TEST REPORT

DIN VDE 0620-1

Plugs and socket-outlets for household and similar purposes

Part 1: General requirements

Report reference No ..... :	SH10110684-001
Tested by (printed name and signature) ..... :	Justin Zhang
Approved by (printed name and signature) ..... :	Paulus Hou
Date of issue ..... :	2010-12-30

Testing Laboratory Name ..... :	Intertek Testing Services Shanghai
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Testing location ..... :	Same as above

Applicant's Name ..... :	GEMBIRD ELECTRONICS (NINGBO) LIMITED
Address ..... :	Xiejialu Village, Simen Town, Yuyao City, Zhejiang,
..... :	P.R.China

Test specification	
Standard ..... :	DIN VDE 0620-1: 2010-02
Test procedure ..... :	GS-mark
Procedure deviation ..... :	N/A
Non-standard test method ..... :	N/A

Test Report Form	
Test Report Form No. ..... :	G0620-1_10-02_A1
TTRF originator ..... :	Intertek
Master TRF ..... :	dated 2010-03-17

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Test item description	
Type of accessory..... :	Multiple socket outlet with cord extension set
Trademark ..... :	GEMBIRD
Manufacturer/site ..... :	Same as the applicant
Factory/site ..... :	Same as the applicant
Model and/or type reference ..... :	SPG3-B; SPG6-B

Test item particulars	
Standard Sheet ..... :	DIN 49440-1
Rated current (A)..... :	16A
Rated voltage (V) ..... :	250V
Degree of protection against harmful ingress of water..... :	Ordinary(IPX0) ~~/ splash-proof (IPX4)/ jet-proof (IPX5)~~
Provision for earthing ..... :	~~without earthing contact~~ / with earthing contact
Method of connecting the cable ..... :	~~rewirable /~~ non-rewirable
Type of cable..... :	H05VV-F
Nominal cross-sectional areas (mm^2) ..... :	3G1,5mm^2 (length: min.1,4m)
Type of terminals..... :	~~screw-type / screwless (rigid) / screwless (rigid and flexible)~~
Type of connections ..... :	Hook soldered
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~~
Test case verdicts	
Test case does not apply to the test object ... :	N/A (Not Applicable)
Test item does meet the requirement ..... :	P(ass)
Test item does not meet the requirement ..... :	F(ail)
Testing	
Date of receipt of test item ..... :	2010-11-17
Date(s) of performance of test ..... :	2010-11-17 to 2010-12-30

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

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

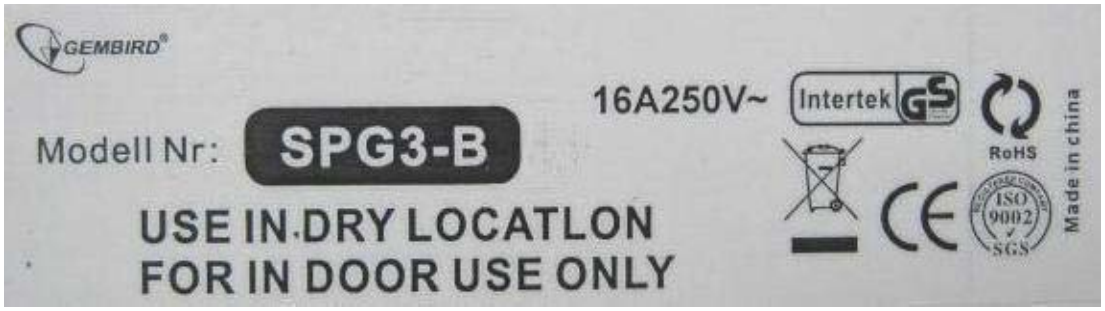
"(see remark #)" refers to a remark appended to the report.

"(see Annex #)" refers to an annex appended to the report.

Throughout this report a comma is used as the decimal separator.

Copy of marking plate:

(SPG3-B as representative model)



$\frac{16}{250}$ ~ (in DIN 49440-1 socket-outlet portion)

WARNUNG:

- **Nicht hintereinanderstecken**
- **Nicht abgedeckt betreiben**
- **Spannungsfrei nur bei gezogenem Stecker**
- **Nur zur Verwendung in trockenen Räumen**

Note: Warnings in label are pasted on the

back of product.

Description of products:

16A 250V~, IP20, Class I, non-rewirable, with multi-ways DIN49440-1 socket-outlets without shutter, with a CBE, with a non-rewirable plug with cord H05VV-F 3G1,5mm^2 (The min 1,4m in length for cord).
SPG3-B: with 5 ways socket outlet;
SPG6-B: with 6 ways socket outlet.

Summary of testing:

This test report complies with DIN VDE 0620-1/2010-02

No obvious or conspicuous PAK/PAH issues was observed.

This test report should be read in conjunction with the Constructional Data Form (CDF).

Remarks:

1. The samples for each group of testing were selected randomly from the samples provided by the manufacturer.
2. For each test in 10.6.1, 10.6.2, 12.4 and 24.10 three samples are required.
3. The test results reported in this test report shall refer only to the sample actually tested and shall not refer or be deemed to refer to bulk from which such a sample may be said to have been obtained.
4. Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods.
5. We conclude that the product presented in this test report complies with the standard according to the test results on the submitted samples.
6. A varistor is connected between L and N pole and the varistor is protected by thermal link, and the varistor is not used for surge protection function and no such function should be advertised.

Component Data Form(CDF):

Please refer to the latest edition of the Constructional Data Form (CDF) issued for this test report.

Insulating material declaration, if any:

Please refer to the latest edition of the Constructional Data Form (CDF) issued for this test report.

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
8	MARKING		P
8.1	Accessories marked with:		
	The legal requirements for the marking of products are to considered. (GPSG)		P
	- rated current (A) .....:	16A	P
	- rated voltage (V) .....:	250V	P
	- symbol for nature of supply .....:	~	P
	- manufacturer's or responsible vendor's name or trade mark in accordance with the GPSG §5 (0620-1) .....:	See page 1	P
	- type reference, that may be a catalogue number.:	See page 1	P
	- symbol for degree of protection (first digit) .....:	IP2X	N/A
	- symbol for degree of protection (second digit) ....:	IPX0	N/A
	- Rated value and type of replaceable fuse…..		N/A
	Socket-outlets with screwless terminals marked with:		
	- the length of insulation to be removed .....:		N/A
	-- an indication of the suitability to accept rigid conductors only (if any) .....: (NOTE: this may be given on the outlet, on the package or in a manual)		N/A
	Plugs and/or socket-outlets, that is part of an equipment need not carry this marking if the equipment is marked with the rating, manufacturer and type.		N/A
8.2	Symbols used: as required in the standard		P
	Marking for the nature of supply placed next to the marking for rated current and rated voltage		P
8.3	Marking of fixed socket-outlets placed on the main part:		
	- rated current, rated voltage and nature of supply		N/A
	- identification mark or name of the manufacturer or of the responsible vendor		N/A
	- length of insulation to be removed for screwless terminals, if any		N/A
	- type reference that may be a catalogue number:		N/A
	Parts e.g. cover plates necessary for safety purposes and intended to be sold separately: marked with the manufacturer's or responsible vendor's name or mark or identification and type reference		N/A

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	Symbol for the degree of protection (second digit): marked on the outside of its associated enclosure so as to be easily discernible in intended use.		N/A
8.4	Plugs and portable socket-outlets: marking specified in 8.1, other than the type reference, easily discernible when assembled and wired.		P
	Accessories for equipment of class II not marked with the symbol for class II construction		N/A
	Portable socket outlets with IP-Code IPX4 shall be marked with the following symbol .....:		N/A
8.5	Neutral terminals: N .....:		N/A
	Earthing terminals: [earth symbol 8.2] .....:		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:		
	- 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:		
	- their marking with graphical symbols according to EN 60147 or colours and/or alphanumeric system, or		N/A
	- their physical dimension or relative location		N/A
	Leads of indicator lamps are not to be considered conductors for the purpose of this clause.		N/A
8.6	Fixed socket-outlets higher than IP 20: marked with the IP symbol visible when the accessory is installed		N/A
	Surface-type mounting socket outlets with protection degree IPX4 shall be easily discernible be marked that the condensation water hole in the lowest mounting position has to be opened		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 is ensured		N/A
	Additional indication for socket-outlets intended only for mounting on certain types of surface		N/A
8.8	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	Portable Multiple socket-outlets and extensions must have the following warnings on the equipment or in the package (Text or pictograms):		P

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Cl.	Requirement – Test	Result	Verdict
	-For portable multiple outlets: - Do not connect after each other (Nicht hintereinander stecken) - Do not cover when in use. (Nicht abgedeckt betreiben)		P
	-For portable multiple outlets with functional switch, additionally: - To disconnect Voltage pull the plug. (Spannungsfrei nur bei gezogenem Stecker)	With a CBE switch	P
	For intermediate adaptors: - Do not connect after each other (Nicht hintereinander stecken)		N/A
	- Portable multiple outlets and extensions cords shall be provided with information about the intended environment	Nur zur Verwendung in trockenen Räumen	P
8.10	Units intended for installation shall be marked on the smallest closed selling unit with the note according to Appendix E		N/A

9	CHECKING OF DIMENSIONS		
9.1	Accessories and surface-type mounting boxes comply with the appropriate standard sheets:		P
	DIN 49075 (series), DIN49406(series),DIN49437, DIN49440(series), DIN49441(series), DIN49442, DIN 49443, DIN 49445, DIN49446, DIN 49447, DIN 49448, DIN 49464.	DIN49440 series	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/or by means of gauges with manufacturing tolerances as shown in table 2, unless otherwise specified. The most unfavourable dimension of the standard sheets shall be used for the gauges.		P
	Plugs and socket outlets to the standard sheets in 9.1 shall be tested with the gauges L1 to L9.		P
	Socket-outlets are subjected, before the above checking, to 10 insertions and withdrawals of a plug complying with the corresponding standard sheet having the maximum pin dimensions.		P
9.2	It shall not be possible to engage a plug with:		
	- a socket-outlet having a higher voltage rating or a lower current rating;		P

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	- a socket-outlet with a different number of live poles is permissible for socket-outlets specially designed for engagement with plugs of a lower number of poles provided that no dangerous situation can arise;		P
	- a socket-outlet with earthing contact (plug for class 0 equipment).		P
	Engagement of a plug for class 0 or class I equipment with a socket-outlet designed to accept plugs for class II equipment, not possible		N/A
	Test: inspection or testing with gauges according to the dimensions in the standard sheets.		P
	Impossibility of insertion checked by applying the gauge L11, for 1 min, with a force of:		
	- 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	Sockets or 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.		N/A
	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		
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 standard test finger shown in figure 2 of DIN 61032(VDE0470-2).		P
	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 8: specimens not show deformation 15 min after.		P
10.2	Accessible parts (with exception of small screws and the like for fixing bases and covers or cover plates and grounding): made of insulating material		P

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Cl.	Requirement – Test	Result	Verdict
	Cover or cover plates of fixed socket-outlets and accessible part of plugs and table-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
	For the case of single pole insertion the requirement in 10.3 applies.		N/A
10.2.2	Metal covers or cover plates automatically connected, through a low-resistance connection, to the earth during fixing.		N/A
	The Creepage distances and the clearances between the live pins of a plug when fully inserted and the earthed metal cover of a socket-outlet shall comply with item 2 and 7 of table 23 respectively; in addition for single pole insertion the requirements of 10.3 apply.		N/A
	Test: With handheld gauge 10 and 12		N/A
10.3	Connection 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 10 and 12.		P
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		P
	Socket-outlets with enclosure or bodies of rubber or polyvinyl chloride: test carried out with gauge 10 and 12 and 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 .....:		N/A
10.4	External parts of plugs and portable socket-outlets made of insulating material. Exception is plugs and table socket-outlets		P
	Overall dimensions of rings around pins not exceed 8 mm concentric with respect to the pin		N/A

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Cl.	Requirement – Test	Result	Verdict
10.5	Shuttered socket-outlets: live parts not accessible, without a plug in engagement, with the gauge number 13.		N/A
	Live contacts automatically screened when the plug is withdrawn		N/A
	Means cannot easily be operated by anything other than a plug and not depend upon parts which are liable to be lost		N/A
	Gauge 13 applied to the entry holes corresponding to live contacts with a force up to 1 N in three straight movements shall not touch live parts; socket-outlets with a plug partially inserted are checked with the test finger.		N/A
	Accessories with elastomeric or thermoplastic material: test carried out at 35 °C ± 2 °C		N/A
	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		N/A
10.6	Earthing contacts of a socket-outlet designed that they cannot be deformed by the insertion of a plug		P
10.6.1	The socket-outlet is placed with the outlet contacts in vertical position. Gauge 14 inserted into the socket-outlet with a force of 150 N for 1 min. This test is conducted on new samples		
	After this test: socket-outlet still comply with the requirements of clause 9		P
10.6.2	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
10.7	Socket-outlet with increased protection(higher IP20): live parts not accessible		N/A
	Gauge 13 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 shall separate before the earth connection is broken		P
11.2	Earthing terminals of rewirable accessories comply with clause 12	Non-rewirable	N/A

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Cl.	Requirement – Test	Result	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
	An additional terminal outside on the housing of fixed socket-outlets is permitted 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:		
	- fixed to the base, or a part reliably connected to the base		N/A
	- fixed to the cover (reliably connected to the earthing terminals; contact pieces silver plated or with adequate protection)		N/A
	This connection shall be ensured under all conditions which may occur in normal use,…		N/A
	Parts of earthing circuit in one piece or reliably connected by riveting, welding, or the like	Hook soldering	P
11.3	Accessible metal parts of fixed socket-outlets: permanently and reliably connected to the earthing terminal	Portable accessories	N/A
11.4	Socket-outlets, having an IP code higher than IPX0, with an enclosure of insulating material and more than one cable inlet, shall be provided with an additional internal earthing terminal for the continuity of the earthing circuit, or		N/A
	In case of sufficient space for an unsecured terminal that permits the connection of an incoming and outgoing earthing conductor.		N/A
	In the case of an unsecured terminal the requirement in 12.2.8 are not applicable.		N/A
	Test for the requirements 11.2 to 11.4 : inspection and tests in clause 12 and in addition for unsecured terminals a connection test with the type of terminal specified by the manufacturer.		N/A
11.5	Connection between earthing terminal and accessible metal parts: of low resistance		N/A
	Test:		
	Test current equal to 1,5 times the rated current or 25 A a.c.(A) .....:		—
	Resistance not exceed 0,05 Ω (Ω) .....:		N/A

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
12	TERMINALS		
	All the test on terminals, with the exception of the test of 12.3 11, made after the test of clause 16	No terminals	N/A
12.1	General		
12.1.1	Rewirable fixed socket-outlets provided with screw-type terminals or with screwless terminals ..:	Portable	N/A
	Rewirable plugs and portable socket-outlets provided with terminals with screw clamping .....:	Non-rewirable	N/A
	Pre-soldered flexible conductors used: pre-soldered area outside the squeezed 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 .....:	Hook soldered	P
	Screwed or snap-on connections not used		P
	Connections made by crimping a pre-soldered flexible conductor not permitted		P
	Compliance is checked by inspection and the tests in 12.2 or 12.3 as applicable.		—
12.2	Terminals with screw clamping for external copper conductors		N/A
12.3	Screwless terminals for external copper conductors		N/A
12.4	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
13	CONSTRUCTION OF FIXED SOCKET-OUTLETS		N/A
14	CONSTRUCTION OF PLUGS AND PORTABLE SOCKET-OUTLETS		
14.1	Non-rewirable plug or non-rewirable portable socket-outlet:		
	flexible cable cannot be separated from the accessory without making it permanently useless		P
	Accessory cannot be opened by hand or by using a general purpose tool, for example a screwdriver used as such		P

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Cl.	Requirement – Test	Result	Verdict
14.2	Pins of plugs and portable socket-outlets: adequate mechanical strength	No pin	N/A
	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		
	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:		
	- locked against rotation	Non pin	N/A
	- not removable without dismantling the plug		N/A
	- adequately fixed in the body of the plug when the plug is wired and assembled as in normal use		N/A
	Earthing contacts and neutral pins of plugs: not possible to insert in an incorrect position		N/A
14.4	Earthing contacts and neutral contacts of portable socket-outlets :		
	- locked against rotation		P
	- removable only with the aid of a tool, after dismantling the socket-outlet		P
14.5	Socket-contact assemblies: sufficient resiliency		P
	Parts of socket-contact assemblies, which with an inserted plug will be in contact with the pin and complete the circuit must be of metal. And		P
	-shall ensure metallic opposing contacts at least on two sides of each pin.		P
	These requirements also apply to socket-outlets where the contact pressure relies on insulating material		P
	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		P
	The contact pressure of the contact tube shall not depend on soldered connection only.		P
14.6	Pins and socket-contacts: resistant to corrosion and abrasion		P
	Resistant to abrasion according clauses 20 and 21		P
	Resistant to corrosion by inspection and test according clause 26.5		P
14.7	Enclosures of rewirable accessories: completely enclose terminals and ends of flexible cable.		N/A
	Construction of rewirable accessories:		

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Cl.	Requirement – Test	Result	Verdict
	- 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		P
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		P
14.10.1	Rewirable accessories: test with 6 mm free wire		
	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		
	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		P
	free wire of a conductor connected to an earth termination not touch any live part		P
14.10.3	Non-rewirable, moulded-on accessories:		
	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 plugs and rewirable portable socket-outlets:		
	- clear how relief from strain and prevention of twisting is intended to be effected		N/A

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Cl.	Requirement – Test	Result	Verdict
	- 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
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 portable socket-outlets: bushings for entry holes for the pins not removable from the outside or detachable inadvertently from the inside	No such parts	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		N/A
14.16	Engagement face of portable socket-outlets: no projection		P
14.17	Accessories other than IP20: provided with gland(s) or the like		N/A
	Plugs other than IP20: 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 with means for mounting on a wall or other surfaces must be so constructed that the means for mounting does not permit access to live parts and so that no fault during testing expose live parts.		P
	Portable Socket-outlets with means for permanent mounting shall be tested to 28.1.1 (as stationary outlet) and to 24.1		P
	No free openings between space intended for suspension means fixed to the wall and live parts		P

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
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	Movable accessories not integral part of lampholders.		P
	Adaptors without interposed auxiliaries (Switches, regulators, timers etc.) shall comply with DIN 49437.		N/A
	Multiple outlets with earthing contact and with stiffly mounted plug are not allowed.		N/A
14.21	- Plugs must be non-rewirable if exclusively for class II		N/A
	- Extension cords must have PE.		N/A
	- Class II Plugs incorporated in a cord set shall be provided with a connector for equipment of class II.		N/A
14.22	Components (switches and fuses) incorporated in accessories: comply with the relevant standard	See CDF	P
14.23	Plug-in equipment: not cause overheating of the pins or impose undue strain		N/A
	Plugs with rating above 16 A and 250 V: not integral part of other equipment		N/A
	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):		N/A
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) ..... :		N/A
14.24	Plugs: can easily withdrawn by hand from the relevant socket-outlet		N/A
	Gripping surfaces: so designed that the plug can be withdrawn without pull on the flexible cable and comply with one of:		N/A
	-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

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Cl.	Requirement – Test	Result	Verdict
	-The plug has a special device for pulling it out, e.g. a hook or ring		N/A
14.25	Membranes in inlet openings: meet the requirements of 13.22 and 13.23		N/A
14.26	Plugs and socket outlets on adaptors shall comply with DIN 49440 and DIN 49441		N/A
	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.		N/A
	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])		N/A
14.27	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.	Min 1,4m for cord length; Measured: 1,5m	P
	For cords in spiral form the length is measured when stretched under own weight.		N/A
14.28	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
	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

15	INTERLOCKED SOCKET-OUTLETS		
	Socket-outlet interlocked with a switch:		
	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

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Cl.	Requirement – Test	Result	Verdict
16	RESISTANCE TO AGEING, TO HARMFUL INGRESS OF WATER AND TO HUMIDITY		
16.1	Resistance to ageing		
	Accessories shall be resistant to ageing		P
	Plugs and sockets with an IP code higher than IP X0 are tested after being mounted and connected according to 16.2	IP20	N/A
	Accessories subjected to a test in a heating cabinet at 70 °C ± 2 °C for seven days (168 h)		P
	After the tests (96 h at 45-55%RH), samples shall show:		
	- no crack visible with normal or corrected vision without additional magnification		P
	- no sticky or greasy material		P
	- no trace of cloth (forefinger pressed with 5 N)		P
	- no damage		P
16.2	Protection by enclosure		
	Enclosure of accessories shall provide a degree of protection against harmful ingress of solids and water in accordance with the IP classification.	IP20	P
	Accessories are mounted on a vertical surface as in intended use. Flush-type and semi flush-type socket-outlets fixed in a test wall using an appropriate box in accordance with the manufacturer's instructions		N/A
	Accessories with glands or membranes are fitted with a cord according to 12.2.1. Glands are tightened with a torque 2/3 of the torque for the test in Clause 24.6.		N/A
	Mounting screws for housings are tightened with 2/3 of the torque in table 6 of 12.2.8.		N/A
	Parts that can be removed without tools are removed.		N/A
	Flush-type and semi flush-type socket-outlets fixed:		
	- in a test wall using an appropriate box in accordance with the manufacturer's instructions		N/A
	-The wall description and instructions for mounting if according to the manufacturer.		N/A
	- in a test wall according to figure 13. No water can enter between the tile and socket-outlet box.		N/A
	The test wall for surface type socket-outlets is arranged in vertical position.		N/A

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Cl.	Requirement – Test	Result	Verdict
	Fixed socket-outlets are mounted as in normal use and fitted with such cable having conductors of the largest and smallest cross sectional area given in table 3 as appropriate to their rating.		N/A
	Portable socket-outlets tested on a plain, horizontal surface in a position as in normal use and fitted with flexible cables according to table 17 having the largest and smallest cross-sectional area given in table 3:		N/A
	- largest cross-sectional area (mm^2); type of cable (table 27) .....:		—
	- smallest cross-sectional area (mm^2); type of cable (table 27) .....:		—
	Mounting screws 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) .....:		—
	Parts that can be removed without tools are removed.		N/A
	Socket –outlets with IP classification lower than IP X5 and drain holes have a drain hole open according to intended use and in lowest position.		N/A
	Fixed socket-outlets are tested with an inserted plug of same protection degree (or Gauge DIN 49440-4) and		N/A
	Fixed socket-outlets are tested without plug and with the lid closed		N/A
	Portable socket outlets are tested with and without plug (or Gauge DIN 49440-4) in engagement.		N/A
	Plugs are tested engaged with an outlet of the same system and with the same degree of protection.		N/A
	High voltage test according to clause 17.2 immediately after the IP test.		N/A
16.2.1	Protection against access to hazardous parts and ingress of solids.	IP20	P
16.2.1.1	Protection against contact with hazardous parts		P
	Appropriate test performed as specified in EN 60529 (VDE 0470) (see also clause 10)	IP20	P
16.2.1.2	Protection against ingress of solids.		P
	Appropriate test performed as specified EN 60529 (VDE 0470)		P

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Cl.	Requirement – Test	Result	Verdict
	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. Drain holes remain closed.		N/A
	Drain holes remain closed.		N/A
16.2.2	Protection against ingress of water		N/A
	The enclosure of plugs and sockets shall provide protections against ingress of water according to their IP classification (test to EN 60529).		N/A
	Directly after this test the High voltage test 17.2 must be passed. No water may penetrate in between the insulation and the strands.		N/A
16.3	Resistance to humidity		
	Accessories proof against humidity which may occur in normal use		P
	Compliance checked by a humidity treatment carried out in a humidity cabinet containing air with relative humidity maintained between 91 % and 95 %	93%	P
	Parts that can be removed without a tool are removed.	No such part	N/A
	Specimens kept in the cabinet for:		
	- two days (48 h) for IPX0 accessories	IP20	P
	- seven days (168 h) for accessories higher than IP X0		N/A
	After this treatment the specimens show no damage		P

17	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
17.1.1	For socket-outlets: insulation resistance (500 V d.c. after 1 min application):		
	a) between all poles connected together and the body, with a plug in engagement ≥ 5 MΩ .....:	199MΩ	P
	b) between each pole in turn and all others connected to the body, with a plug in engagement ≥ 5 MΩ .....:	199MΩ	P
	c) between any metal enclosures and metal foil in contact with the inner surface of its insulating linings, if any ≥ 5 MΩ .....:		N/A
	d) between any metal part of the cord anchorage, including clamping screws, and earthing terminal or earthing contact, if any, of portable socket-outlets ≥ 5 MΩ .....:		N/A

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Cl.	Requirement – Test	Result	Verdict
	e) between any metal part of the cord anchorage of portable socket-outlets and a metal rod of the maximum diameter of the flexible cable inserted in its place (see table 17) ≥ 5 MΩ .....:		N/A
17.1.2	For plugs: insulation resistance (500 V d.c. after 1 min application):		
	a) between all poles connected together and the body ≥ 5 MΩ .....:	MΩ	N/A
	b) between each pole in turn and all others connected to the body ≥ 5 MΩ .....:	MΩ	N/A
	c) between any metal part of the cord anchorage, including clamping screws, and earthing terminal or earthing contact, if any ≥ 5 MΩ .....:	MΩ	N/A
	d) between any metal part of the cord anchorage and a metal rod of the maximum diameter of the flexible cable inserted in its place ≥ 5 MΩ .....:	MΩ	N/A
17.2	Socket-outlets: electric strength, test voltage (a.c.,full value for 1 min):		
	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
	Plugs: electric strength, test voltage (a.c., for 1 min):		
	a) test voltage (V) .....:	~~1250 V / 2000 V~~	N/A
	b) test voltage (V) .....:	~~1250 V / 2000 V~~	N/A
	c) test voltage (V) .....:	~~1250 V / 2000 V~~	N/A
	d) test voltage (V) .....:	~~1250 V / 2000 V~~	N/A
	During the test no flashover or breakdown		P

18	OPERATION OF EARTHING CONTACTS		
18.1	Earthing contacts provide adequate contact pressure and not deteriorate in normal use. The contact pressure of the earthing side-contact of 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 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

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Cl.	Requirement – Test	Result	Verdict
	Then the force is measured on each hook that is required to bring the markings in line: [N,N]….	13N / 12N	P
	The test is repeated with the test equipment turned 180 degrees [N,N]……..	11N / 12N	P
	The average force for each contact shall not be less than 5 [N]…….(Average [N,N])	12N / 12N	P
	Other outlets are tested according to clause 19 and 21.		P
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.		N/A
	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.		N/A

19	TEMPERATURE RISE		
	Accessories shall be so constructed that they comply with the following temperature rise test.		P
	Testing shall be performed at a draught-free location.		P
	The temperature is determined by means of melting particles, colour-changing indicators or thermocouples, chosen and positioned in such a way that they have negligible effect on the temperature being determined.	thermocouples	P
	accessories provided with cords are tested as delivered:	~~Fixed socket-outlet/~~portable socket-outlet/~~plugs/adaptor~~	P
	- type of cord; number of conductors and nominal cross-sectional area (mm^2) :	H05VV-F3G1,5 mm^2	P
	Rewirable accessories without cords are fitted with polyvinyl chloride insulated conductors having a nominal cross-sectional area as show in table 15:		N/A
	- rated current of accessory .....:		N/A
	- nominal cross-sectional area (mm^2) .....:		N/A
	- type of conductors .....:		N/A
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 12.2.8 (Nm) .....:		N/A

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Cl.	Requirement – Test	Result	Verdict
	Note: To ensure normal cooling of the terminals, the conductors connected to them should have a length of at least 1m		N/A
	For accessories having three poles or more, the current during the test shall be passed through the phase contacts, where applicable. 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. For the purpose of this test, earthing contacts, irrespective of their number, are considered as one pole		P
	Number of poles:	2P+E	P
	Separate tests made passing the current through:	20A	P
	- the neutral contact, if any, and the adjacent phase contact. Temperature rise on terminals or terminations (K).....:		N/A
	- the earthing contact, if any, and the nearest phase contact. Temperature rise on terminals or terminations (K) .....:	40K	P
	The Temperature rise of touchable part:		P
	Metal part shall not exceed 40K:	5K	P
	Non-metal part shall not exceed 60K:	25K	P
	For the testing according to 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 (K)		N/A
19.1	Fixed socket-outlets:		
	Flush mounted accessories are mounted in flushed-mounted boxes.		N/A
	Surface-type socket-outlets shall be mounted centrally on the surface of a wooden block		N/A
	Other type of socket-outlets shall be mounted according to the manufacturer's instruction or, in the absence of such an instruction, in the position of normal use considered to give the most onerous conditions.		N/A
	Socket-outlets are tested using a test plug according to Figure 16.		N/A
	In the case of multiple socket-outlets the test is carried out only on one socket-outlet of each type and current rating. The test plug is inserted into the socket-outlet in which the highest temperature rise can be expected. In case of doubt the test is repeated with a test plug inserted in a further socket-outlet.		N/A
19.1.1	Fixed socket-outlets without additional function:		
	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

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Cl.	Requirement – Test	Result	Verdict
19.1.2	Fixed socket-outlets with additional functions:		
	1) socket-outlets are tested at rated current for 1 h,		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 contact sockets as well as tterminals for outer 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
19.2	Portable socket-outlets		
	Portable socket-outlets are tested using a test plug according to Figure 16.		P
	Non-rewirable plug for cord extension set or multiple socket-outlet are tested with a current according to table 20 for rewirable or non-rewirable portable socket-outlets.	Test current: 20A Measured values on plug: 41K	P
19.2.1	Portable socket-outlets without additional function		
	test for 1 h with a alternating current as specified in Table 20		N/A
	The temperature rise of the terminals and internal connections shall not exceed 45 K:		N/A
19.2.2	Portable socket-outlets with additional function	With CBE	
	1) socket-outlets are tested at rated current for 1 h,	Covered by 0,95 times of tripping current test	P
	The temperature rise of terminals and internal connections for additional function shall not exceed the limits given in appropriate regulations		N/A
	The other terminals and connections shall not exceed 45K		N/A
	2)socket-outlets are tested with an alternating current as specified in table 20 for 1 h	Test current: 20A	P

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Cl.	Requirement – Test	Result	Verdict
	In case of tripping of the integrated protection device the test will be repeated with 0,95 times of the tripping current.	Test current: 16,5A; Tripping current: 17,4A	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.	No fuse link	N/A
	The temperature rise of all terminals and connections shall not exceed 70K.	65K	P
	The temperature rise of contact tube shall not exceed 45K.	38K	P
19.3	Plugs		
	Plugs are tested as follows:		N/A
	An appropriate test apparatus is to be mounted together with a thermocouple in the lower part to each active pin respectively to the earthing contact of the plug (NOTE: Also a commercially obtainable socket-outlet can be regarded as an appropriate test apparatus)		N/A
19.3.1	Plugs without additional function		
	test for 1 h with a alternating current as specified in Table 20		N/A
	The temperature rise of the terminals and connections shall not exceed 45 K:		N/A
19.3.2	Plugs with additional function		
	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 sockets as well as terminals for outer 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

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Cl.	Requirement – Test	Result	Verdict
	The temperature rise of contact tube shall not exceed 45K.		N/A
19.4	Adaptors		
	Socket-outlets are tested using a test plug according to Figure 16.		N/A
	Plugs are tested as follows:		N/A
	An appropriate test apparatus is fitted together with a thermocouple on the lower part of each live pin respectively to the earthing contact of the plug. (NOTE: As an appropriate test apparatus a commonly available socket-outlet may be used)		N/A
19.4.1	Adaptor without additional function (DIN49437 adaptor)		
	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
19.4.2	adaptor with additional function		
	1) adaptor are tested at rated current for 1 h,		N/A
	The temperature rise of terminals and internal connections for additional function shall not exceed the limits given in appropriate regulations		N/A
	The other terminals and connections shall not exceed 45K		N/A
	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.		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
19.5	Plug-in equipment		
	Plug-in equipment are tested according to appropriate product standards		N/A
	For the testing of the plug see 14.23		N/A

20	BREAKING CAPACITY		
	Accessories shall have adequate breaking capacity		P

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Cl.	Requirement – Test	Result	Verdict
	The test is made with connections shown in figure 18		P
	Compliance checked by testing:		
	- socket-outlets;		P
	- plugs with pins which are not solid		N/A
	Test conditions:		
	- 100 strokes; rate of operation .....:	30 ~~(15)~~ strokes per minute	—
	- test voltage (1,1 Vn) .....:	275V	—
	- test current (1,25 In) (power factor 0,6) .....:	20A	—
	Socket-outlets are tested with a test plug with brass pins in good condition. Diameter 4.8 +0.06/0 [mm] respective 4.0+0.06/0 [mm]. Distance between pins 19+0.05/0 [mm]. The pin ends shall comply with DIN 49441, DIN 49446		P
	Plugs tested using a fixed socket-outlet complying with the standard and having as near to average characteristics.		N/A
	Accessible metal parts and metal supports are connected via a fuse to ground. The fuse shall be a Cu wire 0.1 [mm] diameter and at least 50 [mm] long. The fuse shall not burn out.	No metal parts	N/A
	During the test: no sustained arcing occur		P
	After the test:		
	- specimens show no damage impairing their further use;		P
	- entry holes for the pins not show any damage which may impair the safety		P

21	NORMAL OPERATION		
	Accessories shall withstand without excessive wear or other harmful effect, the mechanical, electrical and thermal stresses occurring in normal use		P
	Compliance for socket-outlets as well as plugs with resilient earthing contacts or non solid pins is checked by testing:		
	- socket-outlets;		P
	- plugs with resilient earthing socket-contacts;		N/A
	- plugs with pins which are not solid		N/A
	Test performed on:		
	- complete socket-outlets (with shutters if any)	10000 strokes	P

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Cl.	Requirement – Test	Result	Verdict
	- if shutter fail, test repeated under same condition but with operations made by hand as in normal use (Remark: Start point 2 as shown in Figure 43 of IEC 60884-1 is not permitted)	~~10000 strokes~~	N/A
	Test conditions:		
	- 10000 strokes; rate of operation .....:	30 ~~(15)~~ strokes per minute	—
	- test voltage Vn (V) .....:	250V	—
	- test current (as specified in table 20 (A) (power factor 0,8 ±0.05) .....:	16A	—
	Test current passed:		
	- 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		P
	During the test: no sustained arcing occur		P
	After the test the specimens shall not show:		
	- wear impairing their further use;		P
	- deterioration of enclosures, insulating lining or barriers;		P
	- damage to the entry holes for the pins, that might impair proper working;		P
	- loosening of electrical or mechanical connections;		P
	- seepage of sealing compound		N/A
	Shuttered socket-outlets: the following gauges not touch live parts when they remain under the relevant forces:		
	- gauges of figure 15 applied with a force up to 20 N		N/A
	- steel gauge of figure 13 applied with a force up to 1 N		N/A
	Temperature-rise test (requirements of clause 19):		
	Test current for this clause is given in table 20, passed for 1 h (A) .....:	16A	—
	Temperature rise of terminals not exceed 45 K (K) .....:	37K	P
	Separate tests made passing the current through:		
	- the neutral contact, if any, and the adjacent phase contact (K) .....:		N/A
	- the earthing contact, if any, and the nearest phase contact (K) .....:	39K	P

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Cl.	Requirement – Test	Result	Verdict
	The force to open the shutter shall not exceed 50N when tested with Gauge 19a or 19b		N/A
	Socket-outlets: electric strength (sub-clause 17.2), test voltage (a.c., for 1 min):		
	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
	Plugs: electric strength (sub-clause 17.2), test voltage (a.c., for 1 min):		
	a) test voltage (V).....:	~~1000 V / 1500 V~~	N/A
	b) test voltage (V).....:	~~1000 V / 1500 V~~	N/A
	c) test voltage (V).....:	~~1000 V / 1500 V~~	N/A
	d) test voltage (V).....:	~~1000 V / 1500 V~~	N/A
	During the test: no flashover or breakdown		P
	Accessories with side earthing contacts: the contacts are pressed as far as possible apart, but not more than 35 [mm]. Kept in this position for 48 h.		P
	Test according to Clause 18. The average force necessary to bring the contact in the required position shall be at least 60% of the original value. The mean value of the force shall be at least 5 N.	10N; 10,5N	P
	Test in clause 13.2 and 14.2 shall be carried out after this test.		N/A

22	FORCE NECESSARY TO WITHDRAW THE PLUG		
	Construction of accessory shall allow the easy insertion and withdrawal of the plug, and prevent the plug from working out of the socket-outlet in normal use		P
	Socket outlets:		P
	Rated current (A) .....:	16A	—
	Number of poles .....:	2P+E	—
	Plugs with resilient earthing contact		N/A
	Rated current (A) .....:		—
	Number of poles .....:		—
22.1	Verification of the maximum withdrawal force		—
22.1.1	Test for socket outlets		P

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Cl.	Requirement – Test	Result	Verdict
	- Maximum withdrawal force (test equipment figure 19, gauge 16 have finely ground pins of hardened steel, having a surface roughness between 0,6 µm (0,6) and 0,8 µm (0,8) over their active length and spaced at the nominal distance, with a tolerance of ± 0,05 mm) force according to table 16) (N) .....:	54N	—
	Before each test the test pin is wiped free from grease with a chemical degreaser (Safety precautions)		P
	The plug not remain in the socket-outlet		P
22.1.2	Test for plugs with resilient earthing contact		N/A
	- Maximum withdrawal force (test equipment fig 19, gauge 16e, force according to table 16) (N) .:		—
	Before each test the test pin is wiped free from grease with a chemical degreaser (Safety precautions)		N/A
	The test pin not remain in the earthing contact		N/A
22.2	Verification of the minimum withdrawal force		
	- Minimum withdrawal force (used Gauge 2A,2B or 2C, force according to table 16) (N) .....:	2N	—
	Before each test the test pin is wiped free from grease with a chemical degreaser (Safety precautions)	(By gauge Ø3,8mm)	P
	The plug not fall from each individual contact-assembly within 30 s		P

23	FLEXIBLE CABLES AND THEIR CONNECTION		
23.1	Plugs and portable socket-outlets provided with a cord anchorage such that the conductors are relieved from strain and that their covering is protected from abrasion		P
	Sheath of flexible cable clamped within the cord anchorage		P
23.2	Pull and torque test:		
	The accessory is to be stored for one hour at 45 °C in a climatic cabinet; immediately after it the cord anchorage is to be drawn for 30 s with 50 N, whereby the cord anchorage must remain still effective. A replacement of the cord of less than 2 mm is not regarded as an error.		P

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	After cooling down to ambient temperature the effectiveness of the retention of the cable by the cord anchorage is checked by the following test by means of an apparatus as shown in figure 20.		P
	Non-rewirable accessories:		
	- rating of accessory .....:	250V, 16A	—
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm^2) .....:	H05VV-F 3G1,5mm^2	—
	- pull (100 times) (N) .....:	60N	P
	- torque (1 min) as specified in table 18 (Nm) .....:	0,25Nm	P
	After the test:		
	Displacement ≤ 2 mm .....:	1,2mm	P
	No break in the electrical connections		P
	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:		
	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:		
	Displacement ≤ 2 mm .....:		N/A
	End of conductors not have moved noticeably in the terminals		N/A
	Rewirable accessories having rated current up to and including 16 A:		
	Suitable for fitting with the appropriate cable as shown in table 19		N/A
	Type of flexible cable; number of conductors and nominal cross-sectional area (mm^2) .....:		—

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
23.3	Plugs and portable socket-outlets shall be provided with a flexible cable complying with DIN VDE 0281 or DIN VDE 0282. Plugs may have other types of cord if permitted by other German standards.	H05VV-F	P
	Cord extension sets and multiple portable socket-outlets with cord and plug (table type) without internal protective devices as well as their components shall be designed for a rated current of 16A.		P
	A reduction of the of the cross-section area below 1.5mm² till 1.0mm² is only permitted if an internal protective device is build-in that is designed for the rated current of the wire/conductors.		N/A
	Cord extension sets and multiple portable socket-outlets with cord and plug (table type) are testes as a unit in the assembled condition.		P
	Conductor connected to the earthing contact: identified by the colour combination green/yellow		P
23.4	Plugs and portable (rewirable and non-rewirable) socket-outlets with connected cord: designed that the flexible cable is protected against excessive bending .		P
	For rewirable plugs and socket outlets a radius of 0.5mm at the cable entrance is considered to meet the requirement		N/A
	The test is conducted for the entrance hole of the cable is sharp-edged.		N/A
	Guards shall be of insulating material and fixed in reliable manner		P
	Flexing test (10.000 flexings):		
	- type of flexible cable and nominal cross-sectional area (mm^2) .....:	H05VV-F 3G1,5 mm^2	—
	- test current (A) .....:	16A	—
	- mass (N) .....:	20N	—
	During the test: no interruption of the test current and no short-circuit between conductors		P
	After the test: guard no separated from the body, insulation shows no sign of abrasion or wear, broken strands become no accessible		P

24	MECHANICAL STRENGTH		
	Accessories, surface mounting boxes and screwed glands have adequate mechanical strength		P

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
24.1	Fixed socket-outlets, portable multiple socket-outlets and surface mounting boxes: impact test (apparatus shown in fig. 22, 23, 24 and 25)		P
	After the test: no damage, live parts do not become accessible		P
24.2	Portable single socket-outlets and plugs: tumbling barrel test; number of falls .....:	~~1000 / 500 / 100 / 25~~	N/A
	After the test:		
	No part become detached or loosened;		N/A
	Pins no become so deformed that the plug cannot be introduced into a socket-outlet and also fails to comply with the requirements of 9.1 and 10.3;		N/A
	Pins no turn when a torque of 0,4 Nm is applied for 1 min in each direction		N/A
	Socket-outlets with shutters shall be tested again with the shutter test in cl 21 without the usability test (no 10.000 cycles) .		N/A
24.3	Ordinary 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 test: no damage		N/A
24.4	Portable single socket-outlets, multiple socket-outlets and plugs (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	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. 22)		N/A
	After the test: no damage		N/A
24.6	Screwed glands of accessories other than ordinary: torque test (1 min)		
	- diameter of test rod (mm) .....:		—
	- type of material .....:		—
	- torque (Nm) .....:		—
	- type of material .....:		—
	After the test: no damage of glands and enclosure of the specimens		N/A
24.7	Plug pins provided with insulating sleeves: 20000 movements, 4 N (apparatus shown in fig. 23)		N/A

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	After the test: no damage of pins, insulating sleeve not have punctured or rucked up		N/A
24.8	Shuttered socket-outlets: mechanical test carried out on specimens submitted to the normal operation test according to clause 21		
	Force applied for 1 min against the shutter of an entry hole by means of one pin .....:		—
	Pin not come in contact with live parts		N/A
	After the test: no damage		N/A
	Socket-outlets with shutters shall be tested again with the shutter test in cl 21 without repeating the usability test (no 10,000 time).		N/A
24.9	Multiple portable socket-outlet: mechanical test		
	Rewirable multiple socket-outlets: flexible cable of the smallest cross-sectional area specified in table 3 .....:		—
	8 falls on concrete floor with the specimens arranged as shown in figure 30		P
	After the test: no damage, no part have become detached or loosened		P
	Accessories With IP code higher than IP X0 submitted again to the test as specified in 16.2	IP20	N/A
	Socket-outlets with shutters shall be tested again with the shutter test in cl 21.		P
24.10	Plugs: pull test to verify the fixation of pins in the body of the plug (new specimens)		
	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 .....:		—
	After the test: displacement of pins in the body of the plug ≤ 1 mm .....:		N/A
24.11	Barriers of portable socket-outlets having means for suspension on a wall:		
	Force applied for 10 s against the barrier by means of a cylindrical steel rod (1,5 times the maximum plug withdrawal force specified in table 16) (N) .....:		—
	Rod not pierce the barrier		N/A
24.12	Portable socket-outlets having means for suspension on a wall (pull test):		
	Pull applied to the supply flexible cable for 10 s (force prescribed in 23.2 for checking the flexible cable anchorage) (N) .....:	60N	—
	During the test: no break of the means for suspension on a wall		P
24.13	Portable socket-outlets having means for suspension on a wall (pull test):		

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	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) .....:	54N	—
	During the test: no break of the means for suspension on a wall		P
24.14	Force necessary for covers or cover-plates to come off or not to come off (accessibility with the test finger to live parts)		
24.14.1	Verification of the non-removal of covers or cover-plates		N/A
	Force applied for 1 min in direction perpendicular to the mounting surface .....:		—
	Covers or cover-plates 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. 8)		N/A
	Covers or cover-plates not come off		N/A
	After the test: no damage		N/A
24.14.2	Verification of the removal of covers or cover-plates		
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers or cover-plates 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. 8)		N/A
	Covers or cover-plates come off		N/A
	After the test: no damage		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)		
24.14.1	Verification of the non-removal of covers or cover-plates		
	Force applied for 1 min in direction perpendicular to the mounting surface .....:		—
	Covers or cover-plates 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. 8)		N/A
	Covers or cover-plates not come off		N/A
	After the test: no damage		N/A
24.14.2	Verification of the removal of covers or cover-plates		
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers or cover-plates come off		N/A

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 8)		N/A
	Covers or cover-plates come off		N/A
	After the test: no damage		N/A
24.16	Force necessary for covers or cover-plates to come off or not to come off (accessibility to insulating parts, earthed metal parts, live parts of SELV $\leq$ 25 V a.c. or metal parts separated from live parts by creepage distances twice those according to table 23)		
24.14.1	Verification of the non-removal of covers or cover-plates		
	Force 10 N applied for 1 min in direction perpendicular to the mounting surface: covers or cover-plates 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. 8)		N/A
	Covers or cover-plates not come off		N/A
	After the test: no damage		N/A
24.14.2	Verification of the removal of covers or cover-plates		
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers or cover-plates 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. 8)		N/A
	Covers or cover-plates come off		N/A
	After the test: no damage		N/A
24.17	Test with gauge 17 applied according to figure 33 for verification of the outline of covers or cover-plates: distances between face C of gauge and outline of side under test, not decrease .....:		—
24.18	Test with gauge 18 applied as shown in figure 35 (1 N): gauge not enter more than 1mm .....:		—
24.19	Shroud of portable socket-outlets: compression test (20 $\pm$ 2) N at (25 $\pm$ 5) °C by means of the apparatus shown in figure 37b		P
	After 1 min and while the shrouds are still under pressure the dimensions did comply with the appropriate standard sheet		P
	Test repeated with the specimen rotated 90 °		P

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
24.20	Socket-outlets with flap 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	Socket-outlet with a 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		
25.1	Fixed and portable accessories: heating cabinet 100±2 °C for 1 h		
	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 and parts of insulating material (Except from parts made of rubber) of portable accessories, 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) (table 22A)		
	After the test: diameter of impression ≤ 2 mm .....:	1,6mm (enclosure)	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)		
	Test temperature (°C) .....:		N/A
	After the test: diameter of impression ≤ 2 mm .....:		N/A
25.4	Portable accessories: compression test (20 N, 1 h, 80 °C) by means of the apparatus shown in figure 28		
	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	Non-rewirable	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:		

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	- 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); 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 (including earthing terminals) have mechanical strength, electrical conductivity and resistance to corrosion adequate:		
	- copper;		N/A
	- alloy with at least 58 % copper for parts made from cold-rolled sheet or with at least 50 % copper for other parts;	>59,0 %	P
	- stainless steel with at least 13 % chromium and not more than 0,09 % carbon		N/A
	- steel with electroplated coating of zinc (DIN 50961): service condition ISO no. (1/2/3); IP (X0/X4/X5); thickness (µm)		N/A
	- steel with electroplated coating of nickel and chromium (DIN 50967): service condition ISO no. (2/3/4); IP (X0/X4/X5); thickness (µm)		N/A
	- steel with electroplated coating of tin (DIN 50965): service condition ISO no. (2/3/4); IP (X0/X4/X5); thickness (µm)		N/A

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	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
26.8	If other than screw-type or screwless terminals used for internal connections in fixed or portable accessories, these connections shall be soldered, welded, crimped or equally effective permanent connections.	Hook soldered for internal connection	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
	Screw-type terminals shall not be used for internal connections in non-rewirable portable accessories, compliance is checked by inspection.	Hook soldered for internal connection	P

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):		
	1) between live parts of different polarity ≥ 4(3) mm .....:	> 4,0mm (measured by gauge)	P
	2) between live parts and:		
	- accessible insulating and earthed metal parts ≥ 3 mm .....:	> 4,0 mm (measured by gauge)	P
	- parts of earthing circuit ≥ 3 mm .....:	> 4,0 mm (measured by gauge)	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

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	- external assembly screws, other than screws which are on the engagement face of plugs and are isolated from the earthing circuit ≥ 3 mm .....:	> 4,0 mm (measured by gauge)	P
	3) between pins of plugs and metal parts connected to them, when fully engaged, and a socket-outlet of the same system 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 plug of the same system having pins and metal parts connected to them ≥ 6(4,5) mm .....:		N/A
	5) between live parts of a socket-outlet (without a plug) and its accessible unearthed metal parts ≥ 6(4,5) mm .....:		N/A
	Clearances (cl):		
	6) between live parts of different polarity ≥ 3 mm ..:	> 4,0 mm (measured by gauge)	P
	7) between live parts and:		
	- accessible insulating and earthed metal parts not mentioned under 8 and 9 ≥ 3 mm .....:	> 4,0 mm (measured by gauge)	P
	- parts of earthing circuit ≥ 3 mm .....:	> 4,0 mm (measured by gauge)	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 plugs and are isolated from the earthing circuit ≥ 3 mm .....:	> 4,0 mm (measured by gauge)	P
	8) between live parts and:		
	- 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
	11) Between live parts of a socket-outlet (without plug) or of a plug and their accessible metal parts which are not connected to the earthing circuit ≥ 6(4.5) mm……..:		N/A
	Distance through insulating sealing compound:		

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	12) 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
	13) 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
	Distance through insulation:		
	14) Between accessible surfaces and live parts of non-rewirable, moulded-on plugs and socket-outlets. ≥ 1,5 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	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		
28.1.1	Glow-wire test		
	For parts of fixed accessories necessary to retain current-carrying parts and parts of the earthing circuit in position: test temperature 850 °C.		
	No visible flame and no sustained glowing		N/A
	Flame and glowing extinguish within 30 s .....:	11 s	P
	No ignition of the tissue paper		P
	For parts of fixed accessories needed to retain the earth terminal in position in a box: test temperature 650 °C		
	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 For moulded on plugs the tests is performed on the pin base separately. Note 5: The outer material by moulded plugs is totally removed when testing the supporting parts.		
	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 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		
	No visible flame and no sustained glowing		N/A
	Flame and glowing extinguish within 30 s .....:		N/A

DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	No ignition of the tissue paper		N/A
28.1.2	Plugs with pins provided with insulating sleeves:		
	Test temperature maintained for 3 h by means of the apparatus shown in figure 39 .....:	~~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		
	Parts of insulating material retaining live parts in position of accessories >IP X0: test voltage 175 V, 50 drops, solution A of DIN IEC 60112	IP20	N/A
	No flashover or breakdown		N/A

29	RESISTANCE TO RUSTING		
	Ferrous parts protected against rusting		N/A
	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		N/A

30	ADDITIONAL TESTS ON PINS PROVIDED WITH INSULATING SLEEVES		
30.1	Pressure test at high temperature		
	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		
	Set of 3 specimens submitted to two damp heat cycles in accordance with IEC 68-2-30		N/A
	After the test:		
	Insulation resistance and electric strength test (clause 17)		N/A
	Abrasion test (sub-clause 24.7)		N/A
30.3	Test at low temperature		
	Set of 3 specimens maintained at –15 °C ± 2 °C for 24 h		N/A
	After the test:		

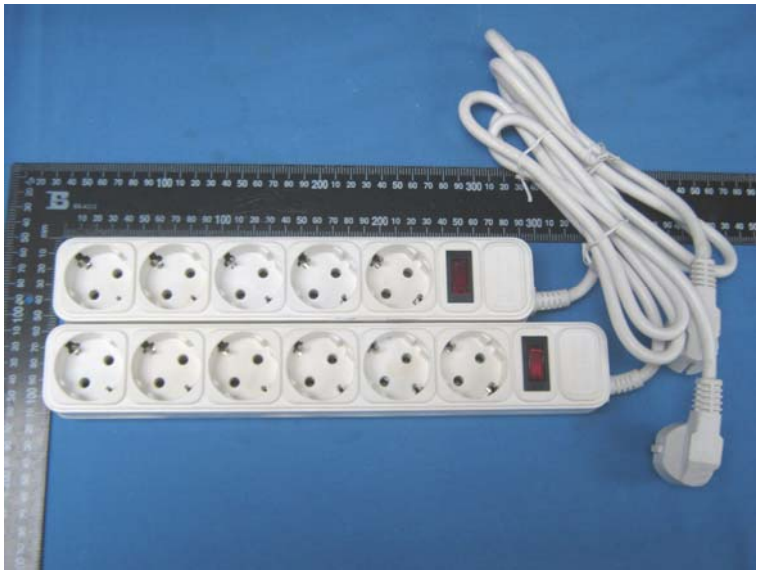
DIN VDE 0620-1			
Cl.	Requirement – Test	Result	Verdict
	Insulation resistance and electric strength test (clause 17)		N/A
	Abrasion test (sub-clause 24.7)		N/A
30.4	Impact test at low temperature		
	Specimens maintained at –15 °C ± 2 °C for 24 h subjected to 4 impacts (mass 100±1 g, height 100 mm) by means of the apparatus shown in figure 41 rotating the specimen through 90° between impacts		N/A
	After the test: no crack of the insulating sleeves		N/A
31	EMC		
	No requirements except when the accessories contain electronic parts. Neon lamps are not electronic parts.		P
	Accessories with electronic parts must comply with the relevant EMC requirements. .		N/A

Annex D	During production required test for the manufacturing of plugs and outlets with crimp connections		
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.		
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.		

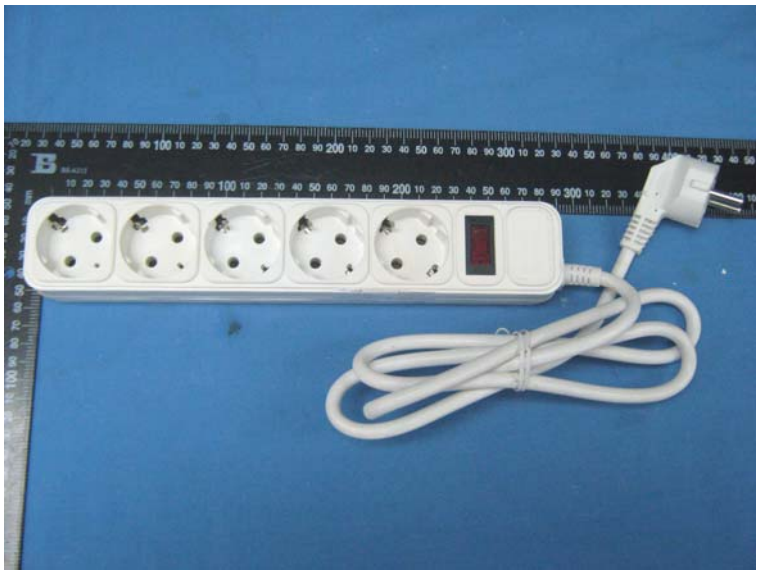
Annex E	Units intended for installation shall be marked on the smallest closed selling unit with the note according to Appendix E **(referred by clause 8.10)-**	
	Hinweis! ***Installation nur durch Personen mit einschlägigen elektrotechnischen Kenntnissen und Erfahrungen!****)*** *Durch eine unsachgemäße 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.)	

Type: SPG3-B; SPG6-B (Multiple socket outlet with cord extension set)

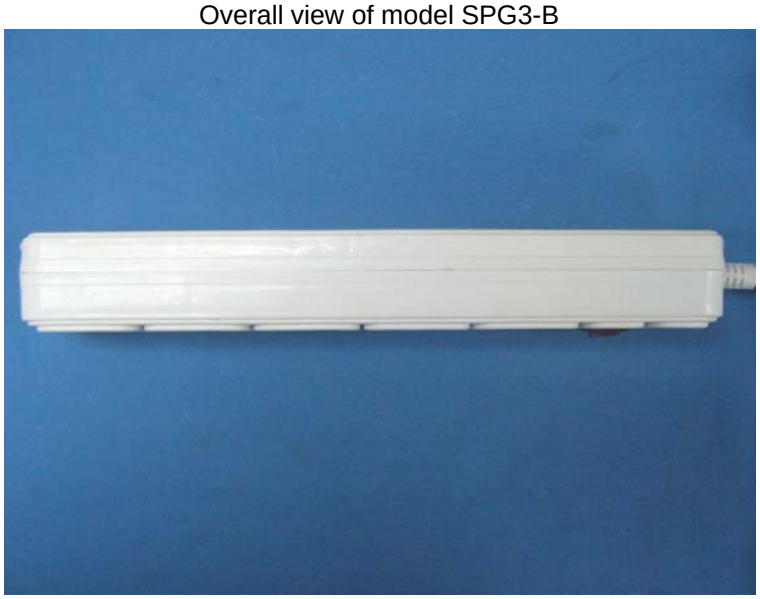
Reference No.: SH10110684-001



Overall view of model SPG3-B and SPG6-B



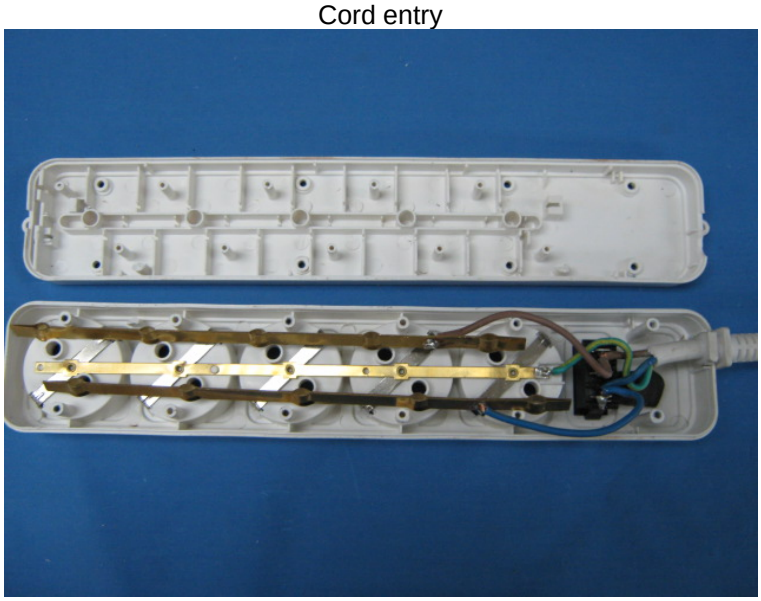
Overall view of model SPG3-B



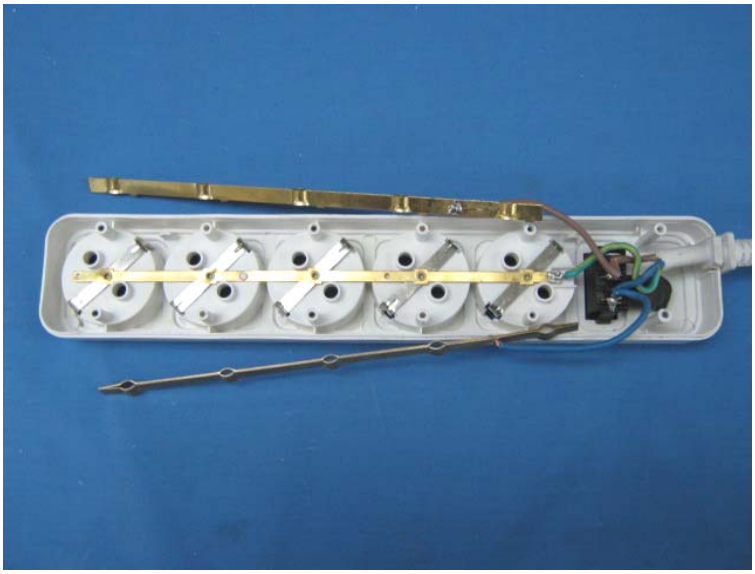
Overall view of model SPG3-B

Overall view of model SPG3-B

Cord entry

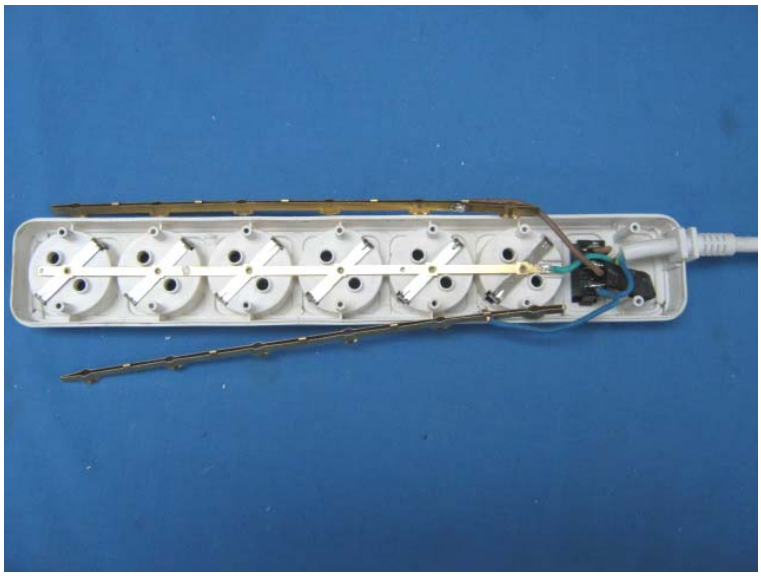


Internal view of model SPG3-B

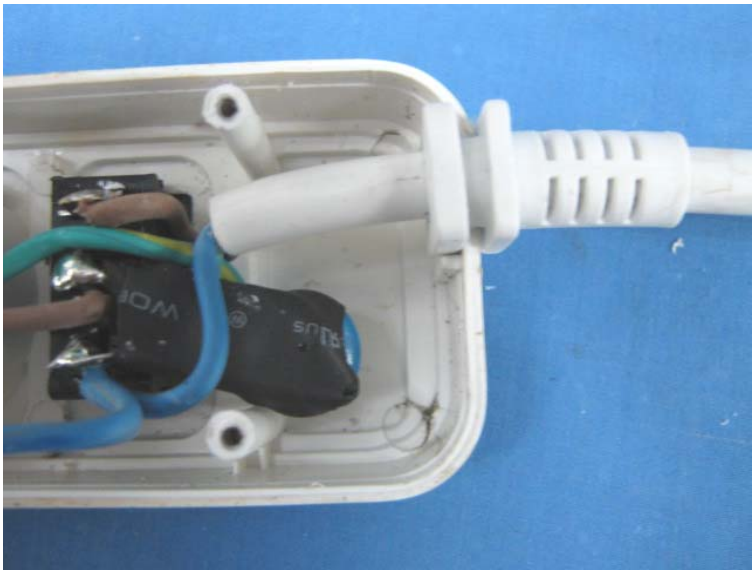


Internal view of model SPG3-B

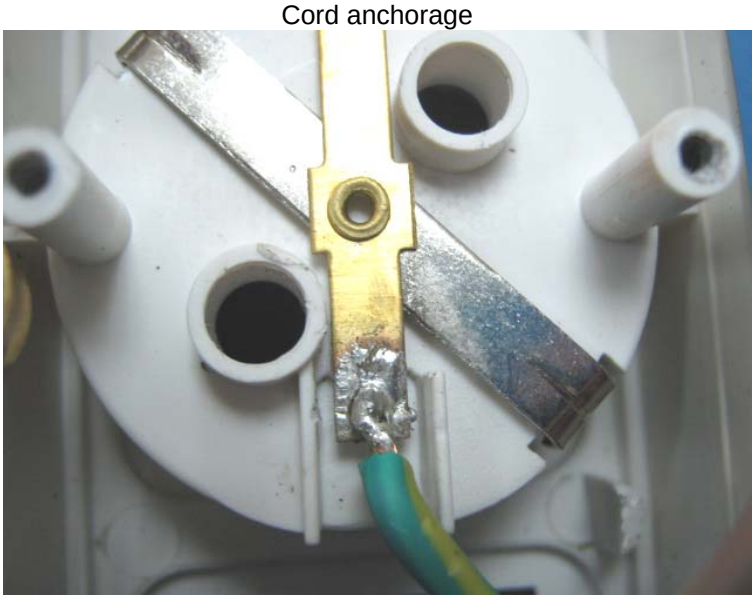
Internal view of model SPG6-B



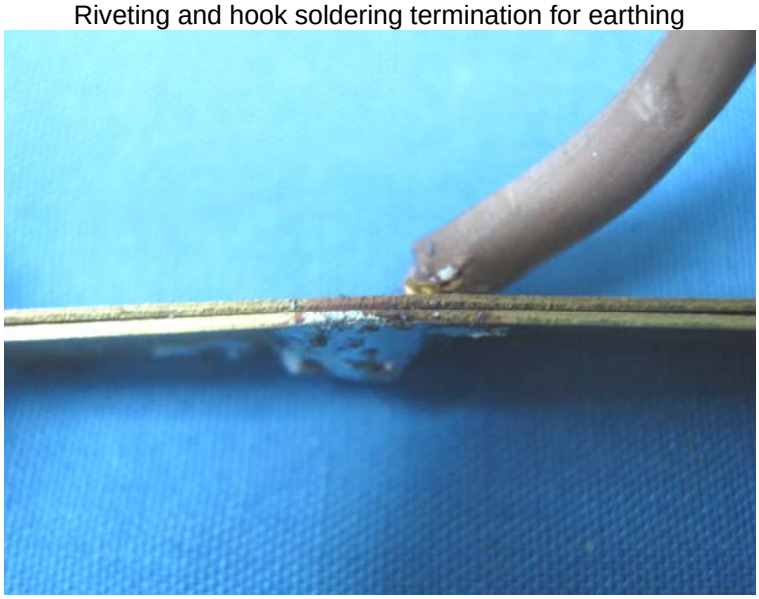
Internal view of model SPG6-B



Cord anchorage



Riveting and hook soldering termination for earthing



Hook soldering termination