Test Report No. 55S070647/MLM/PKS
dated 27 APR 2007

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Subject

TYPE TESTING OF 15A SWITCHED SOCKET-OUTLET

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

PSB TEST ®
Your Peace of Mind

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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

The results reported herein have been performed in accordance with the laboratory's terms of accreditation under the Singapore Accreditation Council - Singapore Laboratory Accreditation Scheme. Tests/Calibrations marked "Not SAC-SINGLAS Accredited" in this Report are not included in the SAC-SINGLAS Accreditation Schedule for our laboratory.

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TEST REPORT
BS 546 : 1950
TWO-POLE AND EARTHING-PIN
Plugs, Socket-outlets and Socket–outlet adaptors

Report Reference No. ..... :	55S070647/MLM/PKS	
Tested by (+ signature) ..... :	Mak Lai Meng	.....
Approved by (+ signature) ..... :	Phua Kim Suah	.....
Date of issue ..... :	27 Apr. 2007	
Testing Laboratory ..... :	TÜV SÜD PSB Corporation Pte Ltd	
Address ..... :	No 1 Science Park Drive, Singapore 118221	
Testing location ..... :	Same as above	
Applicant's name ..... :	Legrand Singapore Pte Ltd.	
Address ..... :	15 Jalan Kilang Barat #07-05 Frontech Centre, Singapore 159357	
Test specification:		
Standard ..... :	BS 546 : 1950 with Amendments 1 – 8 and Supplement 1 & 2	
Test procedure ..... :	Same	
Non-standard test method ..... :	N/A	
Test item description ..... :	1-gang 15A Switched socket-outlet	
Trade Mark ..... :	Legrand	
Manufacturer ..... :	Legrand (Beijing) Electrical Co., Ltd	
Model/Type reference ..... :	i) 281128; 281328 & 281528 ii) 281129; 281329 & 281529 – with LED	
Test item particulars		
Rated current / rated voltage ..... :	15A 250V~	
Switched or unswitched ..... :	Switched	
Fixed or portable ..... :	Fixed	
Fused or unfused ..... :	NA	
Rewirable or non-rewirable ..... :	Rewirable	
Method of application ..... :	Flush / surface / panel	
Type of connection ..... :	Soldered / welded / crimped / others (screw)	

Possible test case verdicts:	
- test case does not apply to the test object	N(/A)
- test object does meet the requirement	P(Pass)
- test object does not meet the requirement	F(Fail)
Testing	
Date of receipt of test item	26 Mar 2007
Date (s) of performance of tests	30 Mar 2007 to 27 Apr 2007

General remarks:

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

"(see appended table)" refers to a table appended to the report

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

Copy of marking plate

Cover plate

legrand

Frame

2811 28 0705

legrand

Base

legrand L N

15A 250V ~

BS 546
SS 145
MS 1577

Summary of test

The switched socket outlets submitted were deemed to comply with BS 546 : 1950 with Amendments 1 – 8 and Supplement 1 & 2.

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
	Section 2 – General requirements		
4	**Position of socket contacts**		
	Socket contacts shall have the relative positions shown in fig. 1		P
5	**Interchangeability**		
	Plugs, socket-outlets, and socket-outlet adaptors shall be tested for interchangeability in accordance with clause 32	Noted	—
6	**Current rating**		
	The current rating of non-fused plugs and of socket-outlets and the nominal current rating of fused plugs	15A	P
	The current rating of a fused-plug shall be expressed in terms of both of the nominal current and of the current rating of the fuse-links		N/A
	The current rating of the socket-outlet adaptors		N/A
7	**Precautions against accidental contact**		
	Minimum distance of pin from periphery of the plug base or socket-outlet adaptor base not be less than given in table 1		N/A
	Plugs, socket-outlets and socket-outlet adaptors shall be so constructed as to:-		—
	a) prevent an earthing-pin from making contact with a current-carrying contact in any circumstances		P
	b) prevent a current-carrying pin from making contact with a current-carrying contact while either or both of the other pins are completely exposed and		P
	c) when a plug is withdrawn from the shuttered socket-outlet the current-carrying socket-contacts are automatically screened by shutters not operated solely by the insertion of one current-carrying pin		P
	The current-carrying contacts shall be sunk below the surface of the socket-outlet or socket-outlet adaptor so as to ensure compliance with clause 8		P

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
8	**Engagement of pins and contacts**		
	On insertion of pins into contacts the travel from the first point of contact of current-carrying parts to complete engagement shall not be less than min. or more than max. given in table 2,	Req: min 0.187" - max 0.269" Mea: 0.228"	P
	There shall be electrical contact throughout the travel		P
	Earthing pin shall make and break contact before and after the current-carrying contacts.		P
	No projections on the face of a plug base, or on the face of a socket-outlet, such as would prevent complete engagement between pins and contacts	No projection	P
	Within a circle having a radius in table 3	Req :1.27''	P
9	**Spacing of pins and contacts**		
	The nominal distance between centres of pins shall be as given in Table 4	Max-min 'GO' gauges	N/A
10	**Earthing of exposed metal parts**		
	Exposed metal parts shall be in effective electrical connection with the earthing pin		N/A
11	**Clearance and creepage**		
	The minimum clearance distance in air shall be 0.1"	Across break :- > 0.1" Bet. L & N :- > 0.1" Bet. L & earth:- > 0.1"	P
	The minimum creepage distance shall be 0.1"	Across break:- > 0.1" Bet. L & N:- > 0.1" Bet. L & earth:- > 0.1"	P
12	**Materials**		
12.1	All materials shall comply with the relevant BS	Clauses 12.1 to 12.8 of amd. 8 applied	P
12.2	Parts made of insulating material and deterioration do not unduly affected by abnormal heat and fire		P
	Ceramic material parts and small components are checked by the test described in 12.4		N/A

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
12.3	Current-carrying parts are made of brass, copper, phosphor-bronze or other suitable material	brass	P
12.4	The glow-wire test is performed in accordance with clause 4 to 10 of BS 6458 : Section 2.1:1984 with the test temperature given in table 5		P
	Parts necessary to retain current carrying parts in position @ 850°C	base	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
	Parts not necessary to retain current carrying parts in position @ 650°C	covers	P
	No visible flame and no sustained glowing		P
	Flame and glowing extinguish within 30 s		N/A
	No ignition of the tissue paper		P
12.5	Current-carrying parts of copper alloy containing less than 80% copper, and which are press formed or produced in a manner are resistance to failure in use due to brittleness		P
12.6	The test specimen is degreased in a suitable alkaline degreasing solution or organic solvent		P
	Then immersed in an aqueous solution of mercurous nitrate		P
	There is no cracks visible with normal or corrected vision without magnification		P
12.7	Ferrous parts are adequately protected against rusting		P
12.8	Ferrous parts protected against rusting		—
	The sample is degrease in an alkaline solution, then immersed for 10 min in a 10% solution of ammonium chloride in water at temp of 27°C		P
	Without drying but shaking off any drops, the parts are placed for 10 min in a box containing air saturated with moisture at temperature of 27°C		P
	After the parts have dried for at least 10 min in a heating cabinet at temperature of 100°C		P
	Their surfaces shall show no signs of rust		P

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict

	Section 3 – Special requirements for plugs		
13	**Fuse-links**		
	Provision shall be made withing a fused-plug for a type A fuse-link to BS 646		N/A
	Fuse-link shall be mounted in appropriate fixed contacts in such a way that it cannot be displaced when the plug is in use		N/A
	Means shall be provided to hand from blowing of fuse during the insertion or withdrawal of a plug.		N/A
	Plug shall not fracture from blowing of fuse		N/A
	Impossible to replace fuse-link unless completely withdrawn from the socket-outlet		N/A

14	**Plug cover and plug base**		
	Plug cover and base firmly secured to one another		N/A
	Impossible to remove cover without withdrawing plug completely		N/A
	Minimum thickness of plug base as given in table 6		N/A
	The diameter of the holes in the plug base through which they pass shall be such that they have a total lateral movement of not more than 0.006 in		N/A
	Unless the plug pins are rigidly fixed in the plug base		N/A

15	**Plug pins**		
	Plug pins shall be substantially cylindrical in form,		N/A
	Plug pins shall have radiused ends to facilitate entry into corresponding socket contacts		N/A
	Their dimensions shall be as given in table 7		N/A
	Plug pins shall be solid, split, or slotted axially with a single slot		N/A
	Dimensions of slot in plug pins as given in table 8		N/A
	The construction of a split plug pin or of a slotted plug pin shall be an integral part of the plug pin.		N/A

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict

16	**Construction of plug pins and terminals**		
	Each plug pin shall be formed in one piece with the fixed part of its terminal		N/A
	Each terminal of substantial construction, and provide for clamping and securing flexible conductor		N/A
	Efficient electrical connection is made direct with an integral part of the plug pin		N/A
	Connection of flexible conductor to earthing plug pin visible when cover of plug in position		N/A
	Fuse link contact which is connected to the line terminal of a fused-plug shall be formed in one piece with the fixed part of the terminal		N/A
	or connected in such a way that it cannot work loose under service conditions		N/A
	Impossible to assemble pins in plug base such that the fuse is connected to the neutral terminal		N/A
	When pillar terminals are used they shall either		N/A
	a) meet the dimension given in table 9 and	Size of clamping screw :	N/A
	have cheese-headed clamping screws long enough under the head to extend to the far side of the conductor holes		N/A
	Terminal screws shall have slightly rounded ends to minimise damage to conductors		N/A
	b) meet requirements given in table 9a and		N/A
	Terminal screws used in making electrical connections have a root area not less than that of the appropriate screws in table 9a.		N/A

17	**Separation of terminals and conductors**		
	Insulating barriers shall be provided to separate metal at different potentials		NA
	The barriers shall be such that there is negligible risk that a wire or strand that may become loose shall touch other parts with which contact may be dangerous		N/A

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
18	**Method of entry of flexible cord or cable**		
	The flexible cord or cable shall enter the plug through one hole, groove or gland		N/A
	There shall be provision for a cord grip to prevent stress on the connection		N/A
	Overall diameter of 3-core circular flexible cables according to table 10		N/A
	The cord and cable shall enter opposite the earth pin and between the current-carrying pins		N/A
19	**Finger grip**		
	A finger grip or other suitable means shall be provided for inserting and withdrawing the plug		N/A
	Without subjecting the flexible cord or cable to any stress		N/A
	Such grip shall be so designed as to discourage gripping the plug by the fingers at the point of entry of the flexible cord or cable		N/A
	Section 4 – Special requirements for socket-outlets		
20	**Socket-contacts**		
	The socket contacts shall be so shaped at the point of entry so as to provide easy access for appropriate plug pins.		P
	Socket contacts shall be self-adjusting as to accept the gauges specified in clause 41	"GO" gauges – fig 4 & 5 withdrawal-pull gauges – fig 2	P
	Each socket-contact shall be in effective electrical and mechanical contact		P
	The corresponding plug pins diameters are specified in clause 15		N/A
	The means for producing the contact pressure shall be associated with each socket contact independently		P
	Diameter of holes in the socket-outlet plate or cover not more than given in table 11	Req:- max 0.303" mea: L:- 0.296"; N:- 0.296"	P

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
	Unless there is a shutter intended to touching the socket contacts		N/A
21	**Construction of socket contact and terminals (replaced by cl.4 in sup. No. 2)**		
	Each socket-contact shall be provided with a terminal and connected to its socket contact in such a way that it cannot work loose		—
	Each terminal shall provide adequate means of clamping firmly a max. of 2 appropriate conductors,		—
	30 A socket contacts shall provide for clamping firmly only one conductor		—
	When pillar terminals are used they shall either		—
	a) meet the dimension given in table 12 and	Size of clamping screw :	—
	have cheese-headed clamping screws long enough under the head to extend to the far side of the conductor holes		—
	Terminal screws shall have slightly rounded ends to minimise damage to conductors		—
	b) meet requirements given in table 12a and		—
	Terminal screws have min. root area and withstand the min. torques given in table 12a.		—
22	**Separation of terminals and conductors**		
	Insulating barriers provided to provide separation for metal at different potentials within socket-outlet		P
23	**Fixing holes**		
	Fixing holes in socket-outlet shall be suitable for wood screws of the size given in table 13		N/A
24	**Position of fixing-holes**		**delete**
	Fixing holes in a socket-outlet intended for fixing by means of flanges shall have their centre not less than the minimum distance given in table 14		delete

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
25	**Base of surface type socket outlets**		**delete**
	Means integral with the base of a surface-type socket-outlet shall be provided to ensure proper seating on a flat surface		Delete
	Diameter of holes for conductors as given in table 15		Delete
	Distance from terminals to mounting surface < 0.125”		delete
	Filling of holes in base for fixing of components with a non-hygroscopic insulant that will not flow at 55°C		delete
26	**Plate for flush type socket-outlet**		
	Provision of a socket-outlet plate of correct type for flush-type socket-outlets		P
	Section 5 – Special requirements for socket-outlet adaptors		
27	**General**		
	Socket-outlet adaptors shall also comply with the clauses in this section		N/A
28	**Fuse-links**		
	Provision shall be made withing a fused-plug for a type A fuse-link		N/A
	Fuse-link shall be mounted in appropriate fixed contacts in such a way that it cannot be displaced when the plug is in use		N/A
	Means shall be provided to hand from blowing of fuse during the insertion or withdrawal of a plug.		N/A
	Plug shall not fracture from blowing of fuse		N/A
	Impossible to replace fuse without withdrawing plug		N/A
29	**Current rating of pins and contacts**		
	Current rating of plug portion same as socket-outlet and shall be either 5 A or 15 A		N/A

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict

	Section 6 - Marking		
30	**Marking**		
	All plugs and socket-outlets and socket-outlet adaptors shall be clearly and indelibly marked as follows:		P
	Manufacturers name or identification mark	legrand	P
	BS 546	BS 546	P
	Plugs:		—
	a) The letter L and N and the symbol for earth and, if practicable, E		N/A
	b) The word FUSED visible when the plug is in engagement with the socket-outlet		N/A
	c) The word USE CORRECT FUSE-LINKS		N/A
	Socket-outlets:		—
	a) Current rating	15A	P
	b) The letters E, L and N	L; N; E	P
	Socket-outlet adaptor		—
	a) Current rating of the plug portion		N/A
	b) The word FUSED visible		N/A
	c) The word USE CORRECT FUSE-LINKS		N/A
	d) Total loading must not exceed "_____Amperes"		N/A
	The required markings not placed on screws, removable washers or other removable parts, or on parts intended for separate sale		P

	Section 7 – Sampling tests		
31	**General**		
	Conditions for tests of clauses 32 to 36	Noted	—

32	**Interchangeability**		
	Plugs, socket-outlets, and socket-outlet adaptors shall be tested for interchangeability by means of gauges in clause 41	Fig 4 & 5 – max & min "GO" gauges	P

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
	The gauges shall be deemed to prove accuracy in respect of the relevant dimensions		P
33	**Effectiveness of contact**		
	Minimum withdrawal pull of a gauge of fig. 2		P
	a) from an individual socket-contact in a complete socket-outlet, and		P
	b) from an individual adaptor contact in a complete socket-outlet adaptor as shown in table 17		N/A
	The voltage drop between individual socket-contact in a complete socket-outlet and a corresponding plug pin (mv)		P
	Measured between the terminal of the socket contact and the terminal of the plug pin shall be not more than 25 mV at rated current	Test current:- 15A L: 17.4; 17.9; 16.9mV N: 20.1; 14.4; 15.7mV	P
	The resistance between the terminal and any other parts not exceed 0.05Ω. Test current 25A	Bet. earth socket terminal & fixing screw < 0.05Ω	P
34	**Withdrawal pull**		
	Minimum withdrawal pull of a plug from the socket outlet shall be as shown in table 18	Req :max 18lb mea :< 18lb	P
35	**Insulation resistance**		
	Test voltage 500 Vdc for 1 min. applied:-		—
	a) between line and neutral terminal > 100 MΩ	> 100 MΩ	P
	b) between live and neutral connected together and earth / metal foil > 100 MΩ	> 100 MΩ	P
	c) across switch break > 100 MΩ	> 100 MΩ	P
36	**High voltage test**		
	Test voltage at 1500 V ac for 1 min. apply ;		—
	a) between line and neutral terminal		P
	b) between live and neutral connected together and earth / metal foil		P

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
	c) across switch breaks		P
	Section 8 – Type test		
37	**General**		
	Conditions for test of clauses 38 to 40	Noted	—
38	**Current-breaking**		
	The breaking capacity of socket-contacts shall be adequate		P
	Socket-outlets or adaptors shall be connected and mounted as in normal use		P
	Socket-contact make & break a current of 1.3 x rated current in non-inductive a.c circuit at 1.25 x rated voltage	Test current:- 19.5A Test voltage:- 312.5V	P
	The plugs and socket break the circuit 10x in succession at 30 s interval at a speed of 6 inches per second		P
	For the purpose of the tests, fuse-links may be replaced by links of negligible resistance		N/A
	After the test, the socket-outlets are capable of satisfying the subsequent tests detailed in clauses 33 and 39		P
39	**Temperature rise of fused-plugs and socket-outlet adaptor**		
	Fused-plugs shall be tested in socket-outlets for temperature rise at their current rating		N/A
	Socket-outlet adaptors shall be fitted into socket-outlets and equipped with a non-fused plugs for temperature rise test		N/A
	The fused outlets shall be loaded to their full rated capacity, and the non-fused outlet, if any, shall carry the difference between the sum of the currents carried by the fused outlets and the current rating of the plug portion		N/A
	The temperature rise of any terminal to which the flexible cord is attached shall not exceed 35 K		N/A

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
	The fuse-links used in this test shall have a dissipation fo not less than 0.27 watt for 2A fuse-links or 0.45 watt for 5A fuse-links and not more than 0.3 Watt for 2A fuse-links or 0.5 Watt for 5A fuse-link		N/A
40	**Shutters**		
	Shutters shall be capable of continuing to work		P
	Operated mechanically 5000 times by the pins of corresponding plugs not carrying any current		P
	The rate of insertion and withdrawal not exceed 20 cycles per minute at regular intervals		P
	The speed during the insertion and withdrawal approximately 6 inches per second		P
40a	The gauges illustrated in figures 2, 3, 4 and 5 are considered to meet the dimensional requirements		P
	Section 9 – Gauges		
41	**“GO” gauges for plugs and socket-outlets**		
	“GO” gauge for plug fig. 3 and table 20 is to prove correct spacing of plug-pins and the absence of axial projections on the face of plug base and also indicate accuracy of projection of the plug pins from the face of the plug		N/A
	With the gauge in vertical position and the engagement surface of the plug and the gauge parallel to each other, the plug pins shall be entered into the gauge fully without interference		N/A
	“GO” gauges for socket outlet fig. 4 and 5 and table 21 and 22 is to prove correct spacing of the socket-contacts and the absence of axial projections on the face of socket outlet		P
	With the socket-contact so position that the corresponding pins of gauges figs. 4 and 5 make satisfactory contact when the gauge is correctly and fully inserted		P
	Withdrawal-pull gauges for effectiveness of contact		P
	Fig. 2 gauges are to test the withdrawal-pull specified in clause 33 and shall be used in individual socket-contacts of complete socket-outlets.		P

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
	They shall be applied after the maximum "GO" gauge for socket-outlet		P
	When gauging the line and neutral socket-contacts, the shutter, shall be kept clear of the gauge		P
	PLUGS MADE OF RESILIENT MATERIAL		
	Supplement no. 1 (1960)		
1	**Scope**		
	Material of the plugs		N/A
	Type of plugs		N/A
	Rated current		N/A
2	**Definitions**		
	According to the standards		N/A
3	**General requirements**		
	Plugs comply with the following clause of BS 546		N/A
	Section 2 – General requirements, clauses 3 to 12		N/A
	Section 3 – Clauses 13 and 17 to 19		N/A
	Section 6 – clause 30		N/A
	Section 7 – clauses 31 to 36		N/A
	Section 8 – clauses 37 to 39		N/A
	Section 9 – clause 41		N/A
	The following amendments to the clauses of BS 546 indicated are applicable:		N/A
	Clause 12 - materials		N/A
	The requirements of clause 12 of BS 546 for the base and cover do not apply to such components		N/A
	Clause 35 – insulation resistance		N/A
	Replace clause 35 of BS 546 for plugs having live metal parts in contact with rubber		N/A

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
4	**Materials**		
	Rubber used for the cover or base shall be free from blisters, cracks and embedded foreign matter and other physical properties		N/A
	And defect likely to affect insulating and mechanical properties		N/A
	Shall have hardness not less than 85 BS degrees		N/A
5	**Construction of plugs**		
	Plugs shall be so designed and constructed that they cannot readily be deformed to allow access to live parts, nor		N/A
	shall it be possible for separated metal parts to be brought into contact with each other		N/A
	To provide the user with adequate protection against shock		N/A
	Sufficiently strong to resist mechanical damaged		N/A
	Comply with the plug pin deflection test specified in clause 15		N/A
	Plugs comply with the following clause of BS 546		N/A
	The size of the flexible cord shall be appropriate to the current rating		N/A
	Not subjected to clause 18 of BS 546		N/A
	Fused-plugs with integral flexible cord		N/A
	The current rating of the fuse appropriate to the flexible cord shall be clearly marked on the plug		N/A
	The current rating		N/A
6	**Protection against accidental contact**		**delete**
7	**Plug pins**		
	Plug pins shall be substantially cylindrical in form,		N/A
	They shall not be split or slotted		N/A

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
8	**Construction of plug pins and terminals**		
	Each plug pin shall be formed in one piece with the fixed part of its terminal		N/A
	Each terminal be of substantial construction, and the terminal shall provide for clamping and securing its flexible conductor		N/A
	Efficient electrical connection is made direct with an integral part of the plug pin		N/A
	Connection of flexible conductor to earthing plug pin visible when cover of plug in position		N/A
	Fuse link contact which is connected to the line terminal of a fused-plug shall be formed in one piece with the fixed part of the terminal		N/A
	or connected in such a way that it cannot work loose under service conditions		N/A
	Impossible to assemble pins in plug base such that the fuse is connected to the neutral terminal		N/A
	When pillar terminals are used they shall either		N/A
	a) meet the dimension given in table 9 and	Size of clamping screw :	N/A
	have cheese-headed clamping screws long enough under the head to extend to the far side of the conductor holes		N/A
	Terminal screws shall have slightly rounded ends to minimise damage to conductors		N/A
	b) meet requirements given in table 9a and		N/A
	Terminal screws used in making electrical connections have a root area not less than that of the appropriate screws in table 9a.		N/A
	Withstand the minimum torques given in table 9a		N/A
9	**Connection between cover and base of plug**		
	The plug cover and base shall be firmly secured to one another		N/A
	Ant screws or other devices used for securing the plug cover and the plug base shall only be accessible from the underside of the base of the plug		N/A

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
10	**Ageing**		
	Plugs shall be sufficiently resistant to ageing		N/A
	Complied checked by test specified in clause 14 of supplement		N/A
11	**Marking**		
	Plugs shall be marked BS 546/A		N/A
	For fused plug with integral flexible cord comply with the requirement of clause 5c		N/A
12	**Tests**		
	Test specified in clauses 14 and 15 of this supplement shall be type test		N/A
13	**Insulation resistance test**		
	Every plug having live metal in contact with rubber shall pass the insulation resistance test		N/A
	This test are lieu of the test specified in clause 35 of BS 546		N/A
	Before the tests, samples are subjected to a high voltage test as required by clause 36		N/A
	Test voltage 500 Vdc for 1 min. applied:-		N/A
	a) between line and neutral terminal > 100 MΩ		N/A
	b) between live and neutral connected together and earth / metal foil > 100 MΩ		N/A
14	**Ageing test**		
	An accelerated ageing test is made in an atmosphere having the composition and pressure of the ambient air		N/A
	The samples are suspended freely in a heating cabinet		N/A
	They are kept at a temperature of 70°C ± 2°C for 240 hours		N/A

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
	After the test, the samples comply in all respects with the other requirements and the clause 13 and 15 of this supplement		N/A
15	**Plug pin deflection test**		
	Plug pins shall be tested for deflection under the conditions of the test		N/A
	The test is carried out in an ambient temperature		N/A
	Deflecting force of 1 lb. is applied of 1 inch from the face of the plug and at right angles to the axis of the pin under test		N/A
	The deflection of the pin from the horizontal		N/A
	Deflection in the lower position		N/A
	Deflection in the upper position		N/A
	the arithmetical mean		N/A
	0.5 times the diameter of the pin under test		N/A
	Supplement no. 2 (1987) – Specification for switched socket-outlets		
3	**General requirements**		
	Switched socket-outlets conforming to this standards shall comply with the clauses of BS 546 except as stated below	Noted	—
8	**Engagement of pins and contacts**		
	Additional requirements		P
	Any part of the actuating member shall not lie within a circle having a radius given in table 3. For 15 A switched socket this radius is reduced to 1.160”	15A	P
11	**Clearance and creepage**		
	Additional requirements		P
	The minimum distance between switch contacts in the open position shall be 0.047”	0.120”	P

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
21	**Construction of socket contacts and terminals**		
	Clause 4 of this supplement replaces clause 21 of BS 546		P
30	**Marking**		
	Clause 10 of this supplement replaces clause 30 of BS 546		P
32	**Interchangeability**		
	The following additional note applies. For switched socket-outlets, although the actuating member maybe outside the radius of engagement it may still prevent full engagement of the clause 41 gauge. In this circumstance it may be removed	Noted	—
33	**Effectiveness of contact**		
	The following additional requirement applies. For switched socket-outlets the voltage drop in a switched pole measure from the terminal of the switched pole to the corresponding plug pin shall not exceed 60 mV	Test current:- 15A 22.8mV; 11.2mV; 12.2mV	P
35	**Insulation resistance**		
	The following additional requirement applies. Across switch contacts the value shall be > 50 MΩ	> 100 MΩ	P
36	**High voltage tests**		
	The following additional requirement applies. Switches shall be tested in the closed position followed by tests in the open position		—
	Test voltage at 1500 V for 1 minute		—
	Between L & N		P
	Between live parts and earth		P
	Between lives and foil/surface		P
	No flashover and no breakdown during the test		P

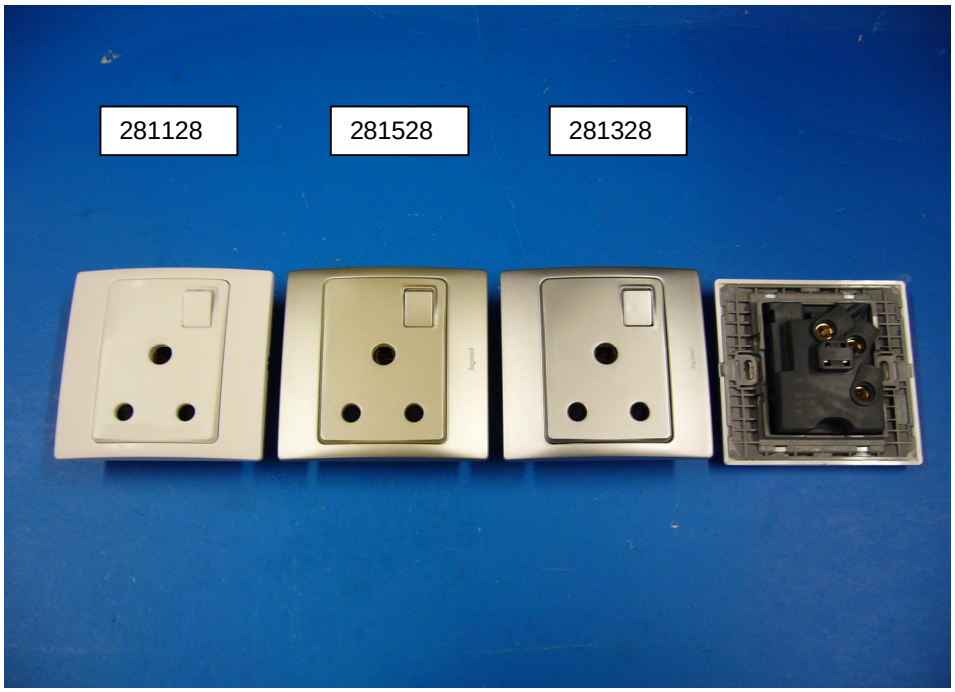
BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
38	**Current breaking**		
	The following additional requirement applies. Switched socket-outlets shall be tested in a substantially non-inductive a.c. circuit as follows		—
	(a) for socket-outlets, as described in clause 38 as modified above		P
	(b) for switch contacts, the switch shall make and break the specified current 10 times at 30 s interval	Test current:- 19.5A Test voltage:- 275V	P
	After the test the switched socket outlet shall be in a serviceable condition		P
41	**Go gauges for plugs and socket**		
	The following additional note applies. When checking the requirement of clause 41, provided the switch lies outside the radius specified in table 3, the projecting switch operating member may be removed	Noted	—
4	**Terminals**		
	Terminals shall be of such design and dimensions that under normal conditions of use they do not overheat		P
	In pillar type terminals the screw shall be of sufficient length to extend to the far side of the terminal hole		P
	The screws and the surface on which the conductor is clamped shall be so shaped that the conductor is securely held and not damaged		P
	The sizes of the conductor hole and clamping screw shall be such that the clearance between the sides of the major diameter of the clamping screw and the conductor hole does not exceed 0.6 mm	0.4mm	P
	Terminals shall be of a form that prevents spreading or be fitted with special washers to control spreading		P
	Terminals shall accept two conductors appropriate to the rated current of the accessory (except 30 A)	2x2.5mm sq	P
	The clearance of any live part to other metal parts shall comply with clause 11 when fitted with appropriate conductors		P

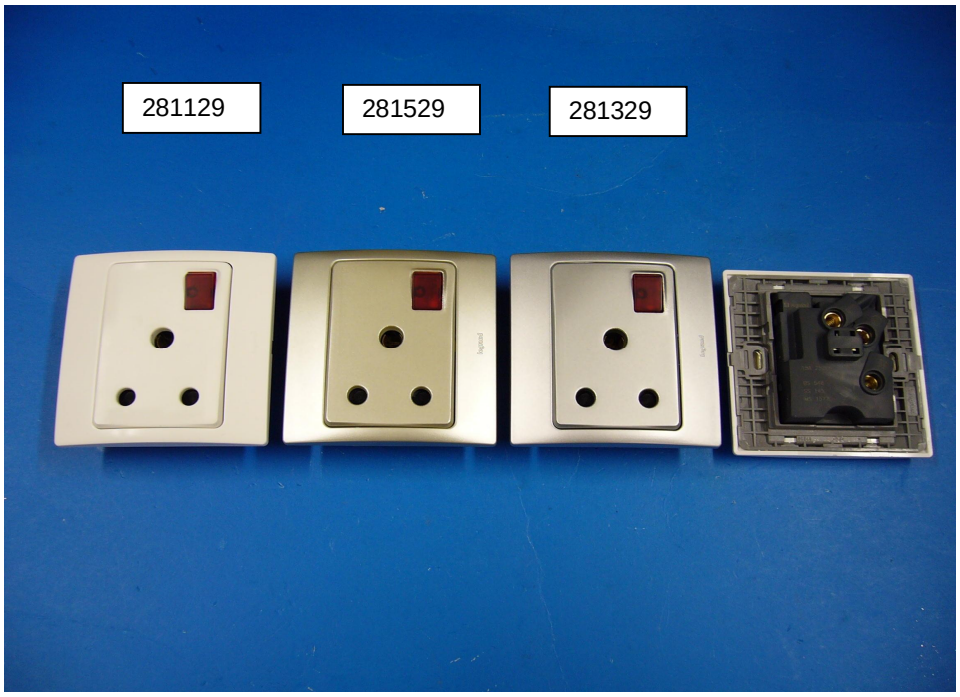
BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
	Terminal screws shall have a root mean area not less than table A and withstand the torque detailed in table A. ISO metric screws shall be in accordance with BS 3643		N/A
	Pillar terminals may as an alternative comply with clause 21 and table 12 of BS 546	Screw dia:- 4.87mm	P
	Compliance checked by inspection and temperature rise test of clause 7		P
5	**Precautions against reversal of polarity**		
	Internal connections shall be so arranged that polarity is maintained		P
6	**Switch action**		
	The actuating member of a switch shall not remain at rest in the off position whilst the switch contacts remain closed		P
	The mechanism shall be so constructed that when operated can only give adequate contact or adequate separation		P
	Switches shall be so constructed that arcing cannot occur when the switch is activated slowly		P
	Switches shall disconnect at least the supply to the line socket contact		P
	Double pole switches shall disconnect both poles of the supply with one movement of the actuator		N/A
	Compliance is checked by inspection and the following test		P
	Following the test of clause 38 the circuit is broken a further 10 times each time moving the actuator by hand over a period of 2 s	Test current:- 19.5A Test voltage:- 275V	P
7	**Temperature rise test**		
	Switched socket outlets shall not attain excessive temperatures in normal use		P
	Compliance checked by a temperature rise test at rated current	Test current:- 15A	P

BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
	The temperature rise of the terminal shall not exceed 35 K when measured at 4 h and 8 h	L: 20.0K; 18.2K; 17.7K N: 17.7K; 17.1K; 17.5K	P
8	**Electrical endurance of switches**		
	The electrical endurance of the switches shall be adequate		P
	Compliance shall be checked by testing the capacity to make and break rated current at 250 V 15,000 times in a non-inductive circuit at a rate of 6 cycles per minute	Test current:- 15A Test voltage:- 250V	P
	After the test the switch shall be capable of making and breaking its rated current at rated voltage		P
	The voltage drop across each pole at rated current shall not exceed 75 mV	L: 28.8; 27.2; 20.2mV N: 19.8; 19.6; 16.3mV	P
	The switch shall comply with clauses 35 & 36 as modified in clause 3 above. 100 MΩ reduced to 5 MΩ and 50 MΩ reduce to 2 MΩ	Insulation resistance:- Across break:- > 100 MΩ Electric strength:-1.5kV	P
9	**Moisture resistance**		
	Switched socket-outlets shall be proof against humid conditions which may occur in normal use		P
	Test temperature between 20 K and 30 K	25 K	—
	Relative humidity between 91% & 95%	93%	—
	Test duration 48 h		—
	Immediately after this treatment, samples shall not show any damage and in addition the switch shall comply with the requirements of clause 35 and 36		P
35	**Insulation resistance**		
	The following additional requirement applies. Across switch contacts the value shall be > 2 MΩ	> 100 MΩ	P
	Between L & N > 5 MΩ	> 100 MΩ	P
	Between live parts & earth > 5MΩ	> 100 MΩ	P
	Between live parts and foil/surface > 5 MΩ	> 100 MΩ	P

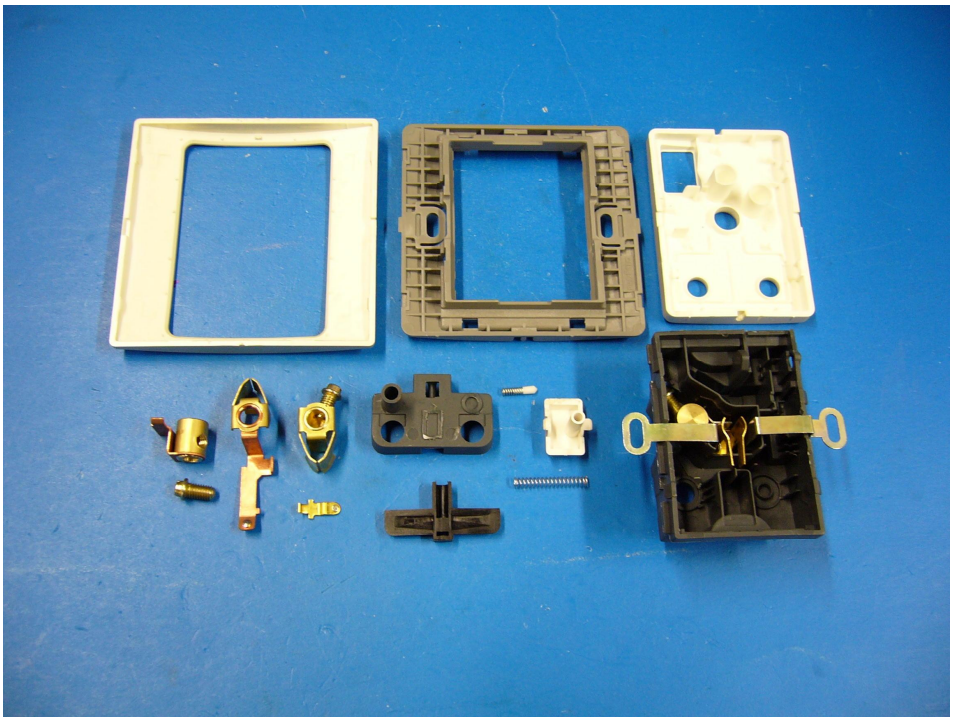
BS 546			
Clause	Requirement – Test	Result – Remark	Verdict
36	**High voltage tests**		
	The following additional requirement applies. Switches shall be tested in the closed position followed by tests in the open position		—
	Test voltage at 1500 V for 1 minute		—
	Across switch contact		P
	Between L & N		P
	Between live parts & earth		P
	Between live parts and foil/surface		P
10	**Marking**		
	Switched socket-outlets shall be clearly marked		P
	Markings not placed on removable parts		P
	The following information shall be marked:		—
	a) trade mark or name of manufacturer / supplier	Legrand	P
	b) rated current in amperes	15A	P
	c) rated voltage in volts	250V	P
	d) nature of supply	~	P
	e) terminal connection of line, neutral and earth identified by symbols L, N and E.	L; N; ⏚	P

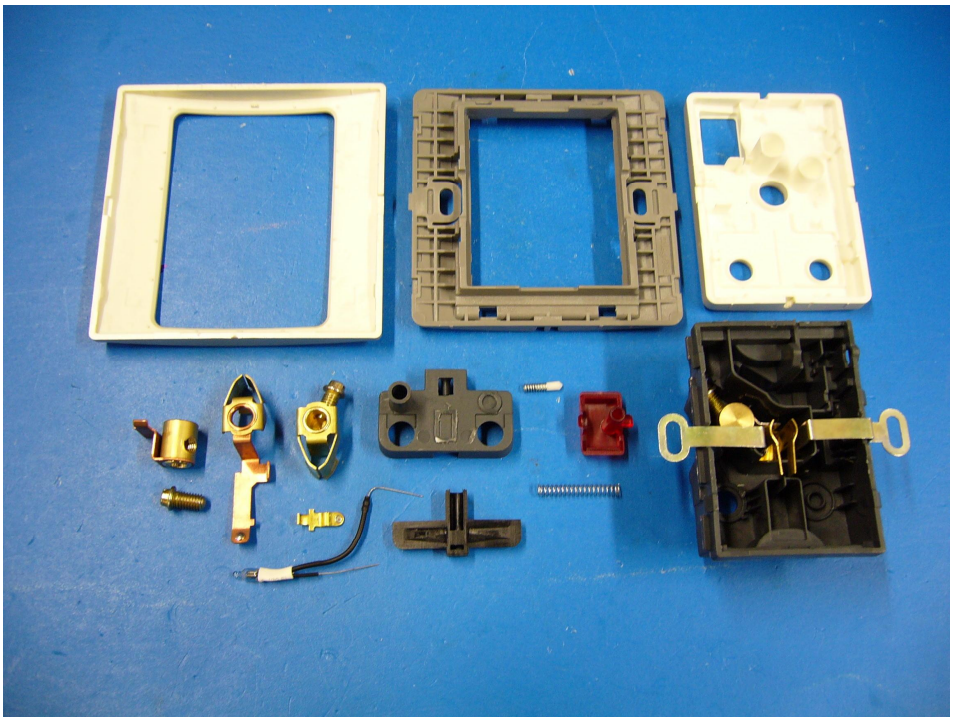
Appendix I
'Legrand' Switched Socket-Outlet
15A 250V ~





Appendix I (con't)
'Legrand' Switched Socket-Outlet





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