and/or ☐ flexible		N/A
5.5	The suitability of the terminal for connection of conductors indicated:			
	• maximum conductor diameter		mm	N/A
	• minimum conductor diameter		mm	N/A
5.6	Suitability for interconnection of two or more conductors to terminals.			N/A
5.7	The type of solder terminal mechanical securement before soldering, iron, bath, etc.			N/A
5.8	For terminals with specific connection method, such as:			
	• solder temperatures or process declared			N/A
5.9	Terminals for prepared conductors indicate the method for preparing the conductors.			N/A
5.10	For tabs with dimensions other than those according to IEC 61210:			
	• the appropriate female connector			N/A
6	**OPERATING CYCLES / SEQUENCE**			
6.1	Number of operating cycles.	10 000 cycles		N/A
6.2	Operating sequence for switches with more than one circuit.			N/A
6.3	Forces applied to end stops or full travel of actuating member.			N/A

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict

7	**SIGNAL INDICATORS**			
7.1	Maximum power of tungsten filament signal lamps.		W	N/A
	Marking visible when replacing lamp.			N/A
7.2	Intended function or operation of the signal indicator.			N/A
8	**CIRCUIT DISCONNECTION**			
8.1 – 8.4	☐ Electronic ☒ Micro ☐ Full ☐ Combination			P
9	**INSULATING MATERIALS**			
9.1	Tracking ☒ PTI or ☐ CTI	175V		P
9.2	Glow-wire temperatures.	850°C		P
10	**COOLING CONDITION**			
10.1 10.2 10.3 10.4 10.5 10.6	☒ Not requiring forced cooling ☐ Requiring cooling ☐ Direction of air for forced cooling ☐ Speed of air for forced cooling ☐ Thermal resistance of heat sink ☐ Incoming temperature, density and other details of the air stream			P
11	**PROTECTIVE DEVICE**			
11.1	Rated current/fusing characteristic/breaking capacity of replaceable built-in protection			N/A
11.2	Type/function of non-replaceable built-in protection.	10A thermal link		P
11.3	External protective device rated current, fusing characteristic, breaking capacity.			N/A
12	**TEST CONDITIONS**			
12.1	Test condition for switches having a contact making and breaking speed independent from the speed of actuation			P
12.2	Special requirements for testing such as minimum electric load in 3.2.11, thermal current I_{th} (3.2.12)			N/A
8.2	**Symbols** (*when used*)			
	☒ Ampere (A) ☒ Volt (V) ☒ Watt (W) ☐ Volt-amperes (VA) Alternating current (*single-phase*) ☒ ∿ ☐ or a.c. ☐ or ∿a.c. Direct current ☐ ⎓ ☐ or d.c. ☐ or ⎓ d.c.			P
	Tungsten filament lamp load:	⊗		N/A
	Protective earth symbol:	⏚		N/A
	Hertz – Frequency of supply	Hz	50/60	P
	Number of operating cycles	See 8.5	1E4	N/A
	Symbol for micro-disconnection	μ		P

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	☐ "OFF"-position or the direction of actuation to the "OFF" position ☐ "ON"-position or the direction of actuation to the "ON" position		N/A
	Electronic disconnection	ε	N/A
8.3	**Load rating**		
8.3.2	Substantially resistive	10A	P
8.3.3	Resistive load and motor load		N/A
8.3.4	Resistive load and capacitive load		N/A
8.3.5	Resistive load and tungsten filament lamp load		N/A
8.3.6	Declared specific load		N/A
8.3.7	Inductive loads		N/A
8.3.8	General Purpose loads		N/A
8.4	**Temperature rating**		
8.4.1	☐ 25 T 85 (-25 °C up to +85 °C) (*example*) ☐ T 85 (0 °C up to +85 °C) (*example*)		N/A
	If no information is given:		
	• rated ambient temperature range is 0 – 55 °C	0-35 °C	P
8.4.2	Switches only partially suitable for a rated ambient temperature > 55 °C:		
	• T85/55 or 25T85/55 (*examples*)		N/A
8.5	**Operating cycles**		
	Information about rated operating cycles by using symbol "E", indicating exponent.	10 000 cycles	N/A
8.6	**Switches intended for use in Class II equipment or appliances**		
	The symbol ⧈ shall not be marked on the switch.		N/A
8.7	**Required marking**		
	Shall preferably be on the body of the switch.		P
	Not on screws, removable washers or other removable.		P
	Marking for replaceable fuse incorporated in a switch shall be placed on the fuse-holder or in the proximity of the fuse.		N/A
	The characteristics may be indicated by symbols (see IEC 60127).		N/A
8.8	**Legibility and durability of marking**		
	The requirements of 8.1 to 8.8 is checked by inspection and by rubbing the marking by hand for 15 s with a piece of cotton cloth:		
	a) soaked with water and		P

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	b) again for 15 s soaked with aliphatic solvent hexane		P
	After these tests, the marking shall still be legible.		P
8.9	**Switches with their own enclosure**		
	• "OFF"-position, clearly indicated		N/A
	Switches with micro-disconnection or electronic disconnection:		
	• not marked with symbol "O" for the "OFF" position		P
	Switches where marking of switch position is impossible or leads to misunderstanding:		
	• direction of actuation(s) is marked		N/A
	Switches having more than one actuating member:		
	• marking shall indicate, for each of the actuating members, the effect achieved by its operation		N/A
	For switches classified as unique type, 7.10.1, the OFF marking is according to the manufacturer's declaration.		N/A
	For push-button switches with a single button the OFF position is not required to be marked.		N/A
9	**PROTECTION AGAINST ELECTRIC SHOCK**		P
9.1	Switches shall be constructed so that there is adequate protection against contact with live parts in any position of use when the switch is mounted and operated as in normal use. Checked by inspection and by the following test:		
	a) applied to accessible parts of the switch when mounted in accordance with the manufacturer's documentation, with any detachable parts, except lamps with caps, removed;		P
	b) The insulating properties of lacquer, enamel, paper, cotton, oxide film on metal parts, beads and sealing compounds which soften in heat:		
	• shall not be relied upon to give the required protection against contact with live parts		N/A
	c) Probe B according to IEC 61032 (IEC 60529:1989, Figure 1) jointed test finger is:		
	• applied without force in every possible position		P
	If Probe B is able to enter the opening:		
	• the finger is repeated with an electrical contact indicator to show contact		N/A
	d) Probe 11 according to IEC 61032 straight unjointed test finger is applied:		
	• with 20 N of force to any opening that prevents the entry of probe B		P
	e) Test pin Probe 13 according to IEC 61032 is applied to:		

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Clause	Requirement - Test	Result - Remark	Verdict
	• openings in insulation materials and unearthed metal parts without force in every possible position		P
	It shall not be possible to touch bare live parts.		P
	For switches which have any parts of double insulation construction:		
	• not possible to touch with the jointed test finger unearthed metal parts separated from live parts by basic insulation, or by the basic insulation itself		N/A
9.1.1	Accessible metal parts which are needed for the operation of a switch may be connected to live parts by means of a protective impedance:		
	The protective impedance shall consist of resistors and/or capacitors comply with one of the following at least:		
	☐ a) 2 independent resistors of the same nominal value in series complying with 24.4; ☐ b) 2 independent capacitors in series, of the same value complying with class Y2 according to IEC 60384-14; ☐ c) 1 resistor complying with 24.4 and 1 capacitor complying with class Y2 according to IEC 60384-14 in series		N/A
	The removal of protective impedances, or their short-circuiting, possible:		
	• only by destruction of the switch or by rendering the electronic switch obviously unusable		N/A
	The protective impedances so designed and arranged that along their surfaces and between their surfaces:		
	• the requirements according to Clause 20 are met		N/A
9.1.2	If a cover or cover-plate or a fuse can be removed without the use of a tool or if the instruction for use specifies that, for the purpose of maintenance, when replacing the fuse, covers and cover-plates fastened by means of a tool have to be removed:		
	• protection against contact with live parts assured even after removal of the cover or cover-plate		N/A
	Checked with Probe C according to Figure 3 IEC 61032:1997, through the hole, applying up to 20 N of force.		
	The pin shall not touch live parts.		N/A
9.1.3	An actuating member fixed adequately if the removal of the actuating member gives access to live parts.		P
9.2	For switches for appliances other than of Class III, actuating members shall be of one of the following types:		
	a) insulating material;		P
	b) metal separated from basic insulated parts by supplementary insulation;		N/A
	c) metal separated from live parts by double or reinforced insulation;		N/A

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Clause	Requirement - Test	Result - Remark		Verdict
	d) for electronic switches, metal separated from live parts by protective impedances			N/A
	Item d) measurements carried out between either a single accessible metal part or any combination of accessible metal parts and earth, through a non-inductive resistor of 2 kΩ:			
	☐ at rated voltage (and rated load in ON-state) ☐ in ON- and OFF-state ☐ and/or at lowest and highest setting value			N/A
	The current not exceed, in any measurement:			
	• 0,7 mA (*peak*) for a.c. ≤ 1 kHz or 2 mA for d.c.		mA	N/A
	For frequencies > 1 kHz:			
	• the limit of 0,7 mA is multiplied by the value of the frequency in kHz, but shall not exceed 70 mA		mA	N/A
9.3	Capacitors not connected to unearthed metal parts which are accessible when the switch is mounted.			N/A
	Metal casing of capacitors separated by supplementary insulation from accessible unearthed metal parts, when the switch is mounted.			N/A
10	**PROVISION FOR EARTHING**			P
10.1	Switches for Class II appliances:			
	• have no provision for earthing the switch or parts thereof			N/A
	Interconnections for maintaining the earthing circuit are permitted.			N/A
10.2	Earthing terminals, earthing terminations and other earthing means:			
	• not connected electrically to any neutral terminal	Integrated earthing parts from socket to plug		P
10.3	Accessible metal parts of switches for Class I appliances:			
	• have provision for earthing			N/A
10.3.1	Parts separated from live parts by double or reinforced insulation, and parts screened from live parts by metal parts connected to an earthing terminal, earthing termination, or other earthing means:			
	• not regarded as likely to become live in the event of an insulation fault			N/A
10.3.2	Accessible metal parts of switches connected to earth through their fixing means:			
	• provided the provision is made for clean metallic surfaces at the connection points			N/A
10.4	The connection between an earthing terminal/termination or other earthing means, and parts required to be connected thereto, is of low resistance**.**			

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Clause	Requirement - Test	Result - Remark		Verdict
	a) a current of 1.5I_R but ≥ 25 A a.c. with ≤ 12 V, passed between the type of used earthing and each of the parts in turn		A	N/A
	The resistance not exceeding 50 mΩ.		mΩ	N/A
10.5	Earthing terminals of all types for unprepared conductors:			
	• is of a size ≥ required for the corresponding current carrying terminal			N/A
	Not possible to loosen the clamping means without the aid of a tool, and they be adequately locked against unintentional loosening.			N/A
10.5.1	Terminals according to 11.1 and 11.2:			
	• provide sufficient resilience for adequate locking against unintentional loosening			N/A
10.5.2	Switch subjected to excessive vibration or temperature cycling:			
	• special provisions are used			N/A
10.6	Thread-cutting and thread-forming screws may be used to provide earthing continuity;			
	• provided it is not necessary to disturb the connection in normal use			N/A
	• and at least 2 screws are used for each connection (*see tests in 19.2*)			N/A
10.7	All parts of an earthing terminal:			
	• no risk of corrosion			N/A
10.8	The body of an earthing terminal shall be:			
	☐ of brass ☐ or other metal no less resistant to corrosion			N/A
	Unless:			
	☐ it is a part of the enclosure when any screws or nuts be of brass plated steel complying with 19.3 ☐ or other metal no less resistant to corrosion and rusting			N/A
10.9	If the body of an earthing terminal is part of a frame or enclosure of aluminium or aluminium alloy:			
	• precautions taken to avoid risk of corrosion resulting from contact between copper and aluminium or its alloys			N/A

11	**TERMINALS AND TERMINATIONS**	N/A
11.1 11.1.1	**Common requirements to terminals** General	

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Clause	Requirement - Test	Result - Remark	Verdict
	Terminals enable a safe and reliable connection for the conductors declared under the conditions of the intended use.		N/A
	Screws and nuts for clamping the conductors:		
	• shall not serve to fix any other part		N/A
	• they may hold the clamping part in place or prevent it from turning		N/A
	Clamping shall be between metal surfaces except for terminals:		
	• intended to be used in circuits carrying a current ≤ 0,2 A, one of the surfaces may be non-metallic		N/A
11.1.2	Design of terminals		
	• so designed that a suitable conductor may be inserted into the aperture to the designed depth without undue force and undue damage to the conductor and terminal		N/A
11.1.3	Insulation		
	Terminals shall be designed so that there is no reduction of the insulation strength:		
	• when the conductor is attached to the terminal as declared by the manufacturer (*see clause 20*)		N/A
11.1.4	Connection		
	A terminal shall be designed so that a conductor cannot slip out:		
	• while being connected or while the switch is being operated as intended (*checked by TT1*)		N/A
11.2	**Fixing of terminals**		
11.2.1	Terminals shall be fixed so, that they will not work loose:		
	• when the conductor is connected or disconnected		N/A
	The intended removal of a conductor shall require an action other than a pull at the conductor.		N/A
	Does not preclude floating terminals or terminals mounted on floating elements, used in some stack-type switches.		N/A
	For terminals declared 7.20.14 (*flat quick-connect termination*) the tabs shall:		
	• allow the application and withdrawal of female connectors without damage to the switch (*checked by TT2*)		N/A
11.2.2	For terminals declared 7.20.13 (*push in*) in combination with conductors declared unprepared (*7.20.1*):		
	• checked by inspection and 11.8.4		N/A
11.3	**Location and shielding of terminals**		
11.3.1	Terminals shall be located or shielded so that when wires are connected, there:		

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Clause	Requirement - Test	Result - Remark	Verdict
	• is no reduction of the insulation strength of the terminals, live parts or to accessible metal parts		N/A
11.3.2	Terminals suitable for the connection of flexible conductors (7.20.3) shall be located or shielded so that:		
	• there is no risk of contact between live parts and accessible metal parts		N/A
11.3.3	For switches for class II appliances there shall be no risk of contact:		
	• between live parts and metal parts separated from accessible metal parts by supplementary insulation only (*checked by inspection and for stranded wires by TT3*)		N/A
11.4	**Terminals for interconnection of more than one conductors**		
	Terminals to be used for the interconnection of more than one conductor (7.20.9)		
	• designed so that the combination of the most onerous sizes connected simultaneously, does not result in a hazard (*checked by inspection and TT4*)		N/A
11.5	**Thermal stress**		
	Terminals shall withstand thermal stress occurring in normal use.		
	Checked according to TE2 in Clause 17 of .....:	☐ IEC 61058-1-1:2016 or ☐ IEC 61058-1-2:2016.	N/A
11.6	**Test sequences**		
	Depending on terminals allowing the connection of prepared or unprepared conductors:		
	• the tests are conducted according Table 5 in the sequence with increasing TT-number	See table 5.	N/A
11.7	**Conductor escape test (TT1)**		
	Conductors as declared by the manufacturer.	mm²	N/A
	Or of **maximum** cross sectional areas in Table 4.	See table 4.	N/A
	The conductor is inserted into the terminal over a length equal to the minimum distance prescribed.		N/A
	Or, if no distance is prescribed, until an end-stop is reached.		N/A
	Or until the conductor just projects from the far side of the terminal and in the position most likely to assist a strand to escape.		N/A
	Test is repeated with the terminal fitted with conductors as declared.	mm²	N/A
	Or of **minimum** cross sectional area in Table 4	See table 4.	N/A
	Terminals declared suitable for prepared conductors (7.20.2), the declared type used.		N/A
	Terminals declared for rigid conductors (7.20.5), before insertion into the terminal:		

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Clause	Requirement - Test	Result - Remark	Verdict
	• the wires are straightened		N/A
	Terminals declared for stranded conductors (7.20.3 or 7.20.4), these are twisted:		
	• in one direction, so a twist of one complete turn in a length of approximately 2 cm is obtained		N/A
	Terminals declared screw type terminals (7.20.12) these are:		
	• tightened with the torque according to Table 10	See table 10.	N/A
	Terminals declared for the connection of two or more conductors (7.20.9):		
	• the test is repeated with the terminal fitted with the declared numbers of conductors		N/A
	Terminals declared for solder or welding terminals (7.20.15 or 7.20.16) or if the connection is designed so that a slip out is prevented by design:		
	• no test is necessary		N/A
	After the test, the conductor shall not have:		
	• escaped into or through the gap between the clamping means and retaining device		N/A
11.8	**Terminal displacement test (TT2)**		
11.8.1	Connection test		
	A conductor connected and disconnected 10 times using the parameters of TT1, if no test according to 11.8.2 is required.		N/A
	Terminals declared for only one time connection (7.20.10), test is not required.		N/A
	After the test the terminal:		
	• have not displaced from its intended position		N/A
11.8.2	Screw-type terminal		
	a) is fitted with a conductor of the **smallest**	mm²	N/A
	or **declared** cross sectional area as in Table 4	See table 4.	N/A
	The terminal screw being tightened with a torque as specified in appropriate column of Table 10.	See table 10.	N/A
	b) If the screw has a hexagonal head with a slot, the torque applied is as in column III of Table 10.	See table 10.	N/A
	c) The conductor is subjected to a pull force as in Table 6, applied without jerks, for 1 min, in the direction of the axis of the conductor space.	N	N/A
	d) Repeat a) to c) with the **largest** wire size.	mm²	N/A
	Terminals declared for the connection of two or more conductors (7.20.9):		
	• the test is repeated with the terminal fitted with the declared number of conductors		N/A
	Terminals declared suitable for two or more conductors (7.20.9):		

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Clause	Requirement - Test	Result - Remark		Verdict
	• the appropriate pull is applied consecutively to each conductor			N/A
	During the test:			
	• the conductor shall not move noticeably in the terminal			N/A
11.8.3	Flat quick-connect termination			
	For terminals declared 7.20.14 (flat quick-connect termination) compliance is:			
	• checked by applying the axial forces without jerks to the tab equal to those specified in **IEC 61210:2010, Table 6 (*retention force*)**		N	N/A
	No significant displacement or damage shall occur.			N/A
11.8.4	Push in terminals.			
	Conductors fitted as **declared** by the manufacturer.		mm²	N/A
	Or of **maximum** cross sectional areas as in Table 4.	See table 4.		N/A
Step a)	• Insert of the conductor into the terminal.			N/A
Step b)	• Twist through 90° in an axial direction.			N/A
Step c)	• Apply a pull force in opposite to direction of insertion as in Table 6; without jerks, for 1 min.		N	N/A
Step d)	• Disconnect the conductor by the designed disconnect means other than a pull on the conductor only.			N/A
Step e)	• New conductor for each of the next 3 insertions indicated above.			N/A
Step f)	• At the 5th insertion, the conductor for the 4th insertion is reused.			N/A
	The test repeated with the terminal fitted with conductors as **declared**.		mm²	N/A
	Or of **minimum** cross sectional area according to Table 4.	See table 4.		N/A
	Compliance of the test:			
	During the application of the pull, the conductor shall not come out of the terminal.			N/A
	After these tests, neither the terminal nor the clamping means shall have worked loose.			N/A
11.9	**Strand escape test (TT3)**			
	The insulation from the end of a stranded conductor having the **minimum** or **declared** cross sectional area as in Table 4 is removed for a length of 8 mm.	See table 4.		N/A
	One strand of the flexible conductor is separated and left free.			N/A

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Clause	Requirement - Test	Result - Remark		Verdict
	The remainder are fully inserted into the terminal and clamped.			N/A
	Terminals declared for unprepared stranded conductors 7.20.3 and 7.20.4:			
	The free strand shall be bent without tearing the insulation back and without making sharp bends in every possible direction.			N/A
	The free strand of the flexible conductor shall not touch relevant parts mentioned in 11.3.			N/A
	The free strand of a flexible conductor connected to an earthing terminal shall not touch any live part.			N/A
11.10	**Multiple conductors (TT4)**			
	Conductors fitted as **declared** by the manufacturer.		mm²	N/A
	Or of **maximum** cross sectional areas as in Table 4	See table 4.		N/A
	For conductors classified 7.20.13, perform steps a) to c) of TT2 Clause 11.8.4.			
Step a)	• Insert the conductor into the terminal, either as far as possible or insert so that adequate connection is obvious.			N/A
Step b)	• Twist it through 90° in an axial direction.			N/A
Step c)	• Apply a pull force in opposite to direction of insertion as in Table 6; applied without jerks, for 1 min.		N	N/A
	For conductors classified 7.20.12 perform steps a) to c) of TT2 Clause 11.8.2.			
	a) The screw-type terminal is fitted with a conductor of the **smallest** or **declared** cross sectional area as in Table 4	See table 4.		N/A
	The terminal screw being tightened with a torque as specified in appropriate column of Table 10.	See table 10.		N/A
	b) If the screw has a hexagonal head with a slot, the torque applied is as in column III of Table 10.	See table 10.		N/A
	c) The conductor is subjected to a pull force as in Table 6, applied without jerks, for 1 min, in the direction of the axis of the conductor space.		N	N/A
	Compliance of the test:			
	During the application of the pull, the conductor shall not come out of the terminal.			N/A
	After these tests, neither the terminal nor the clamping means shall have worked loose.			N/A

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Clause	Requirement - Test	Result - Remark	Verdict
12	**CONSTRUCTION**		P
12.1 12.1.1	**Constructional requirements relating to protection against electric shock** When double insulation is used the design shall be such that the:		
	• basic and the supplementary tested separately		N/A
	Unless compliance to the properties of both insulations is provided in another way:		
	a) Basic and supplementary insulation cannot be tested separately, the insulation is considered to be reinforced insulation.		P
	b) Specially prepared specimens, or specimens of the insulating parts.		N/A
12.1.2	Creepage distances and clearances not reduced, as a result of wear, below values in clause 20.		P
	If any conductive part of the switch becomes loose and moves out of position it:		
	• cannot get so disposed in normal use that creepage distances or clearances across supplementary or reinforced insulation are reduced		P
	For the purpose of this test:		
	☒ not expected that two independent fixings will become loose at the same time ☐ parts fixed by screws or nuts provided with locking washers not liable to become loose ☐ springs and spring parts not become loose or fall out of position if they do not do so during the tests of Clauses 18 and 19		P
12.1.3	Integrated conductors is rigid and fixed,		N/A
	• or insulated that creepage distances and clearances not reduced below values in Clause 20		N/A
	Insulation, if any, shall be such that it cannot be damaged during mounting or in normal use.		N/A
	If the insulation of a conductor is not at least electrically equivalent to that of cables and cords complying with the appropriate IEC standard or does not comply with the dielectric strength test made between the conductor and the metal foil wrapped around the insulation under the conditions specified in Clause 15:		
	• the conductor is a bare conductor		N/A
12.1.4	Full disconnection or micro-disconnection can only be achieved using a:		
	• series mechanical contact		P
12.1.5	Electronic disconnection is formed by any parallel components or path across a series contact		N/A
	• or when no mechanical contact is provided in the switch		N/A

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Clause	Requirement - Test	Result - Remark		Verdict
12.2	**Constructional requirements relating to safety during mounting and normal operation of the switch**			
12.2.1	Covers, cover plates, removable actuators and the like cannot be displaced or removed except by use of a tool.			P
	Fixings for a cover or cover plate do not serve to fix any other part except an actuating member.			P
	Not possible to mount removable parts, such that indication of switch positions does not correspond with the actual switch position.			N/A
12.2.2	Fixing screws of covers or cover plates captive.			N/A
12.2.3	Switch not damaged when its actuating member is removed as intended.			P
12.2.4	Pull-cord insulated from live parts.			N/A
	Possible to fit or to replace it without removing parts causing live parts to become accessible.			N/A
12.2.5	Illuminated indicator incorporated in a switch, provides correct indication as declared by the manufacturer.			
	Checked by connecting the switch to a voltage ±10 % of marked U_L or U_N.	225-275	V	P
12.3	**Constructional requirements relating to the mounting of switches and to the attachment of cords**			
12.3.1	Methods of mounting do not adversely affect compliance with this standard.			N/A
	Switch cannot rotate, or be displaced, and be removed from an appliance without the aid of a tool.			N/A
	If removal of a part is necessary during the normal use, requirements of clauses 9, 15 and 20 is satisfied before and after such removal.			N/A
12.3.2	A conductor intended to be disconnected shall:			
	• indicate an obvious method for insertion and disconnection of the conductors			N/A
	The intended disconnection of a conductor shall require an operation:			
	• other than a pull at the conductor			N/A
12.3.3	Openings for the use of a tool intended to assist the insertion or disconnection shall:			
	• be clearly distinguishable from the opening for the conductor			N/A

13	**MECHANISM**	P
13.1	For DC switches with a voltage rating above 28 V dc in combination with a current rating above 0,1 A**:**	

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Clause	Requirement - Test	Result - Remark	Verdict
	• the speed of contact making and breaking shall be independent of the speed of actuation		N/A
13.2	A switch with an intermediate position shall:		
	• not create an unintended operation		N/A
13.3	When the actuating member is released		
	☒ it take automatically or stay in the position corresponding to the moving contacts ☐ except only one rest position		P
13.4	Cord-operated switch (pull cord) shall be constructed so that, after actuating the switch and releasing the cord:		
	• the relevant parts of the mechanism are in a position allowing the immediate performance of the next movement in the cycle of actuation		N/A
13.5	Multi-pole switches makes and breaks all poles substantially together.		N/A
	Unless otherwise declared according to Table 3 “Operating sequence”.		N/A
	The neutral may make before and break after the others.		N/A

14	**PROTECTION AGAINST INGRESS OF SOLID FOREIGN OBJECTS, INGRESS OF WATER AND HUMID CONDITIONS**			P
14.1	**Protection against ingress of solid foreign objects**			
	Degree of protection as in 13.3 of IEC 60529.	IP20		P
	Detachable parts are removed.			N/A
	Switch which relies on mounting for the declared degree of protection:			
	• mounted in or on a closed box to simulate the appliance • tests performed using this simulated assembly			N/A
	For numerals 5 and 6:			
	• test carried out according to category 2 with the specimen in the most unfavourable position to the manufacturer's declarations for a period of 8 h			N/A
	During the 8 h the specimen loaded alternatively 1 h with the maximum I_R and 1 h without current.		A	N/A
	For the test for first characteristic numeral 5, the switch comply if:			
	• all actions function as declared			N/A
	• $\triangle t$ at the terminals ≤ 55 K tested as in 16.2 at I_R and at 25 ± 10°C		K	N/A
	• dielectric strength of 15.3 with no humidity treatment before application of test voltage 75 % of the test voltage in 15.3		V	N/A

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Clause	Requirement - Test	Result - Remark		Verdict
	• no transient fault between live parts and earth metal, accessible metal parts, or actuating members has occurred			N/A
	Test for 1st characteristic numeral 6, no deposit of dust is inside the switch at the end of the test.			N/A
14.2	**Protection against ingress of water** Degree of protection against ingress of water when mounted and used as declared.			
	Checked by tests in IEC 60529 with the switch placed in any position of normal use.	IP20		N/A
	Switches kept at 25 ± 10 °C for 24 h before being subjected to the test.		°C	N/A
	The test is carried out according to IEC 60529 as follows:			
	☐ IPX1 – IPX2 switches as in 14.2.1 – 14.2.2 with **the drain holes open** ☐ IPX3 – IPX9 switches as in 14.2.3 – 14.2.9 with **the drain holes closed**			N/A
	a) Switch not electrically loaded during these tests.			N/A
	The water temperature shall not differ from that of the switch by more than 5 K.			N/A
	b) Detachable parts are removed.			N/A
	c) Switches incorporating separate gaskets, screwed glands, membranes or other sealing means, manufactured from rubber or thermoplastic materials are:			
	• aged in a heating cabinet with an atmosphere having the composition and pressure of the ambient air and ventilated by natural circulation			N/A
	d) Switches **without T-rating** (*7.3.1*), kept in the cabinet at a temperature of 70 ± 2 °C for 240 h		°C	N/A
	Switches **with T-rating** (*7.3.2*), kept in the cabinet at a temperature of T + 30 °C for 240 h		°C	N/A
	Switch according to 7.3.3, the “T” equals the lower of the two values following the letter T in 8.4.2.		°C	N/A
	Switches with glands or membranes are fitted and connected with conductors as in clause 11.			N/A
	Glands tightened with a torque as in Table 11.	See table 11.		N/A
	Fixing screws for enclosures are tightened with a torque as in Table 10.	See table 10.		N/A
	e) Immediately after ageing, the parts are taken out of the cabinet and left at 25 ± 10 °C, avoiding direct daylight, for at least 16 h		°C	N/A
	f) Switch which relies on mounting for the declared degree of protection:			
	• mounted in or on a closed box to simulate the appliance			N/A

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Clause	Requirement - Test	Result - Remark		Verdict
	• tests performed using this simulated assembly			N/A
	g) For tests of 2nd characteristic numerals 3 and 4, hand-held spray in IEC 60529 used.			N/A
	After the test, the switch shall withstand the dielectric strength test specified in 15.3.		V	N/A
	And inspection show no trace of water on insulation which could result in a reduction of creepage and clearance below the values specified in clause 20			N/A
14.3	**Protection against humid conditions**			
	Cable inlet openings and drain-holes left open. Drain-hole for a water-tight switch is opened.	☐ Yes ☐ No ☒ N/A ☐ Yes ☐ No ☒ N/A		—
	a) Before being placed in the humidity cabinet, the specimens are brought to a temperature between t and t + 4 °C.	25	°C	—
	b) Detachable parts removed and subjected to the humidity treatment with the main part.	☐ Yes ☐ No ☒ N/A		—
	c) Humidity treatment carried out in a humidity cabinet containing air maintained between 20 °C and 30 °C, with a relative humidity above 91 %.	93	%	—
	The specimens kept in the cabinet for 96 h.	96	h	—
	d) After removing the specimens from the cabinet, the testing of 15.2 and 15.3:			
	• completed within 2 h under ambient conditions			P
	The switch does not show any damage			P
15	**INSULATION RESISTANCE AND DIELECTRIC STRENGTH**			P
15.1	**General requirements.**			
	Checked by the tests of 15.2 and 15.3, immediately after test of 14.3.			P
	The foils not pressed into openings but are pushed into corners and the like by means of the jointed test finger (test probe B according to IEC 61032).			P
	Basic insulation and supplementary insulation cannot be tested separately:			
	• The insulation is subjected to the test voltages specified for reinforced insulation.			P
	The tests are not carried out across protective impedances and poles interconnected by components.			N/A
15.2	**Measurement of insulation resistance**			
	The insulation resistance is measured with a DC voltage of ~ 500 V applied, being made 60 s after application of the voltage.			P

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Clause	Requirement - Test	Result - Remark	Verdict
	The insulation resistance not less than specified in Table 7.	See table 7.	P
15.3	**Insulation test voltage**		
	The test voltage raised uniformly from a value not greater than the rated U_n to the value specified in Table 8 within not more than 5 s and held at that value for 60 s.	See table 8.	P

16	**HEATING**			P
16.1	**General requirements**			
	Switches shall be constructed so that they do not attain excessive temperatures in normal use.			P
	The materials used shall be such that the performance of the switches is not adversely affected by operation in normal use at the rated temperature of the switch.			P
16.2	**Contacts and terminals**			
	The material and design of the contacts and terminals shall be such that the operation and performance of the switch is not adversely affected by their oxidation or other deterioration.			
	Compliance is checked by Clause 17.			N/A
16.3	**Other parts**			
16.3.1	Switch parts other than the contacts and terminals, in normal use shall not:			
	• attain temperatures which impair the performance or operation of the switch or create a hazard to the user (*checked by Clauses 17 and 21*)			P
16.3.2	Insulation for conductors provided with the switch shall be rated:			
	• not less than the relevant maximum temperature rating of the switch (*checked/verified on data provided by switch manufacturer*)			N/A
16.4	**Heating test**			
	Unless declared otherwise, the test is carried out on 3 specimens mounted as declared by the manufacturer.			
	a) Conductors of an approximate length of 1 m, are fitted to the terminals or leads.			N/A
	The cross-sectional area as declared.		mm²	N/A
	Or specified in Table 4 “medium”.	See table 4.		N/A
	b) Connected conductors when provided are joined to conductors in item a) per the manufacturer’s instructions.			N/A
	c) Screw terminals and/or nuts are tightened with a torque equal to 2/3 of the appropriate column of Table 10.		Nm	N/A

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Clause	Requirement - Test	Result - Remark		Verdict
	d) Heating cabinets for testing switches without forced convection or a draught free condition.			N/A
	e) The temperature of the air in the heating cabinet is measured as near as possible to the centre of the space occupied by the specimens and at a distance not closer than 50 mm to the specimen.			N/A
	f) Switches declared as 7.3.2 or 7.3.3, are placed in a heating cabinet and the temperature is raised to the maximum T-rating of the switch.		°C	N/A
	The temperature of the cabinet maintained at T ± 5 °C or T ± 5 % (T ± 0,05T), whichever is greater.		°C	N/A
	g) Partially suitable rated switches as 7.3.3, with accessible parts rated 0 to 55 °C, exposed to a temperature ≤ 55 °C.		°C	N/A
	The internal switch enclosure with a T rating is tested as described for “all parts”.		°C	N/A
	h) The temperature of mounting surfaces of the test equipment is between T and 20 °C.		°C	N/A
	i) The specimens are subjected to 20 operating cycles with no current flowing.			P
	The actuating member is left in the most unfavourable "ON" position.			P
	If more "ON" positions, then the verification shall be realized at the most unfavourable one			N/A
	Actuating members of biased switches are fixed in the declared "ON" position.			N/A
	j) Multi-way switches are loaded as specified in 5.3 resulting in the maximum heating.			N/A
	k) Switches for DC or AC and DC voltage where no polarity is given, the test with DC voltage is performed in both polarities and an average value calculated.			N/A
	l) During the test, the switch state does not change.			P
	Fuses and other protective devices not operate.			P
	m) Any convenient AC or DC voltage may be used for the test circuit as far as the result is not affected.			N/A
	n) The load is adjusted to allow the maximum rated current I_r if not other declared.			P
	o) Switch provided with components generating heat in addition to the heat generated by the contacts, are operated in the most unfavourable mode.			N/A

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Clause	Requirement - Test	Result - Remark		Verdict
	p) The ON period is maintained with the test current until a constant temperature at the terminals is attained.			P
	A temperature considered constant when 3 successive readings taken at intervals of 5 min indicate no change greater than ± 2 °C.			P
	For a cycling load, after 1 h, the maximum temperature of the cycle is measured.			N/A
	q) Thermocouples shall measure the temperature of the surfaces of the switch indicated below.			P
	During the test, the temperatures necessary to perform the ball pressure test of 21.1 measured.			P
	The non-metallic surfaces likely to attain the highest temperature are measured without disassembling the switch.			P
17	**ENDURANCE**			P
	See IEC 61058-1-1 for mechanical switch testing.			P
	See IEC 61058-1-2 for electronic switch testing.			N/A
18	**MECHANICAL STRENGTH**			P
18.1	**General requirements**			
	Accessible parts shall have adequate mechanical strength to withstand a minimum level of force during normal use.			P
18.2	**Impact**			
	Switches rated;			
	• ≥ 0 °C are tested at 25 °C± 10 °C	25	°C	P
	• < 0 °C, are cooled to the minimum rated temperature T + 0/-5 °C for 2 h prior to testing		°C	N/A
	The impact is delivered using the spring hammer test apparatus of IEC 60068-2-75.			
	The impact is equal to:			
	• 0,5 Nm ± 0,04 Nm,			P
	• for foot operated switches: 1,0 Nm ± 0,05 Nm			N/A
	One specimen is mounted in the test plate of Figure 11.			P
	Remove the mounting device and specimen from the cold cabinet, when required.			N/A
	Immediately apply 3 blows, in a direction perpendicular to the switch.			P
18.3	**Pull**			

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
18.3.1	Cord-operated switches are submitted to an additional pull test as follows:		
	• mounted as declared by the manufacturer • the pull-cord is subjected to a force, without jerks • first for 60 s in the normal direction • then for 60 s in a direction 45° maximum from the normal direction • minimum values of the pull force as in Table 9 or three times the values of the normal operating force if that is greater		
	The sample shall not be damaged in a way that reduces the electrical safety.	See table 9.	N/A
18.3.2	Pull (switches other than cord operated switches).		
	Testing is completed at 25 °C ± 10 C.	25 °C	P
	A pull force is applied for 60 s to try to pull off the actuating member.		P
	The pull to be applied is 15 N.		P
	But if the actuating member is intended to be pulled in normal use,		
	The pull force is increased to 30 N.		N/A
18.4	**Push**		
	A push force of 30 N, using a switch not subjected to the pull force, shall be:		
	• applied for 60 s to try to push in the actuating members		P
	The sample shall not be damaged in a way that reduces the electrical safety.		P

19	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		P
19.1	**General requirements for electrical connections** Contact pressure is not transmitted through insulating material other than		
	☐ ceramic ☐ pure mica ☐ other material no less suitable ☐ there is visual evidence of sufficient resiliency in the metallic parts to compensate for any possible shrinkage or distortion of the insulating material		N/A
	The suitability of the material is considered in respect to the stability of the dimensions within the temperature range applicable to the switch.		N/A
	This requirement is not applicable to connections internal to a switch where the connection is used for:		
	• lamps for indicating purposes		N/A
	• and where the current in this circuit is ≤ 20 mA		N/A
19.2 19.2.1	**Screwed connections** Screwed connections, not tested in Clause 11, electrical or other:		

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	• withstand the mechanical stresses occurring in normal use		P
19.2.2	Screws transmitting contact pressure		
	• is in engagement with a metal thread		N/A
	Such screws not be of metal which is		
	• soft or liable to creep, as zinc or aluminium		N/A
19.2.3	Mechanical connections used during installation of switches may be made of using thread-forming or thread-cutting tapping screws:		
	• only if the screws are supplied together with the piece in which they are intended to be inserted		N/A
	Thread-cutting tapping screws intended to be used during installation:		
	• captive with the relevant part of the switch		N/A
19.2.4	Thread-forming (*metal sheet*) screws not used:		
	☐ for the connection of current-carrying parts ☐ unless they clamp directly in contact with each other and are provided with means of locking		N/A
	Thread-cutting (*self-tapping*) screws not used:		
	☐ for electrical connection of current-carrying parts ☐ unless they generate a full metric ISO thread or a thread of equivalent effectiveness		N/A
	Such screws not used:		
	☐ if likely to be operated by the user or installer ☐ unless the thread is formed by a swaging action		N/A
	The screws or nuts are tightened and loosened:		
	☐ 10 times with thread of insulating material; ☐ 5 times in all other cases		N/A
	Nuts concentric with the button or lever are tightened and loosened 5 times. Thread:		
	☐ insulating material ⇒ the torque is 0.8 Nm ☐ are of metal ⇒ the torque is 1.8 Nm		N/A
	Screws and nuts are tightened and loosened by means of a suitable test screwdriver or spanner.		N/A
	The torque applied when tightening being equal to that specified in the appropriate column of Table 10, if not otherwise specified.	See table 10.	N/A
	During the test:		
	• terminals shall not work loose		N/A
	• and damage that could impair the further use of the screwed connection		N/A
19.2.5	Switches having screwed glands are submitted to the following test.		

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Screwed glands fitted with a cylindrical metal rod having a diameter equal to the nearest integer value less than the internal diameter of the packing, in millimetres		N/A
	The glands then tightened by means of a suitable spanner, the torque specified in Table 11 being applied to the spanner for 60 s.	See table 11.	N/A
19.2.6	Correct introduction of the screws which are operated during mounting or connection of the switch into the screw holes or nuts shall be ensured.		
	Compliance checked by inspection and manual test.		N/A
19.2.7	Screws which make a mechanical connection between different parts of the switch shall be locked against loosening if the connection carries current.		
	Rivets used for current carrying connections shall be secured:		
	• against loosening if these connections are subject to torsion in normal use		N/A
	Sealing compound which softens in heat provides adequate locking:		
	• only for screw connections not being subject to torsion in normal use		N/A
19.2.8	Screws and nuts for clamping the conductors shall have:		
	• a metric ISO standard thread or a thread comparable in pitch and mechanical strength		N/A
19.3	**Current-carrying parts**		
	Current-carrying parts and parts in an earthing path:		
	• have adequate mechanical strength and resistance to corrosion	☒ inspection ☐ checked by Clause 22	P

20	**CLEARANCES, CREEPAGE DISTANCES, SOLID INSULATION AND COATINGS OF RIGID PRINTED BOARD ASSEMBLIES**		P
20.1	**Generally requirements**		
	Compliance is checked:		
	• with detachable parts removed		P
	• and movable parts which can be assembled in different orientations placed in the most unfavourable position		P
	Distances through slots or openings in surfaces of insulating material are:		
	• measured to a metal foil in contact with the surface		P
	The foil is pushed into comers and the like by means of:		
	• the jointed test finger of IEC 61032 Probe B but is not pressed into openings		P

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	A force is applied to bare conductors and accessible surfaces in order to attempt to reduce clearances when making the measurement. The force is:		
	☐ 2 N for bare conductors. ☒ 30 N for accessible surfaces.		P
	When applied to openings as specified in 9.1, the distance through insulation between live parts and the metal foil:		
	• not reduced below the specified values		P
20.2	**Clearances**		
20.2.1	General		
	The clearances shall be dimensioned to withstand the rated impulse voltage declared by the manufacturer according to 7.12 considering the:		
	• rated U_n and overvoltage category in annex E	250V / Category II	P
	• pollution degree declared by the manufacturer	Pollution degree 2	P
20.2.2	Clearances for basic insulation ≥ the values given in Table 12	See table 12.	N/A
	Smaller clearances except those in Table 12 with note 5 may be used if the switch meets the U_{imp} test of annex G:		
	• but only if the parts are rigid or located by mouldings,		N/A
	• or if the construction is such that there is no likelihood of the distances being reduced by distortion		N/A
	• or by movement of the parts during mounting, connection and normal use		N/A
20.2.3	Clearances for functional insulation ≥ the values for basic insulation in 20.2.2.		N/A
20.2.4	Clearances for supplementary insulation ≥ the values given in Table 12.	See table 12.	N/A
20.2.5	Clearances for reinforced insulation ≥ the values for basic insulation in 20.2.2 but using the next higher step for the rated U_{imp} in Table 12.	See table 12.	P
20.3	**Clearances for disconnection**		
20.3.1	Electronic disconnection.		
	No clearances specified for electronic disconnection.		N/A
20.3.2	Micro disconnection		
	Clearances between terminals and terminations fulfil functional insulation according to 20.2.3.		P
	No clearances are specified for the distance across the contacts.		P

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	For switches with a rated impulse withstand voltage < 1,5 kV, clearances between other current-carrying parts which are separated by the action of the switch:		
	• ≥ the actual value of the distance between the relevant contacts		N/A
	Switches with a rated impulse withstand voltage of 1,5 kV the clearance of the other current carrying parts which are separated by action of the switch:		
	• shall be at least 0,5 mm		N/A
20.3.3	Full disconnection		
	Clearances for full disconnection ≥ the values in Table 12.	See table 12.	N/A
	Switches provided by two or more breaks in series:		
	• the separation is the sum of the distances of the breaks		N/A
	Each break ≥ 1/3 of the prescribed distance.		N/A
20.4	**Creepage distances**		
20.4.1	General – The creepage distances shall be dimensioned for the voltage expected to occur in normal use taking into account the pollution degree declared by the manufacturer according to 7.8 and 7.9 and the material group.		
	Relationship between material group and proof tracking index (PTI) values:		
	Material group ..... :	IIIa ⇒ PTI: 175	P
	PTI values obtained in accordance with annex C.		P
	CTI (Comparative tracking index) may be substituted for PTI in Clause 20..... :	V	N/A
	Creepage distances for:		
20.4.2 20.4.3 20.4.4 20.4.5 20.4.6	☐ basic insulation ≥ the values in Table 13 ☐ functional insulation ≥ the values in Table 14 ☐ supplementary insulation ≥ the values for basic insulation in 20.4.2 ☒ reinforced insulation ≥ double the values for basic insulation in 20.4.2 ☒ disconnection ≥ the values for functional insulation in 20.4.3	See table 13 and 14.	P
20.5	**Solid insulation –** withstanding electrical and mechanical stresses, thermal and environmental influences which may occur during the anticipated life of the switch:		
	• checked during tests of clauses 14, 15, 16 and 17 in IEC 61058-1-1:2016 or IEC 61058-1-2:2016		P
	Distance through accessible supplementary solid insulation		
	• have a minimum value of 0.8 mm		N/A

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Distances through accessible reinforced solid insulation have minimum values:		
	☐ for rated $U_{imp} \leq 1500$ V: ≥ 0.8 mm; ☒ for rated $U_{imp} \geq 2500$ V: ≥ 1.5 mm.	> 2,0mm	P
20.6 20.6.2	**Coatings of rigid printed board assemblies.** **Type 1 coating:** The insulation distances of a printed board assembly with type 1 coating declared:		
	• comply with pollution degree 1 of clearances in Table 12 and of creepage distances in Table 14		N/A
	Test specimens:		
	☐ as in 5.1 and 5.2 of IEC 60664-3 ☐ or any representative rigid printed board assemblies as in 5.3 of IEC 60664-3		N/A
20.6.3	**Type 2 coating:** A printed board assembly with type 2 coating declared shall comply with the requirements for solid insulation as specified in 20.5.		
	• checked by the relevant test of Clause 6 of IEC 60664-3:2003 with the test levels or conditions as given in Table 15 and the test specimens as in 20.6.2		N/A
21	**FIRE HAZARD**		P
21.1	**Resistance to heat**		
21.1.2	Compliance is checked with new samples using the ball pressure test according to IEC 60695-10-2 at:		
	☒ the temperatures using either the (A) heating test results (*see 21.1.3*) ☐ or (B) calculated temperatures (*see 21.1.4*)		P
	The ∅ of the impression by the ball not > 2 mm.	See table “”Fire hazard”	P
21.2	**Resistance to abnormal heat**		
	Parts of non-metallic material shall be resistant to abnormal heat	See table “Resistance to abnormal heat”	P
22	**Resistance to rusting**		P
	Ferrous parts, the rusting of which might impair safety, adequately protected against rusting.		P
23	**ABNORMAL OPERATION AND FAULT CONDITIONS FOR ELECTRONIC SWITCHES**.		P
	See IEC 61058-1-1 for mechanical switch testing.		P
	See IEC 61058-1-2 for electronic switch testing.		N/A
24	**Components for switches**		P

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
24.1	**General requirements** Components which, if they fail, may cause risk of electric shock or fire shall comply • either with the requirements of this standard • or with the relevant IEC component standard as far as they reasonably apply		
24.2	**Protective devices**		
24.2.1	General Protective devices shall be in accordance with the relevant IEC publications and/or the additional requirements specified in the following sub-clauses: ☐ 24.2.2 fuses; ☒ 24.2.3 cut-outs; ☐ 24.2.7 protective devices which only decrease the current; ☒ 24.2.8 fusing resistors		
24.2.2	Fuses:		
	• comply with IEC 60127 or IEC 60269-3 and have a rated breaking capacity ≥1 500 A		N/A
	• unless any fault current through the fuse is limited to the breaking capacity of the fuse		N/A
24.2.3	Cut-outs – have adequate making and breaking capacity. If the cut-out in the switch is subjected to a reference temperature outside the range 0 °C to 35 °C or 55 °C:		
	• samples tested at this reference temperature	°C	N/A
	During the test:		
	• the other conditions shall be similar to those occurring in the switch		P
	• no sustained arcing shall occur		P
	After the test:		
	• the specimens show no damage impairing their further use or the safety of the switch		P
24.2.4	Non-resettable cut-outs: ☒ thermal links in accordance with IEC 60691 ☐ or bi-metallic single operation devices (*SOD*) according to IEC 60730-2-9 Compliance checked by the tests according to 24.2.3. After the test the supply shall be:		
	• cut out and the temperature neither exceed the maximum temperatures specified by the manufacturer for abnormal conditions	See table “Non-resettable cut-outs – After the test”	P
24.2.5	Resettable, non-self-resetting cut-outs shall be:		
	• in accordance with IEC 60730-1 and appropriate parts of IEC 60730-2		N/A
	• checked by the tests according to 24.2.3 and the following additional tests		N/A
	Resettable, non-self-resetting cut-outs in the load circuit of the switch:		

IEC 61058-1				
Clause	Requirement - Test	Result - Remark		Verdict
	• tested at 1.1U_N of the switch and with loads as specified below		V	N/A
	The cut-outs are reset after each operation and caused to operate 10 times:			
	• Cut-outs in switches for incandescent lamps tested in a non-inductive circuit and loaded with the conventional fusing current of the protecting fuse		A	N/A
	• Cut-outs in switches for speed control circuits, subjected to 2 series of 10 operations. I_n the:			
	• 1st series the cut-out closes a circuit with 9I_N (*cos φ = 0.8 ± 0.05*).		A	N/A
	• 2nd series, the circuit 6I_N (*cos φ = 0.6 ± 0.05*).		A	N/A
	• Cut-outs for other types of load are tested with the opening and closing current as declared		A	N/A
24.2.6	Self-resetting cut-outs – shall be in compliance with IEC 60730 series. Checked by the tests according to 24.2.3 and the following additional tests:			
	• Self-resetting cut-outs in the load circuit of the switch tested at 1.1U_N:		V	N/A
	• Cut-outs in switches for incandescent lamps operated automatically for 200 cycles in a non-inductive circuit and loaded with conventional fusing current of the protecting fuse.		A	N/A
24.2.7	Protective devices which only decrease the current (for example PTC resistors) be:			
	☐ of a thermistor type according to Annex J in IEC 60730-1:2013 ☐ or PTC-S thermistors according to IEC 60738-1			N/A
	Checked by the tests according to 24.2.3 and the following additional tests. For PTC-S thermistors, with power dissipation > 15 W for the rated zero-power resistance at an ambient temperature of 25 °C, the encapsulation/tubing comply:			
	• with flammability category V-1 or better according to IEC 60695-11-10 and IEC 60695-11-20			N/A
24.2.8	Fusing resistors:			
	• have adequate breaking capacity and does not cause emission of flames or burning particles			P
24.3	**Capacitors**			
	• comply with Table 16 or as declared (7.23)	See table 16.		N/A
24.4	**Resistors**			
	Resistors for protective impedances according to 9.1.1 and resistors the short-circuiting or disconnecting of which would cause an infringement of the requirements for operation under fault conditions (*see Clause 23*):			
	• have an adequate stable resistance value under overload and complies with the requirements of 14.1 of IEC 60065:2014			N/A

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict

25	**EMC REQUIREMENTS**			P
25.1	**General**			
	Tests in Clause 25:			
	• carried out on requested by the manufacturer	Mechanical switch with electronic circuit		P
	Electronic switches for appliances			
	• fulfil the requirements for immunity and emission when used in accordance with the manufacturer's specification			N/A
	Electronic switches intended to be built in or incorporated in an appliance.			
	• comply with the requirements for immunity and emission as evaluated in the end product			N/A
25.2 25.2.1	**Immunity** General Electronic switches so designed that the switch state (ON or OFF) and/or setting value is protected against electromagnetic interference.			
	The electronic switch is mounted as in normal use			P
	Loaded as specified in clause 17 at U_N	250	V	P
	Each electronic switch is tested, if applicable, in the following states:			
	☒ ON, ☒ highest setting; ☒ lowest setting; ☒ OFF, ☒ highest setting; ☒ lowest setting.			P
25.2.2	Voltage dips and short interruptions			
	Electronic switch tested as in 25.2.1 with Table 17 using the test equipment specified in IEC 61000-4-11, 3 dips/interruptions with ≥ 10 s minimum (between each test event).			P
	Abrupt changes in supply voltage occurs at zero crossings.			P
	The change between the test voltage U_T and the changed voltage is abrupt.			P
	U_T = to the rated voltage.			P
	Test level of 0 % = to a total supply voltage interruption.			P
	During the test: • the electronic switch state and/or setting may alter			P
	Occasional flickering of luminaires and irregular running of motors during the test are neglected.			P
	After the test, the electronic switch:			
	• be in the original state and the setting unchanged			P
25.2.3	Surge immunity test			

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	Tests carried out according to IEC 61000-4-5 with an open-circuit test voltage of 1 kV (*level 2*).		P
	During the tests, the switch state and/or setting shall not alter.		P
	After the tests the electronic switch is in the original state and the setting is unchanged.		P
25.2.4	Electrical fast transient test		
	The electronic switch subjected to repetitive fast transients (*bursts*) on supply and control terminals / terminations.		P
	The test is carried out according to IEC 61000-4-4 with the following specification:		
	The level of the repetitive fast transients consisting of bursts is in accordance with Table 18.		
	☒ Supply terminals/terminations 1 kV (level 2) ☐ Control terminals/terminations 0,5 kV (level 2)		P
	The duration of the test ≥ 1 min.		P
	During the test, the electronic switch state and/or setting may alter.		P
	After the test, the switch shall remain in its original state.		P
25.2.5	Electrostatic discharge test		
	The electronic switch mounted as in normal use.		P
	The following levels apply:		
	☒ test voltage of contact discharge: 4 kV; ☒ test voltage of air discharge: 8 kV.		P
	During the test, the electronic switch state and/or setting may alter.		P
	After the test, the switch shall remain in its original state.		P
25.2.6	Radiated electromagnetic field test Electronic switch subjected to electromagnetic fields tested as follows:		
	Test carried out according to IEC 61000-4-3, applying a field strength of 3 V/m.		P
	After the test, the electronic switch is in the original state and the setting is unchanged.		P
	During the test, the electronic switch state and/or setting may alter:		
	• no other changes observed		P
25.2.7	Power-frequency magnetic field test		
	• carried out according to IEC 61000-4-8 by applying a magnetic field of 3 A/m, 50 Hz.		N/A

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	During the test, the state of the electronic switch shall not change.		N/A
	Occasional flickering of lamps or irregular running of motors during the test **does not** occur.		N/A
25.3 25.3.1	**Emission** Low frequency emission Checked by tests according to IEC 61000-3-2 and IEC 61000-3-3 or IEC 61000-3-5.		
	Requirements met if the electronic switch complies with the criteria's specified in these standards.		P
	If overview shows an envelope of the spectrum with a monotonal decrease according to the increasing order of harmonics:		
	• measurements restricted to harmonics up to order 11		P
25.3.2	Radio-frequency emission		
	The electronic switch complies with the requirements of .....:	☒ CISPR 14-1 ☐ CISPR 15	P
	Electronic switch used for electrical lighting application, complies with CISPR 15.		N/A

Annex C	**PROOF TRACKING TEST** (PTI) **(***normative***)**	P
	Proof tracking test made according to IEC 60112.	P

Annex E	**RELATION BETWEEN RATED IMPULSE WITHSTAND VOLTAGE U_{IMP}, RATED VOLTAGE U_N AND OVERVOLTAGE CATEGORY (***normative***)**	P

Table E1	**Rated impulse withstand voltage for switches energized directly from the low voltage mains**						
	Nominal voltage of the supply system based on IEC 60038 (V) Three phase	Single phase	Voltage line to neutral derived from nominal voltages a.c. or d.c. up to including (V)	U_{imp} 2) 3) (kV) Overvoltage category I	II	III	—
			250V		2,5		P

Annex G	**IMPULSE VOLTAGE TEST** (*normative*)			N/A
	To verify that clearances will withstand specified transient overvoltage.			
	Impulse withstand voltage test U_{imp} is carried out with a voltage having a 1.2/50 µs wave-form as in IEC 60060-1 and is intended to simulate overvoltage of atmospheric origin.		V	N/A
	The test is conducted for a minimum of 3 impulses of each polarity with an interval > 1 s between pulses.			N/A
	When surge suppression is provided inside the specimen, the impulse have the following characteristics: Waveform			

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	☐ 1.2/50 µs for the no-load voltage with amplitudes equal to the values in Table G1; ☐ 8/20 µs for an appropriate surge current.		N/A

Table G1	**Test voltages for verifying clearances at sea level**			
	Rated impulse withstand voltage Û (kV)	Impulse test voltage at sea level Û (kV)		—
	2,5	2,95		N/A

Annex H	**ALTITUDE CORRECTION FACTORS (*normative*)**	P
	Dimensions given in Table 22 are valid for altitudes ≤ 2000 m above sea level, clearances for altitudes > 2000 m sea level is multiplied by the altitude correction factor specified as follows:	

Table H.1	**Altitude correction factors**				
	Altitude (m)	Normal barometric pressure (kPa)	Multiplication factor for clearances		—
	2000	80,0	1,00		P

Annex I	**TYPES OF COATINGS FOR RIGID PRINTED BOARD ASSEMBLIES (*normative*)**		N/A
	Type 1 coating:		
	Provides only protection against pollution by coating to pollution degree 1.		N/A
	Clearance and creepage distance of 20.1 and 20.2 apply to the rigid printed board assembly under the coating		N/A
	Type 2 coating:		
	Provides protection against pollution and insulation that the clearance and creepage distance of 20.1 and 20.2 are not applicable between conductors under the coating.		N/A

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict

11.1.1	General			
Table 4	**Resistive current carried by the terminal and related cross-sectional areas of terminals for unprepared conductors**			
	Flexible conductors			
	Terminal size..... :			—
	Resistive current carried by the terminal ..... :		A	—
	Cross-sectional areas ..... :		mm²	N/A
	Supplementary information:			
	Rigid conductors			
	Terminal size..... :			—
	Resistive current carried by the terminal ..... :		A	—
	Cross-sectional areas ..... :		mm²	N/A
	Supplementary information:			

11.6	**Test sequences**							
Table 5	**Terminal test sequence**							
	Reconnection	**Conductor**	**TT1**	**TT2**	**TT3**	**TT4**	**Examples of terminals**	—
	Possible (7.20.11)	Unprepared (7.20.1).					☐ Screw 7.20.12, ☐ Piercing 7.20.18, ☐ Push in 7.20.13	N/A
	Possible (7.20.11)	Prepared (7.20.2)					☐ Screw 7.20.12, ☐ Piercing 7.20.18, ☐ Push in 7.20.13, ☐ Quick connect	N/A
	Not possible (7.20.10)	unprepared (7.20.1).					☐ Solder 7.20.15 ☐ Welding 7.20.16	N/A
	Not possible (7.20.10)	Prepared (7.20.2)					☐ Fixed wires (7.20.17) and terminations in general	N/A
	Supplementary information:							

15.2	**Measurement of insulation resistance**			
	The insulation resistance measured with a DC voltage ~ 500 V, the measurement being made 60 s after application of the voltage.			
Table 7	**Minimum insulation resistance**			
	Insulation to be tested	Insulation resistance		
	Functional	≥ 2 MΩ		N/A
	Basic	≥ 2 MΩ		N/A
	Supplementary	≥ 5 MΩ		N/A
	Reinforced	≥ 7 MΩ	> 10 MΩ	P

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict

	Across disconnections	≥ 2 MΩ	> 10 MΩ	P
	Supplementary information:			

15.3	**Insulation test voltage**			
	The insulation is subjected to a voltage of substantially sine wave form, 50 or 60 Hz.			
Table 8	**Dielectric strength**	Rated voltage (V)	250	
	Insulation or disconnection to be tested	Test voltage (V)		
	Functional			N/A
	Basic			N/A
	Supplementary			N/A
	Reinforced	3000	Between L/N and enclosure	P
	Electronic disconnection			N/A
	Micro-disconnection	500	Between Lin and Lout	P
	Full disconnection			N/A
	No flash over or breakdown occurs.			P
	Supplementary information:			N/A

16.3	**Heating test**			
	Test voltage .....:	250	V	—
	Resistive or declared current .....:	10	A	—
	Cross-sectional areas .....:	-	mm²	—
Thermocouple locations			Max. temperature measured, (°C)	
Enclosure			31,2	P
Button			32,3	P
	Supplementary information:			

18.3	**Pull**				
Table 9	**Minimum values of pull force**				
	Rated current	Force (N)			—
	A	Normal direction	45° from normal direction		—
	☐ ≤ 4 ☐ > 4	☐ 50 ☐ 100	☐ 25 ☐ 50		N/A
	Supplementary information:				

19.2	**Screwed connections**	
Table 10	**Torque values**	

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict

	Type of screw	Nominal thread ∅ (mm)	Torque (Nm)		—
	Terminal:				N/A
	Assembly:				N/A
	Cord anchorages:				N/A
	Other:				N/A
19.2.5	Switches having screwed glands are submitted to the following test.				
Table 11	**Torque values for screwed glands**				
	∅ of the test rod (mm)	Torque for glands of			—
		Metal		Nm	N/A
		Insulating material		Nm	N/A
	Supplementary information:				
	After the test neither the glands nor the enclosure of the specimen shall show any damage.				N/A

20	**CLEARANCES, CREEPAGE DISTANCES, SOLID INSULATION AND COATINGS OF RIGID PRINTED BOARD ASSEMBLIES**				P
	Working voltage (V):	250			—
	Degree of pollution, micro:	☐ 1	☒ 2	☐ 3	—
	Degree of pollution, macro:	☐ 1	☐ 2	☐ 3	—
Table 12 – 14	**Creepage distance Cd and clearance Cl across:**	required Cd (mm)	Cd (mm)	required Cl (mm)	Cl (mm)
	Functional, sealed or incapsulated	—	—	—	—
	Functional,	—	—	—	—
	Basic	—	—	—	—
	Supplementary	—	—	—	—
	Reinforced	5,0	>6,0	3,0	>4,0
	Full disconnection	—	—	—	—
	Micro disconnection	2,5	2,6	1,5	2,3
	Supplementary information:				

20.6	**Coatings of rigid printed board assemblies.**			
Table 15	**Test levels and conditions (Type 2 coating)**			
	IEC 60664-3 sub-clause	Test levels and conditions		—
	6.6.1 cold storage	- 25°C		N/A
	6.6.3 Rapid change of temperature	Degree of severity 2 (- 25°C to 125°C)		N/A
	Supplementary information:			

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict

21	**Fire hazard**			
21.1.2	Ball pressure test according to IEC 60695-10-2 at the temperatures using: ☒ (A) heating test results (*clause 16*) ☐ (B) calculated temperatures			
Non-metallic materials to be tested:		Ball pressure temperature (°C)	Max 2.0 mm impression	
PCB		125	1,0mm	P
Enclosure		125	1,6mm	P
Mylar		75	1,0mm	P
	Supplementary information:			

21.2	**Resistance to abnormal heat**		
Non-metallic materials to be tested:	Test temperature (°C)	• extinguish within 30 s • no ignition of the layer of wrapping tissue	
PCB	850	No flame	P
Enclosure	850	No flame	P
Mylar	650	No flame	P
	Supplementary information:		

24.2.4	Non-resettable cut-outs – After the test:			
Thermocouple locations		Max. temperature measured, (°C)	Max permitted (°C) declared	
Enclosure		36,6	125	—
				—
	Supplementary information:			

24.3	**Capacitors**				
Table 16	**Requirements for capacitors**				
	Application of capacitors	Type(s) of capacitors (*according IEC 60384-14*)			—
	Between live conductor	$U_N \leq$ 125V	125V < $U_N \leq$ 250V Over-current protection		—
	(Z = impedance)		Without [1)]	With [1)]	
	L or N and earth (PE)	☐ Y4	☐ Y2	☐ Y2	N/A
	L and N or L1 and L2				
	• without Z in series	☐ X2	☐ X1	☐ X2	N/A
	• with Z in series, by short-circuiting of capacitor, limits the current to ≥ 0.5 A	☐ X3	☐ X2	☐ X3	N/A

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict
	• < 0.5 A No special requirement		N/A
	[1)] Fusing resistor (built in or external).		
	Supplementary information:		

IEC 61058-1			
Clause	Requirement - Test	Result - Remark	Verdict

	TABLE: List of critical components				P
Object/part No.	**Manufacturer/ trademark**	**Type/model**	**Technical data**	**Standard (Edition / year)**	**Mark(s) of conformity[1])**
- Description:					
- Description:					
- Description:					
- Description:					
- Description:					
- Description:					

Supplementary information:
[1)] Provided evidence ensures the agreed level of compliance. See OD-2039.

Refer to Critical component list.

IEC 61058-1-1			
Clause	Requirement - Test	Result - Remark	Verdict
8	**MARKING AND DOCOMENTATION**		P
	This clause of part 1 is applicable.		
9	**PROTECTION AGAINST ELECTRIC SHOCK**		P
	This clause of part 1 is applicable.		
10	**PROVISION FOR EARTHING**		P
	This clause of part 1 is applicable.		
11	**TERMINALS AND TERMINATIONS**		N/A
	This clause of part 1 is applicable.		
12	**CONSTRUCTION**		P
	This clause of part 1 is applicable.		
13	**MECHANISM**		P
	This clause of part 1 is applicable.		
14	**PROTECTION AGAINST SOLID FOREIGN OBJECTS, INGRESS OF WATER AND HUMID CONDITIONS**		P
	This clause of part 1 is applicable.		
15	**INSULATION RESISTANCE AND DIELECTRIC STRENGTH**		P
	This clause of part 1 is applicable.		
16	**HEATING**		P
	This clause of part 1 is applicable.		
17	**ENDURANCE**		P
17.1	**General requirements**		
17.1.2	The sequence of tests to be completed on the same 3 specimens is as follows:		
		Carried out:	
	• TC3: a test at high speed specified in 17.5.3	☐ yes, ☐ no	N/A
	• TC2: a test at slow speed specified in 17.5.2	☐ yes, ☐ no	N/A
	• TC1: an increased-voltage test at accelerated speed as specified in 17.5.1	☒ yes, ☐ no	P
	• TC9: a locked-rotor test as specified in 17.5.5 at accelerated speed	☐ yes, ☐ no	N/A
	• TC4: a test at accelerated speed as specified in 17.5.4;	☒ yes, ☐ no	P

IEC 61058-1-1			
Clause	Requirement - Test	Result - Remark	Verdict
17.1.3	When required by Clause 13, TC10, is conducted on a different set of 3 specimens:		
	• a test at very slow speed as in 17.5.6; only applies to switches according to the requirements of 13.1		N/A
17.2	**Electrical endurance tests**		—
	The switch loaded as in Table 102 and/or Table 103 and connected in accordance with the circuit as given in Table 2.	☒ Table 102 and/or ☐ Table 103	P
a)	Where in Table 2 an auxiliary switch (A) is symbolised in the test circuit,		
	• tests for two ON-positions of the specimen (S) performed on 2 separate sets of test samples		N/A
b)	Multiway switches loaded according to 61058-1:2016, Table 1.	See table 1.	N/A
c)	For specific lamp load (7.2.7),		
	• the connection and test load as specified by the manufacturer using the maximum occurring inrush current at room temperature		N/A
	• the specimen operated with loads that are used in the field rather than with synthetic loads		N/A
	• forced cooling of the specific lamp load applied in order to ensure cold resistance for each operating cycle and shorten the test time	☐ used ☐ not used	N/A
d)	No electrical endurance tests applied for switches for 20 mA load as classified to 7.2.6		N/A
17.3 17.3.1	**Thermal conditions** (*air temperatures*) Switches according to 7.3.2 during tests in 17.5.4 (TC4) all parts exposed to:		
	☐ 1st half of test at maximum T-rating (+5 / 0)°C	°C	N/A
	☐ 2nd half of test at 25°C ± 10°C ☐ or at the minimum T-rating (0 / -5)°C if T< 0°C	°C	N/A
17.3.2	Switches according to 7.3.3, during tests in 17.5.4 (TC4):		
	• parts for 0 °C to 55 °C, exposed to a temperature within this range for the complete test period		N/A
	☐ 1st half of test, the remainder of the switch maintained at (T +5/0) °C	°C	N/A
	☐ 2nd half of test, carried out at 25 °C ± 10 °C ☐ or at the minimum T-rating (T 0/-5) °C	°C	N/A
17.3.3	Switches according to 7.3.1, during the tests in 17.5.4 (TC4):		
	• the switch exposed to 25 °C ± 10 °C		P
17.4 17.4.1	**Actuating conditions** The operating speed for the operating cycles shall be as follows: a) For very slow speed approximately:		
	☐ 1°/s for rotary actuation; ☐ 0.5 mm/s for linear actuation.		N/A

IEC 61058-1-1			
Clause	Requirement - Test	Result - Remark	Verdict
	b) For slow speed approximately:		
	☐ 9°/s for rotary actuations at an angle ≤ 45°; ☐ 18°/s for rotary actuations at an angle >45°; ☐ 20 mm/s for linear actuations		N/A
	c) For high speed:		
	• actuating member actuated by hand as fast as possible		N/A
	d) For accelerated speed approximately:		
	☐ 45°/s for rotary actuations at an angle ≤ 45°; ☐ 90°/s for rotary actuations at an angle > 45°; ☐ 80 mm / s for linear actuations		N/A
17.4.2	For biased switches, the actuating member is moved to the limit of travel of the opposite position.		N/A
17.4.3	During the testing, care is taken that the test apparatus drives the actuating member, without impeding the designed movements of the switch.		P
17.4.4	During the accelerated speed test:		
	a) Care taken that test apparatus allows actuating member to operate freely.		P
	b) Switches for a rotary actuation where movement is not limited in either direction:		
	• 3/4 of operating cycles made in a clockwise and 1/4 in an anti-clockwise direction		N/A
	c) Switches for rotary actuation in one direction only, test is performed in the designed direction.		N/A
	d) Additional lubrication not applied during tests.		P
	e) Forces applied to the end stops of the actuating members do not exceed declared values.		N/A
17.4.5	Switches are operated with the following conditions. Table 104:		
	☒ I_R ≤ 10 A; 1 (s) ON and 3 (s) OFF ☐ I_R > 10 A but < 25 A; 2 (s) ON and 6 (s) OFF ☐ I_R is ≥ 25 A; 4 (s) ON and 12 (s) OFF		P
	Capacitive and simulated lamp load (*IEC 61058-1:2016, Figures 8 and 9*);		
	• 2 (s) ON and 15 (s) OFF		N/A
	Tungsten lamp loads:		
	• Minimum 1 (s) ON and Minimum 55 (s) OFF		N/A
	Very slow speed TC10:		
	• Minimum 2 (s) ON and Minimum 6 (s) OFF		N/A
	Locked rotor (TC9):		
	• 1 (s) ON and 30 (s) OFF		N/A
	Switches with test circuit as in Table 2 for codes 2.3, 2.5, 2.7 or 2.9:		
	• the ON periods is approximately 50 %		N/A

IEC 61058-1-1			
Clause	Requirement - Test	Result - Remark	Verdict

	Multi-way switches comply with the table 104		(s) ON		(s) OFF	N/A
	• or be actuated with the speed indicated in 17.4.1 and a minimum ON period of 25 %					N/A
17.5	**Type of test condition (TC)**					
17.5.2	Increased-voltage test at accelerated speed (TC1):					
	• Electrical conditions as in Table 102, 1.15 U_n and 1.0 I_n. • Capacitive and simulated lamp load 1.0 U_n and 1.15 I_n. • Thermal conditions 25 ± 10 °C. • Method of operation as in 17.4. • 100 operating cycles.	See table TC.				P
17.5.2	Test at slow speed (TC2)					
	• Electrical conditions as in 17.2. • Thermal conditions 25 ± 10 °C. • Actuating speed as in 17.4 slow speed. • 100 operating cycles	See table TC.				N/A
17.5.3	Test at high speed (TC3) (*only switches with more than one pole and with reversal polarity*).					
	• Electrical conditions as in 17.2. • Thermal conditions 25 ± 10 °C. • Actuating speed as in 17.4 high speed. • 100 operating speed.	See table TC.				N/A
17.5.4	Test at accelerated speed (TC4)					
	• Electrical conditions as in 17.2. • Thermal conditions as in 17.3. • Actuating speed, accelerated as in 17.4. • Operating cycles as number declared in (7.4) reduced with the number already tested in 17.5.1, 17.5.2 and 17.5.3.	See table TC.				P
17.5.5	Locked-rotor test (TC9):					
	• Electrical conditions as in 17.2. • Thermal conditions 25 ± 10 °C. • Actuating speed, accelerated as in 17.4. • 50 operating cycles.	See table TC.				N/A
17.5.6	Test at very slow speed (TC10):					
	• Electrical conditions as in 17.2. • Thermal conditions 25 ± 10 °C. • Actuating speed, very slow speed in 17.4. • 100 operating cycles.	See table TC.				N/A
17.6	**Evaluation of compliance**	See table TE1 – TE3.				P

18	**MECHANICAL STRENGTH**		P
	This clause of part 1 is applicable.		

IEC 61058-1-1			
Clause	Requirement - Test	Result - Remark	Verdict
19	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		P
	This clause of part 1 is applicable.		
20	**CLEARANCES, CREEPAGE DISTANCES, SOLID INSULATION AND COATINGS OF RIGID PRINTED BOARD ASSEMBLIES**		P
	This clause of part 1 is applicable.		
21	**FIRE HAZARD**		P
	This clause of part 1 is applicable.		
22	**Resistance to rusting**		P
	This clause of part 1 is applicable.		
23	**ABNORMAL OPERATION AND FAULT CONDITIONS FOR ELECTRONIC SWITCHES**.		P
	Mechanical switches with electronic components checked by clause 23 of IEC 61058-1-2:2016.	Short circuiting of capacitor C12: Resistor F1 was broken, no output, no hazard observed. Short circuiting of Diode 14: not output, no hazard observed.	P
	Switches with rigid printed boards with creepage distances and clearances that do not comply with the required distances of Table 12 to Table 14 of IEC 61058-1:2016:		
	• checked by Clause 23 of IEC 61058-1-2:2016		N/A
24	**COMPONENTS**		P
	This clause of part 1 is applicable.		
25	**EMC REQUIREMENTS**		P
	This clause of part 1 is applicable.		

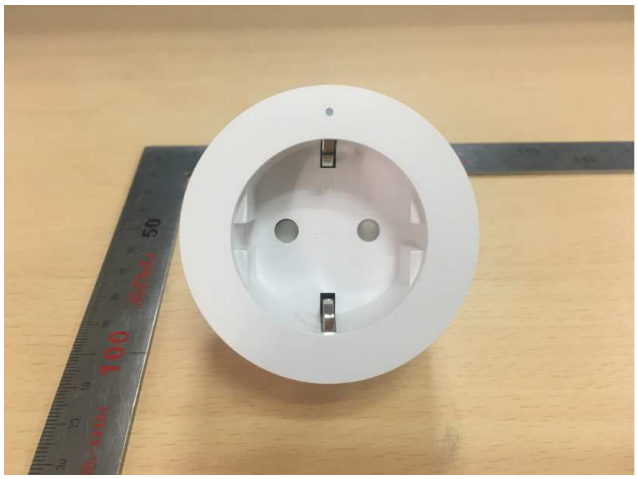
Appendix 1: IEC 61058-1-1			
Clause	Requirement - Test	Result - Remark	Verdict

	Results of endurance testing in clause 17									P
Type:	Substantially resistive	**Tested for:**	a.c. circuits			**Circuit code:**	1.2			
Table 1	**Test loads for multi way switches**									
	Cycles of operations	Switch position of		Circuit ⇒ Load (A) ⇓						—
	1st half	Highest load		I_R						N/A
		Next lower load		0.8 I_R						N/A
		Further next lower load		0.533 I_R						N/A
	2nd half	Highest load		I_R						N/A
		Next lower load		0.5 I_R						N/A
		Further next lower load		0.333 I_R						N/A
Table TC										
Sub-clause	TC test	Volt (V)	Test load (A) Make	Break	Cos (φ) Make	Break	Time constant (ms)		Cycles	
17.5.1	TC1	287,5	11,5	11,5	1,0	1,0	-		100	P
17.5.2	TC2	-	-	-	-	-	-		-	N/A
17.5.3	TC3	-	-	-	-	-	-		-	N/A
17.5.4	TC4	250	10	10	1,0	1,0	-		9900	P
17.5.5	TC9	-	-	-	-	-	-		-	N/A
17.5.6	TC10	-	-	-	-	-	-		-	N/A
TE1 – TE3										
17.6.1	Functional compliance (TE1). Switch complies if									
	☒ all actions function as declared ☒ no loosening of electrical / mechanical connections occur; ☐ sealing compound does not flow to such an extent that live parts are exposed									P
17.6.2	Thermal compliance (TE2) • Δt at the terminals < 55K tested in accordance with Clause 16 at I_R and 25°C ± 10 °C									
	Test current							A		—
	Samples 1, 2, 3:			1) 2) 3)				K K K		N/A
17.6.3	Insulating compliance (TE3) • test voltage 75 % of the corresponding test voltage specified in sub-clause 15.3:									
	☒ Over contact gap(s) ☐ Between live parts of different polarity ☐ Between live parts and earth metal ☒ Between live parts and accessible metal parts or									P

Appendix 1: IEC 61058-1-1			
Clause	Requirement - Test	Result - Remark	Verdict
	actuating members etc. Samples 1, 2, 3: No transient fault occurred		
	Supplementary information:		

Prüfbericht-Nr.: *Test Report No.*:	**50283429 001 Attachment 1**	**Auftrags-Nr.:** *Order No.*:	244152828	Seite 1 von 70 *Page 1 of 70*
Kunden-Referenz-Nr.: *Client Reference No.*:	N/A	**Auftragsdatum:** *Order date*:	24.06.2019	
Auftraggeber: *Client*:	Lumi United Technology Co., Ltd / F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China			
Prüfgegenstand: *Test item*:	Smart Plug			
Bezeichnung / Typ-Nr.: *Identification / Type No.*:	SP-EUC01			
Auftrags-Inhalt: *Order content*:	Type test			
Prüfgrundlage: *Test specification*:	IEC 60884-1:2002+A1+A2 IEC 60884-2-5:2017			

Wareneingangsdatum: *Date of receipt*:	24.06.2019
Prüfmuster-Nr.: *Test sample No.*:	A000951316 001-030
Prüfzeitraum: *Testing period*:	24.06.2019 – 06.08.2019
Ort der Prüfung: *Place of testing*:	TÜV Rheinland (Shanghai) Co., Ltd.
Prüflaboratorium: *Testing laboratory*:	TÜV Rheinland (Shanghai) Co., Ltd.
Prüfergebnis*: *Test result**:	Pass



geprüft von / *tested by*:

04.09.2019	Doom Zhu / PE	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by*:

04.09.2019	Yi Zeng/ TC	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*:
This report was created for type test of above mentioned product.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

V04

Test Report issued under the responsibility of:

TÜVRheinland®
Precisely Right.

TEST REPORT
IEC 60884-2-5
Plugs and socket-outlets for household and similar purposes
Part 2: Particular requirements for adaptors

Report Number. ..... :	50283429 001 Attachment 1
Date of issue ..... :	See cover page
Total number of pages ..... :	See cover page
Name of Testing Laboratory preparing the Report ..... :	TÜV Rheinland (Shanghai) Co., Ltd.
Applicant's name ..... :	Lumi United Technology Co., Ltd
Address ..... :	F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China
Test specification:	
Standard ..... :	IEC 60884-2-5:2017 for use in conjunction with IEC 60884-1:2002, AMD1:2006, AMD2:2013
Test procedure ..... :	Type test
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60884_2_5E
Test Report Form(s) Originator .... :	IMQ S.p.A.
Master TRF ..... :	Dated 2018-10-02

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Smart Plug
Trade Mark ..... :	Aqara
Manufacturer ..... :	Same as applicant
Model/Type reference ..... :	SP-EUC01
Ratings ..... :	250VAC 10A 50/60Hz

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☒	**Testing Laboratory:**	TÜV Rheinland (Shanghai) Co., Ltd	
Testing location/ address ..... :		No.177, Lane 777, West Guangzhong Road, Jing'an District, Shanghai China	
Tested by (name, function, signature) ..... :		See cover page	
Approved by (name, function, signature)... :		See cover page	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature)... :			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :			
Tested by (name + signature) ..... :			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature)... :			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature)... :			
Supervised by (name, function, signature) :			

Summary of testing:	
Tests performed (name of test and test clause): All applicable tests were performed. This report was created for type test for plug and socket portion of remote controlled adaptor, it should be used in conjunction with test report No. 50283429 001 for switch part. Appendix 1: Additional tests according to DIN VDE 0620-1:2016+A1 & DIN VDE 0620-2-1:2016+A1:2017 (12 pages, page 59-70)	**Testing location:** TÜV Rheinland (Shanghai) Co., Ltd No.177, Lane 777, West Guangzhong Road, Jing'an District, Shanghai China
Summary of compliance with National Differences (List of countries addressed): DE= Germany	

Copy of marking plate:

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.

On back view:

On side view:

Note:
1.The following manufacturer info is indicated on the manual:

Lumi United Technology Co., Ltd

F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China

2. Warnings according to DE (Germany) requirement would state on the manual:
Niemals in Reihe schalten.
Nur Spannungsfrei,wenn der Stecker abgezogen wurde.

Diesse Produktist Nur zur Verwendung in Innenräumen vorgesehen

Test item particulars.....:	See page 7
Classification of installation and use.....:	Portable type
Supply Connection.....:	Direct plug-in
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 .....:	See cover page
Date (s) of performance of tests.....:	See cover page

General remarks:

"(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 IECEE 02:

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).....:	SUNWODA Electronic Co., Ltd. Sixth Branch Northeast of Intersection of Keyu Road, and Tongguan Road, Gongming Street, Guangming New District , Shenzhen City , Guangdong Province, P.R. China

General product information and other remarks:

Remote controlled adaptor, 10A 250VAC 50/60Hz, Max. 2300W, IP20, with CEE7 standard sheet VII plug and standard sheet III shuttered outlet, with solid plug pins, with an electronic switch which can be either switched on/off by integrated button or be remote controlled through App.

Test item particulars:		
Standard Sheet	:	Plug: CEE 7 Standard sheet VII Socket: CEE 7 Standard sheet III
Rated current (A) and/or power (W)	:	16A (rating of plug and socket)
Rated voltage (V)	:	250V~ (rating of plug and socket)
Degree of protection against harmful ingress of water	:	ordinary / ~~splash-proof (IPX4) / jet-proof (IPX5)~~
Provision for earthing	:	~~without earthing contact~~ / with earthing contact
Method of connecting the cable	:	~~rewirable intermediate adaptor / non-rewirable intermediate adaptor~~
Type of cable	:	N/A
Nominal cross-sectional areas (mm^2)	:	N/A
Type of terminals	:	~~screw-type / screwless (rigid) / screwless (rigid and flexible)~~
Type of connections	:	soldered / ~~welded~~ / ~~crimped~~ / other: riveted
Socket-outlets:		
Degree of protection against electric shock	:	normal protection / ~~increased protection~~
Existence of enclosures	:	~~unenclosed~~ / enclosed
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~~
Method of installation	:	~~design A / design B~~
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 object	:	See cover page
Date (s) of performance of tests	:	See cover page

General remarks:

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

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

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(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 or ☐ point is used as the decimal separator.

IEC 60884-2-5			
Clause	Requirement + Test	Result - Remark	Verdict

8	**MARKING**		
8.1	**Accessories marked with:**		**P**
	- rated current (A) and/or power (W) ..... :	10A / 2300W	P
	- rated voltage (V) ..... :	250	P
	- symbol for nature of supply..... :	AC	P
	- manufacturer's or responsible vendor's name..... :	Aqara	P
	- type reference ..... :	SP-EUC01	P
	- symbol for degree of protection (first digit) ..... :	IP2X	N/A
	- symbol for degree of protection (second digit) .... :	IPX0	N/A
	Socket-outlets with screwless terminals marked with:		N/A
	- the length of insulation to be removed ..... :		N/A
	- an indication of the suitability to accept rigid conductors only (if any) ..... :		N/A
	Marking for rated current and/or power completed by the word MAX	Max.	P
	Maximum admissible power marking easily discernible until the last plug is connected		P
	Multiway adaptors: maximum admissible power marking not placed on the socket-outlet engagement surface		N/A
	Fused adaptors marked to indicate the presence of a fuse within the adaptor		N/A
	Rewirable fused intermediate adaptors marked to indicate the rated current of the fuse within the intermediate adaptor ..... :	~~on intermediate adaptor / on attached label~~	N/A
	Non-rewirable fused intermediate adaptors permanently marked with the rated current of the fuse appropriate to the attached flexible cable and to associated appliances		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:**		N/A
	- rated current, rated voltage and nature of supply		N/A
	- identification mark of the manufacturer or of the responsible vendor		N/A

IEC 60884-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- length of insulation to be removed, if any		N/A
	- type reference		N/A
	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
	Symbol for the degree of protection (second digit): marked on the outside of its associated enclosure so as to be easily discernible		N/A
8.4	**Plugs and portable socket-outlets: marking specified in 8.1, other than the type reference, easily discernible**		P
	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/A
	Earthing terminals: [earth symbol] ..... :		N/A
	Markings not placed on screws or other easily removable parts		N/A
	Terminals for conductors not forming part of the main function of the socket-outlet:		N/A
	- clearly identified unless their purpose is self-evident, or		N/A
	- indicated in a wiring diagram fixed to the accessory		N/A
	Identification of accessory terminals may be achieved by:		N/A
	- their marking with graphical symbols according to IEC 147 or colours and/or alphanumeric system, or		N/A
	- their physical dimension or relative location		N/A
8.6	**Fixed socket-outlets other than ordinary: marked with the IP symbol visible when the accessory is installed**		N/A
8.7	**Marking durable and easily legible. Test: 15 s with water and 15 s with petroleum spirit**		P
8.8	**Indication of which position or with which special provision the declared IP of flush-type and semi-flush type fixed socket-outlets is ensured**		N/A
	Additional indication for socket-outlets intended only for mounting on certain types of surface		N/A

IEC 60884-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
9	**CHECKING OF DIMENSIONS**		
9.1	**Accessories and surface-type mounting boxes comply with the appropriate standard sheets and corresponding gauges, if any**		P
	Insertion of plugs into fixed or portable socket-outlets ensured by their compliance with the relevant standard sheets		P
	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:**		P
	- 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, not possible		P
	Impossibility of insertion checked by applying a gauge, for 1 min, with a force of:		P
	- 150 N (rated current ≤ 16A);		P
	- 250 N (rated current > 16A)		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at (35 ± 2) °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**		N/A

10	**PROTECTION AGAINST ELECTRIC SHOCK**		
10.1	**Socket-outlets: live parts not accessible**		P
	Live parts of plug portion of adaptors: not accessible when the plug portion of an adaptor is in partial or complete engagement with a socket-outlet		P
	Test with standard test finger shown in figure 2		P

IEC 60884-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	Accessories with elastomeric or thermoplastic material: additional test carried out at 35 °C ± 2 °C with a straight unjointed test finger (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 22: specimens not show deformation		P
10.101	**removal of the fuse and / or fuse carrier shall not result in live parts becoming accessible when the adaptor is in full engagement with socket-outlet**		N/A
10.2	**Accessible parts (with exception of small screws and the like for fixing bases and covers or cover plates): made of insulating material**		P
	Cover or cover plates of fixed socket-outlets: made of metal if the requirements of 10.2.1 or 10.2.2 are fulfilled		N/A
10.2.1	**Metal covers or cover plates 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	**Metal covers or cover plates automatically connected, through a low-resistance connection, to the earth during fixing**		N/A
10.3	**Connection between a pin of an associated plug and a live socket-contact of an adaptor or between a pin of an adaptor and a live socket contact of a socket-outlet not possible while any other current carrying pin is accessible**		P
	Compliance checked by manual test and by means of gauges with tolerances as specified in 9.1		P
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		P

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Clause	Requirement + Test	Result - Remark	Verdict
	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
10.4	**External parts of adaptors made of insulating material**		P
	as specified in the requirements of 10.2.1 or 10.2.2 (IEC 60884-1:2002+A1:2006+A2:2013)		N/A
10.5	**Shuttered socket-outlets portions of adaptors: live parts not accessible, without a plug in engagement, when checked with the gauge shown in figures 9 and 10**		P
	Live contacts automatically screened when the plug is withdrawn		P
	Means cannot easily be operated by anything other than a plug and not depend upon parts which are liable to be lost		P
	Gauge applied to the entry holes corresponding to live contacts with a force up to 1 N shall not touch live parts		P
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °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		P
	After this test: socket-outlet still comply with the requirements of clause 9		P
10.7	**Socket-outlet with increased protection: live parts not accessible**		N/A
	Gauge of figure 4 applied with a force of 1 N on all accessible surfaces shall not touch live parts		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		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

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Clause	Requirement + Test	Result - Remark	Verdict
11.2	**Earthing terminals of rewirable accessories comply with clause 12**		N/A
	Earthing terminals of the same size as the corresponding terminals for the supply conductors		N/A
	Earthing terminals of rewirable accessories: internal		N/A
	Earthing terminals of fixed socket-outlets: fixed to the base or to a part reliably fixed to the base		N/A
	Earthing contacts of fixed socket-outlets:		N/A
	- fixed to the base, or		N/A
	- 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:**		N/A
	- 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**		
	All the test on terminals, with the exception of the test of 12.3 11, made after the test of clause 16		P

IEC 60884-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
12.1	**General**		**P**
12.1.1	**Rewirable intermediate adaptors provided with screw-type terminals .....:**		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		N/A
12.1.2	**Non-rewirable accessories provided with soldered, welded, crimped or equally effective permanent connections .....:**	Soldered and riveted	P
	Screwed or snap-on connections not used		P
	Connections made by crimping a pre-soldered flexible conductor not permitted		P
12.2	**Terminals with screw clamping for external copper conductors**		**N/A**
12.2.1	**Accessories provided with terminals which allows the proper connection of copper conductors as shows in table 3**		N/A
	Rated current (A); Type of accessories ..... :		-
	Type of conductor (rigid / flexible) ..... :		-
	Smallest / largest cross-sectional area (mm^2) ..... :		-
	Diameter of the largest conductor (mm) ..... :		-
	Figure of terminal ..... :		-
	Minimum diameter D (minimum dimensions) of conductor space: required (mm); measured (mm). :		N/A
12.2.2	**Terminals allow the conductor to be connected without special preparation**		N/A
12.2.3	**Terminals have adequate mechanical strength**		N/A
	Screws and nut for clamping the conductors have metric ISO thread or a comparable thread		N/A
	Screws not of soft metal such as zinc or aluminium		N/A
12.2.4	**Terminals resistant to corrosion**		N/A
12.2.5	**Screw-type terminals clamp the conductor(s) without undue damage**		N/A
	Test with apparatus shown in figure 32:		N/A
	- type of conductors ..... :	rigid solid / rigid stranded / flexible	-
	- number of conductors ..... :		-

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Clause	Requirement + Test	Result - Remark	Verdict
	- smallest cross-sectional area (mm²) (table 3); diameter of bushing hole (mm); height H (mm); mass (kg) ..... :		N/A
	- largest cross-sectional area (mm²) (table 3); diameter of bushing hole (mm); height H (mm); mass (kg) ..... :		N/A
	- nominal diameter of thread (mm); torque according to table 6 (Nm) ..... :		-
	During the test: conductor not slip out, no break near clamping unit and no damage		N/A
12.2.6	**Terminals clamp the conductor reliably between metal surfaces**		N/A
	Pull test (1 min):		N/A
	- type of conductors ..... :	rigid solid / rigid stranded / flexible	-
	- number of conductors ..... :		-
	- smallest cross-sectional area (mm²) (table 3); pull (N) ..... :		N/A
	- largest cross-sectional area (mm²) (table 3); pull (N) ..... :		N/A
	- torque (Nm) (2/3 table 6) ..... :		-
	During the test: conductor not move noticeably		N/A
12.2.7	**Terminals designed or placed that the conductor cannot slip out while the clamping screws or nuts are tightened**		N/A
	- largest cross-sectional area (mm²) (table 3) ..... :		-
	- number of wires and nominal diameter of wires (table 5):		N/A
	fixed socket-outlets: rigid solid conductors / rigid stranded conductors ..... :	1 x / 7 x	-
	plugs and portable socket-outlets: flexible conductors ..... :		-
	- terminals intended for looping-in 2 or 3 conductors: permissible number of conductors..... :		-
	- torque (Nm) (2/3 table 6) ..... :		-
	After the test: no wire of the conductor escaped outside the clamping unit		N/A
12.2.8	**Terminals not work loose from their fixing to accessories**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Torque test:		N/A
	- rigid solid copper conductor of the largest cross-sectional area (mm²) (table 3) ..... :		-
	- torque (Nm) (table 6 or appropriate figures 34, 35, 36) ..... :		-
	Screws and nuts tightened and loosened 5 times. During the test: terminals not work loose and show no damage		N/A
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**		N/A
12.2.10	**Earthing terminals: no risk of corrosion**		N/A
	Body of brass or other metal no less resistant to corrosion		N/A
	If the body is a part of a frame or enclosure of aluminium alloy, precautions shall be taken to avoid the risk of corrosion		N/A
12.2.11	**Pillar terminals: distance *g* no less than the value specified in figure 34: required (mm); measured (mm) ..... :**		N/A
	Mantle terminals: distance *g* no less than the value specified in figure 37: 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:**		N/A
	- 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 mm² (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**		N/A

IEC 60884-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	carrying current of materials as specified in 26.5		
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 shall be clear how the connection and disconnection of the conductors is to be made**		N/A
	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 shall not be possible to confuse the opening 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:**		N/A
	- during insertion, operation of clamping means of one of the conductors is independent of operation of that for the other conductor(s);		N/A
	- during disconnection, conductors can be disconnected either at the same time or separately;		N/A
	- each conductor introduced in a separate clamping unit.		N/A
	It shall be possible 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**		N/A
	Test:		N/A
	Connection / disconnection 5 times: rigid solid conductor 2,5 mm^2		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Connection / disconnection 5 times: rigid solid conductor 1,5 mm^2		N/A
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal		N/A
	Connection / disconnection 1 time: rigid stranded conductor 2,5 mm^2		N/A
	Connection / disconnection 1 time: rigid stranded conductor 1,5 mm^2		N/A
	Conductor subjected to a pull of 30 N for 1 min after connection. During application of the pull conductor not come out of the terminal		N/A
	Additional test on terminals intended for both rigid and flexible conductors:		N/A
	Connection / disconnection 5 times: flexible conductor 2,5 mm^2		N/A
	Connection / disconnection 5 times: flexible conductor 1,5 mm^2		N/A
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal		N/A
	Additional test with apparatus shown in figure 32:		N/A
	- type of conductors ..... :	rigid solid / rigid stranded / flexible	-
	- number of conductors ..... :		-
	- 1,5 mm²; diameter of bushing hole 6,5 mm; height H 260 mm; mass 0,4 kg		N/A
	- 2,5 mm²; diameter of bushing hole 9,5 mm; height H 280 mm; mass 0,7 kg		N/A
	During the test: conductors not move 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**		N/A
	Test a) carried out for 1 h connecting rigid solid conductors:		N/A
	- test current (A) (table 10) ..... :		-
	- nominal cross-sectional area (mm^2) ..... :		-

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Clause	Requirement + Test	Result - Remark						Verdict
	- screwless terminal number ..... :	1	2	3	4	5		-
	- voltage drop measured (mV) (requirement: ≤ 15 mV) ..... :							N/A
	Test b) (temperature cycles test) carried out on terminals subjected to Test a):							N/A
	- test current (A) (table 10) ..... :							-
	- cross-sectional area (mm^2) ..... :							-
	- screwless terminal number ..... :	1	2	3	4	5		-
	- voltage drop measured after the 24 cycle (requirement: ≤ 22,5 mV) ..... :							N/A
	- voltage drop measured (mV) after 48^{th} cycle ..... :							N/A
	- voltage drop measured (mV) after 72^{th} cycle ..... :							N/A
	- voltage drop measured (mV) after 96^{th} cycle ..... :							N/A
	- voltage drop measured (mV) after 120^{th} cycle .... :							N/A
	- voltage drop measured (mV) after 144^{th} cycle .... :							N/A
	- voltage drop measured (mV) after 168^{th} cycle .... :							N/A
	- voltage drop measured (mV) after 192^{th} cycle .... :							N/A
	- requirement: ≤ 22,5 mV or 2 times 24^{th} cycle value (mV) ..... :							N/A
	After this test: inspection show no changes							N/A
	Mechanical strength test according 12.3.10:							N/A
	Connection / disconnection 5 times: rigid solid conductor 2,5 mm^2							N/A
	Connection / disconnection 5 times: rigid solid conductor 1,5 mm^2							N/A
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal							N/A
	Connection / disconnection 1 time: rigid stranded conductor 2,5 mm^2							N/A
	Connection / disconnection 1 time: rigid stranded conductor 1,5 mm^2							N/A
	Conductor subjected to a pull of 30 N for 1 min after connection. During application of the pull conductor not come out of the terminal							N/A
	Additional test on terminals intended for both rigid and flexible conductors:							N/A
	Connection / disconnection 5 times: flexible							N/A

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Clause	Requirement + Test	Result - Remark			Verdict
	conductor 2,5 mm²				
	Connection / disconnection 5 times: flexible conductor 1,5 mm²				N/A
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal				N/A
	Additional test with apparatus shown in figure 32:				N/A
	- type of conductors ..... :	rigid solid / rigid stranded / flexible			-
	- number of conductors ..... :				-
	- 1,5 mm²; diameter of bushing hole 6,5 mm; height H 260 mm; mass 0,4 kg				N/A
	- 2,5 mm²; diameter of bushing hole 9,5 mm; height H 280 mm; mass 0,7 kg				N/A
	During the test: conductors not move 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**				N/A
	Deflection test (principle of test apparatus shown in figure 33 a)):				N/A
	- test current (A) (equal rated current) ..... :				-
	Smallest cross-sectional area (mm²) (table 11) .... :				-
	Force (N) (table 12) ..... :				-
	- screwless terminal number ..... :	1	2	3	-
	- starting point (X = deflection original point) ..... :	X	X+10°	X+20°	-
	- voltage drop measured (mV) (1st deflection) ..... :				N/A
	- voltage drop measured (mV) (2nd deflection) ..... :				N/A
	- voltage drop measured (mV) (3rd deflection) ..... :				N/A
	- voltage drop measured (mV) (4th deflection) ..... :				N/A
	- voltage drop measured (mV) (5th deflection) ..... :				N/A
	- voltage drop measured (mV) (6th deflection) ..... :				N/A
	- voltage drop measured (mV) (7th deflection) ..... :				N/A
	- voltage drop measured (mV) (8th deflection) ..... :				N/A

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Clause	Requirement + Test	Result - Remark			Verdict
	- voltage drop measured (mV) (9th deflection) ..... :				N/A
	- voltage drop measured (mV) (10th deflection) ..... :				N/A
	- voltage drop measured (mV) (11th deflection) ..... :				N/A
	- voltage drop measured (mV) (12th deflection) ..... :				N/A
	- requirement: ≤ 25 mV				N/A
	Largest cross-sectional area (mm²) (table 11) ..... :				-
	Force (N) (table 12) ..... :				-
	- screwless terminal number ..... :	1	2	3	-
	- starting point (X = deflection original point) ..... :	X	X+10°	X+20°	-
	- voltage drop measured (mV) (1st deflection) ..... :				N/A
	- voltage drop measured (mV) (2nd deflection) ..... :				N/A
	- voltage drop measured (mV) (3rd deflection) ..... :				N/A
	- voltage drop measured (mV) (4th deflection) ..... :				N/A
	- voltage drop measured (mV) (5th deflection) ..... :				N/A
	- voltage drop measured (mV) (6th deflection) ..... :				N/A
	- voltage drop measured (mV) (7th deflection) ..... :				N/A
	- voltage drop measured (mV) (8th deflection) ..... :				N/A
	- voltage drop measured (mV) (9th deflection) ..... :				N/A
	- voltage drop measured (mV) (10th deflection) ..... :				N/A
	- voltage drop measured (mV) (11th deflection) ..... :				N/A
	- voltage drop measured (mV) (12th deflection) ..... :				N/A
	- requirement: ≤ 25 mV				N/A
13	**CONSTRUCTION OF FIXED SOCKET-OUTLETS**				**N/A**
14	**CONSTRUCTION OF PORTABLE ACCESSORIES**				
14.1	**adaptor cannot be opened by hand or by using a general purpose tool, for example a screwdriver used as such**				P
	exception is made for adaptors with cable outlet and rewirable intermediate adaptors, they can be opened used a general purpose tool				N/A
14.2	**Pins of adaptors: adequate mechanical strength**				**P**

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Clause	Requirement + Test	Result - Remark	Verdict
	Test for pins not solid (made after clause 21): force of 100 N exerted on the pin for 1 min by means of a steel rod Ø 4,8 mm		N/A
	During the application of the force: reduction of the dimension of the pin not exceed 0,15 mm		N/A
	After removal of the rod: dimensions of the pin not changed by more than 0,06 mm		N/A
14.3	**Pins of adaptors:**		**P**
	- locked against rotation, except where rotation is not likely to impair safety or function		P
	- not removable without dismantling the adaptor		P
	- adequately fixed in the body of the adaptor when the plug is wired and assembled as in normal use		P
	Earthing or neutral pins or contacts of adaptors: not possible to replace in an incorrect position		P
14.4	**Earthing contacts, phase contacts and neutral contacts of adaptors:**		**P**
	- locked against rotation		P
	- removable only with the aid of a tool, after dismantling the adaptor		P
14.5	**Socket-contact assemblies: sufficient resiliency**		**P**
14.6	**Pins and socket-contacts: resistant to corrosion and abrasion**		P
14.7	**Enclosures of rewirable accessories: completely enclose terminals and ends of flexible cable.**		N/A
	Construction of rewirable accessories:		N/A
	- conductors can be properly connected		N/A
	- cores not pressed against each other		N/A
	- cores of live conductor not in contact with accessible metal parts		N/A
	- core of earthing conductor not in contact with live parts		N/A
14.8	**Rewirable accessories: terminal screws or nuts cannot become loose and fall out of position and establish an electrical connection between live parts and earthing terminal or metal parts**		N/A
14.9	**Rewirable accessories with earthing contact: ample space for slack of earthing (test)**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Non-rewirable non-moulded-on accessories with earthing contact: current-carrying conductors stressed before the earthing conductor if the flexible cable slips in its anchorage		N/A
14.10	**Terminals of rewirable accessories and terminations of non-rewirable accessories: located and shielded that loose wires not present a risk of electric shock**		N/A
14.10.1	***Rewirable accessories*: test with 6 mm free wire**		N/A
	free wire of a conductor connected to a live terminal not touch any accessible metal part or able to emerge from the enclosure		N/A
	free wire of a conductor connected to an earthing terminal not touch a live part		N/A
14.10.2	***Non-rewirable, non-moulded-on accessories*: test with a free wire of length equivalent to the maximum designed stripping length declared by the manufacturer plus 2 mm**		N/A
	free wire of a conductor connected to a live termination not touch any accessible metal part or reduce creepage and clearance below 1,5 mm to the external surface		N/A
	free wire of a conductor connected to an earth termination not touch any live part		N/A
14.10.3	***Non-rewirable, moulded-on accessories*:**		N/A
	Verification of means to prevent stray wires reducing the minimum distance through insulation to external accessible surface below 1,5 mm		N/A
14.11	**Adaptors with a cable outlet and rewirable intermediate adaptors:**		N/A
	- clear how relief from strain and prevention of twisting is intended to be effected		N/A
	- cord anchorage, or at least part of it, integral with or permanently fixed to one of the component parts of the plug or portable socket-outlet		N/A
	- makeshift methods not used		N/A
	- cord anchorage suitable for the different types of flexible cable which may be connected; screws, if any: not serve to fix any other component		N/A
	- cord anchorages: of insulating material or provided with an insulating lining fixed to the metal parts		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- metal parts of cord anchorages, including clamping screws: insulated from the earthing circuit		N/A
14.12	**Insulating parts which keep live parts in position: reliably fixed together; not possible to dismantle the accessory without the aid of a tool**		P
14.13	**Covers of adaptors: bushes for entry holes for the pins not become detached inadvertently from the inside when the cover is removed**		N/A
14.14	**Screws intended to allow access to interior of the accessory: captive**		N/A
14.15	**Engagement of the plug part of adaptors: no projections other than pins**		P
14.16	**Socket-outlet parts of adaptors not prevented by any projection from the engagement face**		P
14.17	**Accessories other than ordinary: provided with gland(s) or the like**		N/A
	Plugs other than ordinary: adequately enclosed		N/A
	Portable socket-outlets other than ordinary: adequately enclosed without a plug in engagement		N/A
	Lid springs (if any): of corrosion resistant material (bronze or stainless steel)		N/A
14.18	**Portable socket-outlets: means for suspension from a wall or other mounting surfaces not allow access to live parts**		N/A
	No free openings between space intended for suspension means fixed to the wall and live parts		N/A
14.19	**Combinations of plugs and socket-outlets with circuit-breakers or other protective devices comply with relevant standards, if any ……. :**		N/A
14.20	**Portable accessories: not integral part of lampholders**		P
14.21	**Plugs for equipment of class II:**		N/A
	- non-rewirable		N/A
	- if incorporated in a cord set: provided with a connector for equipment of class II		N/A
	- if incorporated in a cord extension set: provided with a portable socket-outlet for equipment of class II		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
14.22	**Components (switches and fuses) incorporated in accessories: comply with the relevant IEC standard**		P
14.23	**adaptor shall not impose undue strain on fixed socket-outlet**		P
	Adaptor is inserted into a fixed socket-outlet; The socket-outlet part of the adaptor is fitted with the relevant plug completed with 1 m of 0,75 mm^2 flexible cable		P
	the socket-outlet is pivoted about a horizontal axis through the axis of the live socket contact at distance of 8mm behind the engagement face of the socket-outlet and parallel to this engagement face.		P
	the addition torque which has to be applied to the socket-outlet in order to maintain the engagement face in the vertical plane not exceed 0,25Nm. During the test, care shall be taken that the flexible cable hang freely	Max. 0,14Nm	P
14.23.1	**Socket-outlet connected to a supply voltage equal to 1,1 times the highest rated voltage of the equipment (V) ..... :**		-
	Temperature rise of the pins after 1 h not exceed 45 K (K) ..... :		N/A
14.23.2	**Additional torque applied to the socket-outlet to maintain the engagement face in the vertical plane not exceed 0,25 Nm (Nm) (adaptor fitted with a relevant plug complete with 1 m of 0,75 mm^2 circular flexible cable to 227 IEC 53, to each socket-outlet portion of the adaptor) .... :**	Max. 0,14Nm	P
14.23.101	**Adaptors withstand lateral strain imposed by equipment likely to be introduced into them**		P
	Test made 4 times with the adaptor turned through 90°, 5 N for 1 min (device shown in fig. 13); test repeated for each socket-outlet portion of the adaptor		P
	During the test: device not come out		P
	After the test:		P
	- no damage		P
	- adaptor complies with clause 22		P

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Clause	Requirement + Test	Result - Remark	Verdict
14.24	**Adaptors: can easily be withdrawn by hand from the relevant socket-outlet**		P
	Gripping surfaces so designed that the adaptor can be withdrawn without having to pull on the flexible cable, if any		P
14.25	**-**		N/A
14.101	**Plug portion of adaptors provided with earthing pins or contacts if any one of the socket-outlet portions is provided with an earthing pin or contact**		P
14.102	**Adaptors for use in polarized socket-outlets: internal connection ensure that plug pins, socket-contacts and terminals, if any, maintain the same polarity at the input and output portions of the adaptor**		N/A
14.103	**Cable considered as a bare conductor if the insulation is not equivalent to the IEC standard and it does not comply with the electric strength test according to 17.2**		N/A
14.104	**Provision made within the body of a fused adaptor for fuse-link complying with IEC 60269-3, IEC 60127-2 or IEC 60127-3 as far as it reasonably applies**		N/A
	Fuse-link mounted between contacts fitted between an adaptor plug pin and the corresponding socket-contact(s)		N/A
	Adaptors for use in polarized system: fuse mounted between the line plug pin and the corresponding line socket-contact(s)		N/A
	Fuse links not fitted in the earthing circuit		N/A
	Fuse-link cannot be left in inadequate contact when the adaptor is assembled		N/A
14.105	**adaptors having a plug part standardized with current of 2,5 A shall be provided with an overcurrent protective device rated 2,5A or less**		N/A
14.106	**Adaptors shall not have the shape or decorated like a toy**		P

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Clause	Requirement + Test	Result - Remark	Verdict
14.107	**Adaptors shall not have any socket-outlet part which permits the insertion of a plug with a higher current rating that the rated current of the plug part of the adaptor,** **unless the adaptor is provided with an overcurrent device rated less than or equal to the rated current of the plug part**		P
15	**INTERLOCKED SOCKET-OUTLET PORTIONS OF ADAPTORS**		
	Socket-outlet portions of adaptors interlocked with a switch:		N/A
	plug cannot be inserted into or completely withdrawn from the adaptor while the socket-contacts are live		N/A
	socket-contacts of the adaptor cannot be made live until a plug is almost completely in engagement		N/A
16	**RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES, AND RESISTANCE TO HUMIDITY**		
16.1	**Resistance to ageing**		**P**
	Accessories are resistant to ageing		P
	For accessories having a lid, the lid is closed during the test		N/A
	adaptors: the plug of the same system having the same rated current as the socket-outlet inserted into the socket-outlet during the test		P
	Accessories subjected to a test in a heating cabinet at (70 ± 2) °C for seven days (168 h)		P
	After the tests, the specimens show:		P
	- 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
	adaptors: contact pressure of the contact assembly checked as specified in sub clause 22.2 with the single-pin gauge		P
16.2	**Protection provided by enclosures**		**P**
	Enclosures provide a degree of protection in accordance with the IP designation of the accessory		P

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Clause	Requirement + Test	Result - Remark	Verdict
16.2.1	**Protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects**		**P**
	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		N/A
	Flush-type and semi-flush type socket-outlets: mounted in an appropriate box according to the manufacturer's instructions		N/A
	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**		**P**
	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**		**P**
	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		N/A
	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**		N/A
	Accessories and their enclosures provide a degree of protection against harmful effects due to ingress of water in accordance with their IP classification		N/A
	Appropriate test performed as specified in IEC 60529 under the following conditions:		N/A
	Flush-type and semi-flush type socket-outlets: fixed in a vertical test wall using an appropriate box according to the manufacturer's instructions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Accessory suitable to be installed on a rough wall: test wall according to figure 15 is used		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
	- 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		N/A
	Plugs tested when in full engagement with:		N/A
	- 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		N/A
16.3	**Resistance to humidity**		**P**
	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:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- two days (48 h) for accessories having IPX0		P
	- seven days (168 h) for accessories having IP>X0		N/A
	After this treatment the specimens show no damage		P
17	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		
17.1.1	**For adaptors: insulation resistance (500 V d.c. for 1 min):**		**P**
	a) between all poles connected together and a metal foil in contact with the outer surface of accessible external parts of insulating material and including external assembly screws ≥ 5 MΩ ..... :	>10MΩ	P
	b) between each pole in turn, and all others connected together ≥ 5 MΩ ..... :	>10MΩ	P
	c) for adaptor with cable outlet and rewirable intermediate adaptors: between any metal part of any cable anchorage, including clamping screws, and the earthing pin or terminal, if any ≥ 5 MΩ ..... :	MΩ	N/A
	e) for adaptor with cable outlet and rewirable intermediate adaptors: between any metal part of the cable anchorage and a metal rod of the maximum diameter of the flexible cable inserted in its place ≥ 5 MΩ ..... :	MΩ	N/A
17.1.2	**-**		**N/A**
17.2	**Electric strength, test voltage (a.c., for 1 min):**		**P**
	a) test voltage (V) ..... :	~~1250 V /~~ 2000 V	P
	b) test voltage (V) ..... :	~~1250 V /~~ 2000 V	P
	c) test voltage (V) ..... :	~~1250 V / 2000 V~~	N/A
	d) test voltage (V) ..... :	~~1250 V / 2000 V~~	N/A
	e) test voltage (V) ..... :	~~1250 V / 2000 V~~	N/A
	During the test no flashover or breakdown		P
18	**OPERATION OF EARTHING CONTACTS**		
	Earthing contacts provide adequate contact pressure and not deteriorate in normal use		P
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
19.101	**adaptors are tested as follows:**		**P**
	Socket-outlets parts 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 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	P
19.102	**adaptors with incorporated components are tested by the following two tests:**		P
	– with a current which is equal to the rated current of the adaptors or the rated current of the component(s), whichever is the lower	See appended table 19.3	P

20	**BREAKING CAPACITY**		
	Accessories shall have adequate breaking capacity		P
	Compliance checked by testing:		P
	- socket-outlet portions of adaptors;		P
	- plug portions of adaptors with pins which are not solid		N/A
	Test conditions:		P
	- 100 strokes; rate of operation .....:	30 ~~(15)~~ strokes per minute	-
	- test voltage (1,1 Vn) .....:	See appended table 20	-
	- test current (1,25 In) (power factor 0,6) .....:	See appended table 20	-
	During the test: no sustained arcing occur		P
	After the test:		P
	- 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**	

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Clause	Requirement + Test	Result - Remark	Verdict
	Accessories shall withstand without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		P
	Compliance checked by testing:		P
	- socket-outlet portions of adaptors;		P
	- plug portion of adaptors with resilient earthing socket-contacts;		P
	- plug portion of adaptors with pins which are not solid		N/A
	Test performed on:		P
	- complete shuttered socket-outlets		P
	- specimens prepared by the manufacturer without shutters (with current flowing). Number of strokes:		N/A
	- specimens with shutters (without current flowing)		N/A
	- complete shuttered socket-outlets with operations made by hand as in normal use		N/A
	Test conditions for socket-outlet portion of adaptor:		P
	- 10000 strokes; rate of operation ..... :	30 ~~(15)~~ strokes per minute	-
	- test voltage Vn (V) ..... :	See appended table 21	-
	- test current (as specified in table 20) (A) (power factor 0,8) ..... :	See appended table 21	-
	Test conditions for plug portion of adaptor:		N/A
	- 2000 strokes; rate of operation ..... :	~~30~~ ~~(15)~~ strokes per minute	-
	- test voltage Vn (V) ..... :	See appended table 21	-
	- test current (as specified in table 20) (A) (power factor 0,8) ..... :	See appended table 21	-
	Test current passed:		P
	- during each insertion and withdrawal of the plug (In ≤ 16A)		P
	- during alternate insertion and withdrawal, the other insertion and withdrawal being made without current flowing (In > 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 shall not show:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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: the following gauges not touch live parts when they remain under the relevant forces:		P
	- gauges of figure 3 applied with a force up to 20 N		P
	- steel gauge of figure 4 applied with a force up to 1 N		P
	Temperature-rise test (requirements of clause 19):		P
	Test current as specified in table 101 passed for 1 h (A) ..... :	See appended table 21	-
	Temperature rise of terminals not exceed 45 K (K) ..... :	See appended table 21	P
	Separate tests made passing the current through:		P
	- the neutral contact, if any, and the adjacent phase contact (K) ..... :		N/A
	- the earthing contact, if any, and the nearest phase contact (K) ..... :	See appended table 21	P
	For adaptors test current applied:		N/A
	- through each separate socket-outlet portion in turn; test current appropriate to the rating of the relevant socket-outlet portion (table 20) (A) ..... :	See appended table 21	N/A
	- through all socket-outlet portions simultaneously; test current appropriate to the rating of the adaptor and divided between the socket-outlet portions (A) ..... :	See appended table 21	N/A
	Electric strength (sub-clause 17.2), test voltage (a.c., for 1 min):		N/A
	a) test voltage (V) ..... :	~~1000 V~~ / 1500 V	P
	b) test voltage (V) ..... :	~~1000 V /~~ 1500 V	P
	c) test voltage (V) ..... :	~~1000 V / 1500 V~~	N/A
	d) test voltage (V) ..... :	~~1000 V / 1500 V~~	N/A
	e) test voltage (V) ..... :	~~1000 V / 1500 V~~	N/A
	During the test: no flashover or breakdown		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Pins of adaptors: test according to 14.2		N/A
	Force exerted measured in side earthing contacts not less than 60 % or 5 N (CEE 7 clause 18) ..... :	12N/ 12N	P
22	**FORCE NECESSARY TO WITHDRAW THE PLUG**		
	Construction of adaptors shall allow the easy insertion and withdrawal of the plug, and prevent the plug from working out of the socket-outlet portion of the adaptor in normal use		P
	Rated current (A) ..... :	16(rating of outlet)	P
	Number of poles ..... :	2P+E	P
22.1	***Verification of the maximum withdrawal force (multi-pin gauge)***		**P**
	- Maximum withdrawal force (N) ..... :	See appended table 22	-
	The plug not remain in the socket-outlet portion of the adaptor		P
22.2	***Verification of the minimum withdrawal force (single-pin gauge)***		**P**
	- Minimum withdrawal force (N) ..... :	See appended table 22	-
	The plug not fall from each individual contact-assembly within 30 s		P
23	FLEXIBLE CABLES AND THEIR CONNECTION		
23.1	Adaptor with cable outlet and intermediate adaptors intended for use with a flexible cable: provided with a cord anchorage such that the conductors are relieved from strain and that their covering is protected from abrasion		N/A
	Sheath of flexible cable clamped within the cord anchorage		N/A
23.2	**Pull and torque test**		N/A
	Non-rewirable accessories:		N/A
	- rating of accessory ..... :		-
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm^2) ..... :		-
	- pull (100 times) (N) ..... :		N/A
	- torque (1 min) as specified in table 18 (Nm) ..... :		N/A
	After the test:		N/A
	Displacement ≤ 2 mm ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	No break in the electrical connections		N/A
	Rewirable accessories:		N/A
	- rating of accessory ..... :		-
	- clamping screws, if any, tightened with a torque equal to 2/3 of that specified in 12.2.8 (Nm) ..... :		-
	- type of flexible cable; number of conductors and smallest nominal cross-sectional area (mm^2) as show in table 17 ..... :		-
	- pull (100 times) (N) ..... :		N/A
	- torque (1 min) as specified in table 18 (Nm) ..... :		N/A
	After the test:		N/A
	Displacement ≤ 2 mm ..... :		N/A
	End of conductors not have moved noticeably in the terminals		N/A
	- type of flexible cable; number of conductors and largest nominal cross-sectional area (mm^2) as show in table 17 ..... :		-
	- pull (100 times) (N) ..... :		N/A
	- torque (1 min) as specified in table 18 (Nm) ..... :		N/A
	After the test:		N/A
	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:		N/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 intermediate adaptors intended for use with a flexible cable provided with a flexible cable complying with IEC 227 or IEC 245**		N/A
	External flexible cables intended for control comply with 14.103		N/A
	Flexible cables have the same number of conductors as there are poles in the plug or socket-outlet		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Conductor connected to the earthing contact: identified by the colour combination green/yellow		N/A
23.4	**Non-rewirable intermediate adaptors with a flexible cable: designed that the flexible cable is protected against excessive bending**		N/A
	Guards shall be of insulating material and fixed in reliable manner		N/A
	Flexing test (10.000 flexings):		N/A
	- type of flexible cable and nominal cross-sectional area (mm^2) ..... :		-
	- test current (A) ..... :		-
	- mass (N) ..... :		-
	During the test: no interruption of the test current and no short-circuit between conductors		N/A
	Voltage drop test: test current (A); voltage drop (≤ 10 mV) ..... :		N/A
	After the test: guard no separated from the body, insulation shows no sign of abrasion or wear, broken strands become no accessible		N/A
24	**MECHANICAL STRENGTH**		
24.1	**Adaptors have adequate mechanical strength**		**P**
24.2	**Adaptors: tumbling barrel test; number of falls .....:**	**~~50~~ / 25**	**P**
	After the test:		P
	No part become detached or loosened;		P
	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;		P
	Pins no turn when a torque of 0,4 Nm is applied for 1 min in each direction (test not carried out where rotation of the pins does not impair safety or function)		P
24.3	**-**		N/A
24.4	**Adaptors (elastomeric or thermoplastic material): impact test, weight 1000 g, height 100 mm (apparatus shown in fig. 21)**		P
	Specimens placed in a refrigerator at –15 °C ± 2 °C for at least 16 h		P

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Clause	Requirement + Test	Result - Remark	Verdict
	After the test: no damage		P
24.5	**Adaptors (elastomeric or thermoplastic material): compression test, 300 N for 1 min, position a) and b) (apparatus shown in fig. 22)**		P
	After the test: no damage		P
24.6	**-**		N/A
24.7	**Pins of plug portions of adaptors 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-outlet portions of adaptors: mechanical test carried out on specimens submitted to the normal operation test according to clause 21**		P
	Force applied for 1 min against the shutter of an entry hole by means of one pin ..... :	40 N ~~/ 75 N~~	-
	Pin not come in contact with live parts		P
	After the test: no damage		P
24.9	**-**		N/A
24.10	**Plug portion of adaptors: pull test to verify the fixation of pins in the body of the adaptor (new specimens)**		P
	Maximum withdrawal force (table 16) applied for 1 min on each pin in turn, after the specimen has been placed at 70 °C for 1 h ..... :	54N	-
	After the test: displacement of pins in the body of the plug ≤ 1 mm ..... :	Max. 0,4mm	P
24.11	-		N/A
24.12	-		N/A
24.13	-		N/A
24.14	-		N/A
24.15	-		N/A
24.16	-		N/A
24.17	-		-
24.18	-		-

24.19	**Shroud of portable socket-outlets: compression test (20 ± 2) N at (25 ± 5) °C by means of the apparatus shown in figure 38**	

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Clause	Requirement + Test	Result - Remark	Verdict
	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**		
25.1	**Fixed and portable accessories: heating cabinet 100 °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: markings still legible		P
25.2	**Parts of insulating material of fixed socket-outlets necessary to retain current-carrying parts and parts of the earthing circuit in position, and parts of the front surface zone of 2 mm width surrounding the phase and neutral pin entry holes: ball-pressure test (1 h, 125 °C)**		P
	After the test: diameter of impression ≤ 2 mm ..... :	See appended table 25.2	P
25.3	**For parts 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)**		P
	Test temperature (°C) ..... :	See appended table 25.3	P
	After the test: diameter of impression ≤ 2 mm ..... :	See appended table 25.3	P
25.4	**Portable accessories: compression test (20 N, 1 h, 80 °C) by means of the apparatus shown in figure 28**		P
	After the test: no damage		P
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 and nuts which transmit contact pressure: in engagement with a metal thread		N/A
	Test:		N/A
	- 10 times for screws in engagement with a thread of insulating material and for screws of insulating material		N/A
	- 5 times for all other cases		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- terminals: screw diameter (mm); torque (Nm); times ..... :		-
	- earthing terminals: screw diameter (mm); torque (Nm); times ..... :		-
	- assembly screws: screw diameter (mm); torque (Nm); times ..... :		-
	- cord anchorage: screw diameter (mm); torque (Nm); times ..... :		-
	- other screws or nuts: diameter (mm); torque (Nm); times ..... :		-
	During the test: no damage impairing the further use of the screwed connections		N/A
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
26.5	**Current-carrying parts of metal having mechanical strength, electrical conductivity and resistance to corrosion adequate:**		P
	- 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;	>59%	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), with thickness of at least:		N/A
	5 µm, service condition ISO no. 1, for ordinary equipment		N/A
	12 µm, service condition ISO no. 2, for splash-proof equipment		N/A
	25 µm, service condition ISO no. 3, for jet-proof equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- steel with electroplated coating of nickel and chromium (ISO 1456), with thickness of at least:		N/A
	20 µm, service condition ISO no. 2, for ordinary equipment		N/A
	30 µm, service condition ISO no. 3, for splash-proof equipment		N/A
	40 µm, service condition ISO no. 4, for jet-proof equipment		N/A
	- steel with electroplated coating of tin (ISO 2093), with thickness of at least:		N/A
	12 µm, service condition ISO no. 2, for ordinary equipment		N/A
	20 µm, service condition ISO no. 3, for splash-proof equipment		N/A
	30 µm, service condition ISO no. 4, for jet-proof equipment		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		N/A
26.6	**Contacts subjected to a sliding action: of metal resistant to corrosion**		P
26.7	**Thread-forming screws and thread-cutting screws not used for the connection of current-carrying parts**		P
	Thread-forming screws and thread-cutting screws used to provide earthing connection: 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 no less than the values shown in table 23**		**P**
	Creepage distances (cr):		*P*
	1) between live parts of different polarity ≥ 4(3) mm ..... :	3,1 mm	P
	2) between live parts and:		P
	- accessible insulating and earthed metal parts	>4 mm	P

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Clause	Requirement + Test	Result - Remark	Verdict
	≥ 3 mm ..... :		
	- parts of earthing circuit ≥ 3 mm ..... :	>4 mm	P
	- metal frames supporting the base of flush-type socket-outlets ≥ 3 mm ..... :		N/A
	- screws or devices for fixing bases, covers or cover-plates of fixed socket-outlets ≥ 3 mm ..... :		N/A
	- external assembly screws, other than screws which are on the engagement face of adaptor and are isolated from the earthing circuit ≥ 3 mm ..... :		N/A
	3) between pins of an adaptor and metal parts connected to them, when fully engaged, and a socket-outlet having accessible unearthed metal parts ≥ 6(4,5) mm ..... :		N/A
	4) between the accessible unearthed metal parts of a socket-outlet and a fully engaged adaptor having pins and metal parts connected to them ≥ 6(4,5) mm ..... :		N/A
	5) between live parts of a socket-outlet portion of an adaptor (without a plug) and its accessible unearthed metal parts ≥ 6(4,5) mm ..... :		N/A
	Clearances (cl):		*P*
	6) between live parts of different polarity ≥ 3 mm . :	3,1 mm	P
	7) between live parts and:		P
	- accessible insulating and earthed metal parts not mentioned under 8 and 9 ≥ 3 mm ..... :	>4 mm	P
	- parts of earthing circuit ≥ 3 mm ..... :	>4 mm	P
	- metal frames supporting the base of flush-type socket-outlets ≥ 3 mm ..... :		N/A
	- screws or devices for fixing bases, covers or cover-plates of fixed socket-outlets ≥ 3 mm ..... :		N/A
	- external assembly screws, other than screws which are on the engagement face of the adaptor and are isolated from the earthing circuit ≥ 3 mm . :		N/A
	8) between live parts and:		N/A
	- exclusively earthed metal boxes ≥ 3 mm ..... :		N/A
	- unearthed metal boxes, without insulating lining ≥ 4,5 mm ..... :		N/A
	9) between live parts and the surfaces on which the base of a socket-outlet for surface mounting is		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	mounted ≥ 6 mm..... :		
	10) between live parts and the bottom of any conductor recess, if any, in the base of a socket-outlet for surface mounting ≥ 3 mm ..... :		N/A
	Distance through insulating sealing compound:		N/A
	11) between live parts covered with at least 2 mm of sealing compound and the surfaces on which the base of a socket-outlet for surface mounting is mounted ≥ 4(3) mm ..... :		N/A
	12) between live parts covered with at least 2 mm of sealing compound and the bottom of any conductor recess, if any, in the base of a socket-outlet for surface mounting ≥ 2,5 mm ..... :		N/A
27.2	**Insulating sealing compound: not protrude above the edge of the cavity in which it is contained**		N/A
27.3	**Ordinary surface-type socket-outlets: no 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***		**P**
28.1.1	***Glow-wire test***		**P**
	For parts of fixed accessories necessary to retain current-carrying parts and parts of the earthing circuit in position: test temperature 850 °C		N/A
	No visible flame and no sustained glowing		N/A
	Flame and glowing extinguish within 30 s ..... :		N/A
	No ignition of the tissue paper		N/A
	For parts of fixed accessories needed to retain the earth terminal in position in a box: test temperature 650 °C		N/A
	No visible flame and no sustained glowing		N/A
	Flame and glowing extinguish within 30 s ..... :		N/A
	No ignition of the tissue paper		N/A
	For parts of portable accessories necessary to retain current-carrying parts and parts of the earthing circuit in position: test temperature 750 °C		P
	No visible flame and no sustained glowing	See appended table 28.1.1	P
	Flame and glowing extinguish within 30 s ..... :		N/A
	No ignition of the tissue paper		P

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Clause	Requirement + Test	Result - Remark	Verdict
	For parts not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though in contact with them: test temperature 650 °C		P
	No visible flame and no sustained glowing	See appended table 28.1.1	P
	Flame and glowing extinguish within 30 s ..... :		N/A
	No ignition of the tissue paper		P
28.1.2	**Plug portion of adaptors with pins provided with insulating sleeves:**		N/A
	Test temperature maintained for 3 h by means of the apparatus shown in figure 40 ..... :	~~120 °C / 180 °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***		N/A
	Parts of insulating material retaining live parts in position of accessories other than ordinary: test voltage 175 V, 50 drops, solution A of IEC 112		N/A
	No flashover or breakdown		N/A
29	**RESISTANCE TO RUSTING**		
	Ferrous parts protected against rusting		P
	No signs of rust after 10 min in carbon tetrachloride, trichloroethane or equivalent degreasing agent, 10 min 10 % solution of ammonium chloride, 10 min in a box with air saturated with moisture and 10 min at 100 °C		P
30	**ADDITIONAL TESTS ON PINS PROVIDED WITH INSULATING SLEEVES**		
30.1	***Pressure test at high temperature***		N/A
	Apparatus shown in figure 29, with the test specimen in position, maintained for 2 h at 200 °C. Force applied through the blade: 2,5 N		N/A
	Thickness of insulation measured: before the test (mm); after the test (mm) ..... :		-
	Thickness within the area of impression ≥ 50 % of the thickness measured before the test: percent value (%) ..... :		N/A
30.2	***Static damp heat test***		N/A
	Set of 3 specimens submitted to two damp heat cycles in accordance with IEC 68-2-30		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	After the test:		N/A
	Insulation resistance and electric strength test (clause 17)		N/A
	Abrasion test (sub-clause 24.7)		N/A
30.3	***Test at low temperature***		N/A
	Set of 3 specimens maintained at –15 °C ± 2 °C for 24 h		N/A
	After the test:		N/A
	Insulation resistance and electric strength test (clause 17)		N/A
	Abrasion test (sub-clause 24.7)		N/A
30.4	***Impact test at low temperature***		N/A
	Specimens maintained at –15 °C ± 2 °C for 24 h subjected to 4 impacts (mass 100 g, height 100 mm) by means of the apparatus shown in figure 30 rotating the specimen through 90° between impacts		N/A
	After the test: no crack of the insulating sleeves		N/A
AA	**Annex AA "Travel adaptors" (*normative*)**		
8	**MARKING**		
8.101	**Additional requirements for travel adaptors**		N/A
	- The manufacturer shall indicate on the adaptor and/or in the documentation accompanying the adaptor that the travel adaptor is for temporary use only and that it shall not be used permanently.		N/A
	- The manufacturer shall indicate on the adaptor and/or in the documentation accompanying the adaptor the types of plugs and socket-outlets according to Figure AA.1 and the countries in which it is intended to be used.		N/A
9	**CHECKING OF DIMENSIONS**		
9.1	**For travel adaptors the plug part and the socket-outlet part shall comply with the national specifications and standard sheets of the countries for which the manufacturer declares compatibility.**	See Annex	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.2	**- Travel adaptors allowing temporary connection of a plug with a socket-outlet having a higher voltage rating are allowed, provided that the manufacturer gives information for the safe use directly on the travel adaptor, e.g. "DOES NOT CONVERT VOLTAGE".**		N/A
10	**PROTECTION AGAINST ELECTRIC SHOCK**		
10.1	**Live parts shall not be accessible when the plug part of an adaptor is in partial or complete engagement with a socket-outlet.**		N/A
	For adaptors, the test finger is applied in every possible position when the adaptor is in partial or complete engagement with a socket-outlet.		N/A
10.3	**It shall not be possible to make contact between a pin of a plug and a live socket contact of an adaptor or between a pin of an adaptor and a live socket contact of a socket-outlet whilst any other current carrying pin is accessible.**		N/A
11	**PROVISION FOR EARTHING**		
11.101	**For earthed configurations, it shall not be possible to engage the current-carrying pins of the travel adaptor in a socket-outlet without the corresponding earth becoming engaged.**		N/A
	The test shall be performed with the travel adaptor pins in all possible positions.		N/A
14	**CONSTRUCTION OF PORTABLE ACCESSORIES**		
14.1	**The socket-outlet part may have one or more socket-outlet type(s), but it shall accommodate only one plug at a time.**		N/A
	The socket-outlet part(s) of travel adaptors shall be provided with shutters.		N/A
	For travel adaptors comprising of several parts, the use of the adaptor shall remain safe for all combinations of parts.		N/A
	Live parts of any separable plug part shall not be accessible when inserted into the relevant Fixed socket-outlet.		N/A
	the plug part of a travel adaptor may have one or several plug type, but only one plug can be electrically connected at a time.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	There shall be no electrical connection between different pin combinations, if any, when one of them is ready for use. This shall additionally be tested with the pin combinations (use and unused, if any) in intermediate positions.		N/A
	Compliance is checked by applying the standard test finger, test probe B of IEC 61032, in every possible position, an electrical indicator with a voltage between 40 V and 50 V being used to show contact with the relevant parts.		N/A
15	**INTERLOCKED SOCKET-OUTLET PARTS OF ADAPTORS**		
	Socket-outlet portions of adaptors interlocked with a switch:		N/A
	plug cannot be inserted into or completely withdrawn from the adaptor while the socket-contacts are live		N/A
	socket-contacts of the adaptor cannot be made live until a plug is almost completely in engagement		N/A
16	**RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES, AND RESISTANCE TO HUMIDITY**		
16.1	**Resistance to ageing**		N/A
	For travel adaptors with movable pins or detachable socket portions, all specimens shall be subjected to a test with 300 cycles of complete movements of the pins which has been selected for the tests of Clause 19, 20 and 21 or of the detachable socket portions.		N/A
20	**BREAKING CAPACITY**		
	- The test voltage shall be 1,1 times the rated voltage of the plug part .....:		N/A
	- the test current shall be 1,25 times the current which is the lowest between the rated current of the plug that can be inserted in the socket outlet part and the rated current of the plug part of the travel adaptor. (power factor 0,6) .....:		N/A
	If more than one type of plug can be engaged into the socket-outlet part, this test shall be performed for the types of plugs on new additional sets of specimens (one set of 3 specimens for each type of plug), chosen according to subclause 5.4, previously submitted to the test of subclause 16.1, and subsequently submitted to the tests of Clause 21.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	In addition to the above tests, an additional set of specimens is required to be tested with all types of plugs. Each plug is inserted and withdrawn from the socket-outlet 50 times (100 strokes) divided by the number of plugs, which may be inserted in that socket-outlet part. Also that set of specimens shall be previously submitted to the test of subclause 16.1, and subsequently submitted to the tests of Clause 21.		N/A
21	**NORMAL OPERATION**		
	The specimens are tested at the rated voltage of the plug part, in a circuit with cosφ=0,8±0,05, with an alternating current as follows:		N/A
	– for travel adaptors without incorporated overcurrent protective device, the test current being the current which is the lowest between the rated current of the plug that can be inserted in the socket outlet part and the rated current of the plug part of the travel adaptor,		N/A
	– for travel adaptors with incorporated overcurrent protective device, the test current being the rated current of the protective device but not higher than the lowest between the rated current of the plug that can be inserted in the socket outlet part and the rated current of the plug part of the travel adaptor.		N/A
	For the additional set of specimens which was tested in Clause 20 with all types of plugs, each plug is inserted and withdrawn from the socket-outlet 5000 times (10000 strokes) divided by the number of plugs, which may be inserted in that socket-outlet part.		N/A
24	**MECHANICAL STRENGTH**		
24.2	**For travel adaptors with movable pins, the test shall be repeated on new set of specimens for all configurations of the plug parts and socket-outlet parts.**		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)**		N/A
	rated current (A) ..... :		**—**
	type of conductors ..... :	**Rigid solid / rigid stranded / flexible**	**—**
	smallest/largest cross-sectional area per table 3 (mm^2) ..... :		**—**
	number of conductors ..... :		**—**
	nominal diameter of thread (mm); torque per table 6 (Nm) ..... :		**—**

Cross-sectional area (mm^2)	Diameter of bushing hole per table 9 (mm)	Height H per table 9 (mm)	Mass (kg)	Remarks

supplementary information:

12.2.6	**TABLE: pull test (screw-type terminals)**		N/A
	rated current (A) ..... :		**—**
	smallest/largest cross-sectional area per table 3 (mm^2) ..... :		**—**
	nominal diameter of thread (mm); torque 2/3 per table 6 (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

supplementary information:

12.2.7	**TABLE: tightening test (screw-type terminals)**		N/A
	rated current (A) ..... :		**—**
	nominal diameter of thread (mm); torque 2/3 per table 6 (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

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Clause	Requirement + Test	Result - Remark	Verdict

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				
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:

12.3.11	**TABLE: electrical and thermal strength test (screwless-type terminals)**		N/A
Test a)	**Test carried out for 1 h connecting rigid solid conductors:**		N/A
	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) ..... :		**—**

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Clause	Requirement + Test	Result - Remark	Verdict

	allowed voltage drop (mV) ..... :				**≤ 22,5 mV or 2 times 24th cycle value (mV)**		—
Screwless terminal number	**1**	**2**	**3**	**4**	**5**	**Remarks**	
voltage drop after 24th cycle							
voltage drop after 48th cycle							
voltage drop after 72nd cycle							
voltage drop after 96th cycle							
voltage drop after 120th cycle							
voltage drop after 144th cycle							
voltage drop after 168th cycle							
voltage drop after 192nd 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**

	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:			N/A
	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)				

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Clause	Requirement + Test	Result - Remark	Verdict

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 1st deflection (mV)							
voltage drop 2nd deflection (mV)							
voltage drop 3rd deflection (mV)							
voltage drop 4th deflection (mV)							
voltage drop 5th deflection (mV)							
voltage drop 6th deflection (mV)							
voltage drop 7th deflection (mV)							
voltage drop 8th deflection (mV)							
voltage drop 9th deflection (mV)							
voltage drop 10th deflection (mV)							
voltage drop 11th deflection (mV)							
voltage drop 12th deflection (mV)							
supplementary information:							

14.22	**TABLE: Components**				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
- Description:					
Supplementary information: See critical components list **[1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.**					

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, the measurement being made with a plug in engagement	>10 MΩ	>5 MΩ

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Clause	Requirement + Test	Result - Remark	Verdict

b)	between each pole in turn and all others, these being connected to the body with a plug in engagement	>10 MΩ	>5 MΩ.
supplementary information:			

17.2	**TABLE: electric strength**		P
	rated voltage (V) .....:	250	—
item per 17.1	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)
	Socket-outlets: electric strength, test voltage (a.c., for 1 min):		
a)	test voltage (V)	2000 V	No
b)	test voltage (V)	2000 V	No

19.1	**TABLE: temperature rise test for socket-outlets parts and plugs parts**						P
	rated current of accessory (A) ..... :			**10A**			**—**
	type of accessory (non-rewirable / rewirable) .... :			**non-rewirable**			**—**
	nominal cross-sectional area per table 15 (mm^2) :			**-**			**—**
	type of conductors (rigid solid / rigid stranded / flexible) ..... :			**-**			**—**
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (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)**
	-	**-**	**L-N**	**11,5**	**Max. 28,9K**	**45K**	**Max. 9,0K**
	-	**-**	**L-E**	**11,5**	**Max. 29,5K**	**45K**	**Max. 9,3K**
supplementary information: **(1) Non-rewirable accessories**							

19.3	**TABLE: temperature rise test for adaptors with incorporated components**		P
	rated current of accessory (A) ..... :	10A	—
	type of accessory (non-rewirable / rewirable) .... :	**non-rewirable**	—
	nominal cross-sectional area per table 15 (mm^2) :	-	—

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Clause	Requirement + Test	Result - Remark	Verdict

	type of conductors (rigid solid / rigid stranded / flexible) ..... :	-	—
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (Nm ..... :	-	—
	Test for Portable socket-outlets parts and plugs parts with incorporated components		P
	Test for adaptor with incorporated components		P

specimen	type of flexible cable (1)	number of conductors and nominal cross-sectional area (mm2) (1)	test circuit (L-L/L-N/L-E)	with a current which is equal to the rated current of the adaptors or the rated current of the component(s), whichever is the lower	measured ΔT (K)	allowed ΔT (K)	ΔT of external parts (25.3)(K) (2)
	-	-	L-N	10	Max. 31,6K	45K	Max. 9,7K
	-	-	L-E	10	Max. 25,2K	45K	Max. 8,5K

supplementary information:
(1) Non-rewirable accessories; (2) Metal parts 30 K ; non-metallic parts 40 K

20	**TABLE: breaking capacity**		**P**
	rating of accessory (A/V) ..... :	**16A / 250V (rating of plug/socket)**	—
	type of accessory (non-rewirable / rewirable) .... :	**Non-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) :	-	—
	type of conductors (rigid solid / rigid stranded / flexible) ..... :	-	—
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (Nm) ..... :	-	—
	rate of operation (strokes per minute) ..... :	**30**	—

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Clause	Requirement + Test	Result - Remark	Verdict

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)							
	4,85	19,0	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) ..... :	10A / 250V~	—
	type of accessory (non-rewirable / rewirable) .... :	Non-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) :	-	—
	type of conductors (rigid solid / rigid stranded / flexible) ..... :	-	—
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (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)							
	4,85	19,0	250	10	-	10000	-	-	P

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Clause	Requirement + Test	Result - Remark	Verdict

	TABLE: test for shuttered socket-outlets								**P**
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**				
	OK				**OK**				**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)**	
	L-N	**10**	**Max. 22,9K**	**45K**	**P**
	L-E	**10**	**Max. 19,5K**	**45K**	**P**
17.2	**TABLE: electric strength**				**P**

specimen	**item per 17.1**	**test voltage applied between:**	**test voltage (V)**	**flashover / breakdown (Yes/No)**
	a)	**between all poles connected together and a metal foil in contact with the outer surface of accessible external parts of insulating material including external assembly screws, the measurements being made with plug(s) in engagement;**	**1500**	**No**
	b)	**between each pole in turn, and all others, these being connected together to a metal foil in contact with the outer surface of accessible external parts of insulating material including external assembly screws with plug(s) in engagement**	**1500**	**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

22	**TABLE: force necessary to withdraw the plug**	**P**

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Clause	Requirement + Test	Result - Remark	Verdict

	Rated current (A) ..... :		**16A (Rating of plug/socket)**		**—**
	Number of poles ..... :		**2P+E**		**—**
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**	
	54N	**N**	**25**	**N**	**P**
22.2	**Verification of the minimum withdrawal force**				**P**
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)**	
	2,0N	**N**	**2,0N**	**N**	**P**
supplementary information:					

23.2	**TABLE: pull and torque test**					N/A
	rating of accessory (A) ..... :					**—**
	type of accessory (non-rewirable / rewirable) .... :					**—**
	smallest/largest cross-sectional area per table 17 (mm^2) (rewirable accessories) ..... :					**—**
	nominal diameter of thread (mm); torque 2/3 per table 6 (Nm) (rewirable accessories) ..... :					**—**
specimen	**type of flexible cable**	**number of conductors and nominal cross-sectional area (mm^2)**	**pull (100 times) (N)**	**torque (1 min) as specified in table 18 (Nm)**	**displacement (mm)**	

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Clause	Requirement + Test	Result - Remark	Verdict

supplementary information:

23.4	**TABLE: flexing test**					N/A
	rated current (A) .....:					**—**
specimen	**type of flexible cable**	**number of conductors and nominal cross-sectional area (mm²)**	**test current (A)**	**mass (N)**		
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)**
Enclosure		**125**	**Max.1,6mm**
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)**
Shutter body		**70**	**Max. 0,9mm**
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**					N/A
threaded part identification		**diameter of thread (mm)**	**column number (1, 2 or 3)**	**applied torque (Nm)**	**times (5/10)**	**no damage**
supplementary information:						

28.1.1	**TABLE: glow-wire test**	**P**

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Clause	Requirement + Test	Result - Remark	Verdict

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)
Enclosure	**PC**	**750**	**N**	**-**	**N**
Shutter body	**PA**	**650**	**N**	**-**	**N**
supplementary information:					

28.2	**TABLE: resistance to tracking**		N/A
	number of drops ..... :		**—**

part under test	material designation	test voltage (V)	flashover / breakdown (Yes/No)
supplementary information:			

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict

GERMANY NATIONAL DIFFERENCES	
Differences according to…….:	DIN VDE 0620-1:2016+A1; DIN VDE 0620-2-1: 2016+A1

8	MARKING		P
8.1	Add after the fourth dashed item:		
	NOTE See GPSG, clause 5 for the type and scope of the information.		P
8.8	Amend the first paragraph to read:		
	Marking shall be durable and if possible not smaller than 3 mm. Clearly readable without visual aids. Test: 15 s with water and 15 s with petroleum spirit.		P
8.9	Additional clause:		
	Portable Multiple socket-outlets and extensions must have the following warnings on the equipment or in the package (Text or pictograms) :		P
	-For portable multiple outlets: - Do not connect after each other (Nicht hintereinander stecken) - Do not cover when in use. (Nicht abgedeckt betreiben)		N/A
	-For portable multiple outlets with functional switch, additionally: - To disconnect Voltage pull the plug. (Spannungsfrei nur bei gezogenem Stecker)		P
	For intermediate adaptors: - Do not connect after each other (Nicht hintereinander stecken)		P
	- Portable multiple outlets and extensions cords shall be provided with information about the intended environment	Nur zur Verwendung in Innenräumen	P
8.10	Additional clause:		
	Units intended for installation shall be marked on the smallest closed selling unit with the note according to Appendix E		N/A
8.11	Additional clause:		
	The installation instructions for the professionals, which are not presumed to be known to the professionals, are required to be added to the smallest sales unit.		N/A

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict
	The name and contact address of the manufacturer or, if not established in the European Economic Area, the name and contact address of the authorized representative or importer shall be indicated on the smallest sales unit.	Information of importer will be added on marking plate or manual or packaging	P
9	CHECKING OF DIMENSIONS		P
9.1	Replace the first paragraph by the following:		
	DIN49406(series),DIN49437, DIN49440-1, DIN49440-2, DIN49440-3, DIN49440-4, DIN49440-6, DIN49441(series), DIN49442, DIN 49443, DIN 49445, DIN49446, DIN 49447, DIN 49448, DIN 49464.	Socket-outlet: DIN 49440-1 Plug: DIN 49441-R2	P
	Add the following before table 2:		
	Plugs and portable socket outlets to the standard sheets in 9.1 shall be tested with the gauges L1 to L9.		P
9.2	Replace the fourth paragraph by the following:		
	Impossibility of insertion checked by applying the gauge L11, for 1 min, with a force of:		P
	- 150 N (rated current ≤ 16A);		P
	- 250 N (rated current > 16A)		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at 35 ± 2 °C		P
9.3	Replace the clause by:		
	Plugs or portable socket outlets, building a part of a product (for example timer, lawn mower mounted plugs, direct plug-in power supplies and so on) shall comply with the dimensions of the standard sheets.		P
	Additional parts that affect the dimensions of the standard sheets (e.g. flat stick in disk) are not allowed.		N/A
10	PROTECTION AGAINST ELECTRIC SHOCK		P
10.3	Replace the first paragraph of the test requirements by the following:		
	Compliance checked by manual test and by means of gauges 10.		N/A
10.5	Add at the end:		
	Shutters shall not interfere the insertion of a plug in an unacceptable way. The opening force of the shutter shall not exceed 30N. Testing is done with the gauges of 19a or 19b. The gauge is to arrange movable		P

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict
10.6	Replace the clause by:		
	Earthing contacts of a portable socket-outlet designed that they cannot be deformed by the insertion of a plug		P
10.6.1	Additional clause:		
	The portable socket-outlet is placed with the outlet contacts in vertical position. Gauge 14 inserted into the portable socket-outlet with a force of 150 N for 1 min. This test is conducted on new samples		P
	After this test: portable socket-outlet still comply with the requirements of clause 9		P
10.6.2	Additional clause:		
	Side PE contacts are loaded with a torque of 100Ncm) 1 min. With the device figure 43. After this tests probe 4 must be possible to insert. This test is conducted on new samples		P
11	PROVISION FOR EARTHING		N/A
11.6	To be deleted		
12	TERMINALS		N/A
12.2.1	Replace table 3		N/A
12.3.12	Replace table 11		N/A
12.4	Additional clause:		
	Crimp connections of non-rewirable plugs and portable socket-outlets shall have sufficient electrical and mechanical properties. Photo documentation from 3 sides shall be made from in total 3 contact points, consisting of side view, top view and perspectively view. The manufacturer has to determine and to document the values of crimping height, withdrawal force or voltage drop (lower and upper limit), these values are the basis of the ongoing production control.		N/A
14	CONSTRUCTION OF PLUGS AND PORTABLE SOCKET-OTLETS		P
14.5	Add the following paragraph after the second dashed item:		
	Insulating material where the contact pressure relies on the insulating material shall have such a charateristic as to ensure a safe and permanent contact in any condition of normal use with regard to shrinking, ageing and abrasion		N/A
14.18	Add the following after the first paragraph:		

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict
	Portable Socket-outlets with means for permanent mounting shall be tested to 28.1.1 (as stationary outlet) and to 24.1		N/A
14.21	Add the following after the first paragraph:		
	- Extension cords must have PE.		N/A
14.24	Replace the second and third paragraph by the following and the note:		
	-The plug has a gripping surface length of at least 55 [mm] in axial direction (cable and cable protection is not counted) or		N/A
	-The plug has a grove that permit a 12±0.1 [mm] ball to enter 2 [mm] from each side or 4 [mm] from one side. or		N/A
	-The plug has a special device for pulling it out, e.g. a hook or ring		N/A
14.26	Add clause:		
	Plugs and socket outlets on adaptors shall comply with DIN 49440 and DIN 49441		P
	Adaptors must be so constructed and the connection of the cord so manufactured that the efficacy of the protective measures is assured.		N/A
	One constructive unit may only accommodate one plug and one socket outlet.		P
	Cords connected to adapters shall be at least 1.40 [m] long.		N/A
	Adaptors shall not impose undue strain on the socket outlet. (0.25 [Nm])	Max. 0,14Nm	P
14.27	Add clause:		
	The length of the cord for multiple socket-outlets shall be at least 1.40 [m]. Length is measured between outsides, if any, of entry bushings for cords.		N/A
	For cords in spiral form the length is measured when stretched under own weight.		N/A
14.28	Add clause:		
	Portable socket-outlets with flap lids for securing the protection degree higher or equal to IPX4 shall be constructed that the correct functioning of the flap lid is ensured during intended use. Compliance on portable socket-outlet with flap lid is checked by inspection and test according to 24.20.		N/A

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict
	In case of closing lids the lid shall be fixed sufficiently to the portable socket-outlet. Compliance on portable socket-outlet with closing lid is checked by inspection and test according to 24.21.		N/A
16	RESISTANCE TO AGEING, TO HARMFUL INGRESS OF WATER AND TO HUMIDITY		P
16.2	Add the following sentence:		N/A
	Portable socket outlets are tested with and without plug (or Gauge DIN 49440-4) in engagement.		N/A
18	OPERATION OF EARTHING CONTACTS		P
	Replace the text of this clause by the following sub-clauses 18.1 and 18.2:		
18.1	Earthing contacts provide adequate contact pressure and not deteriorate in normal use. The contact pressure of the earthing side-contact of portable socket-outlets complying with DIN 49440 and DIN 49442 is tested with suitable test equipment. The equipment in figure 14 is an example of such equipment.		P
	The test equipment fig. 14 is inserted in the portable socket-outlet and secured by the screw C that presses the three screws B against the inner sides of the outlet. The equipment shall be positioned with distance pieces so that the tip of the point F is in contact with the point where the contact to the plug normally is made.		P
	Then the force is measured on each hook that is required to bring the markings in line: [N,N]….	13N / 13N	P
	The test is repeated with the test equipment turned 180 degrees [N,N]……..	13N / 13N	P
	The average force for each contact shall not be less than 5 [N]…….(Average [N,N])	13N / 13N	P
	Other outlets are tested according to clause 19 and 21.		N/A
18.2	Earthing contacts (plug with side earthing contacts) provide adequate contact pressure and not deteriorate in normal use. (test equipment according to figure 15)		—
	The test is conducted with the equipment in figure 15 at 35 ±2 C with a force of 50 [N] applied in 168 [h]. The force must be applied where the contact takes place with the fully inserted plug.		P

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance checked by measuring the change in the contact 30 seconds after the force is withdrawn. The change shall not deviate more than 1 [mm] from the measurement determined in clause 9.	Max. 0,4mm	P
19	TEMPERATURE RISE		P
	Replace Clause 19 including all sub-clauses:		
	Plugs and portable socket-outlets shall be so constructed that they comply with the following temperature rise test.		P
	Testing shall be performed at a draught-free location.		P
	For plugs and portable socket-outlets having three poles or more, the current during the test shall be passed through the phase contacts, where applicable.		N/A
	In addition, separate tests shall be made passing the current through the neutral contact, if any, and the adjacent phase contact and through the earthing contact, if any, and the nearest phase contact.		P
	For the purpose of this test, earthing contacts, irrespective of their number, are considered as one pole		P
	The temperature is determined by means of thermo couples selected and attached in a way that their influence on the temperature to be measured is negligible.		P
	Accessible metal part shall not exceed 40K		N/A
	Accessible non-metal part shall not exceed 60K	Max. 10K	P
	Note: For the purpose of the test of 25.3, the temperature rise of external parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though they are in contact with them, is also determined (K) ..... :		N/A
	Table 15 applies for the assignment of nominal cross-sectional areas of copper conductors		N/A
	- rated current of accessory ..... :		—
	- nominal cross-sectional area (mm2) ..... :		—
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 12.2.8 (Nm) ..... :		—
19.2	Portable socket-outlets		N/A

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict
	Portable socket-outlets provided with cords are tested as delivered. ..... :		N/A
	Rewirable portable socket-outlets without cables are fitted with polyvinyl chloride insulated conductors having a nominal cross-sectional area as shown in table 15.		N/A
	Portable socket-outlets are tested using a test plug according to Figure 16.		N/A
	Non-rewirable plug for cord extension set and multiple socket-outlet are tested with a current according to table 20 for rewirable or non-rewirable portable socket-outlets.	Test current: Measured values on plug:	N/A
19.2.1	Portable socket-outlets without additional function		N/A
	test for 1 h with a alternating current as specified in Table 20	Test current:	N/A
	The temperature rise of the terminals and internal connections shall not exceed 45 K		N/A
	The temperature rise of contact tube shall not exceed 45K (EK1 510-11).		N/A
19.2.2	Portable socket-outlets with additional function		N/A
	1) socket-outlets are tested at rated current for 1 h,	Rated current:	N/A
	The temperature rise of terminals and internal connections for additional function shall not exceed the limits given in appropriate regulations		N/A
	All other terminals and internal connections and sockets contact as well as terminals for external conductor shall not exceed 45K		N/A
	2)socket-outlets are tested with an alternating current as specified in table 20 for 1 h		N/A
	In case of tripping of the integrated protection device the test will be repeated with 0,95 times of the tripping current.		N/A
	In case of cartridge fuse-link according to EN 60127-2 the accessory are tested with 1,5 times of the rated current of the fuse-link. The testing time is 1 h for fuse-links with a rated current up to 6.3 A or 30 min for fuse-links with a rated current exceeding 6.3 A.		N/A
	The temperature rise of all terminals and connections shall not exceed 70K.		N/A
	The temperature rise of contact tube shall not exceed 45K.		N/A
19.3	Plugs		N/A
	Plugs provided with cords are tested as delivered. :		N/A

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict
	Rewirable plugs without cables are fitted with polyvinyl chloride insulated conductors having a nominal cross-sectional area as shown in table 15.		N/A
	The plugs are tested as follows:		N/A
	A suitable test apparatus is mounted on each live pin or protective contact of the plug together with a thermo couple in the lower part. (NOTE A commercially available socket-outlet can be used as a suitable test apparatus.)		N/A
19.3.1	Plugs without additional function		N/A
	test for 1 h with a alternating current as specified in Table 20		N/A
	The temperature rise of clamping units and internal connections shall not exceed 45 K.		N/A
	The temperature rise of contact tube shall not exceed 45K (EK1 510-11).		N/A
19.3.2	Plugs with additional function		N/A
	1) rewirable plugs are tested at rated current for 1 h	Rated current:	N/A
	Non-rewiable plug are tested with an alternating current as specified in table 20 for 1 h	Test current:	N/A
	The temperature rise of terminals and connections points of additional function shall not exceed the values given in relevant standards		N/A
	All other terminals and internal connections and contact as well as terminals for external conductor shall not exceed 45K		N/A
	2)plugs are tested with an alternating current as specified in table 20 for 1 h		N/A
	In case of tripping of the integrated protection device the test will be repeated with 0,95 times of the tripping current.		N/A
	In case of cartridge fuse-link according to EN 60127-2 the accessory are tested with 1,5 times of the rated current of the fuse-link. The testing time is 1 h for fuse-links with a rated current up to 6.3 A or 30 min for fuse-links with a rated current exceeding 6.3 A.		N/A
	The temperature rise of all terminals and connections shall not exceed 70K.		N/A
	The temperature rise of contact tube shall not exceed 45K.		N/A
19.4	Adaptors		P
	Socket-outlets are tested using a test plug according to Figure 16.		P
	Plug part is tested as follows:		P

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict
	A suitable test apparatus is mounted on each live pin or protective contact of the plug together with a thermo couple in the lower part. (NOTE A commercially available socket-outlet can be used as a suitable test apparatus.)		P
19.4.1	Adaptor without additional function (DIN49437 adaptor)		N/A
	test for 1 h with a alternating current as specified in Table 20	Test current:	N/A
	The temperature rise of the terminals and internal connection points shall not exceed 45 K:		N/A
	The temperature rise of contact tube shall not exceed 45K (EK1 510-11).		N/A
19.4.2	adaptor with additional function		P
	1) adaptor are tested at rated current for 1 h,	Rated current: 10A	P
	The temperature rise of terminals and internal connections for additional function shall not exceed the limits given in appropriate regulations		P
	All other terminals and internal connections and sockets contact as well as terminals for external conductor shall not exceed 45K	Max. 31,6K	P
	2)adaptor are tested with an alternating current as specified in table 20 for 1 h		N/A
	In case of tripping of the integrated protection device the test will be repeated with 0,95 times of the tripping current.	11,0A (tripping current: 11,5A)	P
	In case of cartridge fuse-link according to EN 60127-2 the accessory are tested with 1,5 times of the rated current of the fuse-link. The testing time is 1 h for fuse-links with a rated current up to 6.3 A or 30 min for fuse-links with a rated current exceeding 6.3 A.		N/A
	The temperature rise of all terminals and connections shall not exceed 70K.	Max. 35,1K	P
	The temperature rise of contact tube shall not exceed 45K.	Max. 40,3K	P
19.5	Plug-in equipment		N/A
	Plug-in equipment are tested according to appropriate product standards		N/A
	For the testing of the plug see 14.23		N/A

23	FLEXIBLE CABLES AND THEIR CONNECTION		N/A
23.4	The first paragraph is replaced by:		
	Plugs and portable (rewirable and non-rewirable) socket-outlets with connected cord: designed that the flexible cable is protected against excessive bending.		N/A

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict
24	MECHANICAL STRENGTH		P
24.2	Addition before Note 1:		
	Portable socket-outlets with shutters shall be tested again with the shutter test in cl 21 , Para. 16 to 21(no 10.000 cycles) .	1000 falls	P
24.9	The last but one paragraph is replaced by:		
	Portable socket-outlets With IP code higher than IP X0 submitted again to the test as specified in 16.2		N/A
	Portable socket-outlets with shutters shall be tested again with the shutter test in cl 21 without repeating normal operation test		N/A
24.20	Add clause:		
	Portable socket-outlets with self closing lid for securing a degree of protection larger or equal to IP44 the flap lid is to be subjected to a movement test. After assembly as for the intended use the flap lid is to open to at least 5° before the limit stop for 5000-times. Possibly existing springs or other mechanisms for closing the lid shall not get lost to or become useless.		N/A
24.21	Add clause:		
	Portable socket-outlet with a non-self-closing lid a pull test for the captiveness of lid with a force without jerk of 50N for 30s is to be performed in the most unfavourable direction. The lid shall not come loose.		N/A
25	RESISTANCE TO HEAT		P
	Replace table 24		P
26	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		P
26.8	Add clause:		
	If other than screw-type or screwless terminals used for internal connections in plugs and portable socket-outlets, these connections shall be soldered, welded, crimped or equally effective permanent connections.	Soldered, riveted	P
	Screwless terminations, similar like insulating piercing terminations, shall only be used for uninsulated rigid conductors, compliance is checked by the tests according to 12.3 as far as applicable.		N/A

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict
	Screw-type terminals shall not be used for internal connections in non-rewirable portable accessories, compliance is checked by inspection.		P
27	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		P
27.1	Replace table 23		P
31	EMC		P
	No requirements except when the plugs and portable socket-outlets contain electronic parts. Neon lamps are not electronic parts.		P
	Plugs and portable socket-outlets with electronic parts must comply with the relevant EMC requirements. .		P

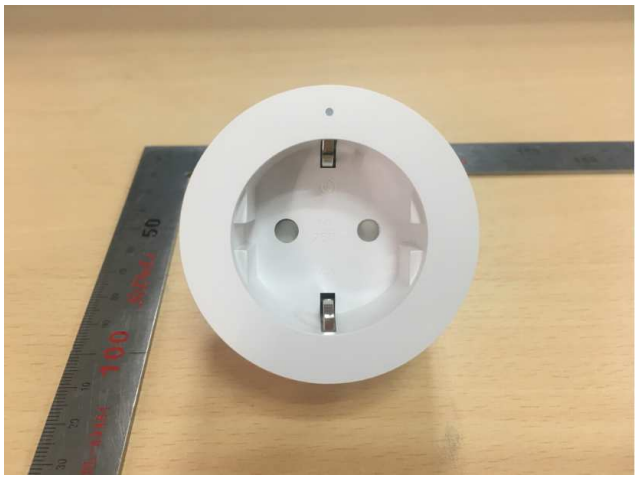
DIN VDE 0620-2-1 **Annex D:** During production required test for the manufacturing of plugs and outlets with crimp connections			
Clause	Requirement + Test	Result - Remark	Verdict
D1	An ability proof of the used tool must be accomplished on at least 50 test samples. At least the following shall be documented: the crimping height; or the withdrawal force; or voltage drop of the crimping connection Testing is performed on the bases of EN 60352-2 With this test no worse values may be obtained than those, which were specified during the type testing in accordance with 12.4.		N/A
D2	During the production the crimping height, the withdrawal force or the voltage drop of the crimp connection is to be tested. The determined values may not be worse than those, which were specified during the type testing in accordance with 12.4. The test is to be conducted on at least 3 test samples for each product at the starting of the manufacturing and at the end of manufacturing of a batch, however at the latest after 8 hours. The results may not be worse than those, which were specified during the type testing in accordance with 12.4. The results are to be documented by the manufacturer and be kept for ten years.		N/A

Appendix 1 : Additional tests according to DIN VDE 0620-1:2016+A1 and DIN VDE 0620-2-1:2016+A1			
Clause	Requirement + Test	Result - Remark	Verdict

Annex E	Units intended for installation shall be marked on the smallest closed selling unit with the note according to Appendix E (referred by clause 8.10)	N/A
	Hinweis! ***Installation nur durch Personen mit einschlägigen elektrotechnischen Kenntnissen und Erfahrungen!*)*** *Durch eine unsachgemäße Installation gefährden **Sie**:* *– Ihr eigenes Leben;* *– das Leben der Nutzer der elektrischen Anlage.* *Mit einer unsachgemäßen Installation riskieren **Sie** schwere Sachschäden, z. B. durch Brand.* *Es droht für **Sie** die persönliche Haftung bei Personen- und Sachschäden.* ***Wenden Sie sich an einen Elektroinstallateur!*** ***) Erforderliche Fachkenntnisse für die Installation*** *Für die Installation sind insbesondere folgende Fachkenntnisse erforderlich:* *– die anzuwendenden „5 Sicherheitsregeln": Freischalten; gegen Wiedereinschalten sichern; Spannungsfreiheit – feststellen; Erden und Kurzschließen; benachbarte, unter Spannung stehende Teile abdecken oder abschranken;* *– Auswahl des geeigneten Werkzeuges, der Messgeräte und ggf. der persönlichen Schutzausrüstung;* *– Auswertung der Messergebnisse;* *– Auswahl des Elektro-Installationsmaterials zur Sicherstellung der Abschaltbedingungen;* *– IP-Schutzarten;* *– Einbau des Elektroinstallationsmaterials;* *– Art des Versorgungsnetzes (TN-System, IT-System, TT-System) und die daraus folgenden Anschlussbedingungen* *– (klassische Nullung, Schutzerdung, erforderliche Zusatzmaßnahmen etc.).* **Reference!** **Installation only by persons with relevant electrotechnical knowledge and experiences!*)** By an inappropriate installation **you** endanger - your own life; - the life of the users of the electrical system. With an inappropriate installation you risk heavy damages to property, e.g. by fire. The personal adhesion threatens with damages to property and person for **you**. **Contact an Electrician! *)** ***)Necessary expertise for the installation** For the installation in particular the following expertise is necessary: - The appropriate "5 safety rules" : De-energize; secure against restarting; determine De-energizing; Grounding and short circuiting; cover energized neighbouring parts or provide it with barriers; - Selection of the suitable tool, the measuring instruments and if necessary the personal protection equipment; - Evaluation of the measurement results; - Selection of the electricity installation material for the securing of the switching off conditions; - IP enclosures; - Installation of the electrical installation material; - Kind of the supply network (TN-system, IT-system, TT-system) and the electrical operating conditions following from it (classical protective grounding, protective grounding, necessary additional measures etc.)	N/A

Prüfbericht-Nr.: *Test Report No.*:	**50283429 001 Attachment 2**	**Auftrags-Nr.:** *Order No.*:	244152828	Seite 1 von 58 *Page 1 of 58*
Kunden-Referenz-Nr.: *Client Reference No.*:	N/A	**Auftragsdatum:** *Order date*:	24.06.2019	
Auftraggeber: *Client*:	Lumi United Technology Co., Ltd / F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China			
Prüfgegenstand: *Test item*:	Smart Plug			
Bezeichnung / Typ-Nr.: *Identification / Type No.*:	SP-EUC01			
Auftrags-Inhalt: *Order content*:	Type test			
Prüfgrundlage: *Test specification*:	NP 1260-1:2016			

Wareneingangsdatum: *Date of receipt*:	24.06.2019
Prüfmuster-Nr.: *Test sample No.*:	A000951316 001-030
Prüfzeitraum: *Testing period*:	24.06.2019 – 06.08.2019
Ort der Prüfung: *Place of testing*:	TÜV Rheinland (Shanghai) Co., Ltd.
Prüflaboratorium: *Testing laboratory*:	TÜV Rheinland (Shanghai) Co., Ltd.
Prüfergebnis*: *Test result**:	Pass



geprüft von / *tested by*:

04.09.2019	Doom Zhu / PE	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by*:

04.09.2019	Yi Zeng / TC	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*:
This report was created for type test of above mentioned product.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

V04

Test Report issued under the responsibility of:

TÜVRheinland®
Precisely Right.

TEST REPORT
NP 1260-1

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

Report Number. :	50283429 001 Attachment 2
Date of issue :	See cover page
Total number of pages :	See cover page
Name of Testing Laboratory preparing the Report :	TÜV Rheinland (Shanghai) Co., Ltd.
Applicant's name :	Lumi United Technology Co., Ltd
Address :	F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China
Test specification:	
Standard :	NP 1260-1:2016 used in conjunction with IEC 60884-2-5:2017
Test procedure :	Type test
Non-standard test method :	N/A
Test Report Form No. :	NP 1260-1_Ed.1.0 for adaptor
Test Report Form(s) Originator :	TÜV Rheinland
Master TRF :	Dated 2019-04

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description ..... :	Smart Plug		
Trade Mark ..... :	Aqara		
Manufacturer ..... :	Same as applicant		
Model/Type reference ..... :	SP-EUC01		
Ratings ..... :	250VAC 10A 50/60Hz		
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):			
☒	**Testing Laboratory:**	TÜV Rheinland (Shanghai) Co., Ltd	
Testing location/ address ..... :		No.177,Lane 777,West Guangzhong Road, Zhabei District, Shanghai 200072, P.R. China	
Tested by (name, function, signature) ..... :		See cover page	
Approved by (name, function, signature) ... :		See cover page	
☐	**Testing procedure: CTF Stage 1:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature) ... :			
☐	**Testing procedure: CTF Stage 2:**		
Testing location/ address ..... :			
Tested by (name + signature) ..... :			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature) ... :			
☐	**Testing procedure: CTF Stage 3:**		
☐	**Testing procedure: CTF Stage 4:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Witnessed by (name, function, signature) . :			
Approved by (name, function, signature) ... :			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment): N/A	
Summary of testing:	
Tests performed (name of test and test clause): All applicable tests were performed. This report was created for type test for plug and socket portion of remote controlled adaptor, it should be used in conjunction with test report No. 50283429 001 for switch part.	**Testing location:** TÜV Rheinland (Shanghai) Co., Ltd No.177,Lane 777,West Guangzhong Road, Zhabei District, Shanghai 200072, P.R. China
Summary of compliance with National Differences (List of countries addressed): N/A	

Copy of marking plate:

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.

On back view:

On side view:

The following manufacturer info is indicated on the manual:

Lumi United Technology Co., Ltd

F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China

Test item particulars.....:	See page 7
Classification of installation and use.....:	Portable type
Supply Connection.....:	Direct plug-in
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 .....:	See cover page
Date (s) of performance of tests.....:	See cover page

General remarks:

"(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 IECEE 02:

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).....:	SUNWODA Electronic Co., Ltd. Sixth Branch Northeast of Intersection of Keyu Road, and Tongguan Road, Gongming Street, Guangming New District , Shenzhen City , Guangdong Province, P.R. China

General product information and other remarks:

Remote controlled adaptor, 10A 250VAC 50/60Hz, Max. 2300W, IP20, with NP 1260-2 standard sheet IX plug and standard sheet III shuttered outlet, with solid plug pins, with an electronic switch which can be either switched on/off by integrated button or be remote controlled through App.

Test item particulars:		
Standard Sheet	:	Plug: NP1620-2 Standard sheet IX Socket: NP1260-2 Standard sheet III
Rated current (A) and/or power (W)	:	16A (rating of plug and socket)
Rated voltage (V)	:	250V~ (rating of plug and socket)
Degree of protection against harmful ingress of water	:	ordinary / ~~splash-proof (IPX4) / jet-proof (IPX5)~~
Provision for earthing	:	~~without earthing contact~~ / with earthing contact
Method of connecting the cable	:	~~rewirable intermediate adaptor / non-rewirable intermediate adaptor~~
Type of cable	:	N/A
Nominal cross-sectional areas (mm²)	:	N/A
Type of terminals	:	~~screw-type / screwless (rigid) / screwless (rigid and flexible)~~
Type of connections	:	soldered / ~~welded~~ /~~ crimped~~ / other: riveted
Socket-outlets:		
Degree of protection against electric shock	:	normal protection /~~ increased protection~~
Existence of enclosures	:	~~unenclosed~~ / enclosed
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~~
Method of installation	:	~~design A / design B~~
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 object	:	See cover page
Date (s) of performance of tests	:	See cover page

General remarks:

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

The test results presented in this report relate only to the object(s) 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 or ☐ point is used as the decimal separator.

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict
8	**MARKING**		
8.1	**Accessories marked with:**		**P**
	- rated current (A) and/or power (W) ..... :	10A / 2300W	P
	- rated voltage (V) ..... :	250	P
	- symbol for nature of supply..... :	AC	P
	- manufacturer's or responsible vendor's name..... :	Aqara	P
	- type reference ..... :	SP-EUC01	P
	- symbol for degree of protection (first digit) ..... :	IP2X	N/A
	- symbol for degree of protection (second digit) .... :	IPX0	N/A
	Socket-outlets with screwless terminals marked with:		N/A
	- the length of insulation to be removed ..... :		N/A
	- an indication of the suitability to accept rigid conductors only (if any) ..... :		N/A
	Marking for rated current and/or power completed by the word MAX	Max.	P
	Maximum admissible power marking easily discernible until the last plug is connected		P
	Multiway adaptors: maximum admissible power marking not placed on the socket-outlet engagement surface		N/A
	Fused adaptors marked to indicate the presence of a fuse within the adaptor		N/A
	Rewirable fused intermediate adaptors marked to indicate the rated current of the fuse within the intermediate adaptor ..... :	~~on intermediate adaptor / on attached label~~	N/A
	Non-rewirable fused intermediate adaptors permanently marked with the rated current of the fuse appropriate to the attached flexible cable and to associated appliances		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:**		N/A
	- rated current, rated voltage and nature of supply		N/A
	- identification mark of the manufacturer or of the responsible vendor		N/A

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- length of insulation to be removed, if any		N/A
	- type reference		N/A
	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
	Symbol for the degree of protection (second digit): marked on the outside of its associated enclosure so as to be easily discernible		N/A
8.4	**Plugs and portable socket-outlets: marking specified in 8.1, other than the type reference, easily discernible**		P
	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/A
	Earthing terminals: [earth symbol] ..... :		N/A
	Markings not placed on screws or other easily removable parts		N/A
	Terminals for conductors not forming part of the main function of the socket-outlet:		N/A
	- clearly identified unless their purpose is self-evident, or		N/A
	- indicated in a wiring diagram fixed to the accessory		N/A
	Identification of accessory terminals may be achieved by:		N/A
	- their marking with graphical symbols according to IEC 147 or colours and/or alphanumeric system, or		N/A
	- their physical dimension or relative location		N/A
8.6	**Fixed socket-outlets other than ordinary: marked with the IP symbol visible when the accessory is installed**		N/A
8.7	**Marking durable and easily legible. Test: 15 s with water and 15 s with petroleum spirit**		P
8.8	**Indication of which position or with which special provision the declared IP of flush-type and semi-flush type fixed socket-outlets is ensured**		N/A
	Additional indication for socket-outlets intended only for mounting on certain types of surface		N/A

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict
9	**CHECKING OF DIMENSIONS**		
9.1	**Accessories and surface-type mounting boxes comply with the appropriate standard sheets and corresponding gauges, if any**		P
	Insertion of plugs into fixed or portable socket-outlets ensured by their compliance with the relevant standard sheets		P
	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:**		P
	- 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, not possible		P
	Impossibility of insertion checked by applying a gauge, for 1 min, with a force of:		P
	- 150 N (rated current ≤ 16A);		P
	- 250 N (rated current > 16A)		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at (35 ± 2) °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**		N/A
10	**PROTECTION AGAINST ELECTRIC SHOCK**		
10.1	**Socket-outlets: live parts not accessible**		P
	Live parts of plug portion of adaptors: not accessible when the plug portion of an adaptor is in partial or complete engagement with a socket-outlet		P
	Test with standard test finger shown in figure 2		P

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Accessories with elastomeric or thermoplastic material: additional test carried out at 35 °C ± 2 °C with a straight unjointed test finger (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 22: specimens not show deformation		P
10.101	**removal of the fuse and / or fuse carrier shall not result in live parts becoming accessible when the adaptor is in full engagement with socket-outlet**		N/A
10.2	**Accessible parts (with exception of small screws and the like for fixing bases and covers or cover plates): made of insulating material**		P
	Cover or cover plates of fixed socket-outlets: made of metal if the requirements of 10.2.1 or 10.2.2 are fulfilled		N/A
10.2.1	**Metal covers or cover plates 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	**Metal covers or cover plates automatically connected, through a low-resistance connection, to the earth during fixing**		N/A
10.3	**Connection between a pin of an associated plug and a live socket-contact of an adaptor or between a pin of an adaptor and a live socket contact of a socket-outlet not possible while any other current carrying pin is accessible**		P
	Compliance checked by manual test and by means of gauges with tolerances as specified in 9.1		P
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		P

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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
10.4	**External parts of adaptors made of insulating material**		P
	as specified in the requirements of 10.2.1 or 10.2.2 (IEC 60884-1:2002+A1:2006+A2:2013)		N/A
10.5	**Shuttered socket-outlets portions of adaptors: live parts not accessible, without a plug in engagement, when checked with the gauge shown in figures 9 and 10**		P
	Live contacts automatically screened when the plug is withdrawn		P
	Means cannot easily be operated by anything other than a plug and not depend upon parts which are liable to be lost		P
	Gauge applied to the entry holes corresponding to live contacts with a force up to 1 N shall not touch live parts		P
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °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		P
	After this test: socket-outlet still comply with the requirements of clause 9		P
10.7	**Socket-outlet with increased protection: live parts not accessible**		N/A
	Gauge of figure 4 applied with a force of 1 N on all accessible surfaces shall not touch live parts		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		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**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Earthing terminals of the same size as the corresponding terminals for the supply conductors		N/A
	Earthing terminals of rewirable accessories: internal		N/A
	Earthing terminals of fixed socket-outlets: fixed to the base or to a part reliably fixed to the base		N/A
	Earthing contacts of fixed socket-outlets:		N/A
	- fixed to the base, or		N/A
	- 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:**		N/A
	- 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**		
	All the test on terminals, with the exception of the test of 12.3 11, made after the test of clause 16		P
12.1	**General**		**P**
12.1.1	**Rewirable intermediate adaptors provided with**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	screw-type terminals .....:		
	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		N/A
12.1.2	**Non-rewirable accessories provided with soldered, welded, crimped or equally effective permanent connections .....:**	Soldered and riveted	P
	Screwed or snap-on connections not used		P
	Connections made by crimping a pre-soldered flexible conductor not permitted		P
12.2	**Terminals with screw clamping for external copper conductors**		**N/A**
12.2.1	**Accessories provided with terminals which allows the proper connection of copper conductors as shows in table 3**		N/A
	Rated current (A); Type of accessories ..... :		-
	Type of conductor (rigid / flexible) ..... :		-
	Smallest / largest cross-sectional area (mm^2) ..... :		-
	Diameter of the largest conductor (mm) ..... :		-
	Figure of terminal ..... :		-
	Minimum diameter D (minimum dimensions) of conductor space: required (mm); measured (mm). :		N/A
12.2.2	**Terminals allow the conductor to be connected without special preparation**		N/A
12.2.3	**Terminals have adequate mechanical strength**		N/A
	Screws and nut for clamping the conductors have metric ISO thread or a comparable thread		N/A
	Screws not of soft metal such as zinc or aluminium		N/A
12.2.4	**Terminals resistant to corrosion**		N/A
12.2.5	**Screw-type terminals clamp the conductor(s) without undue damage**		N/A
	Test with apparatus shown in figure 32:		N/A
	- type of conductors ..... :	rigid solid / rigid stranded / flexible	-
	- number of conductors ..... :		-
	- smallest cross-sectional area (mm^2) (table 3); diameter of bushing hole (mm); height H (mm);		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	mass (kg) ..... :		
	- largest cross-sectional area (mm²) (table 3); diameter of bushing hole (mm); height H (mm); mass (kg) ..... :		N/A
	- nominal diameter of thread (mm); torque according to table 6 (Nm) ..... :		-
	During the test: conductor not slip out, no break near clamping unit and no damage		N/A
12.2.6	**Terminals clamp the conductor reliably between metal surfaces**		N/A
	Pull test (1 min):		N/A
	- type of conductors ..... :	rigid solid / rigid stranded / flexible	-
	- number of conductors ..... :		-
	- smallest cross-sectional area (mm²) (table 3); pull (N) ..... :		N/A
	- largest cross-sectional area (mm²) (table 3); pull (N) ..... :		N/A
	- torque (Nm) (2/3 table 6) ..... :		-
	During the test: conductor not move noticeably		N/A
12.2.7	**Terminals designed or placed that the conductor cannot slip out while the clamping screws or nuts are tightened**		N/A
	- largest cross-sectional area (mm²) (table 3) ..... :		-
	- number of wires and nominal diameter of wires (table 5):		N/A
	fixed socket-outlets: rigid solid conductors / rigid stranded conductors ..... :	1 x / 7 x	-
	plugs and portable socket-outlets: flexible conductors ..... :		-
	- terminals intended for looping-in 2 or 3 conductors: permissible number of conductors..... :		-
	- torque (Nm) (2/3 table 6) ..... :		-
	After the test: no wire of the conductor escaped outside the clamping unit		N/A
12.2.8	**Terminals not work loose from their fixing to accessories**		N/A
	Torque test:		N/A
	- rigid solid copper conductor of the largest cross-		-

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Clause	Requirement + Test	Result - Remark	Verdict
	sectional area (mm²) (table 3) ..... :		
	- torque (Nm) (table 6 or appropriate figures 34, 35, 36) ..... :		-
	Screws and nuts tightened and loosened 5 times. During the test: terminals not work loose and show no damage		N/A
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**		N/A
12.2.10	**Earthing terminals: no risk of corrosion**		N/A
	Body of brass or other metal no less resistant to corrosion		N/A
	If the body is a part of a frame or enclosure of aluminium alloy, precautions shall be taken to avoid the risk of corrosion		N/A
12.2.11	**Pillar terminals: distance *g* no less than the value specified in figure 34: required (mm); measured (mm) ..... :**		N/A
	Mantle terminals: distance *g* no less than the value specified in figure 37: 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:**		N/A
	- 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 mm² (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**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	damage to the conductor		
	Conductor clamped between metal surfaces		N/A
12.3.6	**It shall be clear how the connection and disconnection of the conductors is to be made**		N/A
	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 shall not be possible to confuse the opening 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:**		N/A
	- during insertion, operation of clamping means of one of the conductors is independent of operation of that for the other conductor(s);		N/A
	- during disconnection, conductors can be disconnected either at the same time or separately;		N/A
	- each conductor introduced in a separate clamping unit.		N/A
	It shall be possible 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**		N/A
	Test:		N/A
	Connection / disconnection 5 times: rigid solid conductor 2,5 mm^2		N/A
	Connection / disconnection 5 times: rigid solid conductor 1,5 mm^2		N/A
	Conductor subjected to a pull of 30 N for 1 min after		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	each connection. During application of the pull conductor not come out of the terminal		
	Connection / disconnection 1 time: rigid stranded conductor 2,5 mm²		N/A
	Connection / disconnection 1 time: rigid stranded conductor 1,5 mm²		N/A
	Conductor subjected to a pull of 30 N for 1 min after connection. During application of the pull conductor not come out of the terminal		N/A
	Additional test on terminals intended for both rigid and flexible conductors:		N/A
	Connection / disconnection 5 times: flexible conductor 2,5 mm²		N/A
	Connection / disconnection 5 times: flexible conductor 1,5 mm²		N/A
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal		N/A
	Additional test with apparatus shown in figure 32:		N/A
	- type of conductors ..... :	rigid solid / rigid stranded / flexible	-
	- number of conductors ..... :		-
	- 1,5 mm²; diameter of bushing hole 6,5 mm; height H 260 mm; mass 0,4 kg		N/A
	- 2,5 mm²; diameter of bushing hole 9,5 mm; height H 280 mm; mass 0,7 kg		N/A
	During the test: conductors not move 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**		N/A
	Test a) carried out for 1 h connecting rigid solid conductors:		N/A
	- test current (A) (table 10) ..... :		-
	- nominal cross-sectional area (mm²) ..... :		-
	- screwless terminal number ..... :	1 2 3 4 5	-
	- voltage drop measured (mV) (requirement: ≤ 15 mV) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	Test b) (temperature cycles test) carried out on terminals subjected to Test a):							N/A
	- test current (A) (table 10) ..... :							-
	- cross-sectional area (mm^2) ..... :							-
	- screwless terminal number ..... :	1	2	3	4	5		-
	- voltage drop measured after the 24 cycle (requirement: ≤ 22,5 mV) ..... :							N/A
	- voltage drop measured (mV) after 48th cycle ..... :							N/A
	- voltage drop measured (mV) after 72th cycle ..... :							N/A
	- voltage drop measured (mV) after 96th cycle ..... :							N/A
	- voltage drop measured (mV) after 120th cycle .... :							N/A
	- voltage drop measured (mV) after 144th cycle .... :							N/A
	- voltage drop measured (mV) after 168th cycle .... :							N/A
	- voltage drop measured (mV) after 192th cycle .... :							N/A
	- requirement: ≤ 22,5 mV or 2 times 24th cycle value (mV) ..... :							N/A
	After this test: inspection show no changes							N/A
	Mechanical strength test according 12.3.10:							N/A
	Connection / disconnection 5 times: rigid solid conductor 2,5 mm^2							N/A
	Connection / disconnection 5 times: rigid solid conductor 1,5 mm^2							N/A
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal							N/A
	Connection / disconnection 1 time: rigid stranded conductor 2,5 mm^2							N/A
	Connection / disconnection 1 time: rigid stranded conductor 1,5 mm^2							N/A
	Conductor subjected to a pull of 30 N for 1 min after connection. During application of the pull conductor not come out of the terminal							N/A
	Additional test on terminals intended for both rigid and flexible conductors:							N/A
	Connection / disconnection 5 times: flexible conductor 2,5 mm^2							N/A
	Connection / disconnection 5 times: flexible conductor 1,5 mm^2							N/A

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Clause	Requirement + Test	Result - Remark			Verdict
	Conductor subjected to a pull of 30 N for 1 min after each connection. During application of the pull conductor not come out of the terminal				N/A
	Additional test with apparatus shown in figure 32:				N/A
	- type of conductors ..... :	rigid solid / rigid stranded / flexible			-
	- number of conductors ..... :				-
	- 1,5 mm²; diameter of bushing hole 6,5 mm; height H 260 mm; mass 0,4 kg				N/A
	- 2,5 mm²; diameter of bushing hole 9,5 mm; height H 280 mm; mass 0,7 kg				N/A
	During the test: conductors not move 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**				N/A
	Deflection test (principle of test apparatus shown in figure 33 a)):				N/A
	- test current (A) (equal rated current) ..... :				-
	Smallest cross-sectional area (mm²) (table 11) .... :				-
	Force (N) (table 12) ..... :				-
	- screwless terminal number ..... :	1	2	3	-
	- starting point (X = deflection original point) ..... :	X	X+10°	X+20°	-
	- voltage drop measured (mV) (1st deflection) ..... :				N/A
	- voltage drop measured (mV) (2nd deflection) ..... :				N/A
	- voltage drop measured (mV) (3rd deflection) ..... :				N/A
	- voltage drop measured (mV) (4th deflection) ..... :				N/A
	- voltage drop measured (mV) (5th deflection) ..... :				N/A
	- voltage drop measured (mV) (6th deflection) ..... :				N/A
	- voltage drop measured (mV) (7th deflection) ..... :				N/A
	- voltage drop measured (mV) (8th deflection) ..... :				N/A
	- voltage drop measured (mV) (9th deflection) ..... :				N/A
	- voltage drop measured (mV) (10th deflection) ..... :				N/A
	- voltage drop measured (mV) (11th deflection) ..... :				N/A

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Clause	Requirement + Test	Result - Remark			Verdict
	- voltage drop measured (mV) (12th deflection) ..... :				N/A
	- requirement: ≤ 25 mV				N/A
	Largest cross-sectional area (mm²) (table 11) ..... :				-
	Force (N) (table 12) ..... :				-
	- screwless terminal number ..... :	1	2	3	-
	- starting point (X = deflection original point) ..... :	X	X+10°	X+20°	-
	- voltage drop measured (mV) (1st deflection) ..... :				N/A
	- voltage drop measured (mV) (2nd deflection) ..... :				N/A
	- voltage drop measured (mV) (3rd deflection) ..... :				N/A
	- voltage drop measured (mV) (4th deflection) ..... :				N/A
	- voltage drop measured (mV) (5th deflection) ..... :				N/A
	- voltage drop measured (mV) (6th deflection) ..... :				N/A
	- voltage drop measured (mV) (7th deflection) ..... :				N/A
	- voltage drop measured (mV) (8th deflection) ..... :				N/A
	- voltage drop measured (mV) (9th deflection) ..... :				N/A
	- voltage drop measured (mV) (10th deflection) ..... :				N/A
	- voltage drop measured (mV) (11th deflection) ..... :				N/A
	- voltage drop measured (mV) (12th deflection) ..... :				N/A
	- requirement: ≤ 25 mV				N/A
13	**CONSTRUCTION OF FIXED SOCKET-OUTLETS**				**N/A**
14	**CONSTRUCTION OF PORTABLE ACCESSORIES**				
14.1	**adaptor cannot be opened by hand or by using a general purpose tool, for example a screwdriver used as such**				P
	exception is made for adaptors with cable outlet and rewirable intermediate adaptors, they can be opened used a general purpose tool				N/A
14.2	**Pins of adaptors: adequate mechanical strength**				**P**
	Test for pins not solid (made after clause 21): force of 100 N exerted on the pin for 1 min by means of a steel rod Ø 4,8 mm				N/A
	During the application of the force: reduction of the dimension of the pin not exceed 0,15 mm				N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	After removal of the rod: dimensions of the pin not changed by more than 0,06 mm		N/A
14.3	**Pins of adaptors:**		**P**
	- locked against rotation, except where rotation is not likely to impair safety or function		P
	- not removable without dismantling the adaptor		P
	- adequately fixed in the body of the adaptor when the plug is wired and assembled as in normal use		P
	Earthing or neutral pins or contacts of adaptors: not possible to replace in an incorrect position		P
14.4	**Earthing contacts, phase contacts and neutral contacts of adaptors:**		**P**
	- locked against rotation		P
	- removable only with the aid of a tool, after dismantling the adaptor		P
14.5	**Socket-contact assemblies: sufficient resiliency**		**P**
14.6	**Pins and socket-contacts: resistant to corrosion and abrasion**		P
14.7	**Enclosures of rewirable accessories: completely enclose terminals and ends of flexible cable.**		N/A
	Construction of rewirable accessories:		N/A
	- conductors can be properly connected		N/A
	- cores not pressed against each other		N/A
	- cores of live conductor not in contact with accessible metal parts		N/A
	- core of earthing conductor not in contact with live parts		N/A
14.8	**Rewirable accessories: terminal screws or nuts cannot become loose and fall out of position and establish an electrical connection between live parts and earthing terminal or metal parts**		N/A
14.9	**Rewirable accessories with earthing contact: ample space for slack of earthing (test)**		N/A
	Non-rewirable non-moulded-on accessories with earthing contact: current-carrying conductors stressed before the earthing conductor if the flexible cable slips in its anchorage		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
14.10	**Terminals of rewirable accessories and terminations of non-rewirable accessories: located and shielded that loose wires not present a risk of electric shock**		N/A
14.10.1	***Rewirable accessories*: test with 6 mm free wire**		N/A
	free wire of a conductor connected to a live terminal not touch any accessible metal part or able to emerge from the enclosure		N/A
	free wire of a conductor connected to an earthing terminal not touch a live part		N/A
14.10.2	***Non-rewirable, non-moulded-on accessories*: test with a free wire of length equivalent to the maximum designed stripping length declared by the manufacturer plus 2 mm**		N/A
	free wire of a conductor connected to a live termination not touch any accessible metal part or reduce creepage and clearance below 1,5 mm to the external surface		N/A
	free wire of a conductor connected to an earth termination not touch any live part		N/A
14.10.3	***Non-rewirable, moulded-on accessories*:**		N/A
	Verification of means to prevent stray wires reducing the minimum distance through insulation to external accessible surface below 1,5 mm		N/A
14.11	**Adaptors with a cable outlet and rewirable intermediate adaptors:**		N/A
	- clear how relief from strain and prevention of twisting is intended to be effected		N/A
	- cord anchorage, or at least part of it, integral with or permanently fixed to one of the component parts of the plug or portable socket-outlet		N/A
	- makeshift methods not used		N/A
	- cord anchorage suitable for the different types of flexible cable which may be connected; screws, if any: not serve to fix any other component		N/A
	- cord anchorages: of insulating material or provided with an insulating lining fixed to the metal parts		N/A
	- metal parts of cord anchorages, including clamping screws: insulated from the earthing circuit		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
14.12	**Insulating parts which keep live parts in position: reliably fixed together; not possible to dismantle the accessory without the aid of a tool**		P
14.13	**Covers of adaptors: bushes for entry holes for the pins not become detached inadvertently from the inside when the cover is removed**		N/A
14.14	**Screws intended to allow access to interior of the accessory: captive**		N/A
14.15	**Engagement of the plug part of adaptors: no projections other than pins**		P
14.16	**Socket-outlet parts of adaptors not prevented by any projection from the engagement face**		P
14.17	**Accessories other than ordinary: provided with gland(s) or the like**		N/A
	Plugs other than ordinary: adequately enclosed		N/A
	Portable socket-outlets other than ordinary: adequately enclosed without a plug in engagement		N/A
	Lid springs (if any): of corrosion resistant material (bronze or stainless steel)		N/A
14.18	**Portable socket-outlets: means for suspension from a wall or other mounting surfaces not allow access to live parts**		N/A
	No free openings between space intended for suspension means fixed to the wall and live parts		N/A
14.19	**Combinations of plugs and socket-outlets with circuit-breakers or other protective devices comply with relevant standards, if any .....:**		N/A
14.20	**Portable accessories: not integral part of lampholders**		P
14.21	**Plugs for equipment of class II:**		N/A
	- non-rewirable		N/A
	- if incorporated in a cord set: provided with a connector for equipment of class II		N/A
	- if incorporated in a cord extension set: provided with a portable socket-outlet for equipment of class II		N/A
14.22	**Components (switches and fuses) incorporated in accessories: comply with the relevant IEC standard**		P

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Clause	Requirement + Test	Result - Remark	Verdict
14.23	**adaptor shall not impose undue strain on fixed socket-outlet**		P
	Adaptor is inserted into a fixed socket-outlet; The socket-outlet part of the adaptor is fitted with the relevant plug completed with 1 m of 0,75 mm^2 flexible cable		P
	the socket-outlet is pivoted about a horizontal axis through the axis of the live socket contact at distance of 8mm behind the engagement face of the socket-outlet and parallel to this engagement face.		P
	the addition torque which has to be applied to the socket-outlet in order to maintain the engagement face in the vertical plane not exceed 0,25Nm. During the test, care shall be taken that the flexible cable hang freely	Max. 0,14Nm	P
14.23.1	**Socket-outlet connected to a supply voltage equal to 1,1 times the highest rated voltage of the equipment (V) ..... :**		-
	Temperature rise of the pins after 1 h not exceed 45 K (K) ..... :		N/A
14.23.2	**Additional torque applied to the socket-outlet to maintain the engagement face in the vertical plane not exceed 0,25 Nm (Nm) (adaptor fitted with a relevant plug complete with 1 m of 0,75 mm^2 circular flexible cable to 227 IEC 53, to each socket-outlet portion of the adaptor) .... :**	Max. 0,14Nm	P
14.23.101	**Adaptors withstand lateral strain imposed by equipment likely to be introduced into them**		P
	Test made 4 times with the adaptor turned through 90°, 5 N for 1 min (device shown in fig. 13); test repeated for each socket-outlet portion of the adaptor		P
	During the test: device not come out		P
	After the test:		P
	- no damage		P
	- adaptor complies with clause 22		P
14.24	**Adaptors: can easily be withdrawn by hand from the relevant socket-outlet**		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Gripping surfaces so designed that the adaptor can be withdrawn without having to pull on the flexible cable, if any		P
14.25	**-**		N/A
14.101	**Plug portion of adaptors provided with earthing pins or contacts if any one of the socket-outlet portions is provided with an earthing pin or contact**		P
14.102	**Adaptors for use in polarized socket-outlets: internal connection ensure that plug pins, socket-contacts and terminals, if any, maintain the same polarity at the input and output portions of the adaptor**		N/A
14.103	**Cable considered as a bare conductor if the insulation is not equivalent to the IEC standard and it does not comply with the electric strength test according to 17.2**		N/A
14.104	**Provision made within the body of a fused adaptor for fuse-link complying with IEC 60269-3, IEC 60127-2 or IEC 60127-3 as far as it reasonably applies**		N/A
	Fuse-link mounted between contacts fitted between an adaptor plug pin and the corresponding socket-contact(s)		N/A
	Adaptors for use in polarized system: fuse mounted between the line plug pin and the corresponding line socket-contact(s)		N/A
	Fuse links not fitted in the earthing circuit		N/A
	Fuse-link cannot be left in inadequate contact when the adaptor is assembled		N/A
14.105	**adaptors having a plug part standardized with current of 2,5 A shall be provided with an overcurrent protective device rated 2,5A or less**		N/A
14.106	**Adaptors shall not have the shape or decorated like a toy**		P
14.107	**Adaptors shall not have any socket-outlet part which permits the insertion of a plug with a higher current rating that the rated current of the plug part of the adaptor,** **unless the adaptor is provided with an overcurrent device rated less than or equal to the rated current of the plug part**		P

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Clause	Requirement + Test	Result - Remark	Verdict
15	**INTERLOCKED SOCKET-OUTLET PORTIONS OF ADAPTORS**		
	Socket-outlet portions of adaptors interlocked with a switch:		N/A
	plug cannot be inserted into or completely withdrawn from the adaptor while the socket-contacts are live		N/A
	socket-contacts of the adaptor cannot be made live until a plug is almost completely in engagement		N/A
16	**RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES, AND RESISTANCE TO HUMIDITY**		
16.1	**Resistance to ageing**		**P**
	Accessories are resistant to ageing		P
	For accessories having a lid, the lid is closed during the test		N/A
	adaptors: the plug of the same system having the same rated current as the socket-outlet inserted into the socket-outlet during the test		P
	Accessories subjected to a test in a heating cabinet at (70 ± 2) °C for seven days (168 h)		P
	After the tests, the specimens show:		P
	- 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
	adaptors: contact pressure of the contact assembly checked as specified in sub clause 22.2 with the single-pin gauge		P
16.2	**Protection provided by enclosures**		**P**
	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**		**P**
	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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Flush-type and semi-flush type socket-outlets: mounted in an appropriate box according to the manufacturer's instructions		N/A
	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**		**P**
	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**		**P**
	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		N/A
	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**		N/A
	Accessories and their enclosures provide a degree of protection against harmful effects due to ingress of water in accordance with their IP classification		N/A
	Appropriate test performed as specified in IEC 60529 under the following conditions:		N/A
	Flush-type and semi-flush type socket-outlets: fixed in a vertical test wall using an appropriate box according to the manufacturer's instructions		N/A
	Accessory suitable to be installed on a rough wall: test wall according to figure 15 is used		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) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	- 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
	- 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		N/A
	Plugs tested when in full engagement with:		N/A
	- 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		N/A
16.3	**Resistance to humidity**		**P**
	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:		P
	- two days (48 h) for accessories having IPX0		P
	- seven days (168 h) for accessories having IP>X0		N/A
	After this treatment the specimens show no damage		P

17	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**	
17.1.1	**For adaptors: insulation resistance (500 V d.c. for 1 min):**	**P**

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Clause	Requirement + Test	Result - Remark	Verdict
	a) between all poles connected together and a metal foil in contact with the outer surface of accessible external parts of insulating material and including external assembly screws ≥ 5 MΩ ..... :	>10MΩ	P
	b) between each pole in turn, and all others connected together ≥ 5 MΩ ..... :	>10MΩ	P
	c) for adaptor with cable outlet and rewirable intermediate adaptors: between any metal part of any cable anchorage, including clamping screws, and the earthing pin or terminal, if any ≥ 5 MΩ ..... :	MΩ	N/A
	e) for adaptor with cable outlet and rewirable intermediate adaptors: between any metal part of the cable anchorage and a metal rod of the maximum diameter of the flexible cable inserted in its place ≥ 5 MΩ ..... :	MΩ	N/A
17.1.2	**-**		**N/A**
17.2	**Electric strength, test voltage (a.c., for 1 min):**		**P**
	a) test voltage (V) ..... :	~~1250 V /~~ 2000 V	P
	b) test voltage (V) ..... :	~~1250 V /~~ 2000 V	P
	c) test voltage (V) ..... :	~~1250 V / 2000 V~~	N/A
	d) test voltage (V) ..... :	~~1250 V / 2000 V~~	N/A
	e) test voltage (V) ..... :	~~1250 V / 2000 V~~	N/A
	During the test no flashover or breakdown		P

18	**OPERATION OF EARTHING CONTACTS**		
	Earthing contacts provide adequate contact pressure and not deteriorate in normal use		P
	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
	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
19.101	**adaptors are tested as follows:**		**P**
	Socket-outlets parts tested using a test plug with brass pins having the minimum specified dimensions	See appended table 19.1	P

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Clause	Requirement + Test	Result - Remark	Verdict
	For this test the temperature rise is measured on the terminals and terminations.		P
	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	P
19.102	**adaptors with incorporated components are tested by the following two tests:**		P
	– with a current which is equal to the rated current of the adaptors or the rated current of the component(s), whichever is the lower	See appended table 19.3	P

20	**BREAKING CAPACITY**		
	Accessories shall have adequate breaking capacity		P
	Compliance checked by testing:		P
	- socket-outlet portions of adaptors;		P
	- plug portions of adaptors with pins which are not solid		P
	Test conditions:		P
	- 100 strokes; rate of operation .....:	30 ~~(15)~~ strokes per minute	-
	- test voltage (1,1 Vn) .....:	See appended table 20	-
	- test current (1,25 In) (power factor 0,6) .....:	See appended table 20	-
	During the test: no sustained arcing occur		P
	After the test:		P
	- 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 shall withstand without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		P
	Compliance checked by testing:		P
	- socket-outlet portions of adaptors;		P
	- plug portion of adaptors with resilient earthing socket-contacts;		P

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- plug portion of adaptors with pins which are not solid		N/A
	Test performed on:		P
	- complete shuttered socket-outlets		P
	- specimens prepared by the manufacturer without shutters (with current flowing). Number of strokes:		N/A
	- specimens with shutters (without current flowing)		N/A
	- complete shuttered socket-outlets with operations made by hand as in normal use		N/A
	Test conditions for socket-outlet portion of adaptor:		P
	- 10000 strokes; rate of operation ..... :	30 ~~(15)~~ strokes per minute	-
	- test voltage Vn (V) ..... :	See appended table 21	-
	- test current (as specified in table 20) (A) (power factor 0,8) ..... :	See appended table 21	-
	Test conditions for plug portion of adaptor:		N/A
	- 2000 strokes; rate of operation ..... :	~~30~~ ~~(15)~~ strokes per minute	-
	- test voltage Vn (V) ..... :	See appended table 21	-
	- test current (as specified in table 20) (A) (power factor 0,8) ..... :	See appended table 21	-
	Test current passed:		P
	- during each insertion and withdrawal of the plug (In ≤ 16A)		P
	- during alternate insertion and withdrawal, the other insertion and withdrawal being made without current flowing (In > 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 shall not show:		P
	- 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

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Clause	Requirement + Test	Result - Remark	Verdict
	Shuttered socket-outlets: the following gauges not touch live parts when they remain under the relevant forces:		P
	- gauges of figure 3 applied with a force up to 20 N		P
	- steel gauge of figure 4 applied with a force up to 1 N		P
	Temperature-rise test (requirements of clause 19):		P
	Test current as specified in table 101 passed for 1 h (A) ..... :	See appended table 21	-
	Temperature rise of terminals not exceed 45 K (K) ..... :	See appended table 21	P
	Separate tests made passing the current through:		P
	- the neutral contact, if any, and the adjacent phase contact (K) ..... :		N/A
	- the earthing contact, if any, and the nearest phase contact (K) ..... :	See appended table 21	P
	For adaptors test current applied:		N/A
	- through each separate socket-outlet portion in turn; test current appropriate to the rating of the relevant socket-outlet portion (table 20) (A) ..... :	See appended table 21	N/A
	- through all socket-outlet portions simultaneously; test current appropriate to the rating of the adaptor and divided between the socket-outlet portions (A) ..... :	See appended table 21	N/A
	Electric strength (sub-clause 17.2), test voltage (a.c., for 1 min):		N/A
	a) test voltage (V) ..... :	~~1000 V~~ / 1500 V	P
	b) test voltage (V) ..... :	~~1000 V /~~ 1500 V	P
	c) test voltage (V) ..... :	~~1000 V / 1500 V~~	N/A
	d) test voltage (V) ..... :	~~1000 V / 1500 V~~	N/A
	e) test voltage (V) ..... :	~~1000 V / 1500 V~~	N/A
	During the test: no flashover or breakdown		P
	Pins of adaptors: test according to 14.2		N/A
	Force exerted measured in side earthing contacts not less than 60 % or 5 N (CEE 7 clause 18) ..... :	12N/ 12N	P
22	**FORCE NECESSARY TO WITHDRAW THE PLUG**		
	Construction of adaptors shall allow the easy insertion and withdrawal of the plug, and prevent the plug from working out of the socket-outlet		P

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Clause	Requirement + Test	Result - Remark	Verdict
	portion of the adaptor in normal use		
	Rated current (A) ..... :	16	P
	Number of poles ..... :	2P+E	P
22.1	***Verification of the maximum withdrawal force (multi-pin gauge)***		**P**
	- Maximum withdrawal force (N) ..... :	See appended table 22	-
	The plug not remain in the socket-outlet portion of the adaptor		P
22.2	***Verification of the minimum withdrawal force (single-pin gauge)***		**P**
	- Minimum withdrawal force (N) ..... :	See appended table 22	-
	The plug not fall from each individual contact-assembly within 30 s		P

23	FLEXIBLE CABLES AND THEIR CONNECTION		
23.1	Adaptor with cable outlet and intermediate adaptors intended for use with a flexible cable: provided with a cord anchorage such that the conductors are relieved from strain and that their covering is protected from abrasion		N/A
	Sheath of flexible cable clamped within the cord anchorage		N/A
23.2	**Pull and torque test**		N/A
	Non-rewirable accessories:		N/A
	- rating of accessory ..... :		-
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm^2) ..... :		-
	- pull (100 times) (N) ..... :		N/A
	- torque (1 min) as specified in table 18 (Nm) ..... :		N/A
	After the test:		N/A
	Displacement ≤ 2 mm ..... :		N/A
	No break in the electrical connections		N/A
	Rewirable accessories:		N/A
	- rating of accessory ..... :		-
	- clamping screws, if any, tightened with a torque equal to 2/3 of that specified in 12.2.8 (Nm) ..... :		-
	- type of flexible cable; number of conductors and smallest nominal cross-sectional area (mm^2) as		-

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Clause	Requirement + Test	Result - Remark	Verdict
	show in table 17 ..... :		
	- pull (100 times) (N) ..... :		N/A
	- torque (1 min) as specified in table 18 (Nm) ..... :		N/A
	After the test:		N/A
	Displacement ≤ 2 mm ..... :		N/A
	End of conductors not have moved noticeably in the terminals		N/A
	- type of flexible cable; number of conductors and largest nominal cross-sectional area (mm^2) as show in table 17 ..... :		-
	- pull (100 times) (N) ..... :		N/A
	- torque (1 min) as specified in table 18 (Nm) ..... :		N/A
	After the test:		N/A
	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:		N/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 intermediate adaptors intended for use with a flexible cable provided with a flexible cable complying with IEC 227 or IEC 245**		N/A
	External flexible cables intended for control comply with 14.103		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: identified by the colour combination green/yellow		N/A
23.4	**Non-rewirable intermediate adaptors with a flexible cable: designed that the flexible cable is protected against excessive bending**		N/A
	Guards shall be of insulating material and fixed in reliable manner		N/A
	Flexing test (10.000 flexings):		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- type of flexible cable and nominal cross-sectional area (mm^2) ..... :		-
	- test current (A) ..... :		-
	- mass (N) ..... :		-
	During the test: no interruption of the test current and no short-circuit between conductors		N/A
	Voltage drop test: test current (A); voltage drop (≤ 10 mV) ..... :		N/A
	After the test: guard no separated from the body, insulation shows no sign of abrasion or wear, broken strands become no accessible		N/A
24	**MECHANICAL STRENGTH**		
24.1	**Adaptors have adequate mechanical strength**		**P**
24.2	**Adaptors: tumbling barrel test; number of falls .....:**	**~~50~~ / 25**	**P**
	After the test:		P
	No part become detached or loosened;		P
	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;		P
	Pins no turn when a torque of 0,4 Nm is applied for 1 min in each direction (test not carried out where rotation of the pins does not impair safety or function)		P
24.3	**-**		N/A
24.4	**Adaptors (elastomeric or thermoplastic material): impact test, weight 1000 g, height 100 mm (apparatus shown in fig. 21)**		P
	Specimens placed in a refrigerator at –15 °C ± 2 °C for at least 16 h		P
	After the test: no damage		P
24.5	**Adaptors (elastomeric or thermoplastic material): compression test, 300 N for 1 min, position a) and b) (apparatus shown in fig. 22)**		P
	After the test: no damage		P
24.6	**-**		N/A
24.7	**Pins of plug portions of adaptors with insulating sleeves: 20000 movements, 4 N**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	(apparatus shown in fig. 28)		
	After the test: no damage of pins, insulating sleeve not have punctured or rucked up		N/A
24.8	**Shuttered socket-outlet portions of adaptors: mechanical test carried out on specimens submitted to the normal operation test according to clause 21**		P
	Force applied for 1 min against the shutter of an entry hole by means of one pin ..... :	40 N ~~/ 75 N~~	-
	Pin not come in contact with live parts		P
	After the test: no damage		P
24.9	**-**		N/A
24.10	**Plug portion of adaptors: pull test to verify the fixation of pins in the body of the adaptor (new specimens)**		P
	Maximum withdrawal force (table 16) applied for 1 min on each pin in turn, after the specimen has been placed at 70 °C for 1 h ..... :	54N	-
	After the test: displacement of pins in the body of the plug ≤ 1 mm ..... :	Max. 0,4mm	P
24.11	-		N/A
24.12	-		N/A
24.13	-		N/A
24.14	-		N/A
24.15	-		N/A
24.16	-		N/A
24.17	-		-
24.18	-		-

24.19	**Shroud of portable socket-outlets: compression test (20 ± 2) N at (25 ± 5) °C by means of the apparatus shown in figure 38**		
	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**		
25.1	**Fixed and portable accessories: heating cabinet 100 °C for 1 h**		P
	During the test: no change impairing their further use and sealing compound, if any, not flow		P

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Clause	Requirement + Test	Result - Remark	Verdict
	After the test: markings still legible		P
25.2	**Parts of insulating material of fixed socket-outlets necessary to retain current-carrying parts and parts of the earthing circuit in position, and parts of the front surface zone of 2 mm width surrounding the phase and neutral pin entry holes: ball-pressure test (1 h, 125 °C)**		P
	After the test: diameter of impression ≤ 2 mm ..... :	See appended table 25.2	P
25.3	**For parts 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)**		P
	Test temperature (°C) ..... :	See appended table 25.3	P
	After the test: diameter of impression ≤ 2 mm ..... :	See appended table 25.3	P
25.4	**Portable accessories: compression test (20 N, 1 h, 80 °C) by means of the apparatus shown in figure 28**		P
	After the test: no damage		P

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 and nuts which transmit contact pressure: in engagement with a metal thread		N/A
	Test:		N/A
	- 10 times for screws in engagement with a thread of insulating material and for screws of insulating material		N/A
	- 5 times for all other cases		N/A
	- terminals: screw diameter (mm); torque (Nm); times ..... :		-
	- earthing terminals: screw diameter (mm); torque (Nm); times ..... :		-
	- assembly screws: screw diameter (mm); torque (Nm); times ..... :		-
	- cord anchorage: screw diameter (mm); torque (Nm); times ..... :		-
	- other screws or nuts: diameter (mm); torque (Nm);		-

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Clause	Requirement + Test	Result - Remark	Verdict
	times ..... :		
	During the test: no damage impairing the further use of the screwed connections		N/A
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
26.5	**Current-carrying parts of metal having mechanical strength, electrical conductivity and resistance to corrosion adequate:**		P
	- 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;	>59%	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), with thickness of at least:		N/A
	5 µm, service condition ISO no. 1, for ordinary equipment		N/A
	12 µm, service condition ISO no. 2, for splash-proof equipment		N/A
	25 µm, service condition ISO no. 3, for jet-proof equipment		N/A
	- steel with electroplated coating of nickel and chromium (ISO 1456), with thickness of at least:		N/A
	20 µm, service condition ISO no. 2, for ordinary equipment		N/A
	30 µm, service condition ISO no. 3, for splash-proof equipment		N/A
	40 µm, service condition ISO no. 4, for jet-proof equipment		N/A
	- steel with electroplated coating of tin (ISO 2093), with thickness of at least:		N/A
	12 µm, service condition ISO no. 2, for ordinary		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	equipment		
	20 µm, service condition ISO no. 3, for splash-proof equipment		N/A
	30 µm, service condition ISO no. 4, for jet-proof equipment		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		N/A
26.6	**Contacts subjected to a sliding action: of metal resistant to corrosion**		P
26.7	**Thread-forming screws and thread-cutting screws not used for the connection of current-carrying parts**		P
	Thread-forming screws and thread-cutting screws used to provide earthing connection: 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 no less than the values shown in table 23**		**P**
	Creepage distances (cr):		*P*
	1) between live parts of different polarity ≥ 4(3) mm ..... :	3,1 mm	P
	2) between live parts and:		P
	- accessible insulating and earthed metal parts ≥ 3 mm ..... :	>4 mm	P
	- parts of earthing circuit ≥ 3 mm ..... :	>4 mm	P
	- metal frames supporting the base of flush-type socket-outlets ≥ 3 mm ..... :		N/A
	- screws or devices for fixing bases, covers or cover-plates of fixed socket-outlets ≥ 3 mm ..... :		N/A
	- external assembly screws, other than screws which are on the engagement face of adaptor and are isolated from the earthing circuit ≥ 3 mm ..... :		N/A
	3) between pins of an adaptor and metal parts connected to them, when fully engaged, and a		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	socket-outlet having accessible unearthed metal parts ≥ 6(4,5) mm ..... :		
	4) between the accessible unearthed metal parts of a socket-outlet and a fully engaged adaptor having pins and metal parts connected to them ≥ 6(4,5) mm ..... :		N/A
	5) between live parts of a socket-outlet portion of an adaptor (without a plug) and its accessible unearthed metal parts ≥ 6(4,5) mm ..... :		N/A
	Clearances (cl):		*P*
	6) between live parts of different polarity ≥ 3 mm . :	3,1 mm	P
	7) between live parts and:		P
	- accessible insulating and earthed metal parts not mentioned under 8 and 9 ≥ 3 mm ..... :	>4 mm	P
	- parts of earthing circuit ≥ 3 mm ..... :	>4 mm	P
	- metal frames supporting the base of flush-type socket-outlets ≥ 3 mm ..... :		N/A
	- screws or devices for fixing bases, covers or cover-plates of fixed socket-outlets ≥ 3 mm ..... :		N/A
	- external assembly screws, other than screws which are on the engagement face of the adaptor and are isolated from the earthing circuit ≥ 3 mm . :		N/A
	8) between live parts and:		N/A
	- exclusively earthed metal boxes ≥ 3 mm ..... :		N/A
	- unearthed metal boxes, without insulating lining ≥ 4,5 mm ..... :		N/A
	9) between live parts and the surfaces on which the base of a socket-outlet for surface mounting is mounted ≥ 6 mm..... :		N/A
	10) between live parts and the bottom of any conductor recess, if any, in the base of a socket-outlet for surface mounting ≥ 3 mm ..... :		N/A
	Distance through insulating sealing compound:		N/A
	11) between live parts covered with at least 2 mm of sealing compound and the surfaces on which the base of a socket-outlet for surface mounting is mounted ≥ 4(3) mm ..... :		N/A
	12) between live parts covered with at least 2 mm of sealing compound and the bottom of any conductor recess, if any, in the base of a socket-outlet for		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	surface mounting ≥ 2,5 mm ..... :		
27.2	**Insulating sealing compound: not protrude above the edge of the cavity in which it is contained**		N/A
27.3	**Ordinary surface-type socket-outlets: no 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***		**P**
28.1.1	***Glow-wire test***		**P**
	For parts of fixed accessories necessary to retain current-carrying parts and parts of the earthing circuit in position: test temperature 850 °C		N/A
	No visible flame and no sustained glowing		N/A
	Flame and glowing extinguish within 30 s ..... :		N/A
	No ignition of the tissue paper		N/A
	For parts of fixed accessories needed to retain the earth terminal in position in a box: test temperature 650 °C		N/A
	No visible flame and no sustained glowing		N/A
	Flame and glowing extinguish within 30 s ..... :		N/A
	No ignition of the tissue paper		N/A
	For parts of portable accessories necessary to retain current-carrying parts and parts of the earthing circuit in position: test temperature 750 °C		P
	No visible flame and no sustained glowing	See appended table 28.1.1	P
	Flame and glowing extinguish within 30 s ..... :		N/A
	No ignition of the tissue paper		P
	For parts not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though in contact with them: test temperature 650 °C		P
	No visible flame and no sustained glowing	See appended table 28.1.1	P
	Flame and glowing extinguish within 30 s ..... :		N/A
	No ignition of the tissue paper		P
28.1.2	**Plug portion of adaptors with pins provided with insulating sleeves:**		N/A
	Test temperature maintained for 3 h by means of the apparatus shown in figure 40 ..... :	~~120 °C / 180 °C~~	-
	Impact test according to sub-clause 30.4 (mass 100 g, height 100 mm, 4 impacts): no cracks of the		N/A

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict
	insulating sleeves		
28.2	***Resistance to tracking***		N/A
	Parts of insulating material retaining live parts in position of accessories other than ordinary: test voltage 175 V, 50 drops, solution A of IEC 112		N/A
	No flashover or breakdown		N/A
29	**RESISTANCE TO RUSTING**		
	Ferrous parts protected against rusting		P
	No signs of rust after 10 min in carbon tetrachloride, trichloroethane or equivalent degreasing agent, 10 min 10 % solution of ammonium chloride, 10 min in a box with air saturated with moisture and 10 min at 100 °C		P
30	**ADDITIONAL TESTS ON PINS PROVIDED WITH INSULATING SLEEVES**		
30.1	***Pressure test at high temperature***		N/A
	Apparatus shown in figure 29, with the test specimen in position, maintained for 2 h at 200 °C. Force applied through the blade: 2,5 N		N/A
	Thickness of insulation measured: before the test (mm); after the test (mm) ..... :		-
	Thickness within the area of impression ≥ 50 % of the thickness measured before the test: percent value (%) ..... :		N/A
30.2	***Static damp heat test***		N/A
	Set of 3 specimens submitted to two damp heat cycles in accordance with IEC 68-2-30		N/A
	After the test:		N/A
	Insulation resistance and electric strength test (clause 17)		N/A
	Abrasion test (sub-clause 24.7)		N/A
30.3	***Test at low temperature***		N/A
	Set of 3 specimens maintained at –15 °C ± 2 °C for 24 h		N/A
	After the test:		N/A
	Insulation resistance and electric strength test (clause 17)		N/A

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Abrasion test (sub-clause 24.7)		N/A
30.4	***Impact test at low temperature***		N/A
	Specimens maintained at –15 °C ± 2 °C for 24 h subjected to 4 impacts (mass 100 g, height 100 mm) by means of the apparatus shown in figure 30 rotating the specimen through 90° between impacts		N/A
	After the test: no crack of the insulating sleeves		N/A
AA	**Annex AA "Travel adaptors" (*normative*)**		
8	**MARKING**		
8.101	**Additional requirements for travel adaptors**		N/A
	- The manufacturer shall indicate on the adaptor and/or in the documentation accompanying the adaptor that the travel adaptor is for temporary use only and that it shall not be used permanently.		N/A
	- The manufacturer shall indicate on the adaptor and/or in the documentation accompanying the adaptor the types of plugs and socket-outlets according to Figure AA.1 and the countries in which it is intended to be used.		N/A
9	**CHECKING OF DIMENSIONS**		
9.1	**For travel adaptors the plug part and the socket-outlet part shall comply with the national specifications and standard sheets of the countries for which the manufacturer declares compatibility.**	See Annex	N/A
9.2	**- Travel adaptors allowing temporary connection of a plug with a socket-outlet having a higher voltage rating are allowed, provided that the manufacturer gives information for the safe use directly on the travel adaptor, e.g. "DOES NOT CONVERT VOLTAGE".**		N/A
10	**PROTECTION AGAINST ELECTRIC SHOCK**		
10.1	**Live parts shall not be accessible when the plug part of an adaptor is in partial or complete engagement with a socket-outlet.**		N/A
	For adaptors, the test finger is applied in every possible position when the adaptor is in partial or complete engagement with a socket-outlet.		N/A

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.3	**It shall not be possible to make contact between a pin of a plug and a live socket contact of an adaptor or between a pin of an adaptor and a live socket contact of a socket-outlet whilst any other current carrying pin is accessible.**		N/A
11	**PROVISION FOR EARTHING**		
11.101	**For earthed configurations, it shall not be possible to engage the current-carrying pins of the travel adaptor in a socket-outlet without the corresponding earth becoming engaged.**		N/A
	The test shall be performed with the travel adaptor pins in all possible positions.		N/A
14	**CONSTRUCTION OF PORTABLE ACCESSORIES**		
14.1	**The socket-outlet part may have one or more socket-outlet type(s), but it shall accommodate only one plug at a time.**		N/A
	The socket-outlet part(s) of travel adaptors shall be provided with shutters.		N/A
	For travel adaptors comprising of several parts, the use of the adaptor shall remain safe for all combinations of parts.		N/A
	Live parts of any separable plug part shall not be accessible when inserted into the relevant Fixed socket-outlet.		N/A
	the plug part of a travel adaptor may have one or several plug type, but only one plug can be electrically connected at a time.		N/A
	There shall be no electrical connection between different pin combinations, if any, when one of them is ready for use. This shall additionally be tested with the pin combinations (use and unused, if any) in intermediate positions.		N/A
	Compliance is checked by applying the standard test finger, test probe B of IEC 61032, in every possible position, an electrical indicator with a voltage between 40 V and 50 V being used to show contact with the relevant parts.		N/A
15	**INTERLOCKED SOCKET-OUTLET PARTS OF ADAPTORS**		
	Socket-outlet portions of adaptors interlocked with a switch:		N/A

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict
	plug cannot be inserted into or completely withdrawn from the adaptor while the socket-contacts are live		N/A
	socket-contacts of the adaptor cannot be made live until a plug is almost completely in engagement		N/A
16	**RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES, AND RESISTANCE TO HUMIDITY**		
16.1	**Resistance to ageing**		N/A
	For travel adaptors with movable pins or detachable socket portions, all specimens shall be subjected to a test with 300 cycles of complete movements of the pins which has been selected for the tests of Clause 19, 20 and 21 or of the detachable socket portions.		N/A
20	**BREAKING CAPACITY**		
	- The test voltage shall be 1,1 times the rated voltage of the plug part .....:		N/A
	- the test current shall be 1,25 times the current which is the lowest between the rated current of the plug that can be inserted in the socket outlet part and the rated current of the plug part of the travel adaptor. (power factor 0,6) .....:		N/A
	If more than one type of plug can be engaged into the socket-outlet part, this test shall be performed for the types of plugs on new additional sets of specimens (one set of 3 specimens for each type of plug), chosen according to subclause 5.4, previously submitted to the test of subclause 16.1, and subsequently submitted to the tests of Clause 21.		N/A
	In addition to the above tests, an additional set of specimens is required to be tested with all types of plugs. Each plug is inserted and withdrawn from the socket-outlet 50 times (100 strokes) divided by the number of plugs, which may be inserted in that socket-outlet part. Also that set of specimens shall be previously submitted to the test of subclause 16.1, and subsequently submitted to the tests of Clause 21.		N/A
21	**NORMAL OPERATION**		
	The specimens are tested at the rated voltage of the plug part, in a circuit with cosφ=0,8±0,05, with an alternating current as follows:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	– for travel adaptors without incorporated overcurrent protective device, the test current being the current which is the lowest between the rated current of the plug that can be inserted in the socket outlet part and the rated current of the plug part of the travel adaptor,		N/A
	– for travel adaptors with incorporated overcurrent protective device, the test current being the rated current of the protective device but not higher than the lowest between the rated current of the plug that can be inserted in the socket outlet part and the rated current of the plug part of the travel adaptor.		N/A
	For the additional set of specimens which was tested in Clause 20 with all types of plugs, each plug is inserted and withdrawn from the socket-outlet 5000 times (10000 strokes) divided by the number of plugs, which may be inserted in that socket-outlet part.		N/A
24	**MECHANICAL STRENGTH**		
24.2	**For travel adaptors with movable pins, the test shall be repeated on new set of specimens for all configurations of the plug parts and socket-outlet parts.**		N/A

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict

12.2.5	**TABLE: test with apparatus shown in figure 11 (screw-type terminals)**		N/A
	rated current (A) ..... :		—
	type of conductors ..... :	**Rigid solid / rigid stranded / flexible**	—
	smallest/largest cross-sectional area per table 3 (mm^2) ..... :		—
	number of conductors ..... :		—
	nominal diameter of thread (mm); torque per table 6 (Nm) ..... :		—

Cross-sectional area (mm^2)	Diameter of bushing hole per table 9 (mm)	Height H per table 9 (mm)	Mass (kg)	Remarks
supplementary information:				

12.2.6	**TABLE: pull test (screw-type terminals)**		N/A
	rated current (A) ..... :		—
	smallest/largest cross-sectional area per table 3 (mm^2) ..... :		—
	nominal diameter of thread (mm); torque 2/3 per table 6 (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
supplementary information:				

12.2.7	**TABLE: tightening test (screw-type terminals)**		N/A
	rated current (A) ..... :		—
	nominal diameter of thread (mm); torque 2/3 per table 6 (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

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict

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	

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:

12.3.11	**TABLE: electrical and thermal strength test (screwless-type terminals)**		N/A
Test a)	**Test carried out for 1 h connecting rigid solid conductors:**		N/A
	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 24th cycle value (mV)**	**—**

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Clause	Requirement + Test	Result - Remark	Verdict

Screwless terminal number	1	2	3	4	5	Remarks
voltage drop after 24th cycle						
voltage drop after 48th cycle						
voltage drop after 72nd cycle						
voltage drop after 96th cycle						
voltage drop after 120th cycle						
voltage drop after 144th cycle						
voltage drop after 168th cycle						
voltage drop after 192nd 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

	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:		N/A
	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	

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Clause	Requirement + Test	Result - Remark	Verdict

starting point (X = deflection original point)	**X**	**X+10°**	**X+20°**	**X**	**X+10°**	**X+20°**	
voltage drop 1st deflection (mV)							
voltage drop 2nd deflection (mV)							
voltage drop 3rd deflection (mV)							
voltage drop 4th deflection (mV)							
voltage drop 5th deflection (mV)							
voltage drop 6th deflection (mV)							
voltage drop 7th deflection (mV)							
voltage drop 8th deflection (mV)							
voltage drop 9th deflection (mV)							
voltage drop 10th deflection (mV)							
voltage drop 11th deflection (mV)							
voltage drop 12th deflection (mV)							
supplementary information:							

14.22	**TABLE: Components**				P
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
- Description:					
- Description:					
- Description:					

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information: See critical components list

[1] Provided evidence ensures the agreed level of compliance. See OD-CB2039.

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, the measurement being made with a plug in engagement	>10 MΩ	>5 MΩ
b)	between each pole in turn and all others, these being connected to the body with a plug in engagement	>10 MΩ	>5 MΩ.
supplementary information:			

17.2	**TABLE: electric strength**		P
	rated voltage (V) .....:	250	—
item per 17.1	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)
a)	test voltage (V)	2000 V	No
b)	test voltage (V)	2000 V	No

19.1	**TABLE: temperature rise test for socket-outlets parts and plugs parts**		P
	rated current of accessory (A) ..... :	**10A**	**—**
	type of accessory (non-rewirable / rewirable) .... :	**non-rewirable**	**—**
	nominal cross-sectional area per table 15 (mm^2) :	**-**	**—**
	type of conductors (rigid solid / rigid stranded / flexible) ..... :	**-**	**—**
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (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)
	-	-	L-N	11,5	Max. 28,9K	45K	Max. 9,0K
	-	-	L-E	11,5	Max. 29,5K	45K	Max. 9,3K

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict

supplementary information:
(1) Non-rewirable accessories

19.3	**TABLE: temperature rise test for adaptors with incorporated components**		P
	rated current of accessory (A) ..... :	10A	—
	type of accessory (non-rewirable / rewirable) .... :	**non-rewirable**	—
	nominal cross-sectional area per table 15 (mm^2) :	-	—
	type of conductors (rigid solid / rigid stranded / flexible) ..... :	-	—
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (Nm ..... :	-	—
	Test for Portable socket-outlets parts and plugs parts with incorporated components		N/A
	Test for adaptor with incorporated components		P

specimen	type of flexible cable (1)	number of conductors and nominal cross-sectional area (mm2) (1)	test circuit (L-L/L-N/L-E)	with a current which is equal to the rated current of the adaptors or the rated current of the component(s), whichever is the lower	measured ΔT (K)	allowed ΔT (K)	ΔT of external parts (25.3)(K) (2)
	-	**-**	**L-N**	10	**Max. 31,6K**	**45K**	**Max. 9,7K**
	-	**-**	**L-E**	10	**Max. 25,2K**	**45K**	**Max. 8,5K**

supplementary information:
(1) Non-rewirable accessories; (2) Metal parts 30 K ; non-metallic parts 40 K

20	**TABLE: breaking capacity**		**P**
	rating of accessory (A/V) ..... :	**16A / 250V (rating of plug/socket)**	**—**
	type of accessory (non-rewirable / rewirable) .... :	**Non-rewirable**	**—**
	type of flexible cable (non-rewirable accessories) ..... :	**-**	**—**
	number of conductors and nominal cross-sectional area (mm^2) (non-rewirable accessories) ..... :	**-**	**—**

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict

	nominal cross-sectional area per table 15 (mm^2) :					**-**			**—**
	type of conductors (rigid solid / rigid stranded / flexible) ..... :					**-**			**—**
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (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)**							
	4,85	**19,0**	**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) ..... :	**10A / 250V~**	**—**
	type of accessory (non-rewirable / rewirable) .... :	**Non-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) :	**-**	**—**
	type of conductors (rigid solid / rigid stranded / flexible) ..... :	**-**	**—**
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (Nm) ..... :	**-**	**—**
	rate of operation (strokes per minute) ..... :	**30**	**—**

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Clause	Requirement + Test	Result - Remark	Verdict

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)							
	4,85	19,0	250	10	-	10000	-	-	P

	TABLE: test for shuttered socket-outlets	P

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	
	OK	OK	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)	
	L-N	10	Max. 22,9K	45K	P
	L-E	10	Max. 19,5K	45K	P

17.2	TABLE: electric strength	P

specimen	item per 17.1	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)
	a)	between all poles connected together and a metal foil in contact with the outer surface of accessible external parts of insulating material including external assembly screws, the measurements being made with plug(s) in engagement;	1500	No

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Clause	Requirement + Test	Result - Remark	Verdict

	b)	**between each pole in turn, and all others, these being connected together to a metal foil in contact with the outer surface of accessible external parts of insulating material including external assembly screws with plug(s) in engagement**	**1500**	**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

22	**TABLE: force necessary to withdraw the plug**				**P**
	Rated current (A) ..... :		**16A (Rating of plug/socket)**		**—**
	Number of poles ..... :		**2P+E**		**—**
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**	
	54N	**N**	**25**	**N**	**P**
22.2	**Verification of the minimum withdrawal force**				**P**
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)**	
	2,0N	**N**	**2,0N**	**N**	**P**

supplementary information:

23.2	**TABLE: pull and torque test**	N/A

NP 1260-1			
Clause	Requirement + Test	Result - Remark	Verdict

	rating of accessory (A) ..... :					—
	type of accessory (non-rewirable / rewirable) .... :					—
	smallest/largest cross-sectional area per table 17 (mm^2) (rewirable accessories) ..... :					—
	nominal diameter of thread (mm); torque 2/3 per table 6 (Nm) (rewirable accessories) ..... :					—
specimen	**type of flexible cable**	**number of conductors and nominal cross-sectional area (mm^2)**	**pull (100 times) (N)**	**torque (1 min) as specified in table 18 (Nm)**	**displacement (mm)**	
supplementary information:						

23.4	**TABLE: flexing test**				N/A
	rated current (A) .....:				—
specimen	**type of flexible cable**	**number of conductors and nominal cross-sectional area (mm^2)**	**test current (A)**	**mass (N)**	
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)**	
Enclosure	**125**	**Max.1,6mm**	
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)**	
Shutter body	**70**	**Max. 0,9mm**	

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Clause	Requirement + Test	Result - Remark	Verdict

supplementary information:
(1) (70 ± 2) °C / (40 ± 2) °C + highest temperature rise determined during the test of clause 19

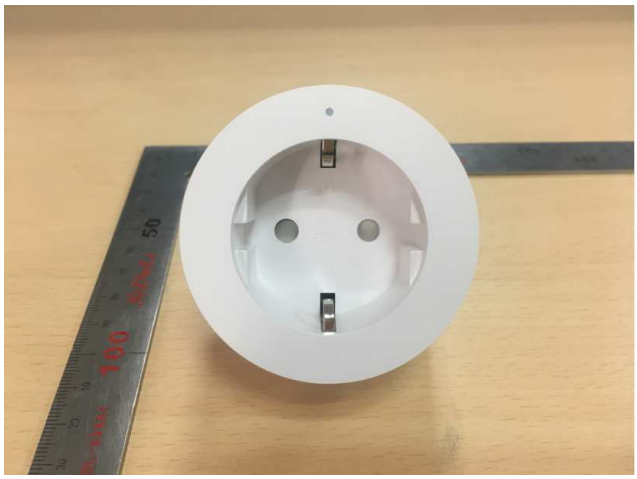
26.1	TABLE: threaded part torque test				N/A
threaded part identification	**diameter of thread (mm)**	**column number (1, 2 or 3)**	**applied torque (Nm)**	**times (5/10)**	**no damage**
supplementary information:					

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)**
Enclosure	**PC**	**750**	**N**	**-**	**N**
Shutter body	**PA**	**650**	**N**	**-**	**N**
supplementary information:					

28.2	TABLE: resistance to tracking		N/A
	number of drops ..... :		**—**
part under test	**material designation**	**test voltage (V)**	**flashover / breakdown (Yes/No)**
supplementary information:			

Prüfbericht-Nr.: *Test Report No.*:	**50283429 001 Attachment 3**	**Auftrags-Nr.:** *Order No.*:	244152828	Seite 1 von 41 *Page 1 of 41*
Kunden-Referenz-Nr.: *Client Reference No.*:	N/A	**Auftragsdatum:** *Order date*:	24.06.2019	
Auftraggeber: *Client*:	Lumi United Technology Co., Ltd / F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China			
Prüfgegenstand: *Test item*:	Smart Plug			
Bezeichnung / Typ-Nr.: *Identification / Type No.*:	SP-EUC01			
Auftrags-Inhalt: *Order content*:	Type test			
Prüfgrundlage: *Test specification*:	UNE 20315-1-1:2009 UNE 20315-1-2: 2009 UNE 20315-2-5: 2008			

Wareneingangsdatum: *Date of receipt*:	24.06.2019
Prüfmuster-Nr.: *Test sample No.*:	A000951316 001-030
Prüfzeitraum: *Testing period*:	24.06.2019 – 06.08.2019
Ort der Prüfung: *Place of testing*:	TÜV Rheinland (Shanghai) Co., Ltd.
Prüflaboratorium: *Testing laboratory*:	TÜV Rheinland (Shanghai) Co., Ltd.
Prüfergebnis*: *Test result**:	Pass



geprüft von / *tested by*:			**kontrolliert von /** *reviewed by*:		
04.09.2019	Doom Zhu / PE		04.09.2019	Yi Zeng / TC	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other*:
This report was created for type test of above mentioned product.

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery*:	Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhaft
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	*1 = very good*	*2 = good*	*3 = satisfactory*	*4 = sufficient*	*5 = poor*
	P(ass) = passed a.m. test specification(s)		*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

V04

Test Report issued under the responsibility of:

TÜVRheinland®
Precisely Right.

TEST REPORT
UNE 20315-2-5
Plugs and socket-outlets for household and similar purposes
Part 2-5: Particular requirements for adaptors.

Report Reference No.....:	50283429 001 Attachment 3
Tested by (name + signature) .....:	See cover page
Approved by (+ signature) .....:	See cover page
Date of issue.....:	See cover page
Total number of pages	See cover page
Testing Laboratory.....:	TÜV Rheinland (Shanghai) Co., Ltd
Address .....:	No.177,Lane 777,West Guangzhong Road, Zhabei District, Shanghai 200072, P.R. China
Applicant's name.....:	Lumi United Technology Co., Ltd
Address .....:	F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China
Test specification:	
Standard.....:	UNE 20315-2-5: 2008 used in conjunction with UNE 20315-1-1:2009(including Erratum: 2011) and UNE 20315-1-2: 2009
Test procedure .....:	Type test
Non-standard test method……..:	N/A
Test Report Form No.....:	UNE 20315-2-5ED1.1
Test Report Form(s) Originator .....:	TÜV Rheinland
Master TRF.....:	Dated 2017-06
Test item description .....:	Smart Plug
Trade Mark .....:	Aqara
Factory/site .....:	SUNWODA Electronic Co., Ltd. Sixth Branch / Northeast of Intersection of Keyu Road, and Tongguan Road, Gongming Street, Guangming New District , Shenzhen City , Guangdong Province, P.R. China
Model/Type reference.....:	SP-EUC01
Ratings .....:	250VAC 10A 50/60Hz

Summary of testing:

Tests performed:	**Testing location:**
All applicable tests were performed. This report was created for type test for plug and socket portion of remote controlled adaptor, it should be used in conjunction with test report No. 50283429 001 for switch part.	TÜV Rheinland (Shanghai) Co., Ltd No.177,Lane 777,West Guangzhong Road, Zhabei District, Shanghai 200072, P.R. China

Copy of marking plate

On back view:

On side view:

The following manufacturer info is indicated on the manual:

Lumi United Technology Co., Ltd

F8, Jingqizhigu office building, No.1 Tangling Rd., Liuxian Ave., Taoyuan Sub-dist., Nanshan Dist., Shenzhen, P.R. China

Test item particulars .....:	
Standard Sheet .....:	Plug: UNE 20315-1-2 Standard sheet C4
	Socket: UNE 20315-1-2 Standard sheet C2a
Rated current (A) / Rated voltage (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 /~~IPX1/ IPX4 / IPX5/IPX6~~
Provision for earthing .....:	~~without earthing contact~~ / with earting contact
Method of connecting the cable .....:	~~rewirable / non-rewirable~~
Type of cable .....:	-
Nominal cross-sectional areas (mm^2) .....:	-
Type of terminals .....:	~~screw-type / screwless (rigid and flexible)~~
Type of connections .....:	soldered / ~~welded / crimped~~ / other: riveted
Socket-outlets:	
Degree of protection against electric shock ..:	normal protection / ~~increased protection~~
Existence of enclosures .....:	~~unenclosed~~ / enclosed
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 / rail mounting~~
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 .....:	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 .....:	See cover page
Date (s) of performance of tests .....:	See cover page

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(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 is used as the decimal separator.

General product information:

Remote controlled adaptor, 10A 250VAC 50/60Hz, Max. 2300W, IP20, with UNE 20315-1-2 standard sheet C4 plug and standard sheet C2a shuttered outlet, with solid plug pins, with an electronic switch which can be either switched on/off by integrated button or be remote controlled through App.

UNE 20315-2-5			
Clause	Requirement + Test	Result - Remark	Verdict

8	**MARKING**		
8.1	Accessories marked as follows:		P
	- rated current (A) .....:	10A / 2300W	P
	- rated voltage (V) .....:	250	P
	- symbol for nature of supply .....:	AC	P
	- manufacturer's or responsible vendor's name .....:	Aqara	P
	- type reference .....:	SP-EUC01	P
	- symbol for degree of protection (first digit) .....:	IP2X	N/A
	- symbol for degree of protection (second digit) .....:	IPX0	N/A
	Socket-outlets with screwless terminals marked with the following:		N/A
	- the length of insulation to be removed .....:		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
	Symbol of fuse: 		N/A
8.3	Marking of fixed socket-outlets placed on the main part:		N/A
	- rated current, rated voltage and nature of supply		N/A
	- identification mark of the manufacturer or of the responsible vendor		N/A
	- length of insulation to be removed, if any		N/A
	- type reference		N/A
	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		N/A
	Base described in C 3a Standard Sheet shall be used for fixed socket-outlets intended for circuits where electrical noise immunity is desired for the earthing circuit of connected equipment, UPS systems and polarized systems.		N/A
8.4	Plugs and portable socket-outlets: marking specified in 8.1, other than the type reference, easily discernible		P
	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/A
	Earthing terminals: [earth symbol] .....:		N/A

UNE 20315-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	Markings not placed on screws or other easily removable parts		N/A
	Terminals for conductors not forming part of the main function of the socket-outlet:		N/A
	- 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:		N/A
	- their being marked with graphical symbols according to EN 60417 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 IP>20: 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
	if the base is intended to be mounted only in specific surfaces in order to obtain these protection degrees, it shall be indicated by the manufacturer in the catalog or instruction sheet.		N/A
8.8	Marking durable and easily legible. Test: 15 s with water and 15 s with petroleum spirit		P
8.9	Removable plugs for class II equipment, when received by the user, shall have safety instructions.		N/A
8.10	Socket-outlets of type C1a, when received by the user, shall have the safety instructions.		N/A
8.11.2	Markings of power shall be visible until the last plug is connected to the socket		P
8.12	Removable plugs intended to be used only with flat cable shall have the relevant indications.		N/A
8.101	Adaptors shall be marked with the maximum admitted power, after the word MÁXIMO, or MÁX., and followed by the word VATIOS or W.		P
	The marked power shall be the rated current of the plug portion multiplied by the mains supply voltage.		P
	In adaptors according to 7.1.102, the presence of a protection system against overcurrent shall be indicated.		P

UNE 20315-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	In adaptors according 7.1.102.1, the maximum rated current of the fuse to be inserted in the adaptor shall be indicated with a permanent marking, accompanied by the fuse symbol.		N/A
9	**CHECKING OF DIMENSIONS**		P
9.1	Accessories and surface-type mounting boxes comply with the appropriate standard sheets and corresponding gauges, if any		P
	Insertion of plugs into fixed or portable socket-outlets ensured by their compliance with the relevant standard sheets		P
	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:		P
	- a socket-outlet having a higher voltage rating or a lower current rating;		P
	Engagement of a plug for class I equipment with a socket-outlet designed to accept plugs for class II equipment, not possible		P
	The accessories interchangeability is subjected to restrictions of tables 2 and 3 from UNE 20315-1-2.		P
	Impossibility of insertion checked by applying a gauge, for 1 min, with a force of:		P
	- 150 N (rated current ≤ 16A);		P
	- 250 N (rated current > 16A)		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at (35 ± 2) °C		P
10	**PROTECTION AGAINST ELECTRIC SHOCK**		P
10.1	Socket-outlets: live parts not accessible		P
	Live parts of plugs: not accessible when the plug is in partial or complete engagement with a socket-outlet		P
	Test with test figure 1 of UNE-EN 20324		P
	Accessories with elastomeric or thermoplastic material: additional test carried out at (35 ± 2) °C with straight test finger (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		P
10.2	Accessible parts (with exception of small screws and the like for fixing bases 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 plugs and portable socket-outlets: made of metal if the requirements of 10.2.1 or 10.2.2 are fulfilled		N/A
10.2.1	Metal covers or cover plates 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	Metal covers or cover plates automatically 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 UNE 20315-1-2		P
	Accessories with elastomeric or thermoplastic material: test carried out at (35 ± 2) °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 and mobile socket-outlets made of insulating material		P
	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
	Means cannot easily be operated by anything other than a plug and not depend upon parts which are liable to be lost		P

UNE 20315-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	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 ± 2) °C		P
10.6	Socket-outlet 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 ± 2) °C		N/A
11	**PROVISION FOR EARTHING**		P
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		N/A
	Earthing terminals of the same size as the corresponding terminals for the supply conductors		N/A
	Earthing terminals of rewirable accessories: internal		N/A
	Additional external earthing terminal of fixed socket-outlets of size suitable for conductors of at least 6 mm^2 ..... :		N/A
	Earthing terminals of fixed socket-outlets: fixed to the base or to a part reliably fixed to the base		N/A
	Earthing contacts of fixed socket-outlets:		N/A
	- fixed to the base, or		N/A
	- 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:		N/A

UNE 20315-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	- 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 conncted to the protective earthing circuit of the installation		N/A
12	**TERMINALS AND TERMINATIONS**		P
12.1	General		P
12.1.2	Non-rewirable accessories provided with soldered, welded, crimped or equally effective permanent connections (termination) ..... :	Soldered and riveted	P
	Screwed or snap-on connections not used		P
	Connections made by crimping a pre-soldered flexible conductor not permitted		P
13	**CONSTRUCTION OF FIXED SOCKET-OUTLETS**		N/A
13.1	Socket-contact assembly: sufficient resilience		N/A
13.2	Socket-contact and pins of socket-outlets: resistant to corrosion		N/A
13.3	Insulating linings, barriers and the like: adequate mechanical strength		N/A
13.4	Socket-outlets constructed as to permit		N/A
	- easy fixing of the base to a wall or in a mounting box		N/A
	- easy introduction and connection of the conductors in the terminals		N/A
	- correct positioning of the conductors		N/A
	- adequate space between the underside of the base and the surface on which the base is mounted		N/A
	- adequate space between the underside of the base and the sides of the base and the enclosure (cover or box)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Socket-outlets classified as design A: permit easy positioning and removal of the cover or cover plate, without displacing the conductors		N/A
13.5	Socket-outlets designed that full engagement of associated plugs is not prevented by any projection from their engagement face		N/A
	Gap between the engagement face of the socket-outlet and the plug: not exceed 1 mm		N/A
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:		N/A
	- held in place at two or more points by effective fixings		N/A
	- 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 base: 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:		N/A
	Compliance checked by inspection only		N/A
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:		N/A
	Compliance checked, when their removal may give access, with the standard test finger:		N/A
	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:		N/A

UNE 20315-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	Compliance checked, when their removal may give access, with the standard test finger:		N/A
	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		N/A
	Fixing means not serve any other fixing purpose		N/A
13.11	Multiple socket-outlets consist of socket-outlets, which shall have the same configuration		N/A
13.12	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
13.13	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
13.14	Mounting plate of surface-type socket-outlets: adequate mechanical strength		N/A
13.15	Socket-outlets withstand the lateral strain imposed by equipment likely to be introduced into them		N/A
	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)		N/A
	During the test: device not become disengaged from the socket-outlet		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	After the test:		N/A
	- no damage		N/A
	- socket-outlets comply with clause 22		N/A
13.16	Socket-outlets are not an integral part of lampholders		N/A
13.17	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 IPX5 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) .....:		N/A
13.18	Earthing pins: adequate mechanical strength		N/A
	Not solid pins: compliance checked by inspection and by the test of 14.2 made after the tests of clause 21		N/A
13.19	Earthing contacts and neutral contacts: locked against rotation and removable only with the aid of a tool, after dismantling the socket-outlet		N/A
13.20	Metal strips of the earthing circuit: no burrs which might damage the insulation of the supply conductors		N/A
13.21	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		N/A
13.22	lnlet openings: allow the introduction of the conduit or the sheath of the cable		N/A
	Surface-type socket-outlets:		N/A
	the conduit or sheath of the cable can enter at least I 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 EN60423 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

UNE 20315-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
13.23	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		N/A
	Accessories placed at (40 ± 2) °C for 2 h±15min. Force of 30(0,-2) N applied for 5±1 s by test probe 11 of EN 61032. During the test: no deformation		N/A
	Membranes likely to be subjected to an axial pull: axial pull of 30 (0,-2) N applied for 5±1 s. During the test: membranes not become detached		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
13.24	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		N/A
	Accessories kept at (-15 ± 2) °C for 2 h: possibility to introduce cables of the largest diameter through membranes		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
14	**CONSTRUCTION OF PLUGS AND PORTABLE SOCKET-OTLETS**		P
14.1	Non-rewirable portable accessories:		P
	flexible cable cannot be separated from the accessory without making it permanently useless		N/A
	Accessory cannot be opened by hand or by using a general purpose tool, for example a screwdriver used as such		P
14.2	Pins of portable accessories: adequate mechanical strength		P
	Test for pins not solid (made after clause 21): force of 100 N exerted on the pin, according to figure 14, for 1 min by means of a steel rod Ø 4,8 mm		N/A
	During the application of the force: reduction of the dimension of the pin not exceed 0,15 mm		N/A
	After removal of the rod: dimensions of the pin not changed by more than 0,06 mm		N/A
14.3	Pins of plugs:		P
	- locked against rotation		P
	- not removable without dismantling the plug		P
	- adequately fixed in the body of the plug when the plug is wired and assembled as in normal use		P

UNE 20315-2-5			
Clause	Requirement + Test	Result - Remark	Verdict
	Earthing or neutral pins or contacts of plugs: not possible to arrange in an incorrect position		P
14.4	Earthing contacts and neutral contacts of portable socket-outlets:		P
	- locked against rotation		P
	- removable only with the aid of a tool, after dismantling the socket-outlet		P
14.5	Socket-contact assemblies: sufficient resilience		P
	Parts of socket-contact assemblies:		P
	- are not of insulating material except ceramic, or other material with no less suitable characteristics		P
	- ensure metallic contacts at least on two opposing sides of each pin		P
	Contact pressure of the contact tube does not depend on soldered connection only		P
14.6	Pins and socket-contacts: resistant to corrosion and abrasion		P
14.7	Enclosures of rewirable portable accessories: completely enclose terminals and ends of flexible cable		N/A
	Construction of rewirable accessories:		N/A
	- conductors can be properly connected		N/A
	- cores not pressed against each other		N/A
	- cores of live conductor not pressed against accessible metal parts		N/A
	- core of earthing conductor not pressed against live parts		N/A
14.8	Rewirable portable accessories: terminal screws or nuts cannot become loose and fall out of position and establish an electrical connection between live parts and earthing terminal or metal parts		N/A
14.9	Rewirable portable accessories with earthing contact: ample space for slack of earthing (test)		N/A
	Non-rewirable non-moulded-on accessories with earthing contact: current-carrying conductors stressed before the earthing conductor if the flexible cable slips in its anchorage		N/A
14.10	Terminals of rewirable portable accessories and terminations of non-rewirable portable accessories: located and shielded that loose wires not present a risk of electric shock		N/A
	Non-rewirable moulded-on portable accessories: provided with means to prevent loose wires of a conductor from reducing the minimum isolation distance requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
14.10.1	Rewirable accessories: test with 6 mm free wire		N/A
	free wire of a conductor connected to a live terminal not touch any accessible metal part or able to emerge from the enclosure		N/A
	free wire of a conductor connected to an earthing terminal not touch a live part		N/A
14.10.2	Non-rewirable, non-moulded-on accessories: test with a free wire of length equivalent to the maximum designed stripping length declared by the manufacturer plus 2 mm		N/A
	free wire of a conductor connected to a live termination not touch any accessible metal part or reduce creepage distance and clearance below 1,5 mm to the external surface		N/A
	free wire of a conductor connected to an earth termination not touch any live part		N/A
14.10.3	Non-rewirable, moulded-on accessories:		N/A
	Verification of means to prevent stray wires reducing the minimum distance through insulation to external accessible surface below 1,5 mm		N/A
14.11	Rewirable portable accessories:		N/A
	- clear how relief from strain and prevention of twisting is intended to be effected		N/A
	- cord anchorage, or at least part of it, integral with or fixed to one of the component parts of the plug or portable socket-outlet		N/A
	- makeshift methods not used		N/A
	- cord anchorage suitable for the different types of flexible cable which may be connected to it; screws, if any: not serve to fix any other component		N/A
	- cord anchorages: of insulating material or provided with an insulating lining fixed to the metal parts		N/A
	- metal parts of cord anchorages, including clamping screws: insulated from the earthing circuit		N/A
14.12	Rewirable portable accessories and non-rewirable non-moulded on portable accessories: it is not possible to remove covers, cover-plates or parts of them intended to ensure protection against electric shock without the use of a tool		P
14.13	Covers of portable socket-outlets: bushings for entry holes for the pins not removable from the outside or detachable inadvertently from the inside		N/A
14.14	Screws intended to allow access to interior of the accessory: captive		N/A
14.15	Engagement face of plugs: no projections		P

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Clause	Requirement + Test	Result - Remark	Verdict
14.16	Engagement face of portable socket-outlets: no projection		P
14.17	Portable accessories of IP>20: enclosed according to their IP classification		N/A
	Plugs having IP>20: adequately enclosed with the exception of the engagement face		N/A
	Portable socket-outlets having IP>20: adequately enclosed without a plug in engagement		N/A
	Lid springs (if any): of corrosion-resistant material (bronze or stainless steel) .....:		N/A
14.18	Portable socket-outlets having means for suspension from a wall or other mounting surface are considered as fixed and shall comply the requirements of fixed and portable socket-outlets.		N/A
	The socket-outlets having means of suspension are not considered as fixed if their use does not prevent the movement with the hand, especially if it is not possible to screw or use other means of fixing.		N/A
	No free openings between space intended for suspension means by which the socket-outlet is fixed to the wall, or other mounting surface and live parts		N/A
14.19	Combinations of portable accessories and switches, circuit-breakers or other devices comply with relevant individual applicable standards, if relevant combined product standard does not exist .....:		N/A
14.20	Portable accessories: not integral part of lampholders		P
14.21	Plugs classified exclusively as plugs for equipment of class II shall comply:		N/A
	- When they are rewirable, with marking conditions specified in 8.9.		N/A
	- When they are part of a cord set, with the applicable part of UNE-EN 60799 “Cord set”..		N/A
	- When they are part of a cord extension set, with UNE 20315-2-7		N/A
14.22	Components (switches and fuses) incorporated in accessories: comply with the relevant standard		P
14.23	Plug-in equipment: not cause overheating of the pins or impose undue strain		P
	Plugs with rating above 16 A and 250 V: not integral part of other equipment		P
	Tests for two-pole plugs, with or without earthing contact, with rating up to and including 16 A and 250 V (plug of equipment inserted into a fixed socket-outlet complying with this standard):		P

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Clause	Requirement + Test	Result - Remark	Verdict
14.23.1	Socket-outlet connected to a supply voltage equal to 1,1 times the highest rated voltage of the equipment (V) .....:		—
	Temperature rise of the pins after 1 h not exceed 45 K (K) .....:		N/A
14.23.2	Additional torque applied to the socket-outlet in order to maintain the engagement face in the vertical plane not exceed 0,25 Nm (Nm) .....:	Max. 0,14Nm	P
14.24	Plugs can easily withdrawn by hand from the relevant socket-outlets		P
	Gripping surfaces are so designed that the plug can be withdrawn without having to pull the flexible cable		P
14.25	Membranes in inlet openings of portable accessorie: meet the requirements of 13.22 and 13.23		N/A
14.26	Portable multiple socket-outlets shall comply :		—
	- When they are rewirable, with labeling/marking specified in the paragraph 8.11		N/A
	- When they are part of a cord extensions set, with the standard UNE 20315-2-7		N/A
14.101	The plug portion of adaptors shall comply with the requirements of clause 14 in Part 1-1 referred to plugs.		P
14.102	The socket-outlet portion of adaptors shall comply with the requirements of clause 14 in Part 1-1 referred to socket-outlets.		P
14.103	Adaptors shall be constructed in such a way that they cannot be opened by using an general purpose tool, for example a screw-driver, without making it permanently useless		P
14.104	Adaptors shall have an adequate shape and be manufactured in such a way they can be easily removed from the socket-outlet by hand.		P
14.105	In case that the rated current of the socket-outlet portion is higher than the rated current of the plug portion, a protection system against overcurrent shall be interspersed. This must avoid the current to exceed the rated current of the adaptor.		N/A
14.105.1	Adaptors with protection system against overcurrent by means of fuse (fused adaptors)		—
	The fuse receptacle shall be constructed so that it can accept fuses complying UNE-EN 60269-1 and UNE-EN 60269-3		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	The fuse shall be mounted between the cable terminal or socket-contact and the plug pins.		N/A
14.105.2	Adaptors with protection system against overcurrent by other means:		—
	Adaptors according 7.102.2 shall be of manual reassembly and they shall open the circuit depending on the rated current of the adaptor.		N/A
	The protection system shall be mounted between the cable terminal or socket-contact and the plug pins.		N/A
15	**INTERLOCKED SOCKET-OUTLETS**		N/A
	Socket-outlet interlocked with a switch:		N/A
	plug cannot be inserted into or completely withdrawn from the socket-outlet while the socket-contacts are live		N/A
	socket-contacts cannot be made live until a plug is almost completely in engagement		N/A
16	**RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES, AND RESISTANCE TO HUMIDITY**		P
16.1	Resistance to ageing		P
	Accessories are resistant to ageing		P
	Portable socket-outlets: test plug as specified in Clause 20 inserted into the socket-outlets		P
	Accessories subjected to a test in a heating cabinet at (70 ± 2) °C for seven days (168 h)		P
	After the tests, the specimens show:		P
	- 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
16.2	Protection provided by enclosures		P
	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		P
	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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Flush-type and semi-flush type socket-outlets: mounted in an appropriate box according to the manufacturer's instructions		N/A
	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		P
	Appropriate test performed as specified in UNE 20324 (see also clause 10)		P
16.2.1.2	Protection against harmful effects due to ingress of solid foreign objects		P
	Appropriate test performed as specified in UNE 20324		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		N/A
16.3	Resistance to humidity		P
	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:		P
	- two days (48 h) for accessories having IPX0		P
	- seven days (168 h) for accessories having IP>X0		N/A
	After this treatment the specimens show no damage		P
16.201	Adaptors shall have a minimum protection degree of IP20		P
17	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
18	**OPERATION OF EARTHING CONTACTS**		P
	Earthing contacts provide adequate contact pressure and not deteriorate in normal use		P
	For C2a standard sheet, tests of clause 18.1.1 and 18.1.2 apply.		P
	For C3a standard sheet, tests of clause 18.2 apply.		N/A
	For the rest of standard sheets, test of clauses 19 and 21 apply.		P
18.1	Verification of lateral earthing contacts of socket-outlets		—
18.1.1	The verification lies in measuring the force made by the earthing contacts, by using the ES 19 gauge.		P
	Then the force is measured on each hook that is required to bring the markings in line: [N,N] ……. :	13N/ 13N	P
	The test is repeated with the test equipment turned 180 degrees [N,N] ……... :	13N/ 13N	P
	The average force for each contact shall not be less than 5 [N]…….(Average [N,N])	13N/ 13N	P
	After the tests of Clause 21 the above test is performed again.		P
	The average of the obtained values shall not be less than 60% of that obtained in the measurement after clause 19, however no measurement shall be less than 5 N.	12N / 12N	P
18.1.2	Lateral earthing contacts of socket-outlets shall be designed so that when inserting a plug, they cannot be deformed to such an extent that safety is not compromised.		P
	The ES18 gauge is inserted in the socket-outlet, applying a force of 150 N for one minute.		P
	After this test, the socket-outlet shall still meet the requirement of Clause 9.		P
18.2	The earthing contact pins shall have sufficient mechanical strength		N/A
	Compliance is checked by tests of Clause 24, and in the case of non-solid pins by the test of 14.2.		N/A
	The earthing pins shall be protected against rotation. Verification is performed by subjecting the pin to a torque of 0,4 Nm applied in both directions for one minute.		N/A
	For portable socket-outlets, this test is carried out after the test of paragraph 24.2.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
19	**TEMPERATURE RISE**		P
	Adaptors shall be constructed so that they comply with the following temperature rise test		—
	Adaptors are tested as delivered		P
	The testing set is placed in a location free of air flows. The socket-outlet portion is tested using testing plugs with brass solid pins having the minimum dimensions according UNE 20315-1-2.		P
	The plug portion pins are put in the clamping device having the dimensions specified in figure 101, next to thermocouple in the lower part.		N/A
	The screw is placed approximately in the middle of the bare part of the plug, and a torque of 0,8Nm is applied. An alternating current as specified in table 20 of UNE 20315-1-1 is passed for one hour,		N/A
	In case of multiway adaptors, the test is made on a socket outlet of each type and each rated current.		N/A
	The temperature is measured by the electrical thermocouple.		P
	The temperature rise shall not exceed 45 K.	See appended table 19	P
20	**BREAKING CAPACITY**		P
	Accessories have adequate breaking capacity		P
	Compliance checked by testing:		P
	- 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:		P
	- 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**		P
	Accessories withstand without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		P
	Compliance checked by testing:		P
	- socket-outlets;	See appended table 21	P
	- plugs with resilient earthing socket-contacts;	See appended table 21	P

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Clause	Requirement + Test	Result - Remark	Verdict
	- plugs with pins which are not solid	See appended table 21	N/A
	Test performed according to the procedure specified in Figure 45; point of Figure 45 at which the test program has begun (1, 2, 3) .....:	1	—
	Test current passed:		P
	- during each insertion and withdrawal of the plug (In ≤ 16A)		P
	- during alternate insertion and withdrawal, the other insertion and withdrawal being made without current flowing (In > 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:		P
	- 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**		P
	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**		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	Sheath of flexible cable is maintained inside the accessory		N/A
23.2	Pull and torque test		N/A
	Non-rewirable accessories:		N/A
	After the test: displacement ≤ 2 mm	See appended table 23.2	N/A
	No break in the electrical connections		N/A
	Rewirable accessories:		N/A
	After the test: displacement ≤ 2 mm	See appended table 23.2	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:		N/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 UNE 21027-1 or UNE 21031-1		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
23.3.1	Non-rewirable plugs intended to be incorporated in household appliances may be connected to another suitable cable and have different rated currents than the table, provided that they are specified in relevant device standards		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)		N/A
	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

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Clause	Requirement + Test	Result - Remark	Verdict
24	**MECHANICAL STRENGTH**		P
	Adaptors shall have adequate mechanical strength to withstand the stress imposed during installation and use		P
	Adaptors shall be subjected to the tests of plugs and socket-outlets of this clause in Part 1-1		P
	Compliance is checked by tests of 24, taking into account that adaptors according 7.1.101.1 are considered as fixed and the ones according 7.1.101.2 are considered as portable.		N/A
24.1	Fixed socket-outlets, portable multiple socket-outlets and surface-type mounting boxes: impact test (apparatus shown in fig. 22, 23, 24 and 25)	See appended table 24.1	N/A
	After the test: no damage, live parts no become accessible		N/A
24.2	Portable single socket-outlets and plugs: subjected to test Ed: Free fall, procedure 2 of EN60068-2-32 (tumbling barrel); number of falls ..... :	1000	P
	After the test:		P
	- no part become detached or loosened;		P
	- 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;		P
	- pins no turn when a torque of 0,4 Nm is applied for 1 min in each direction		P
24.3	Bases of surface-type socket-outlets: first fixed to a cylinder of rigid steel sheet and then fixed to a flat steel sheet		N/A
	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)		P
	Specimens placed in a freezer at (-15 °C ± 2) °C for at least 16 h. After the test: no damage		P
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)		P
	After the test: no damage		P
24.6	Screwed glands of accessories having an IP code higher than IPX0 : 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

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Clause	Requirement + Test	Result - Remark	Verdict
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		P
	Force (40 N / 75 N) applied for 1 min against the shutter of an entry hole by means of one pin (N) :	40N	—
	Pin did not come in contact with live parts		P
	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		N/A
	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
24.10	Plugs: pull test to verify the fixation of pins in the body of the plug (new specimens)		P
	Maximum withdrawal force (table 16) applied for 1 min on each pin in turn, after the specimen has been placed at (70 ± 2) °C for 1 h (N) ..... :	54N	—
	After the test: displacement of pins in the body of the plug ≤ 1 mm (mm) ..... :	Max. 0,4mm	P
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) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
	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
	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 ± 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 ≤ 25 V a.c. or metal parts separated from live parts by creepage distances twice those according to table 23)		N/A
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 ± 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 ± 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 7 applied according to figure 9 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 5 applied as shown in figure 11 (1 N): gauge not enter more than 1mm ..... :	complying / not complying	—
24.19	Shroud of portable socket-outlets: compression test (20 ± 2) N at (25 ± 5) °C by means of the apparatus shown in figure 38		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	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**		P
	Adaptors shall be resistant to heating.		P
	Compliance is checked by tests of 25, taking into account that adaptors according 7.1.101.1 are considered as fixed and the ones according 7.1.101.2 are considered as portable.		P
25.1	Specimens kept for 1 h in a heating cabinet at (100 ± 2) °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:		P
	- no access to live parts with probe B of EN 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 ± 2)°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	Protection collars of portable socket-outlets: compression test (20 N) at (25 ± 5)°C by means of the apparatus shown in figure 38		P
	After the 1 min test: the dimensions shall comply with the relevant standard sheet		P
26	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		P
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 and nuts which transmit contact pressure: in engagement with a metal thread		N/A
	Threaded part torque test	See appended table 26.1	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
26.5	Current-carrying parts (including earthing terminals) have mechanical strength, electrical conductivity and resistance to corrosion adequate:		P
	- 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;	>59%	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		N/A
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**		P
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

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Clause	Requirement + Test	Result - Remark	Verdict
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**		P
	Taking into account that adaptors according to 7.1.101.1 are considered as fixed and the ones according to 7.1.101.2 are considered as portable.		P
28.1	Resistance to abnormal heat and to fire		P
28.1.1	Glow-wire test according to EN 60695-2-10 and EN 60695-2-11	See appended table 28.1.1	P
28.1.2	Plugs with pins provided with insulating sleeves:		N/A
	Test temperature maintained for 3 h by means of the apparatus shown in figure 40 at (120 ± 5) °C / (180 ± 5) °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		N/A
	Parts of insulating material retaining live parts in position of accessories having IP>X0: of material resistant to tracking		N/A
	Tracking test at 175 V with solution A of EN 60112	See appended table 28.2	N/A
29	**RESISTANCE TO RUSTING**		P
	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 ± 5) °C:		P
	No signs of rust		P
30	**ADDITIONAL TESTS ON PINS PROVIDED WITH INSULATING SLEEVES**		N/A
30.1	Pressure test at high temperature		N/A
	Apparatus shown in figure 41, with the test specimen in position, maintained for 2 h at (125 ± 5) °C. Force applied through the blade: 2,5 N		N/A
	Thickness of the insulation measured: before the test (mm); after the test (mm) .....:		—
	Thickness remaining at the point of impression is not reduced by more than 50 % of its original value measured at the start of the test: percentage value (%) .....:		N/A
30.2	Static damp heat test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Set of 3 specimens submitted to two damp heat cycles in accordance with EN 60068-2-30		N/A
	After the test:		N/A
	- insulation resistance and electric strength test (clause 17)		N/A
	- abrasion test (sub-clause 24.7)		N/A
30.3	Test at low temperature		N/A
	Set of 3 specimens maintained at (-15 °C ± 2) °C for 24 h		N/A
	After the test:		N/A
	- insulation resistance and electric strength test (clause 17)		N/A
	- abrasion test (sub-clause 24.7)		N/A
30.4	Impact test at low temperature		N/A
	Specimens maintained at (-15 °C ± 2) °C for 24 h subjected to 4 impacts (mass 100 g, height 100 mm) by means of the apparatus shown in figure 42 rotating the specimen through 90 ° between impacts		N/A
	After the test: no crack of the insulating sleeves		N/A
101	EMC		—
	Adaptors not incorporating electronic circuits within the scope of this Standard they do not generate electromagnetic disturbances, and therefore it is not necessary to make any emission test.		N/A
	This adaptors are not sensitive to electromagnetic disturbances, and therefore it is not necessary to make any immunity test.		N/A
	Cord extension sets incorporating electronic circuits shall comply with the requirements of electromagnetic compatibility.		P

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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, the measurement being made with a plug in engagement	>10 MΩ	>5 MΩ
b)	between each pole in turn and all others, these being connected to the body with a plug in engagement	>10 MΩ	>5 MΩ.
supplementary information:			

17.2	**TABLE: electric strength**		P
	rated voltage (V) ..... :	250	—
item per 17.1	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)
a)	test voltage (V)	2000 V	No
b)	test voltage (V)	2000 V	No
supplementary information:			

19	**TABLE: temperature rise test**		P
	rated current of accessory (A) ..... :	16A / 250V (rating of plug/socket)	—
	type of accessory (non-rewirable / rewirable) ..... :	non-rewirable	—
	nominal cross-sectional area per table 15 (mm^2) (rewirable accessories) / type of conductor ..... :		—
	type of conductors (rigid solid / rigid stranded / flexible) (rewirable accessories) ..... :		—
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (Nm) (rewirable accessories) ..... :		—

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 dT (K)	allowed dT (K)	temperature rise of external parts of insulating material (25.3)
	-	-	L-N	16	Max. 40,1K	45K	Max. 14,8K
	-	-	L-E	16	Max. 33,8K	45K	Max. 12,9K

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Clause	Requirement + Test	Result - Remark	Verdict

supplementary information:

(1) Non-rewirable accessories

20	**TABLE: breaking capacity**		P
	rating of accessory (A/V) ..... :	16A / 250V (rating of plug/socket)	—
	type of accessory (non-rewirable / rewirable) ..... :	non-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) (rewirable accessories) / type of conductor ..... :	-	—
	type of conductors (rigid solid / rigid stranded / flexible) (rewirable accessories) ..... :	-	—
	nominal diameter of thread (mm); torque 2/3 of that specified in 12.2.8 (Nm) (rewirable accessories) ..... :	-	—
	rate of operation (strokes per minute) ..... :	-	—

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)							
	4,85	19,0	275	20	-	100	-	-	P

supplementary information:

(1) starting point 1 or 3 of Figure 45

(2) starting point 2 of Figure 45

21	**TABLE: normal operation**		P
	rating of accessory (A/V) ..... :	16A / 250V~ (rating of plug/socket)	—
	type of accessory (non-rewirable / rewirable) ..... :	Non-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) (rewirable accessories) / type of conductor ..... :	-	—
	type of conductors (rigid solid / rigid stranded / flexible) (rewirable accessories) ..... :	-	—

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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) (rewirable accessories) ..... :					-			—
	rate of operation (strokes per minute) ..... :					-			—
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)							
	4,85	19,0	250	16	-	10000	-	-	P
	TABLE: test for shuttered socket-outlets								P
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				
	OK				OK				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)			
	L-N		16		Max. 41,9K	45K			P
	L-E		16		Max. 34,6K	45K			P
									P
17.2	**TABLE: electric strength**								P
specimen	item per 17.1		test voltage applied between:		test voltage (V)		flashover / breakdown (Yes/No)		
	a)		between all poles connected together and a metal foil in contact with the outer surface of accessible external parts of insulating material including external assembly screws, the measurements being made with plug(s) in engagement;		1500		No		

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Clause	Requirement + Test	Result - Remark	Verdict

	b)	between each pole in turn, and all others, these being connected together to a metal foil in contact with the outer surface of accessible external parts of insulating material including external assembly screws with plug(s) in engagement	1500	No

supplementary information:

(1) starting point 1 or 3 of Figure 45

(2) starting point 2 of Figure 45

(3) starting point 1 or 2 of Figure 45

22	**TABLE: force necessary to withdraw the plug**				P
	Rated current (A) ..... :		16A (Rating of plug/socket)		—
	Number of poles ..... :		2P+E		—
22.1	Verification of the maximum withdrawal force				P
specimen	socket-outlets (multi-pin gauge)		plugs with resilient earthing contact assemblies (single-pin gauge)		P
	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	
	54N	N	18N	N	P
22.2	Verification of the minimum withdrawal force				P
specimen	socket-outlets (single-pin gauge)		plugs with resilient earthing contact assemblies (single-pin gauge)		P
	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)	
	2,0N	N	2N	N	P

supplementary information:

23.2	**TABLE: pull and torque test**	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	rating of accessory (A) ..... :					—
	type of accessory (non-rewirable / rewirable) ..... :					—
	smallest/largest cross-sectional area per table 17 (mm^2) (rewirable accessories) ..... :					—
	nominal diameter of thread (mm); torque 2/3 per table 6 (Nm) (rewirable accessories) ..... :					—
specimen	type of flexible cable	number of conductors and nominal cross-sectional area (mm^2)	pull (100 times) (N)	torque (1 min) as specified in table 18 (Nm)	displacement (mm)	N/A
supplementary information:						

23.4	**TABLE: flexing test**				N/A
	rated current (A) ..... :				—
specimen	type of flexible cable	number of conductors and nominal cross-sectional area (mm^2)	test current (A)	mass (N)	N/A
supplementary information:					

24.1	**TABLE: impact test**			N/A
part of enclosure tested per table 21 (A, B, C, D)	blows per part	height of fall (mm)	comments	
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)
Enclosure		125	Max.1,6mm
supplementary information:			

25.3	**TABLE: ball pressure test of insulating materials**	P

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Clause	Requirement + Test	Result - Remark	Verdict

	allowed impression diameter (mm) .....:	≤ 2 mm	—
part under test		test temperature (°C) (1)	impression diameter (mm)
Shutter body		70	Max. 0,9mm
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**				N/A
threaded part identification	diameter of thread (mm)	column number (1, 2 or 3)	applied torque (Nm)	times (5/10)	no damage
supplementary information:					

27.1	**TABLE: creepage distances, clearances and distances through sealing compound**						P
	rated voltage (V) .....:		250				—
item per table 23	creepage distance dcr, clearance cl and distance through sealing compound dtsc at/of:	required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)	required dtsc (mm)	dtsc (mm)
1); 6)	between live parts of different polarity	≥ 3	3,1	≥ 3	3,1	≥	-
2); 7)	between live parts and accessible surface of parts of insulating material	≥ 3	> 4	≥ 3	> 4	≥	-
2); 7)	between live parts and earthed metal parts including parts of earthing circuit	≥ 3	> 4	≥ 3	> 4	≥	-
2); 7)	between live parts and external assembly screws, other than screws which are on the engagement face of plugs and are isolated from the earthing circuit	-	-	-	-	≥	-
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)
Enclosure	PC	750	N	-	N

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Clause	Requirement + Test	Result - Remark	Verdict

Shutter body	PA	650	N	-	N
supplementary information:					

28.2	**TABLE: resistance to tracking**		N/A
	number of drops ..... :	50	—

part under test	material designation	test voltage (V)	flashover / breakdown (Yes/No)
		175	
supplementary information:			