

**Test Report No. 55S070650/ZHY/PKS**  
**dated 28 APR 2007**



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**Subject**

**TYPE TESTING OF CONNECTION UNIT**

**Client**

**Legrand Singapore Pte Ltd**  
15 Jalan Kilang Barat #07-05  
Frontech Centre, Singapore 159357

Attn: Mr. Poh Tze Koon

**Sample Submission Date**



26 Mar 2007



**Laboratory:**  
TÜV SÜD PSB Corporation Pte. Ltd.  
Testing Group  
No.1 Science Park Drive  
Singapore 118221

Phone: +65-6885 1333  
Fax: +65-6776 8670  
E-mail: [testing@psbcorp.com](mailto:testing@psbcorp.com)  
[www.psbcorp.com](http://www.psbcorp.com)  
Co. Reg: 199002667R

**Regional Head Office:**  
TÜV SÜD Asia Pacific Pte. Ltd.  
3 Science Park Drive  
#04-01/05 The Franklin  
Singapore 118223

		<p>LA-2001-0212-A LA-2001-0213-F LA-2001-0214-E LA-2001-0215-B LA-2001-0216-G LA-2001-0217-G LA-2006-0355-C</p>	<p>The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Council (SAC-SINGLAS) standards. "Not SAC-SINGLAS Accredited" in this Report are not included in the 'SAC-SINGLAS Accreditation Schedule' for our laboratory.</p>
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dated 28 APR 2007



<b>TEST REPORT</b> <b>BS 5733 : 1996 / SS 241 : 1996</b> <b>General requirement for electrical accessories</b>	
Report Reference No. ....	55S070650/ZHY/PKS
Tested by (+ signature) .....	Zhou Hong Yu 
Approved by (+ signature) .....	Phua Kim Suah 
Date of issue .....	28 Apr 2007
<b>Testing Laboratory</b> .....	TÜV SÜD PSB Corporation Pte Ltd
Address .....	No. 1 Science Park Drive Singapore 118221
Testing location .....	Same as above
<b>Applicant's name</b> .....	Legrand Singapore Pte Ltd
Address .....	15 Kilang Barat #07-05 Frontech Centre, Singapore 159357
<b>Test specification</b>	
Standard .....	BS 5733: 1995 Amendment No.1 + Corrigendum No.1/ SS 241 : 1996
Test procedure .....	Same
Non-standard test method .....	N/A
<b>Test item description</b> .....	
Trade Mark .....	Legrand
Manufacturer .....	Legrand (Beijing) Electrical Co., Ltd
Model/Type reference .....	281147, 281347, 281547
<b>Test item particulars</b>	
Rating .....	20A 250V~
Method of application .....	Flush
Method of connecting the cable .....	Rewirable
Type of cable .....	N/A
Nominal cross sectional area .....	N/A
Type of terminals .....	Screw
Type of connection .....	N/A
Existence of fuse .....	N/A
Existence of switch .....	N/A
Provision for earthing .....	With earth
Degree of protection .....	Ordinary

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**Test case verdicts**

Test case does not apply to the test object .. : N/A

Test item does meet the requirement ..... : P(ass)

Test item does not meet the requirement .... : F(ail)

**Testing**

Date of receipt of test item ..... : 26 Mar 2007

Date(s) of performance of test ..... : 27 Mar 2007 to 23 Apr 2007

**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**

**Front**

legrand

**Back**

BS 5733  
20A 250V ~  
1mm<sup>2</sup> to 4mm<sup>2</sup>  
legrand

**Base**

L N E



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**Summary of testing**

1. The connection units submitted were deemed to comply with BS 5733: 1995 with Amendment No.1 and with Corrigendum No.1 / SS 241 : 1996.

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BS 5733 / SS 241			
Clause	Requirement – Test	Result – Remark	Verdict

7	<b>RATING</b>		—
	Shall mark with:-		—
	Voltage not exceeding 250 V a.c and/or 250 V d.c	250 V ~	P
	Rated current not exceeding 63 A	20 A	P

8	<b>MARKING</b>		—
	Shall marked with :		—
	BS 5733	BS 5733	P
	For rough use 'A		N/A
	Name or trade mark	Legrand	P
	Rated current	20 A	P
	Rated voltage	250 V	P
	Nature of supply if relevant	~	P
	Terminal identification	L; N; E	P
	The word 'FUSE' or symbol if relevant		N/A
	Degree of protection other than ordinary		N/A
	Type reference	281147; 281347; 281547	P
	Min. & max. sizes mark on cord anchorage	1mm <sup>2</sup> to 4mm <sup>2</sup>	P
	Length of insulating removed for screwless		N/A
8.2	Safety information on sample or in instruction		N/A
8.3	Visibility of marking in 8.1 visible during installation		P
8.4	Symbols :		—
	Amperes	A	P
	Volts	V	P
	Alternating current	~	P
	Direct current		N/A
	Line	L	P
	Neutral	N	P
	Earth	E	P

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Clause	Requirement – Test	Result – Remark	Verdict

	On		N/A
	Off		N/A
	Fuse		N/A
	Cord / cable size	mm <sup>2</sup>	P
8.5	Marking of rated current & voltage	20 A 250 V ~	P
8.6	Conformity for 8.1 to 8.5 by inspection		P
8.7	Durability and legibility of markings		—
8.7.1	Markings shall be legible and durable and shall not be placed on screws, washers or removable parts		P
8.7.2	For legibility checked by inspection without additional magnification		P
8.7.3	For durability rub by hand for 15s		P
	in water	15 s	P
	in petroleum spirit	15 s	P

9	<b>DIMENSIONS</b>		—
	Accessories and surface-type mounting boxes comply with the appropriate standard sheets		N/A
	Insertion of plugs into socket-outlets ensured by inspection, measurement or gauges with the relevant standard		N/A
	Accessories with no applicable standard compliance checked by measurement and by means of gauges with manufacturing tolerances		P

10	<b>CREEPAGE DISTANCES &amp; CLEARANCE IN AIR</b>		—
	Creepage distances, clearances and distances through sealing compound no less than the values shown in table 1		—
	Creepage distances (cr):		—
	1) between live parts of different polarity $\leq 4(3)$ mm	$> 4$ mm	P
	2) between live parts and:		—

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Clause	Requirement – Test	Result – Remark	Verdict

	- accessible insulating and earthed metal parts $\geq 3$ mm .....	> 4mm	P
	- parts of earthing circuit $\geq 3$ mm .....	> 4mm	P
	- metal frames supporting the base of flush-type socket-outlets $\geq 3$ mm .....		N/A
	- screws or devices for fixing bases, covers or cover-plates of fixed socket-outlets $\geq 3$ mm .....	> 4mm	P
	- external assembly screws, other than screws which are on the engagement face of plugs and are isolated from the earthing circuit $\geq 3$ mm .....	> 4mm	P
	Clearances (d):		—
	6) between live parts of different polarity $\geq 3$ mm .....	> 4mm	P
	7) between live parts and:		—
	- accessible insulating and earthed metal parts not mentioned under 8 and 9 $\geq 3$ mm .....	> 4mm	P
	- parts of earthing circuit $\geq 3$ mm .....	> 4mm	P
	- metal frames supporting the base of flush-type socket-outlets $\geq 3$ mm .....		N/A
	- screws or devices for fixing bases, covers or cover-plates of fixed socket-outlets $\geq 3$ mm .....	> 4mm	P

<b>11</b>	<b>ACCESSIBILITY OF LIVE PARTS</b>		—
11.1	Accessories live parts not accessible without use of tool after assembled or mounted even after removal of parts without the use of tool.		P
	Test by using probe B of BS 3042 applying 5 N		P
	Accessories with plug-pin and or socket-contact live parts not accessible when accessories are in partial or complete engagement with corresponding accessories		N/A
	Test with standard test probe B of BS 3042		N/A
11.2	Accessories with shutter, live parts not accessible with test pin of fig. 8.		N/A
	Live parts automatically screened by shutter and not operated solely by insertion of one current-carrying plug-in contact		N/A

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Clause	Requirement – Test	Result – Remark	Verdict
	Test by applying test pin on each shutter with 1 N force perpendicularly		N/A
	Not possible to touch live parts		N/A
11.3	Plug & socket devices so constructed to prevent :		—
	Earthing plug pin from making contact with current-carrying socket-contact		N/A
	Current-carrying plug pin from making contact with current carrying socket contact while other pin is accessible		N/A
	Checked by inspection and application of a corresponding accessory		N/A
11.4	Plug-in and socket devices earth connection made first and break last		N/A
	Checked by inspection and application of a corresponding accessory		N/A
11.5	Plug fitted with cord, free end encapsulated		N/A
11.6	Plug-in fused accessories not possible to access fuse-link while in engagement		N/A
	Checked by inspection		N/A
11.7	Fuse-link possible to remove and replace safely		N/A
	Instruction provided where necessary		N/A
	Test by probe B of SS IEC 1032 applied with a force of 30 N during removable of fuse-link. Lives parts not accessible		N/A
11.8	Base and cover of non-rewirable portable accessories shall be permanently attached		N/A
11.9	Base and cover of rewirable portable accessories cannot be separated without the use of tool		N/A
	Fixing cover screw test using fig. 9 apparatus:		N/A
	Pull applied 60N for 1 min. at 70°C		N/A
	After test screw thread not damaged		N/A
<b>12</b>	<b>PROVISION FOR EARTHING</b>		—
12.1	Provided with an internal earthing terminal for the continuity of the earthing circuit		—



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	Connection between earthing terminal and accessible metal parts be of low resistance :-		P
	Test current equal to 25 A (A) shall be passed for 60s as follows:.....:	25 A	P
	a] For all accessories, between earthing terminal and any accessible metal part		P
	b] For plug between earthing terminal and end of earthing plug pin and any accessible metal part to be earth		N/A
	c] For socket between earth terminal and accessible metal part and between earth terminal and plug pin inserted into the earth socket-contact		N/A
	d] For adaptor without earthing terminal between earthing plug pin inserted into the earthing socket and the earthing plug pin		N/A
	e] Earth continuity for class 1 device, between the incoming & outgoing earth terminals.		N/A
	f] Accessories with earth continuity conductor of flexible cord including insulated / metallic / metallic conduit		N/A
	The resistance between earth terminal & nominated part not exceed 0.05 Ohm	Bet. earth terminal & fixing screw:- 0.014Ω; 0.015Ω; 0.013Ω	P
12.2	Cover and cover plates of metal provide with:-		—
	a] Insulating material fixed to metal parts and		N/A
	b] insulating material cannot removed without permanently damaged or replaced in an incorrect manner and		N/A
	c] if omitted become useless and		N/A
	d] no risk of contact bet. live & metal cover /plates through fixing screw and		N/A
	e] precaution take to reduce creepage & clearance		N/A
	Test with test voltage of 4KV		N/A

<b>13</b>	<b>CONSTRUCTION</b>		—
13.1	Current-carrying parts of brass, copper or phosphor-bronze		P
	Comply with clause 13.12, 20 & 25		P

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Clause	Requirement – Test	Result – Remark	Verdict
13.2	Sealing compound shall be of insulating material resistance to heat as in cl. 22.1		P
13.3	Boxes not deformed, not in contact with live parts and not access to live parts		N/A
	Comply with cl. 21 followed by cl. 11		N/A
13.4	Boxes shall conform to the BS 4662:		N/A
	1.5.3 – Material thickness		N/A
	1.5.4 – Construction		N/A
	1.5.5 – screw threads		N/A
	1.5.7 – mounting holes		N/A
	1.5.8 – cable entry		N/A
	1.5.10 – size of knockouts		N/A
	1.6 – earthing		N/A
	1.8.2 – safety on impact		N/A
	1.10 – resistance to corrosion		N/A
13.5	Internal connections of plug-pins and socket-contact maintain correct polarity		N/A
13.6	Terminals of portable accessories shielded		N/A
	- no risk of accidental contact when wire escape		N/A
	- or wire bypass fuse-link		N/A
	A free wire of 4 mm from live terminal bent in every position shall not touch accessible live parts or metal part		N/A
	and not reduce creepage & clearances to accessible surface to less than 1.3 mm		N/A
	A free wire from earth terminal not touch live part		N/A
13.7	Fuse contact material confirm to cl. 13.1		N/A
	Solid link from stainless steel as follows:		N/A
	For fuse to BS 646 dimensions as in fig. 10, type a		N/A
	For fuse to SS 167 / BS 1362 dimensions in fig.10, type c		N/A
	For fuse to other standards, max. dimensions as in relevant standard sheet		N/A

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	Fuse contact resilient test as follows:- Insert and withdrawn steel solid link from the fuse clip 10 times in succession at 10 insertion / min.		N/A
	Replace steel solid link with link of negligible impedance of appropriate fuse dimensions with positive tolerance of fuse cap + 0.01 mm and length of +0.04 mm		N/A
13.8	Accessories with switches having adequate contact or adequate separation of the contact		N/A
13.9	Multi-pole switches make or break with one movement		N/A
13.10	Switches other than ac only, shall be quick make & break type		N/A
13.11	Accessories with switches tested to SS 227 of Clause 17 – Making & breaking test		N/A
	Rated current		N/A
	Test current : 1.25 x		N/A
	Rated voltage .....		N/A
	Test voltage .....		N/A
	Operation .....		N/A
	Rated operation .....		N/A
	Clause 18 – Normal operation		N/A
	Rated current .....		N/A
	Rated voltage .....		N/A
	No. of movement .....		N/A
	Rate of operation .....		N/A
13.12	Socket contacts in accessories withstand electrical & mechanical stresses		N/A
	Normal operation of socket-contact		N/A
	No. of movement :30,000 for normal accessories 600 for infrequent use accessories		N/A
	Rated current .....		N/A
	Rated voltage .....		N/A
	Rate of operation .....		N/A

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Clause	Requirement – Test	Result – Remark	Verdict

	After the test socket still functioning and Inlet in the cover not damage		N/A
	Shutters operate and shielded contact		N/A
	Conform to cl. 19 & 20		N/A

<b>19</b>	<b>INSULATION RESISTANCE AND ELECTRIC STRENGTH</b>		—
19.1	The insulation resistance & the electric strength of accessories shall be adequate		N/A
19.2	Insulation resistance measures with 500 V d.c. for 1 min:		N/A
	a) Between parts of opposite polarity, > 5 M Ohm		N/A
	b) Between parts of opposite polarity connected together and other parts insulated including earth metal, > 5M Ohm		N/A
	c) Across switch contact, > 2 M Ohm		N/A
19.3	Electric strength at 2000 v a.c for 1 min. :		N/A
	a) Between parts of opposite polarity		N/A
	b) Between parts of opposite polarity connected together and other parts insulated including earth metal		N/A
	c) Across switch contact		N/A
	No flash over or breakdown shall occur		N/A

<b>20</b>	<b>TEMPERATURE RISE</b>		—
20.1	Accessories so constructed temperature rise is not excessive		N/A
20.2	Test conductors		N/A
20.2.1	Conductor max. size as given in table 2		N/A
20.2.2	For fixed accessories conductor fitted with.....:		N/A
	- rated current of accessory .....		N/A
	- maximum cross-sectional area (mm <sup>2</sup> ) .....		N/A
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 20.1 (Nm) .....		N/A

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Clause	Requirement – Test	Result – Remark	Verdict

	Fixed accessories with additional provision for external connection using flexible cord or cable fitted as given in table 2		N/A
	- maximum cross-sectional area (mm <sup>2</sup> ) .....		N/A
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 20.1 (Nm) .....		N/A
20.2.3	Portable accessories flexible cord or cable fitted as given in table 2		N/A
	- rated current of accessory .....		N/A
	- maximum cross-sectional area (mm <sup>2</sup> ) .....		N/A
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 20.1 (Nm) .....		N/A
20.2.4	Cable or cord used for testing fixed accessories shall be single core insulated and sheathed copper conductors		P
20.2.5	Non-rewirable accessories tested with cord supplied		N/A
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm <sup>2</sup> ) .....		N/A
	- rated current of accessory .....		N/A
20.2.6	Accessories without provision for cord or cables, connection as intended use		N/A
20.3	Mounting procedure		N/A
20.3.1	Surface mounted accessories with boxes fixed to vertical plywood 25 mm thick and having surface at least 150 mm all round		N/A
20.3.2	Flush mounted accessories mounted in flush mounting box surrounded on all side with 25mm thickness wood		N/A
20.3.3	Portable accessories mounted on horizontal board 25mm thick and surface of 150mm		N/A
20.3.4	Plugs & adaptor with provision for flexible cords shall be inserted into socket-outlet and mounted as specified in cl. 20.3.1, 20.3.2 or 20.3.3		N/A
20.3.5	Accessories having no provision for cord or cable mounted as in cl. 20.3.1, 20.3.2, 20.3.3 or 20.3.4 as relevant		N/A

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20.3.6	Surface & flush mounted supply cables entry shall by be means of knocks or cable entries and entry shall be seal to prevent air circulation		N/A
20.4	Testing procedures		N/A
20.4.1	Temperature measured by means of thermocouples attached by soldering or effective means		N/A
20.4.2	Test carried out :		N/A
	- in draught-free environment		N/A
	- at ambient temperature of 27 ° C ± 5 ° C		N/A
	- for period of 1-hour		N/A
	- at convenient voltage		N/A
	- at test current for:		N/A
	For accessories rating up to & including 10A multiply by 1.25		N/A
	For accessories rating over 10A up to & including 25 A multiply by 1.2		N/A
	For accessories over 25 A multiply by 1.1		N/A
20.4.3	Temperature rise of terminals not exceed 47 K for fixed accessories .....		N/A
	Temperature rise of terminals not exceed 52 K for portable accessories, plug or adaptor .....		N/A
13.13	Accessories with fuse capable of performing its function correctly		N/A
	Fuse make & break test using resistive load.		N/A
	Rated current		N/A
	Rated voltage		N/A
	No. of movements	10 time in succession at interval of 30 second	N/A
	Metal parts connected to earth		N/A
	Accessory in serviceable condition		N/A

<b>14</b>	<b>TERMINALS &amp; TERMINATIONS</b>		—
14.1	Terminals for rewirable accessories		—
	Rewirable accessories provided with terminals screw or with screwless terminals	Screw terminals	P

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	The means of clamping shall not serve to fix any other components		P
	Checked by inspection and cl. 14.2 & 14.3		—
14.2	Terminals with screw clamping for conductors		—
14.2.1	Terminals possible to connect conductors shown in table 2		P
	Checked by inspection, by measurement, and by fitting smallest and then the largest cross-sectional areas specified	Hole diameter : 4.52 mm Smallest cable : 1.5 mm <sup>2</sup> Largest cable : 4.0 mm <sup>2</sup>	P
14.2.2	Screw terminals connect conductor without special preparation		P
14.2.3	Screw terminals or nuts for clamping conductor having ISO thread or comparable in pitch & strength		P
	Screws not of metal which is soft or creep, such as aluminium or zinc		P
14.2.4	Terminals shall be resistant to corrosion		P
14.2.5	Screw terminals clamp conductors without undue damage to conductors		P
	Test with apparatus shown in figure 11:		—
	- type of conductors .....	Rigid stranded conductor	P
	- number of conductors.....	1	P
	- smallest cross-sectional area (mm <sup>2</sup> ) (table 2); diameter of bushing hole (mm); height H (mm); mass (kg) .....	1.5 mm <sup>2</sup> ; 6.5 mm; 250 mm; 4 kg	P
	- largest cross-sectional area (mm <sup>2</sup> ) (table 3); diameter of bushing hole (mm); height H (mm); mass (kg) .....	4.0 mm <sup>2</sup> ; 9.5 mm; 250 mm; 5 kg	P
	- nominal diameter of thread (mm); torque according to table 3 (Nm) .....	3.88 mm; 1.2 Nm	P
	During the test: conductor not slip out, no break near clamping unit and no damage		P
14.2.6	Terminals clamp the conductor reliably between metal surfaces		P
	Pull test without jerk (1 min):	1 minute	P
	- type of conductors :	Rigid stranded conductor	P
	- number of conductors :	1	P

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Clause	Requirement – Test	Result – Remark	Verdict
	- smallest cross-sectional area (mm <sup>2</sup> ) (table 2); pull (N) (table 4) :	1.5 mm <sup>2</sup> ; 40 N	P
	- largest cross-sectional area (mm <sup>2</sup> ) (table 2); pull (N) (table 4) :	4.0 mm <sup>2</sup> ; 50 N	P
	- torque (Nm) (2/3 table 3) :	0.8 Nm	P
	During the test: conductor not move noticeably		P
14.2.7	Terminals designed or placed that the conductor cannot slip out while the clamping screws or nuts are tightened		P
	- largest cross-sectional area (mm <sup>2</sup> ) (table 2) .....	4 mm <sup>2</sup>	P
	- torque (Nm) (2/3 table 3) .....	0.8 Nm	P
	After the test: no wire of the conductor escaped outside the clamping unit		P
14.2.8	Terminals not work loose from their fixing to accessories		P
	Torque test:		—
	- rigid solid copper conductor of the largest cross-sectional area (mm <sup>2</sup> ) (table 2) .....	4.0 mm <sup>2</sup>	P
	- torque (Nm) (table 3) .....	1.2 Nm	P
	Screws and nuts tightened and loosened 5 times. During the test: terminals not work loose and show no damage		P
14.2.9	Clamping screws or nuts of earthing terminals: adequately locked against accidental loosening, not possible to loosen them without the aid of a tool		P
14.2.10	Earthing terminals: no risk of corrosion		P
	Body of brass or other metal no less resistant to corrosion	brass	P
	If the body is a part of a frame or enclosure of aluminium alloy, precautions shall be taken to avoid the risk of corrosion		P
14.2.11	Pillar terminals: distance g no less than the value specified in figure 1. required (mm); measured (mm):	Required: 1.8 mm Measured: 2.46 mm	P
	Mantle terminals: distance g no less than the value specified in figure 5: required (mm); measured (mm):		N/A
14.2.12	Lug terminals for 45A & above		N/A
	Fitted with spring washer or locking means		N/A



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14.3	Screwless terminals for external copper conductors		—
14.3.1	Screwless terminals provide with clamping unit		N/A
	Suitable for conductor up to 13A		N/A
	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
14.3.2	Screwless terminals allow the conductor to be connected without special preparation		N/A
14.3.3	Screwless terminals material specify in cl.15.5		N/A
14.3.4	Screwless terminals clamp specified conductors with sufficient contact pressure without undue damage to the conductor		N/A
	Conductor clamped between metal surfaces		N/A
14.3.5	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
14.3.6	Screwless terminals intended for the interconnection of two or more conductors:		—
	- 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 <sup>2</sup> ) :		N/A
14.3.7	Screwless terminal – undue insertion prevented adequate insertion obvious		—

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	Marking indicating length of insulation to be remove given on accessories or instruction sheet		N/A
14.3.8	Screwless terminals properly fixed to the socket-outlets		—
	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
14.3.9	Screwless terminals withstand mechanical stresses occurring in normal use		—
	Test:		—
	Connection / disconnection 5 times: rigid solid conductor 2,5 mm <sup>2</sup>		N/A
	Connection / disconnection 5 times: rigid solid conductor 1,5 mm <sup>2</sup>		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 <sup>2</sup>		N/A
	Connection / disconnection 1 time: rigid stranded conductor 15 mm <sup>2</sup>		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 on terminals intended for both rigid and flexible conductors:		N/A
	Connection / disconnection 1 time: rigid stranded conductor 2,5 mm <sup>2</sup>		N/A
	Connection / disconnection 1 time: rigid stranded conductor 15 mm <sup>2</sup>		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
14.3.10	Screwless terminals withstand electrical and thermal stresses occurring in normal use		—
	Test a) carried out for 1 h connecting rigid solid conductors:		N/A

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	- test current (A) (table 5) :		N/A
	- nominal cross-sectional area (mm <sup>2</sup> ) :		N/A
	- 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) .....		N/A
	- cross-sectional area (mm <sup>2</sup> )		N/A
	- 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 <sup>th</sup> cycle .....		N/A
	- voltage drop measured (mV) after 72 <sup>th</sup> cycle .....		N/A
	- voltage drop measured (mV) after 96 <sup>th</sup> cycle .....		N/A
	- voltage drop measured (mV) after 120 <sup>th</sup> cycle .....		N/A
	- voltage drop measured (mV) after 144 <sup>th</sup> cycle .....		N/A
	- voltage drop measured (mV) after 168 <sup>th</sup> cycle :		N/A
	- voltage drop measured (mV) after 196 <sup>th</sup> cycle .....		N/A
	- requirement: ≤ 22,5 mV or 2 times 24 <sup>th</sup> cycle value (mV) .....		N/A
	After this test: inspection show no changes		N/A
	Mechanical strength test according 14.3.9:		N/A
	Connection / disconnection 5 times: rigid solid conductor 2,5 mm <sup>2</sup>		N/A
	Connection / disconnection 5 times: rigid solid conductor 1,5 mm <sup>2</sup>		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 <sup>2</sup>		N/A
	Connection / disconnection 1 time: rigid stranded conductor 15 mm <sup>2</sup>		N/A

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	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 on terminals intended for both rigid and flexible conductors:		N/A
	Connection / disconnection 1 time: rigid stranded conductor 2,5 mm <sup>2</sup>		N/A
	Connection / disconnection 1 time: rigid stranded conductor 15 mm <sup>2</sup>		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
14.4	Terminations for non-rewirable accessories		—
	Non-rewirable provided with soldered, welded, crimped or similar terminations; screwed, screwless or snap-on terminals shall not be use		N/A
	No more than one strand or 5% of the total number of strands conductor shall be fractured		N/A
	Termination tested with pull of 30 N for 1 min. in the longitudinal axis of conductor		N/A
	No deterioration of the soldered, welded, crimped or similar joints impairing their further use		N/A

<b>15</b>	<b>SCREWS, CURRENT-CARRYING PARTS &amp; CONNECTIONS</b>		—
15.1	Connections withstand mechanical stresses		P
	Screws and nuts which transmit contact pressure: in engagement with a metal thread		P
	Test:		—
	- 10 times for screws in engagement with a thread of insulating material and for screws of insulating material, each time completely removed and reinstated		N/A
	- 5 times for all other cases		P
	Suitable screwdriver or tool apply with torque as incl. 14.2.8		P
	- terminals: screw diameter (mm); torque (Nm); times .....	3.88 mm; 1.2 Nm; 5X	P
	- earthing terminals: screw diameter (mm); torque (Nm); times .....	3.87 mm; 1.2 Nm; 5X	P

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	- assembly screws: screw diameter (mm); torque (Nm); times .....	3.31 mm; 0.8 Nm; 5X	P
	- cord anchorage: screw diameter (mm); torque (Nm); times .....	2.93 mm; 0.4 Nm; 5X	P
	- other screws or nuts: diameter (mm); torque (Nm); times .....		N/A
	During the test: no damage impairing the further use of the screwed connections		P
15.2	Screws in engagement with a thread of insulating material: correct introduction into the screw hole or nut ensured		N/A
15.3	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
15.4	Screws and rivets locked against loosening and/or turning		—
	Accessories terminals containing earthing & neutral plug pin shall be:		—
	- formed as one piece with the pin or		N/A
	- permanently connected to the pin		N/A
	Connections not made by means of screw		N/A
	Fuse-link connected to line terminal shall be:		—
	- formed in one piece with the fixed part		N/A
	- permanently connected it cannot work loose		N/A
	The other contact of fuse-link connected to the corresponding plug pin and not by means of screws		N/A
	Line terminal or termination provide effective clamping & securing conductor with fuse-link		N/A
	Connection to fuse-clips in accessories not containing terminals not made by means of screws		N/A
15.5	Current-carrying parts and terminals incl. earth terminal shall be of metal having mechanical strength, electrical conductivity and resistance to corrosion adequate		P
15.6	Current-carrying parts subjected to mechanical wear: not of steel with electroplated coating		P

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15.7	Metals having a great difference of electrochemical potential: not used in contact with each other		P
15.8	Thread-forming screws not used for the connection of current carrying parts		P

<b>16</b>	<b>PROVISIONS FOR CABLE &amp; CORDS</b>		—
16.1	Fixed installation accessories terminals specify in cl. 13		P
	These terminals suitable for solid or stranded conductors of cables to BS 6004		P
	- designated by manufacturer	1mm <sup>2</sup> to 4mm <sup>2</sup>	P
	Entry hole not exposing the bare conductor		P
	Entry hole not cause damaged to insulation or sheath of the cable		P
16.2	Flexible cord or cable used in accessories accept 2 or 3-core flexible cable or cord confirming to BS 6500 or designated by manufacturer	1mm <sup>2</sup> to 4mm <sup>2</sup>	P
	Entry by means of suitable hole, groove or gland		P
	The entry shall accept maximum dimension of the outer sheath of the appropriate cable or cord having cross-sectional area as in table 2.		P
	The entry so shaped to prevent damage to cord or cable		P
	Anchorage be provided so as to relieve the cable or cord from strain and twisting		P
	The anchorage shall contain the sheath and		P
	- be of insulating material or		P
	- if metal provided with insulating lining fixed to the metal parts.		N/A
	Anchorage anchored the cable or cord securely to the accessories		P
	The anchorage cannot release from the outside without the use of tool and		P
	Clamping does not require special purpose tool		P
	Anchorage restrain is not effected by a metal part		P
	At least one part of the anchorage is securely fixed to accessories or its mounting box		P

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	Clamping screws not used to secure other components unless:		P
	- it is rendered incomplete if component is omitted or		N/A
	- the component to be fixed cannot be removed without further use of a tool		N/A
	Rewirable accessories:-		—
	- rating of accessory ..... :	20 A 250 V ~	P
	- fitted with 2-core cord of 0.5 mm <sup>2</sup> or		N/A
	- minimum designated by manufacturer	1.0 mm <sup>2</sup>	P
	- clamping screws, if any, tightened with a torque equal to 2/3 of that specified in table 3 (Nm) ..... :	Screw:- 2.93 mm 0.3 Nm	P
	Not possible to push cord into anchorage		P
	Pull test:-		—
	- 25 pulls with force of 30N		P
	Displacement ≤ 2 mm ..... :	< 2mm	P
	- immediately cord subjected to 1 min with torque 0.15 N.m		P
	Insulation of cord / cable not damaged		P
	Repeat test with		—
	- largest flexible cable; number of conductors and nominal cross-sectional area (mm <sup>2</sup> ) ..... :	1; 4 mm <sup>2</sup>	P
	- clamping screws, if any, tightened with a torque equal to 2/3 of that specified in table 3 (Nm) ..... :	Screw:- 2.93 mm 0.3 Nm	P
	Not possible to push cord into anchorage		P
	Pull test:-		—
	- 25 pulls with pull force given in table 6 (N) ..... :	65 N	P
	Displacement ≤ 2 mm ..... :	< 2mm	P
	- immediately cord subjected for 1 min. with torque as given in table 6 (Nm) ..... :		P
	Insulation of cord/ cable not damaged		P
	Non-rewirable accessories:		—
	- rating of accessory ..... :		N/A

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	- type flexible cable; number of conductors and nominal cross-sectional area (mm <sup>2</sup> ) .....		N/A
	Pull test:-		—
	- 25 pulls with pull force given in table 6 (N) .....		N/A
	- torque (1 min) as specified in table 6 (Nm) .....		N/A
	Displacement ≤ 2 mm .....		N/A
	- no breakdown when 3750 KV a.c is applied between the conductors for 1 min.		N/A
16.3	Non-rewirable portable accessories provided with 2 core or 3 core flexible cord / cable to BS6 500 or		N/A
	- to requirement of equipment specification designated by manufacturer		N/A
	Method of connection as in clause 14.4		N/A
	Non-rewirable portable accessories: designed that the flexible cable is protected against excessive bending		N/A
16.4	Flexing test (10.000 flexings):		—
	- type of flexible cable and nominal cross-sectional area (mm <sup>2</sup> ) .....		N/A
	- test current (A) .....		N/A
	- mass (N) .....		N/A
	During the test: no interruption of the test current and no short-circuit between conductors		N/A
	The voltage between the conductors approximately equal to rated voltage		N/A
	After the test no damaged, breakage less than 10% and provided not pierced the insulation		N/A

<b>17</b>	<b>RESISTANCE TO AGEING</b>		—
17.1	Accessories shall be resistant to ageing		P
17.2	Accessories subjected to a test in a heating cabinet at 70 °C ± 2 °C for seven days (168 h)	168 hours	P
	After the tests, samples shall show:		—
	- no crack visible with normal or corrected vision without additional magnification		P



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	- no sticky or greasy material		P
	- no trace of cloth (forefinger pressed with 5 N)		P
	- no damage		P

<b>18</b>	<b>RESISTANCE TO HARMFUL INGRESS OF WATER AND RESISTANCE TO HUMIDITY</b>		—
18.1	Resistance to ingress of water		—
18.1.1	Enclosure of accessories other than ordinary shall provide a degree of protection against harmful ingress of water in accordance with the classification		N/A
18.1.2	Surface-type accessories shall be mounted on vertical surface with open drain hole in the lowest position		N/A
	Flush and semi-flush type fixed vertically in appropriate box which is placed in a recess		N/A
	Unenclosed accessories mounted in a condition of normal use		N/A
	Accessories with screw gland or membranes fitted with flexible cables having the largest & smallest cross-sectional area given in table 2		N/A
	- largest cross-sectional area (mm <sup>2</sup> ); type of cable (table 2) .....		N/A
	- smallest cross-sectional area (mm <sup>2</sup> ); type of cable (table 2) .....		N/A
	Mounting screws tightened with a torque equal to 2/3 of the torque given in table 3 (Nm) .....		N/A
	Glands tightened with a torque equal to 2/3 of the torque applied during the test of 21.3.8 (Nm) .....		N/A
	Parts which can be removed without tool shall be removed		N/A
18.1.2.2	Splash-proof accessories subjected to the test IPX4 according to IEC 529		N/A
18.1.2.3	Jet-proof accessories subjected to the test IPX5 according to IEC 529		N/A
18.2	Resistance to humidity		—
	Accessories proof against humidity which may occur in normal use		P

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	Compliance checked by a humidity treatment carried out in a humidity cabinet containing air with relative humidity maintained at 95 % r.h.	25°C	P
	Specimens kept in the cabinet for:		—
	- two days (48 h) for ordinary accessories	48 h	P
	- seven days (168 h) for accessories other than ordinary		N/A
	Immediately after humidity follow by cl. 19		P
	After this treatment the specimens show no damage		P

<b>19</b>	<b>INSULATION RESISTANCE AND ELECTRIC STRENGTH</b>		—
19.1	The insulation resistance & the electric strength of accessories shall be adequate		P
19.2	Insulation resistance measures with 500 V d.c. for 1 min:		—
	a) Between parts of opposite polarity, > 5 M Ohm	>100 M Ohm	P
	b) Between parts of opposite polarity connected together and other parts insulated including earth metal, > 5M Ohm	>100 M Ohm	P
	c) Across switch contact, > 2 M Ohm		N/A
19.3	Electric strength at 2000 V a.c for 1 min. :		—
	a) Between parts of opposite polarity		P
	b) Between parts of opposite polarity connected together and other parts insulated including earth metal		P
	c) Across switch contact		N/A
	No flash over or breakdown shall occur		P

<b>20</b>	<b>TEMPERATURE RISE</b>		—
20.1	Accessories so constructed temperature rise is not excessive		P
20.2	Test conductors		—
20.2.1	Conductor max. size as given in table 2		P
20.2.2	For fixed accessories conductor fitted with ..... :	Rigid stranded conductor	P

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	- rated current of accessory .....	20 A	P
	- maximum cross-sectional area (mm <sup>2</sup> ) .....	Incoming: 4.0 mm <sup>2</sup>	P
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 20.1 (Nm) .....	Screw:- 3.88 mm 0.8 Nm	P
	Fixed accessories with additional provision for external connection using flexible cord or cable fitted as given in table 2		P
	- maximum cross-sectional area (mm <sup>2</sup> ) .....	Outgoing: 2.5 mm <sup>2</sup>	P
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 20.1 (Nm) .....	Screw:- 3.88 mm 0.8 Nm	P
20.2.3	Portable accessories flexible cord or cable fitted as given in table 2		—
	- rated current of accessory .....		N/A
	- maximum cross-sectional area (mm <sup>2</sup> ) .....		N/A
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 20.1 (Nm) .....		N/A
20.2.4	Cable or cord used for testing fixed accessories shall be single core insulated and sheathed copper conductors		P
20.2.5	Non-rewirable accessories tested with cord supplied		—
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm <sup>2</sup> ) .....		N/A
	- rated current of accessory .....		N/A
20.2.6	Accessories without provision for cord or cables, connection as intended use		N/A
20.3	Mounting procedure		—
20.3.1	Surface mounted accessories with boxes fixed to vertical plywood 25 mm thick and having surface at least 150 mm all round		N/A
20.3.2	Flush mounted accessories mounted in flush mounting box surrounded on all side with 25mm thickness wood		P
20.3.3	Portable accessories mounted on horizontal board 25mm thick and surface of 150mm		N/A
20.3.4	Plugs & adaptor with provision for flexible cords shall be inserted into socket-outlet and mounted as specified in cl. 20.3.1, 20.3.2 or 20.3.3		N/A

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20.3.5	Accessories having no provision for cord or cable mounted as in cl. 20.3.1, 20.3.2, 20.3.3 or 20.3.4 as relevant		N/A
20.3.6	Surface & flush mounted supply cables entry shall be by means of knockouts or cable entries and entry shall be sealed to prevent air circulation		P
20.4	Testing procedures		—
20.4.1	Temperature measured by means of thermocouples attached by soldering or effective means		P
20.4.2	Test carried out :		—
	- in draught-free environment		P
	- at ambient temperature of 20 °C ± 5 °C		P
	- for period of 1-hour		P
	- at convenient voltage		P
	- at test current for:		—
	For accessories rating up to & including 10A multiply by 1.25		N/A
	For accessories rating over 10A up to & including 25 A multiply by 1.2	Test current:- 24A	P
	For accessories over 25 A multiply by 1.1		N/A
20.4.3	Temperature rise of terminals not exceed 47 K for fixed accessories .....	<u>Supply(incoming)</u> L:- 20.7 K; 23.0 K; 26.5 K N:- 22.2 K; 20.4 K; 23.8 K  <u>Load(outgoing)</u> L:- 23.7 K; 23.0 K; 25.1 K N:- 23.1 K; 21.4 K; 25.3 K	P
	Temperature rise of terminals not exceed 52 K for portable accessories, plug or adaptor .....		N/A

<b>21</b>	<b>MECHANICAL STRENGTH</b>		—
21.1	Accessories shall have adequate mechanical strength		—
	Fixed accessories: impact test (apparatus shown in fig. 13, 14 & 15)		P
21.2.2	Portable accessories, other than plug or adaptor the apparatus shown in fig. 16		N/A

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21.2.3	Plug and adaptor apparatus as shown in fig. 17		N/A
21.3	Testing procedure		—
21.3.1	Surface mounted fixed accessories mounted as in normal used with mounting blocks or backplates		N/A
	Ten blows applied evenly distributed over the accessory		N/A
	Any lens shall received one blow at its centre		N/A
	Switch actuating member one blow of the ten blows		N/A
21.3.2	Flush mounted fixed accessories mounted in flush mounting box recess in the block of plywood		P
	Ten blows applied evenly distributed over the accessory	No damage	P
	Any lens shall received one blow at its centre		P
	Switch actuating member applied one blow of the ten blows		N/A
21.3.3	Rewirable plugs fitted with		—
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm <sup>2</sup> )..... :		N/A
	- rated current of plug ..... :		N/A
	Terminal and cover screws tightened with a torque equal to 2/3 of that specified in table 3 (Nm) ..... :		N/A
	Non-rewirable plug tested with flexible cord as delivered		N/A
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm <sup>2</sup> )..... :		N/A
	- rated current of non-rewirable plug ..... :		N/A
	Length of flexible cord shall be 150 mm		N/A
	Plugs tested in tumbling barrel as shown in fig. 17		N/A
	Number of falls:-		N/A
	- rewirable plugs: 1,000 times		N/A
	- non-rewirable plug: 2,500 times		N/A
	- rewirable & non-rewirable rough-use plugs: 5,000 times		N/A

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21.3.4	Non-rewirable single & twin portable socket tested with flexible cord as delivered		N/A
	Single & twin rewirable portable sockets fitted with 2 or 3 core		N/A
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm <sup>2</sup> ) .....		N/A
	- rated current of portable socket		N/A
	Terminal and cover screws tightened with a torque equal to 2/3 of that specified in table 3 (Nm) .....		N/A
	Length of flexible cord shall be 150 mm		N/A
	Portable socket tested in tumbling barrel as shown in fig. 17		N/A
	Portable socket dropped 5,000 times		N/A
21.3.5	Non-rewirable with more than two outlet tested with flexible cord as delivered		N/A
	More than two outlet fitted with 2 or 3 core :		N/A
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm <sup>2</sup> ) .....		N/A
	- rated current of portable socket .....		N/A
	Terminal and cover screws tightened with a torque equal to 2/3 of that specified in table 3 (Nm) .....		N/A
	Length of flexible cord shall be 2250 mm		N/A
	The free end of cord fixed to a wall at a height 400 mm as shown in fig. 16		N/A
	Accessories all to fall 8 times on concrete floor each time the cord rotated through 45° at fixing		N/A
21.3.6	Adaptors tested in tumbling barrel as in fig. 17		N/A
	Adaptor dropped 25 times		N/A
	Adaptors tested with impact tested in fig. 13		N/A
	10 blows applied evenly distributed		N/A
	Adaptor with len receive one blow in its centre		N/A
21.3.7	Other portable accessories intended to remain connected to supply shall be tested in tumbling barrel of fig. 17		N/A
	Non-rewirable accessories with flexible cord tested as delivered		N/A

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	Accessories with flexible cord fitted with 2 or 3 core :		N/A
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm <sup>2</sup> ) .....		N/A
	- rated current of portable accessories .....		N/A
	Terminal and cover screws tightened with a torque equal to 2/3 of that specified in table 3 (Nm) .....		N/A
	Length of flexible cord .....	150 mm	N/A
	Number of drop .....	300	N/A
21.3.8	Screwed glands of accessories: torque test (1 min)		N/A
	- diameter of test rod (mm) .....		N/A
	- type of material .....	Metal / moulded	N/A
	- torque (Nm) as in table 8 .....		N/A
	After the test: no damage of glands and enclosure of the specimens		N/A
21.4	Assessment		—
21.4.1	Accessories in accordance with cl. 21.3 :		—
	- show no damage		P
	- live parts not accessible		P
	- parts not become detached		P
21.4.2	Compliance to cl. 21.4.1 repeat tests cl. 19 & 20 with modification :		N/A
	- Length of cord specify in cl. 21.3.3 .....	1000 mm	N/A
	- Length of cord specify in cl. 21.3.4 .....	1150 mm	N/A

<b>19</b>	<b>INSULATION RESISTANCE AND ELECTRIC STRENGTH</b>		
	The insulation resistance & the electric strength of accessories shall be adequate		—
	Insulation resistance measures with 500 V d.c. for 1 min:		—
	a) Between parts of opposite polarity, > 5 MΩ		N/A
	b) Between parts of opposite polarity connected together and other parts insulated including earth metal, > 5MΩ		N/A

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	c) Across switch contact, > 2 MΩ		N/A
19.3	Electric strength at 2000 v a.c for 1 min. :		N/A
	a) Between parts of opposite polarity		N/A
	b) Between parts of opposite polarity connected together and other parts insulated including earth metal		N/A
	c) Across switch contact		N/A
	No flash over or breakdown shall occur		N/A

<b>20</b>	<b>TEMPERATURE RISE</b>		
20.1	Accessories so constructed temperature rise is not excessive		N/A
20.2	Test conductors		N/A
20.2.1	Conductor max. size as given in table 2		N/A
20.2.2	For fixed accessories conductor fitted with ..... : rigid solid / rigid stranded / flexible		N/A
	- rated current of accessory ..... :		N/A
	- maximum cross-sectional area (mm <sup>2</sup> ) ..... :		N/A
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 20.1 (Nm) ..... :		N/A
	Fixed accessories with additional provision for external connection using flexible cord or cable fitted as given in table 2		N/A
	- maximum cross-sectional area (mm <sup>2</sup> ) ..... :		N/A
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 20.1 (Nm) ..... :		N/A
20.2.3	Portable accessories flexible cord or cable fitted as given in table 2		N/A
	- rated current of accessory ..... :		N/A
	- maximum cross-sectional area (mm <sup>2</sup> ) ..... :		N/A
	Terminal screws or nuts tightened with a torque equal to 2/3 of that specified in 20.1 (Nm) ..... :		N/A
20.2.4	Cable or cord used for testing fixed accessories shall be single core insulated and sheathed copper conductors		N/A



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Clause	Requirement – Test	Result – Remark	Verdict

20.2.5	Non-rewirable accessories tested with cord supplied		N/A
	- type of flexible cable; number of conductors and nominal cross-sectional area (mm <sup>2</sup> )..... :		N/A
	- rated current of accessory ..... :		N/A
20.2.6	Accessories without provision for cord or cables, connection as intended use		N/A
20.3	Mounting procedure		N/A
20.3.1	Surface mounted accessories with boxes fixed to vertical plywood 25 mm thick and having surface at least 150 mm all round		N/A
20.3.2	Flush mounted accessories mounted in flush mounting box surrounded on all side with 25mm thickness wood		N/A
20.3.3	Portable accessories mounted on horizontal board 25mm thick and surface of 150mm		N/A
20.3.4	Plugs & adaptor with provision for flexible cords shall be inserted into socket-outlet and mounted as specified in cl. 20.3.1, 20.3.2 or 20.3.3		N/A
20.3.5	Accessories having no provision for cord or cable mounted as in cl. 20.3.1, 20.3.2, 20.3.3 or 20.3.4 as relevant		N/A
20.3.6	Surface & flush mounted supply cables entry shall by be means of knocks or cable entries and entry shall be seal to prevent air circulation		N/A
20.4	Testing procedures		N/A
20.4.1	Temperature measured by means of thermocouples attached by soldering or effective means		N/A
20.4.2	Test carried out :		N/A
	- in draught-free environment		N/A
	- at ambient temperature of 27 ° C ± 5 ° C		N/A
	- for period of 1-hour		N/A
	- at convenient voltage		N/A
	- at test current for:		N/A
	For accessories rating up to & including 10A multiply by 1.25	Test current =	N/A

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	For accessories over 25 A multiply by 1.1	Test current =	N/A
20.4.3	Temperature rise of terminals not exceed 47 K for fixed accessories .....		N/A
	Temperature rise of terminals not exceed 52 K for portable accessories, plug or adaptor .....		N/A

<b>22</b>	<b>RESISTANCE TO HEAT</b>		—
22.1	Accessories shall be resistant to heat		P
22.2	Accessories are kept for 1 hr. in heating cabinet at:		—
	- 70° C for portable accessories, boxes, & covers		N/A
	- 100° C for all other accessories		P
	Using test probe B of BS 3042 apply 5 N on the samples, no live parts accessible		P
	The accessories shall not undergone any change impairing further use		P
	Sealing compound not flowed that live parts exposed		P
	After the test markings still legible		P
22.3	Fixed accessories :		—
	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)	Base:- 125 °C	P
	After the test: diameter of impression ≤ 2 mm .....	< 2mm	P
22.4	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)	Cover	P
	For portable accessories : ball-pressure test 1 hr		N/A
	Test temperature (°C) .....	75 °C	P
	After the test: diameter of impression ≤ 2 mm .....	< 2mm	P
22.5	Portable accessories <i>external</i> parts of resilient material like thermoplastic, rubber etc. subject to pressure test using apparatus fig. 19	Force = 20 N	N/A

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Clause	Requirement – Test	Result – Remark	Verdict

	After the test accessories show no damage		N/A
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<b>23</b>	<b>RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT AND TO FIRE</b>		—
23.1	Insulating materials not unduly affected by abnormal heat and fire		P
23.2	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	Bases:- 850 °C	P
	No visible flame and no sustained glowing		N/A
	Flame and glowing extinguish within 30 s .....	< 30s	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	Covers	P
	No visible flame and no sustained glowing		P
	Flame and glowing extinguish within 30 s	< 30s	P
	No ignition of the tissue paper		P
	For parts of portable accessories necessary to retain current-carrying parts and parts of the earthing circuit in position: test temperature 750 °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 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		N/A
	No visible flame and no sustained glowing		
	Flame and glowing extinguish within 30 s .....		N/A
	No ignition of the tissue paper		N/A

<b>24</b>	<b>RESISTANCE TO TRACKING</b>		—
24.1	Insulating material retain lives in position be of material resistant to tracking		P

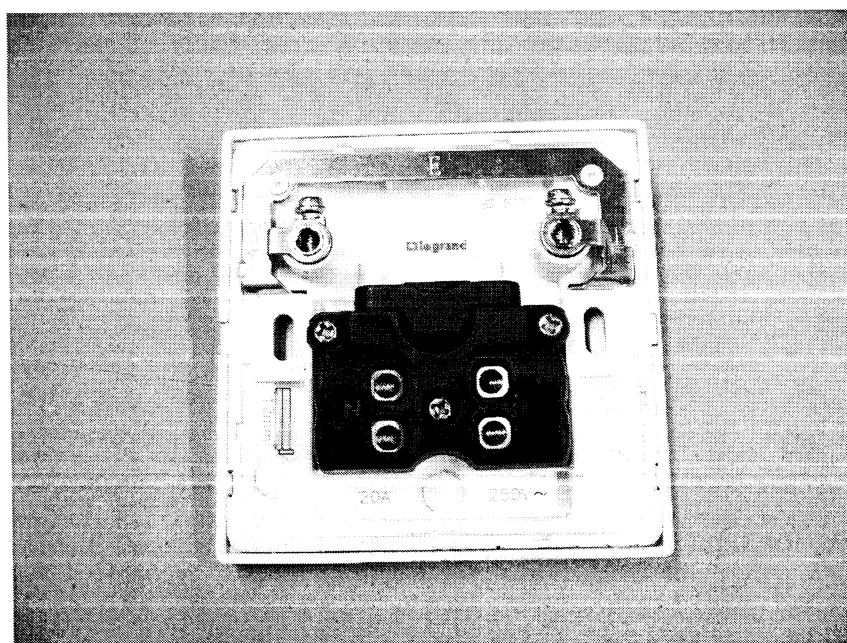
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Clause	Requirement – Test	Result – Remark	Verdict
24.2	Parts of insulating material retaining live parts in position of accessories other than ordinary: test voltage 175 V, 50 drops, solution A of IEC 112	50 drops	P
	There shall be no flashover or breakdown		P
<b>25</b>	<b>RESISTANCE TO EXCESSIVE RESIDUAL STRESSES AND TO RUSTING</b>		—
25.1	Copper alloy less than 80% of copper shall be resistant to brittleness		—
	Samples degreased in alkaline degreasing solution, then immersed in aqueous solution of mercury nitrate for 30 min.		P
	After treatment samples show no crack		P
25.2	Ferrous parts including boxes & cover adequately protected against rusting		—
	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

Appendix I

'Legrand' 20A Connection Unit

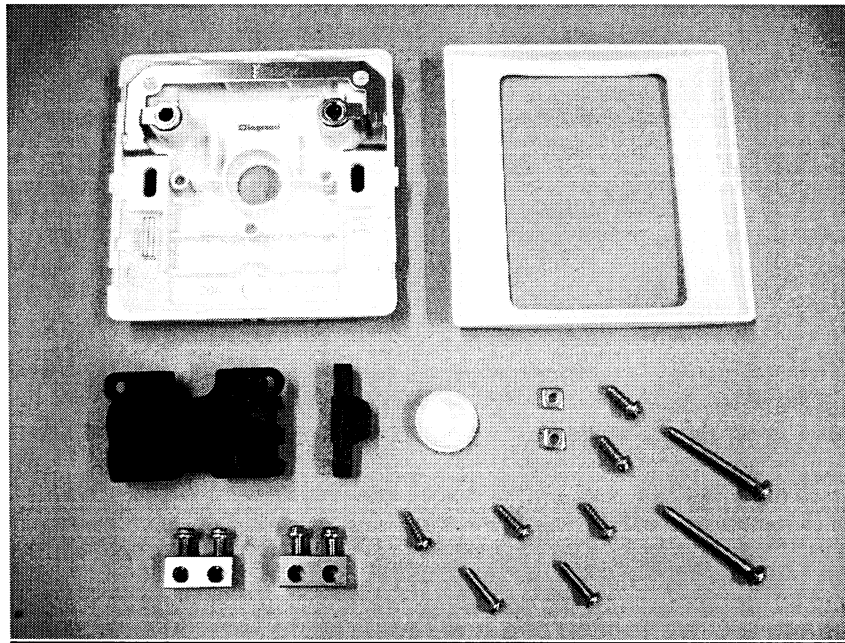


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Appendix I (cont'd)

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**This Report is issued under the following conditions:**

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