

IEC SYSTEM FOR CONFORMITY TESTING
AND CERTIFICATION OF ELECTRICAL
EQUIPMENT (IECEE)
CB SCHEME

SYSTÈME CEI D'ESSAIS DE CONFORMITÉ
ET DE CERTIFICATION DES ÉQUIPEMENTS
ÉLECTRIQUES (IECEE)
METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product
Produit

Name and address of the applicant
Nom et adresse du demandeur

Name and address of the manufacturer
Nom et adresse du fabricant

Name and address of the factory
Nom et adresse de l'usine

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

Trade mark (if any)
Marque de fabrique (si elle existe)

Model/type Ref.
Ref. de type

Additional information (if necessary)
Information complémentaire (si nécessaire)

A sample of the product was tested and found
to be in conformity with
*Un échantillon de ce produit a été essayé et a été
considéré conforme à la*

as shown in the Test Report Ref. No.
which form part of this certificate
*comme indiqué dans le Rapport d'essais numéro
de référence
qui constitue une partie de ce certificat*

Installation switches

Legrand Österreich GmbH, Industriestraße 4,
P241 Wernberg, Austria

Legrand Österreich GmbH, Industriestraße 4,
P241 Wernberg, Austria

see page 2 of test report

10 A - 250 V~

Legrand

775954/-

push-button switch (hotel card)

IEC **PUBLICATION** 60669-1 **EDITION 3**
incl. A1:1999

99.6433.08B (20 pages + annex 1 and 2)

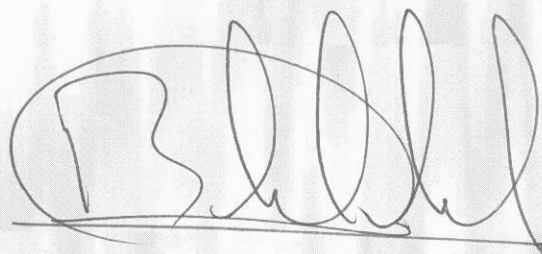
This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

N.V. KEMA, Utrechtseweg 310
6812 AR Arnhem, The Netherlands

Date April 19, 2000

Signature

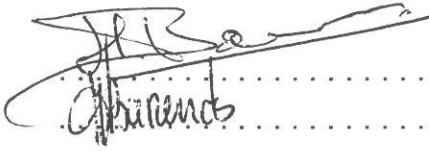
B.T.M. Holtus



TEST REPORT

IEC 60669-1

Switches for household and similar fixed-electrical installations Part 1: General requirements

Report reference No.	: 99.6433.08B	
Compiled by (+ signature)	: H. Boers	
Approved by (+ signature) ...	: H.R.M. Barends	
Date of issue	: 2000-04-20	
Testing laboratory	: KEMA Registered Quality B.V.	
Address	: Utrechtseweg 310, 6812 AR Arnhem, The Netherlands	
Testing location	: as above	
Applicant	: Legrand Österreich GmbH	
Address	: Industriestraße 4 A-9241 Wernberg	
Standard	: IEC 60669-1:1998 + A1:1999	
Test Report Form No.	: I6691__A	
TRF originator.	: IMQ	
Master TRF	: reference No. MOD.BT-2208/X-1995/CB, dated 95-10	
Copyright blank test report ...	: the bodies participating in the Committee of Certification Bodies (CCB) and/or the CENELEC Certification Agreement (CCA). This report is based on a blank test report that was prepared by KEMA using information obtained from the TRF originator.	
Test procedure	: CB-scheme	
Procedure deviation	: N.A.	
Non-standard test method	: N.A.	
Type of test object	: Installation switches; push-button switch	
Trademark	: Legrand	
Model/type reference	: 775954/-	
Manufacturer	: Legrand Österreich GmbH at Wernberg, Österreich	
Rating	: 10 A - 250 V~	
Copy of marking plate		
for example: Base: 10 A - 250 V~ Cover: Legrand and suffix (see annex 1) Legrand 775954		

Test item particulars:

Type of switch : push-button switch

Pattern number : 1 (momentary contact)

Contact opening (gap) : normal

Protection against electric shock : unenclosed

Protection against harmful ingress of water . . . : ordinary

Method of actuating : by means of insert a card

Method of application : flush-type

Method of installation : A

Type of terminals, screw-type : N.A.

Type of terminals, screwless-type : rigid

Flexible cable outlet : without

Rated voltage (V) : 250 V ~

Rated current (A) : 10 A

Possible test case verdicts:

- test case does not apply to the test object . . . : N(.A.)
- test object does meet the requirement : P(ass)
- test object does not meet the requirement . . . : F(ail)

General remarks:

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

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

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

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

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

Factory locations:

The installation switches may be manufactured in the following factory locations:

Legrand Österreich GmbH, Industriestraße 4,
P241 WERNBERG, Austria

Legrand, 128 Av.du Marechal de L. de T.,
87001, LIMOGES, France

The manufacturer declared that the installation switches manufactured in the above mentioned factory locations are equal.

IEC 60669-1			
Clause	Requirement – Test	Result - Remark	Verdict
8	MARKINGS		
8.1	On main part:		
	- rated current or rated fluorescent lamp (A or AX) :	10 A	Pass
	- rated voltage (V) :	250 V	Pass
	- symbol for nature of supply :	~	Pass
	- manufacturer's or responsible vendor's name, trademark or identification mark :	Legrand	Pass
	- type reference :	775954/- see in this case also the annex to this report	
	- symbol for mini gap (m) :		N.A.
	- symbol for micro gap (μ) :		N.A.
	- symbol for semi-conductor switching device		N.A.
	- symbol for degree of protection IP		N.A.
	- switches with screwless terminal (rigid conductors)		Pass
8.3	Markings: on main part:		
	- parts sold separately: manufacturer's name :	Legrand	Pass
	- type reference :	see annex to this report	Pass
	Symbol IP marked on outside, easily discernible		N.A.
	Indications clearly visible and easily legible		Pass
	Indications not on parts removable without tool		Pass
8.4	Terminals for phase conductors, identified or self evident or wiring diagram		Pass
	Switches 2, 3, 03, 6/2 of same polarity, similar identification		Pass
	Indications not on screws or removable parts		Pass
8.5	Terminals for neutral conductors: N :		Pass
	Earthing terminals: symbol :		N.A.
	Not placed on screws or removable parts		N.A.
	Equipment terminals: symbol IEC 417 or colour; physical dimension :		N.A.

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Clause	Requirement – Test	Result - Remark	Verdict
8.6	Pattern numbers 2, 3, 03; switches > 250 V or > 16 A: direction of movement of actuating member or switch position clearly :	ON / OFF	Pass
	Indications clearly visible on front of switch		Pass
	Not possible to fix cover or cover plate in an incorrect position		Pass
8.7	Red colour only for push-button to open the circuit		N.A.
8.8	Special precautions, in instruction sheet		N.A.
8.9	Marking durable and easily legible: 15 s water; 15 s hexane		Pass

9	CHECK OF DIMENSIONS		
	Switches and boxes comply with Standard Sheet	Standard sheet II and III	Pass

10	PROTECTION AGAINST ELECTRIC SHOCK		
10.1	Live parts not accessible		Pass
10.2	Operating means of insulating material, unless		
	- accessible metal parts separated by double or reinforced insulation, or		Pass
	- reliably connected to earth		N.A.
10.3	Accessible parts < 16 A: insulating material		Pass
10.3.1	Covers or cover plates protected by additional insulation		Pass
	Adequately fixed and correctly designed		Pass
10.3.2	Earthing of metal covers or cover plates: connection low resistance: I (A); resistance $\leq 0,05 \Omega$:		N.A.
10.4	Metal parts of mechanism not insulated from live parts not protrude from enclosure		Pass
	Key or similar, insulated from live parts		N.A.
10.5	Metal parts of mechanism:		
	- not accessible and insulated from accessible metal parts		Pass
	- separated from live parts		Pass

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Clause	Requirement – Test	Result - Remark	Verdict
10.6	Key or intermediate part touch parts insulated from live parts		N.A.
	Insulated from metal parts of mechanism		N.A.
10.7	Cord operated, impossible to touch live parts		N.A.

11.	PROVISION FOR EARTHING		
11.1	Accessible metal parts connected to an earthing terminal		N.A.
11.2	Earthing terminals: screw clamping, comply with Cl. 12		N.A.
	Size as supply terminal		N.A.
	External earthing terminal suitable for 6 mm ²		N.A.
11.3	Provision with an internal earthing terminal		N.A.
11.4	Earthing connection: I (A); resistance $\leq 0,05 \Omega$:		N.A.

12	TERMINALS		
12.1	Screw clamping :	pillar / screw / stud / saddle / lug / mantle	—
	Screwless terminal :		Pass
	Not serve to fix any other component		N.A.
12.2	Terminals with screw clamping for external copper conductors:		
12.2.1	- rated current (A) :		—
	- nominal cross-sectional areas (mm ²) :		—
	- conductor space D: diameter (mm); figure . . . :		—
12.2.2	Connection without special preparation		N.A.
12.2.3	Terminals: adequate mechanical strength		N.A.
	Screws and nuts ISO or similar		N.A.
	Screws not of soft metal or liable to creep		N.A.
12.2.4	Terminals resistant to corrosion		Pass
12.2.5	Terminals clamp conductor without damage:		
	- smallest cross-sectional area (mm ²); torque (Nm); height H (mm); mass (kg) :		—

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Clause	Requirement – Test	Result - Remark	Verdict
	- largest cross-sectional area (mm ²); torque (Nm); height H (mm); mass (kg) :		—
12.5.2	During the test: conductor does not slip out or break		N.A.
12.2.6	Conductors connected between metal surfaces:		
	- smallest cross-sectional area (mm ²); torque (Nm) :		—
	- largest cross-sectional area (mm ²); torque (Nm) :		—
	- pull test: pull (N) for 1 min :		—
	During the test: conductor does not move noticeably		N.A.
12.2.7	Conductors do not slip out		N.A.
	Cross-sectional area (mm ²) :	1 x / 7 x	—
	Number of conductors :		—
	Torque (Nm) :		N.A.
	After the test, no wire escaped		N.A.
12.2.8	Terminals shall not work loose: tightened and loosened 5 times; diameter (mm); torque (Nm):		—
	During the test: terminals shall not work loose		N.A.
12.2.9	Earthing terminals, adequately locked against loosening. Loosening only by tool		N.A.
12.2.10	Earthing terminals, no risk of corrosion:		
	- body of brass or other resistant material		N.A.
	- precaution to avoid risk of corrosion		N.A.
12.2.11	Pillar terminals: distance g (mm) :		N.A.
	Mantle terminals: distance (mm) :		N.A.
12.2.12	Lug terminals only for I (A) 40 A and 63 A		N.A.
12.3	Screwless terminals	(see Appendix I)	Pass

13	CONSTRUCTIONAL REQUIREMENTS		
13.1	Insulating lining: adequate mechanical strength and secured in reliable manner		Pass
13.2	Switches permit:		

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Clause	Requirement – Test	Result - Remark	Verdict
	- easy introduction and connection of conductors		Pass
	- correct positioning of the conductors		Pass
	- easy fixing of base to a wall or in a box		Pass
	- adequate space between underside of base		Pass
	Surface-type: fixing means do not damage insulation of the cable		N.A.
	Type A: easy positioning and removal of cover or cover plate		Pass
13.3	Covers, cover plates and actuating members:		
	- held in place at two or more points		Pass
	- fixed by single fixing, if located by another means		N.A.
	Type A: base in position after removal of covers		Pass
13.3.1	Covers, fixing screw type: inspection		N.A.
13.3.2	Cover, fixing not dependent on screws: accessibility:		
	- to live parts (20.4)		Pass
	- to non-earthed metal parts (20.5)		Pass
	- to insulating parts, or earthed metal parts or metal parts, or live parts SELV (20.6)		N.A.
13.3.3	Covers, removal by tool: see 13.3.2		N.A.
13.4	No free opening in ordinary switches		Pass
13.5	Knobs or rotary switches securely coupled		N.A.
	Axial pull: pull 100 N for 1 min; turned 100 times		N.A.
	During the test, knob shall not become detached		N.A.
13.6	Fixing devices: accessible from the front, not serving any other fixing purpose		Pass
13.7	Combinations ensure correct position		N.A.
	Fixing of each base independent		N.A.
13.8	Accessories combined: comply with their standard		N.A.
13.9	Protected switches: totally enclosed		N.A.

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Clause	Requirement – Test	Result - Remark	Verdict
	Drain hole: diameter ≥ 5 mm or 20 mm ² (w/1 ≥ 3 mm) :		N.A.
	Correctly positioned		N.A.
	Lid springs resistant to corrosion		Pass
13.10	Conductors ends, prepared after mounting box, but before mounting switch in box		Pass
13.11	Protected surface switches, 1, 5 and 6 provided with additional terminal		N.A.
13.12	Correct introduction of conduit or protective covering at least 1 mm		N.A.
	Conduit entries: sizes 16, 20, 25 or 32 or a combination at least of two of them :		N.A.
	Cable entries: cables as in Table 11 or specified by manufacturer; diameter (mm) . . . :		N.A.
13.13	Provision for back entry		N.A.
13.14	Membranes or like replaceable		N.A.
13.15.1	Membranes reliably fixed; temperature 40 °C for 2 h; force 30 N by test finger		N.A.
	No deformation, live parts not accessible		N.A.
	Axial pull: pull 30 N for 5 s, membranes shall not come out		N.A.
	Repetition of tests, on new membranes		N.A.
13.15.2	Refrigerator -15 °C for 2 h, no damage		N.A.
	Possibility to introduce cable		N.A.
13.16	Flexible cable outlet: accept max. dimension of cable (245 IEC 66 or 227 IEC 53); diameter (mm) :		N.A.
	Pull test: cable 227 IEC 53, cross-sectional area 1,5 mm ² ; torque (Nm); pull 30 N 25 times :		N.A.
	Torque test: torque 0,15 Nm for 1 min, not displaced ≤ 2 mm :		N.A.
	Pull test: cable 245 IEC 66, diameter (mm) of cable; pull 60 N 25 times :		N.A.
	Torque test: torque 0,35 Nm for 1 min, not displaced ≤ 2 mm :		N.A.
	2000 V a.c. for 1 min		N.A.
	No breakdown or flashover		N.A.

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Clause	Requirement – Test	Result - Remark	Verdict

14	MECHANISM		
14.1	Actuating member: automatic return in position		Pass
14.2	Switches rest only in ON and OFF position		Pass
	Intermediate position, insulation adequate		N.A.
14.3	No undue arcing in slowly operation		Pass
14.4	Make and break simultaneous for all poles		Pass
	Neutral pole make before and break after		N.A.
14.5	Action not influenced by position of cover		Pass
14.6	Cord operated: change from OFF to ON with a pull 45 N vertically, and 65 N at 45°		N.A.

15	RESISTANCE TO AGEING, TO HARMFUL INGRESS OF WATER AND TO HUMIDITY		
15.1	Switches resistance to ageing at temperature 70 °C for 7 days (168 h)		Pass
	After the test, no crack visible, and no traces of clothes		Pass
15.2	IP test: according to IEC 529 :		N.A.
	Electric strength (16.2)		N.A.
15.3	Humidity treatment: duration 2 days or 7 days: 2 days		Pass
	After the test, no damage		Pass

16	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
16.1	Insulation resistance: 500 V d.c. for 1 min:		
	1) between all poles connected together and body $\geq 5 \text{ M}\Omega$:	$> 5 \text{ M}\Omega$	Pass
	2) between each pole in turn and all other $\geq 2 \text{ M}\Omega$:	$> 2 \text{ M}\Omega$	Pass
	3) between terminals with switch in OFF position $\geq 2 \text{ M}\Omega$:	$> 2 \text{ M}\Omega$	Pass
	- normal/mini-gap $\geq 2 \text{ M}\Omega$:	normal $> 2 \text{ M}\Omega$	Pass
	- micro-gap $\geq 2 \text{ M}\Omega$:		N.A.

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Clause	Requirement – Test	Result - Remark	Verdict
	4) Between metal parts of mechanism, and:		
	- live parts $\geq 5 \text{ M}\Omega$:	$> 5 \text{ M}\Omega$	Pass
	- metal foil in contact or surface $\geq 5 \text{ M}\Omega$. . . :	$> 5 \text{ M}\Omega$	Pass
	- key of key operated switches $\geq 5 \text{ M}\Omega$:		N.A.
	- point of anchorage of the cord $\geq 5 \text{ M}\Omega$. . . :		N.A.
	- accessible metal parts $\geq 5 \text{ M}\Omega$:	$> 5 \text{ M}\Omega$	Pass
	5) between metal enclosure and metal foil $\geq 5 \text{ M}\Omega$:	$> 5 \text{ M}\Omega$	Pass
16.2	Electric strength: test voltage a.c. for 1 min:		
	1) :	2000 V	Pass
	2) :	2000 V	Pass
	3) :	2000 V	Pass
	4) :	2000 V	Pass
	5) :	2000 V	Pass
	6) live parts and accessible metal parts :	3000 V	Pass
	7) live parts and metal parts of mechanism:		
	- :	3000 V	Pass
	- :	3000 V	Pass
	8) live parts and metal knobs :	2500 V / 4000 V	N.A.
	No flashover or breakdown		Pass

17	TEMPERATURE RISE		
	Rated current (A) :	10 A	—
	Test current (A) :	13,5 A	—
	Cross-sectional area (mm ²) :	2,5 mm ²	—
	Temperature rise of the terminals: $\leq 45 \text{ K}$ (in case of repetition: samples 4, 5, 6) :	1) 24-26 K 2) 19-21 K 3) 19-21 K 4) - 5) - 6) -	Pass
	Temperature rise (°C) for test of 21.3 :	4 K	Pass

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Clause	Requirement – Test	Result - Remark	Verdict

18	MAKING AND BREAKING CAPACITY		
	Rated current (A)	10 A	—
	Rated voltage (V)	250 V~	—
	Pattern number; 200 operations	1; 200	—
18.1	Test current 1,25 I _n (A); test voltage 1,1 V _n (V); cos phi 0,3	12,5 A - 275 V~	—
	During the test, no sustained arcing occur		Pass
	After the test, no damage		Pass
18.2	Tungsten filament lamps test: test voltage V _n (V); test current 1,2 I _n (A); number of lamps; number	230 V~, 12 A; 14 lamps	—
	During the test, no sustained arcing nor welding of the contacts occur		Pass
	After the test, no damage		Pass

19	NORMAL OPERATION		
19.1	Test voltage V _n (V); test current I _n (A); cos phi 0,6	10 A - 250 V~	—
	Number of operations	40 000	—
	Pattern number 2:		
	- 3 specimens with poles in series		N.A.
	- 3 specimens only one pole: full load, ½ cycles (in case of repetition: samples 4, 5, 6)		N.A.
	During the test, specimens function correctly		Pass
	After the test, electric strength as in Cl. 16, reducing the test voltage by 500 V and 1000 V		Pass
	Temperature rise test: test current I _n (A) ≤ 45 K; 10 cycles (14.3) (in case of repetition: samples 4, 5, 6)	1) 12-16 K 2) 12-17 K 3) 21-23 K 4) 5) 6)	Pass
19.2	Fluorescent lamp load (new specimens):		
	test voltage V _n (V); test current I _n (A); load A:		—

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Clause	Requirement – Test	Result - Remark	Verdict
	Number of operations :		—
	After 100 operations with load B at voltage Vn (V) :		—
	During the test, copper wire not melt, no sustained arcing or welding of contacts occur		N.A.
	Pattern number 2:		
	- 3 specimens with poles in series		N.A.
	- 3 specimens only one pole: full load, ½ cycles (in case of repetition: samples 4, 5, 6) :		N.A.
	During the test, specimens function correctly		N.A.
	After the test: temperature rise test: test current I_n (A) ≤ 45 K; 10 cycles (14.3) (in case of repetition: samples 4, 5, 6) :	1) 2) 3) 4) 5) 6)	N.A.

20	MECHANICAL STRENGTH		
	Switches, boxes and screwed glands adequate mechanical strength		Pass
20.1	Switches and boxes: impact test: 9 blows:		
	- height of falls: 100 mm		Pass
	- height of falls: 150 mm		N.A.
	- height of falls: 200 mm		N.A.
	- height of falls: 250 mm		N.A.
	After the test, no damage; live parts not accessible		Pass
20.2	Ordinary surface type: diameter (mm) of cylinder :		—
	Torque test: torque (Nm) :	0,5 Nm / 1,2 Nm	—
	After the test, bases show no damage		N.A.
20.3	Screwed glands :	metal / moulded material	—
	Test rod diameter (mm); torque (Nm) :		—
	After the test, no damage		N.A.
20.4.1	Verification of the non removal of covers, cover plates or actuating members:		

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Clause	Requirement – Test	Result - Remark	Verdict
	force 40 N (comply with tests 20.7 and 20.8)		Pass
	force 80 N for others		N.A.
	Force applied for 1 min, covers etc., not come off		Pass
	Repetition on new samples, no damage		Pass
20.4.2	Verification of the removal of covers, cover plates or actuating members: force not exceeding 120 N, applied 10 times		Pass
	Covers etc., come off		Pass
	Repetition on new samples, no damage		Pass
20.5	Force 10 N (comply with tests 20.7 and 20.8)		Pass
	Force 20 N for others		Pass
20.6	Force 10 N for all covers etc.		Pass
20.7	Gauge 14b, distances (mm) between face C :		Pass
20.8	Gauge 14e force 1 N, not enter more than 1 mm (mm) :		Pass
20.9	Cord switch: pull test: pull 100 N for 1 min (normal use); pull 50 N for 1 min (unfavourable) :		Pass
	After the test, no damage, not broken		Pass

21	RESISTANCE TO HEAT		
21.1	Switches: test temperature 100 °C for 1 h:		
	- no damage, no live parts accessible		Pass
	- marking still legible		Pass
21.2	Ball-pressure test: test temperature 125 °C for 1 h; diameter of impression $\leq$ 2 mm (mm) . . :	< 2 mm	Pass
21.3	Ball-pressure test: test temperature °C; diameter of impression $\leq$ 2 mm :	70 °C; < 2 mm	Pass

22	SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS		
22.1	Connections, withstand mechanical stresses		Pass
	Thread-forming or thread-cutting screws, only supplied together and captive		N.A.

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Clause	Requirement – Test	Result - Remark	Verdict
	Screws and nuts transmitting contact pressure, engagement in metal thread		N.A.
	Torque test:		
	- 10 times for thread of insulating material . . . :		—
	- 5 times for others :		—
	- diameter (mm); torque (Nm) :		—
	- diameter (mm); torque (Nm) :		—
	- diameter (mm); torque (Nm) :		—
	- diameter (mm); torque (Nm) :		—
22.2	Thread of insulating material: ensured correct introduction		N.A.
22.3	Contact pressure not transmitted through insulating material, other than ceramic		Pass
22.4	Screws and rivets locked against loosening		N.A.
22.5	Current-carrying parts and earthing:		
	- copper		N.A.
	- alloy containing 58% copper for rolled sheet or 50% for other parts	> 58 %	Pass
	- stainless steel containing 13% chromium		N.A.
	- steel provided with coating of zinc (ISO 2081)		N.A.
	- steel provided with coating of nickel and chromium (ISO 1456)		N.A.
	- steel provided with coating of tin (ISO 2093)		N.A.
	Current-carrying parts subjected to mechanical wear, not made of steel with coating		Pass
22.6	Slide contact, metal resistant to corrosion		Pass
22.7	Thread-forming and thread-cutting screws not used for current-carrying parts		Pass

23	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		
23.1	Creepage distances:		
	1. between live parts separated with contact open ≥ 3 mm :	> 3 mm	Pass

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Clause	Requirement – Test	Result - Remark	Verdict
	2. between live parts of different polarity ≥ 4 (3) mm :	> 4 mm	Pass
	3. between live parts and:		
	- accessible surfaces ≥ 3 mm :	> 3 mm	Pass
	- earthed metal parts ≥ 3 mm :		N.A.
	- metal frames ≥ 3 mm :	> 3 mm	Pass
	- screws for fixing bases ≥ 3 mm :		N.A.
	- metal parts of mechanism ≥ 3 mm :	> 3	Pass
	4. between metal parts of mechanism, and:		
	- screws for fixing bases ≥ 3 mm :		N.A.
	- metal frames ≥ 3 mm :	> 3 mm	Pass
	- accessible metal parts ≥ 3 mm :	> 3 mm	Pass
	5. between live parts and unearthed metal parts ≥ 6 mm :	> 6 mm	Pass
	Clearances:		
	6. between live parts separated with contact open ≥ 3 mm (1.2) :	> 3 mm	Pass
	7. between live parts of different polarity ≥ 3 mm :	> 3 mm	Pass
	8. between live parts and:		
	- accessible surfaces ≥ 3 mm :	> 3 mm	Pass
	- earthed metal parts ≥ 3 mm :		N.A.
	- metal frames ≥ 3 mm :	> 3 mm	Pass
	- screws for fixing bases ≥ 3 mm :		N.A.
	- metal parts of mechanism ≥ 3 mm :	> 3 mm	Pass
	9. between live parts and:		
	- earthed metal boxes ≥ 3 mm :		N.A.
	- unearthed metal boxes ≥ 4,5 mm :	> 4,5 mm	Pass
	10. between metal parts of mechanism, and:		
	- screws for fixing bases ≥ 3 mm :		N.A.
	- metal frames ≥ 3 mm :	> 3 mm	Pass
	- accessible metal parts ≥ 3 mm :	> 3 mm	Pass
	11. between live parts and surface ≥ 6 mm :	> 6 mm	Pass

IEC 60669-1			
Clause	Requirement – Test	Result - Remark	Verdict
	12. between live parts and the bottom of the space ≥ 3 mm :	> 3 mm	Pass
	Distances through insulating sealing compound: live parts covered with at least 2 mm and:		Pass
	13. surface in which the base is mounted ≥ 4 mm :		N.A.
	14. the bottom of the space $\geq 2,5$ mm :	$> 2,5$ mm	Pass
23.2	Insulating sealing compound not protrude above the edge		Pass

24	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT, FIRE AND TRACKING		
24.1.1	Glow-wire test at (650 °C): for parts not necessary to retain current-carrying parts of earthing circuit in position	cover plates	Pass
	No visible flames and no sustained glowing, or if flame and glowing, extinguish within 30 s :		Pass
	No ignition of the tissue paper or scorching of the board		Pass
	Glow-wire test at (850 °C): for parts necessary to retain current-carrying parts of earthing circuit in position	base	Pass
	No visible flames and no sustained glowing, or if flame and glowing, extinguish within 30 s :		Pass
	No ignition of the tissue paper or scorching of the board		Pass
24.2	Resistance to tracking (only for switches IP)		N.A.
	50 drops, test voltage 175 V, solution A		N.A.
	No flashover or breakdown		N.A.

25	RESISTANCE TO RUSTING		
	10 min in a 10% solution of ammonium chloride; 10 min in humid ambient; 10 min in heating cabinet at 100 °C :		Pass
	No signs of rust		Pass

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Clause	Requirement – Test	Result - Remark	Verdict

26	EMC REQUIREMENTS		
26.1	Immunity: no tests are necessary		N.A.
26.2	Emission: no tests are necessary		N.A.

	APPENDIX I: screwless terminals for external copper conductors	
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12.3	SCREWLESS TERMINALS FOR EXTERNAL COPPER CONDUCTORS		
12.3.1	Terminal : rigid conductors only		—
12.3.2	Terminals allow proper connection : 1,5 ÷ 2,5 mm ²		—
12.3.3	Connection without special preparation		Pass
12.3.4	Parts for carrying current, material as in 22.5		Pass
12.3.5	Contact pressure without damage of conductor		Pass
12.3.6	Insertion and disconnection, clear		Pass
	Disconnection, not use a pull; manual operation with or without a tool		Pass
	Openings for using a tool, not possible to confuse		N.A.
12.3.7	Terminals for two or more conductors:		
	- during insertion, clamping independent		Pass
	- during disconnection, same time or separately		Pass
	- each conductor introduced in separate clamping		Pass
	- clamp securely any number of conductors as designed		Pass
12.3.8	Undue insertion of conductor is prevented		Pass
	No reduce of creepage distances or clearances		Pass
12.3.9	Terminals properly fixed to the switch		Pass
	Not work loose during insertion and disconnection		Pass
12.3.10	Terminals withstand mechanical stresses:		
	- rigid: min. cross-sectional area (mm ²) : 1,5 mm ²		—

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Clause	Requirement – Test						Result - Remark				Verdict	
	- rigid: max. cross-sectional area (mm²) :						2,5 mm²				—	
	- flexible: min. cross-sectional area (mm²) . . . :										—	
	- flexible: max. cross-sectional area (mm²) . . :										—	
	Pull test: pull 30 N for 1 min; 5 times :										Pass	
	During the test, not move noticeably										Pass	
	After the tests, not worked loose and no deterioration										Pass	
12.3.11	Electrical and thermal stresses:											
	a) five terminals: rated current (A); test current (A) for 1 h; cross-sectional area (mm²); voltage drop ≤ 15 mV (mV) :						1) 5,9-8,2 2) 7,9-9,2 3) 7,8-10,6 4) 6,4-9,1 5) 7,2-7,2				Pass	
	b) 192 temperature cycles: test current (A) . . :						17,5 A				Pass	
	Voltage drop ≤ 22,5 mV or mV :						< 22,5 mV				Pass	
terminal No.	cycles											
	24	48	72	96	120	144	168	192				
1	6,6/7,8	7,0/7,7	7,3/7,7	7,3/7,7	7,4/7,6	7,5/7,6	7,7/7,7	8,4/9,9				
2	7,0/9,3	6,9/9,6	6,9/9,7	6,8/9,6	6,8/9,6	6,8/9,5	6,8/9,5	6,8/12,3				
3	11,6/8,9	11,8/8,7	12,1/8,8	12,2/8,7	12,2/8,7	12,1/8,7	12,1/9,3	12/12,3				
4	10,7/6,2	12,5/6,2	12,6/6,2	13,8/6,2	17,5/6,3	18,9/6,3	22,4/6,3	17,2/6,3				
5	7,1/13,5	7,3/20,4	7,6/22,4	8,0/21,9	8,0/21,9	8,1/22,5	9,0/18,6	9,1/13,5				
	After the test, no deformation, no cracks										Pass	
12.3.12	Rigid solid conductor: deflection test; test current I (A) :						10 A				—	
	1st test sequence: cross-sectional area (mm²); force (N) :						1,5 mm², 0,5 N				—	
sample No.	directions											
	1	2	3	4	5	6	7	8	9	10	11	12
1	9,6	13,7	15,1	13,4	15,3	14,4	9,7	12,5	12,9	13,8	12,2	9,8
2	9,9	11,3	11,6	17,1	17,1	22,4	24,7	20,9	18,7	16,4	14,6	12,7
3	8,4	13,8	19,8	16,3	10,3	12,9	9,9	9,5	10,0	9,4	8,8	10,5
	Voltage drop ≤ 25 mV :										Pass	
	2nd test sequence: cross-sectional area (mm²); force (N) :						2,5 mm², 1,0 N				—	

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Clause		Requirement – Test						Result - Remark				Verdict	
sample No.	directions												
	1	2	3	4	5	6	7	8	9	10	11	12	
	1	10,6	10,5	11,8	9,4	12,3	11,1	10,1	10,1	10,3	12,2	13,5	10,3
	2	8,1	10,3	11,8	9,4	9,8	11,3	15,3	12,1	14,2	9,1	9,8	8,1
	3	9,4	13,6	9,7	10,3	11,2	11,2	12,8	10,3	10,3	14,9	10,1	10,9
		Voltage drop ≤ 25 mV										Pass	

Remarks

SPECIFICATION OF THE HOTEL CARD SWITCHES

product	: push-button switches (for fixed installations)
trade name	: LEGRAND
types	: 775954/7...../77....., 775954/7...../77....., 775954/7...../77....., 775954/7...../77....., 775954/7...../77....., 775954/7...../77.....
method of mounting	: flush-type; screw- or claw- fixing
series resistor of pilot lamp	: 390K Ω
terminals	: screwless terminals
rated current	: 10 A
rated voltage	: 250 V~
pattern no.	: 1
method of actuating	: by means of insert a card
program	: PRO21
markings	: - trade name, type indication and electrical ratings on the base - trade name and suffix for the cover on this part

Product data - type 775954/7...../77.....

cover	: plural screw-fixed cover of thermoplastic material, provided with a lens/name plane
serie	: CREO

Product data - type 775954/7...../77.....

cover	: plural screw-fixed cover of thermoplastic material, provided with a lens/name plane, ring of thermosetting material
serie	: CREO

Product data - type 775954/7...../77.....

cover	: plural screw-fixed cover of thermoplastic material provided with a lens/name plane
serie	: TENARA

Product data - type 775954/7...../77.....

cover	: plural screw-fixed cover of thermoplastic material, metal enclosed provided with a lens/name plane
serie	: STRUCTURA

Product data - type 775954/7...../77....

cover : plural screw-fixed cover of thermoplastic material,
thermosetting material or metal enclosed provided
with a lens/name plane

serie : GALEA

Product data - type 775954/7...../77....

cover : plural screw-fixed cover of thermoplastic material
provided with a lens/name plane

serie : MONOBLOCK



Rahmenplatten:							Nord			
Type:	CREO						TENARA	TENARA	TENARA	STRUCTURA
77	TP	TD	BF	TP	Deco	Metall				
1-fach	776201	776001	776009	778001	779001	779501	779001			
	776301		776209	778201	777906	779601	779101			
	776401		776309	778401	777911	779701	779201			
	776501		776409	778601	777916	779801	779301			
	776101		776509	778601	777941	779901	779401			
	776151			777951						
				777956						

Type:	Süd									
77....	GALEA									
	TP + TD + MET									
1-fach	777001	777151	777201	777600	777730					
	777101	777161	777301	777605	777735					
	777111	777171	777401	777630	777790					
	777121	777181	777501	777700	777800					
	777131	777190	777801	777705	777890					

Frame SOLFA									
Material	UW	G-B	MW	MI	AN	RT	SG	KA	
	PC	PC	PC	PC	PC	PC	PC	PC	
1-fach	772011	772111	772211	772311	772411	772511	772611	772711	

