

# Test report

**Number** T211-1084/25

Project file: C20252067

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Pages: 21

**Product:** Frame for switch

**Type reference:** art.60544.x, art.E60544.x

**Ratings:** IP44

**Trademark:** ALING - CONEL

**Applicant:** ALING – CONEL d.o.o.,  
Železnička 10, 21432 Gajdobra, Serbia

**Manufacturer:** ALING – CONEL d.o.o.,  
Železnička 10, 21432 Gajdobra, Serbia

**Place of manufacture:** ALING – CONEL d.o.o.,  
Železnička 10, 21432 Gajdobra, Serbia

## Summary of testing

**Testing method:** Clauses 8, 10, 13, 15, 16, 20, 21, 24 of IEC 60669-1:2017

**Testing location:** SIQ Ljubljana  
Mašera-Spasičeva ulica 10, SI-1000 Ljubljana, Slovenia

**Remarks:** Date of receipt of test items: 2025-09-18  
Number of items tested: 1  
Date of performance of tests: (2025-09-19) – (2025-10-15)  
The test results presented in this report relate only to the items tested.  
The test items were tested in the condition as received.  
The product complies with the requirements of the testing methods.

**Tested by:** Nejc Krajnik

**Approved by:** Tibor Kokelj

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## 1 GENERAL PRODUCT INFORMATION

IP44 frames for switch are part of PRESTIGE (art..60544.x) and EON (art.E60544.x) family of products.

art.60544.x and art.E60544.x are complets made of cover frame, and two gaskets that are intended to be sold separately and provide IP44 protection in case mounted as described by manufacturer in manual together with the following switches of PRESTIGE and EON family of switches:

- PRESTIGE:
  - o art.60544.xx; art.605244.xx; art.60644.xx; art.60744.xx; art.607244.xx; art.60844.xx; art.60944.xx; art.609144.xx; art.61044.xx; art.610144.xx; art.62544.xx; art.62644.xx; art.62744.xx; art.607544.xx; art.62844.xx; art.609044.xx; art.609244.xx
- EON:
  - o art.E60544.xx; art.E605244.xx; art.E60644.xx; art.E60744.xx; art.E607244.xx; art.E60844.xx; art.E60944.xx; art.E609144.xx; art.E61044.xx; art.E610144.xx; art.E62544.xx; art.E62644.xx; art.E62744.xx; art.E607544.xx; art.E62844.xx; art.E609044.xx; art.E609244.xx

All above mentioned Switches are separately approved according to IEC 60669-1:2017. In this report only gaskets and cover frame needed for IP44 are assessed.

IP44 protection index is only achieved when switch is mounted vertically.

The IP44 test (clause 15.2.3) was performed on smooth wall.

Explanation of color code of front plate (.x):

Code of colours: (0 – white, 2 – graphite, 3 – dark red, 9 – beige, S - silver, E1 - soft black)


History sheet			
Report No.	Date	Change	Revision No.
T211-1084/25	2025-10-30	Initial test report issued.	-

Use of uncertainty of measurement for decisions on conformity (decision rule):

No decision rule is specified by the test methode, when comparing the measurement result with the applicable limit according to the specification in the test methode. »Pass/Fail« decisions on conformity are made based on "simple acceptance" without applying the measurement uncertainty (ISO/IEC Guide 98-4:2012, 8.3.1.2).

## 2 TEST REPORT

Possible test case verdicts:	
- test case does not apply to the test object	N/A
- test object does meet the requirement	P
- test object does not meet the requirement	F

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>8</b>	<b>MARKING</b>		<b>P</b>
<b>8.1</b>	<b>General</b>		<b>P</b>
	Switches are marked with:		<b>P</b>
	a) rated current(s) (A or AX) .....		N/A
	b) rated voltage(s) (V) .....		N/A
	c) symbol for nature of supply .....		N/A
	d) manufacturer's or responsible vendor's name, trade mark or identification mark .....	Aling-conel logo	<b>P</b>
	e) type reference .....	art.62344; art.E62344	<b>P</b>
	f) symbol for mini-gap construction (m) .....		N/A
	g) symbol for micro-gap construction (μ).....		N/A
	h) symbol for semiconductor switching device (without contact gap) (ε).....		N/A
	i) first IP characteristic numeral, if declared higher than 4, in which case the second characteristic numeral is also marked .....	IP44	<b>P</b>
	j) second IP characteristic numeral, if declared higher than 2, in which case the first characteristic numeral is also marked .....	IP44	<b>P</b>
	i & j) suitable for smooth and even wall only (IPXX)		<b>P</b>
	i & j) suitable for smooth and even wall and for rough wall (test wall of figure 21) (  ).....		N/A
	k) length of insulation to be removed before the insertion of the conductor into the screwless-type terminal .....		N/A
	l) symbol for the suitability to accept rigid conductors only (r).....		N/A
	In addition the following information shall be given in the manufacturer's documentation:		<b>N/A</b>
	m) for SBL loads: the rated power in watts and the type of load if the switch is tested according to 19.3 .....		N/A
<b>8.2</b>	<b>Symbols</b>		<b>N/A</b>
	Symbols used: as required in the standard		N/A
	The symbol "AX" may be replaced by the symbol "X". For the marking with rated current and rated voltage the figures may be used alone		N/A
	The marking for the nature of supply shall be placed next to the marking for rated current and rated voltage		N/A
<b>8.3</b>	<b>Visibility of markings</b>		<b>P</b>
	Markings are clearly visible with normal or corrected vision, without additional magnification		N/A
	Markings as given in 8.1 a), b), c), d), e) and, if applicable, f), g), h), k), and l) shall be placed on the main part of the switch		

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Parts such as cover plates, which are necessary for safety purposes and are intended to be sold separately, are marked with the manufacturer's or responsible vendor's name, trade mark or identification mark and type reference	Moulded on inside part of cover frame	P
	Markings as given in 8.1 i) and j), when applicable, are marked so as to be easily discernible when the switch is mounted and wired as in normal use		P
	Markings are placed on parts which cannot be removed without the use of a tool		N/A
8.4	<b>Marking on terminals for phase conductors</b>		N/A
	Terminals intended for the connection of phase conductors (supply conductors) are identified unless the method of connection is of no importance, is self-evident or is indicated on a wiring diagram		N/A
	Indications not placed on screws or other easily removable part		N/A
	Alternatively, the surface of such terminals shall be bare brass or copper, other terminals being covered with a metallic layer of another colour		N/A
	For switches of pattern numbers 2, 3, 03 and 6/2, terminals associated with any one pole have similar identification, if applicable, differing from that of the terminals associated with the other poles, unless the relationship is self-evident		N/A
8.5	<b>Marking on terminals for neutral and earth conductors</b>		N/A
	Neutral terminals: N..... :		N/A
	Earthing terminals: [earth symbol (IEC 60417-5019:2006-08)] ..... :		N/A
	Markings not placed on screws or other easily removable parts		N/A
	Terminals for conductors not forming part of the main function of the switch:		N/A
	- clearly identified unless their purpose is self-evident, or		N/A
	- indicated in a wiring diagram fixed to the accessory		N/A
	Identification of switch terminals may be achieved by:		N/A
	- their marking with graphical symbols according to IEC 60417 or colours and/or alphanumeric system, or		N/A
	- their physical dimension or relative location		N/A
8.6	<b>Marking of the switch position</b>		N/A
	Switches marked to indicate the switch position: they are so marked that the direction of movement of the actuating member to its different positions or the actual position is clearly indicated ..... :		N/A
	Switches having more than one actuating member: marking indicates the effect achieved by the operation		N/A

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Marking clearly visible on the front of the switch		N/A
	Not possible to fix cover, cover plate, or removable actuating members in an incorrect position		N/A
	Symbols for "on" and "off" not used for indication of switch positions unless clearly indicate the direction of movement of the actuating members		N/A
8.7	<b>Additional requirements for marking</b>		P
	Special precautions necessary to take when installing the switch: details of these and clear information given in an instruction sheet which accompanies the switch		P
	Instruction sheets are written in the official language(s) of the country in which the switch is to be sold		N/A
8.8	<b>Durability</b>		P
	Marking durable and easily legible. Test: 15 s with water and 15 s with 95 % n-hexane.		P
10	<b>PROTECTION AGAINST ELECTRIC SHOCK</b>		P
10.1	<b>Prevention of access to live parts</b>		P
	Switches: live parts not accessible		P
	Switches designed to be fitted with pilot lights supplied at voltage other than ELV have means to prevent direct contact with the lamp		P
	Specimen is mounted as in normal use and fitted with conductors as specified		P
	Test probe B of IEC 61032 is applied in every possible position, an electrical indicator with a voltage between 40 V and 50 V being used to show contact with the relevant part		P
	Switches having enclosures or covers in thermoplastic or elastomeric material: additional test carried out at $35\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ . Switches are subjected for 1 min to a force of 75 N, applied through the tip of test probe 11 of IEC 61032		P
	Test finger applied to thin-walled knock-outs with a force of 10 N		P
	During the test: switches not deform and no live parts accessible with test probe 11 of IEC 61032		P
10.2	<b>Requirements for operating parts</b>		P
	Knobs, operating levers, push buttons, rockers and the like: of insulating material, unless:		P
	- accessible metal parts separated from metal parts of mechanism by double or reinforced insulation, or		P
	- reliably connected to earth		N/A
	Requirement does not apply to removable keys or intermediate parts, such as chains or rods		N/A
10.3	<b>Requirements for accessible metal parts</b>		N/A

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.3.1	Accessible parts of switches when in normal use are made of insulating material as specified.		P
10.3.2	Metal covers or cover plates are protected by supplementary insulation made by insulating linings or insulating barriers.		N/A
	Insulating linings or insulating barriers:		N/A
	- cannot be removed without being permanently damaged, or designed that		N/A
	- cannot be replaced in an incorrect position; if they are omitted, accessories are rendered inoperable or manifestly incomplete; there is no risk of accidental contact between live parts and metal covers or cover plates; precautions are taken to prevent creepage distances or clearances becoming less than the values specified in clause 23		N/A
	Linings or barrier comply with the tests of clauses 16 and 23		N/A
10.3.3	Earthing of metal covers or cover plates: connection of low resistance		N/A
10.4	<b>Requirements for insulation of the mechanism</b>		P
	Metal parts of the mechanism which are not insulated from live parts: not protrude from enclosure		P
	Switches operated by means of a removable key or similar device: metal parts of mechanism insulated from live parts		P
10.5	<b>Requirements for insulation of the mechanism with respect to the surrounding environment</b>		P
	Metal parts of mechanism not accessible and insulated from accessible metal parts, unless		N/A
	- separated from live parts (creepage distances and clearances have at least twice the value specified in clause 23), or		N/A
	- reliably connected to earth		N/A
	Unenclosed stack-type switches having a metal spindle pivoting in a metal base plate: creepage distances and clearances between live parts and the spindle, and between metal parts of the mechanism and base plate, have at least twice the values specified in clause 23		N/A
10.6	<b>Requirements for switches operated indirectly</b>		N/A
	Switches operated by means of a removable key or an intermediate part: key or an intermediate part can only touch parts which are insulated from live parts		N/A
	Key or intermediate part: insulated from metal parts of mechanism, unless		N/A
	Creepage distances and clearances between live parts and metal parts of mechanism have at least twice the values specified in clause 23		N/A

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
10.7	<b>Requirements for switches with replaceable pull cord</b>		N/A
	Cord-operated switches: impossible to touch live parts when fitting or replacing the pull cord		N/A
<b>13</b>	<b>CONSTRUCTIONAL REQUIREMENTS</b>		P
13.1	<b>Mechanical requirements for insulating means</b>		-
	Insulating lining, barriers and like: adequate mechanical strength and secured in a reliable manner		P
13.2	<b>Installation requirements</b>		-
	Switches constructed so as to permit:		-
	- easy introduction into the terminal and reliable connection of the conductors in the terminals, except for lead wires of pilot lights		N/A
	- correct positioning of the conductors		N/A
	- easy fixing of the switch to a wall or in a box		P
	- adequate space between the underside of the main part and the surface on which the main part is mounted or between the sides of the main part and the enclosure (cover or box)		N/A
	Surface-type switches: fixing means do not damage insulation of the cable		N/A
	Switches comprising screwless terminals: connecting and/or disconnecting means of the screwless terminals cannot be activated by the conductors during and after installation of the switch in a box or on a wall		N/A
	Compliance is checked by inspection and in case of doubt by the following test		N/A
	The test is carried out with a solid copper conductor having the smallest cross-sectional area, as specified in 12.3.2 (mm <sup>2</sup> ) .....		N/A
	If it is not possible to exert a force onto the connecting / disconnecting means, the product is deemed to comply with the requirements of this sub clause without further tests		N/A
	During the application of the pull, the conductor do not come out of the screwless terminal		N/A
	Switches classified as design A: permit easy positioning and removal of the cover or cover plate, without displacing the conductors or activating the connecting and/or disconnecting means of screwless terminals		P
13.3	<b>Fixing of covers, cover plates and actuating members</b>		-
13.3.1	Covers, cover-plates and actuating members or parts of them intended to ensure protection against electric shock:		-
	- held in place at two or more points by effective fixings		P

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- fixed by means of a single fixing, e.g. by a screw, provided that they are located by another means (e.g. by a shoulder)		N/A
	Where the fixing of covers, cover plates or actuating members of switches of design A serves to fix the main part there are means to maintain the main part in position, even after removal of the covers, cover plates or actuating members.		N/A
13.3.2	Covers, cover plates or actuating members whose fixing is of the screw-type:		-
	Compliance checked by inspection only		N/A
13.3.3	Covers, cover plates or actuating members whose fixing is not dependent on screws and whose removal is obtained by applying a force in a direction approximately perpendicular to the mounting / supporting surface (see table 12):		-
	- when their removal may give access, with the test probe B of IEC 61032, to live parts:	Front cover plate of main part by the tests of 20.5	P
	- when their removal may give access, with the test probe B of IEC 61032, to non-earthed metal parts separated from live parts in such a way that creepage distances and clearances have the values at least equal to those shown in table 23:	by the tests of 20.6	N/A
	- when their removal may give access, with the test probe B of IEC 61032, only to	Button and decorative cover by the tests of 20.7	P
	- insulating parts, or		P
	- earthed metal parts, or		N/A
	- metal parts separated from live parts in such a way that creepage distances and clearances have at least twice the values shown in table 23, or		N/A
	- live parts of SELV circuits not greater than 25 V AC and 60 V DC:		N/A
13.3.4	Covers, cover-plates or actuating members whose fixing is not dependent on screws and whose removal is obtained by using a tool, in accordance with the manufacturer's instructions given in an instruction sheet or catalogue:		-
	By the same tests of 13.3.3 except that the covers, cover plates, actuating members or parts of them need not come out when applying a force not exceeding 120 N in directions perpendicular to the mounting / supporting surface	See 20.5 and 20.7	P
13.4	<b>Openings in normal use</b>		-
	Switches: no free openings in their enclosures according to their IP classification		P
13.5	<b>Attachment of knobs</b>		-
	Knobs of rotary switches securely attached to the shaft or part operating the mechanism		N/A
	- axial pull be applied for 1 min to try to pull off the actuating member		N/A
	- axial pull is likely to be applied in normal use, the force is 30 N		N/A

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	- axial pull is unlikely to be applied in normal use, the force is 15 N		N/A
	- knob of switches having only one direction of operation: turned 100 times in the reverse direction		N/A
	During the test: knob not become detached		N/A
13.6	<b>Mounting means</b>		-
	Screws or other means for mounting the switch on a surface or in a box or enclosure: easily accessible from the front		P
	Fixing means not serve any other fixing purpose		P
13.7	<b>Combination of switches</b>		-
	Combinations of switches, or of switches and socket-outlets, comprising separate bases: correct position of each main part is ensured		N/A
	Fixing of each main part be independent of the fixing of the combination to the mounting surface		N/A
13.8	<b>Accessories combined with switches</b>		-
	Accessories combined with switches: comply with their standard		N/A
13.9	<b>Surface-type switches having an IP code higher than IP20</b>		-
	Surface-type switches with IP > 20 are in according to their classification when fitted with conduits or with sheathed cables		N/A
	Surface-type switches with IPX4, IPX5 and IPX6 have provisions for opening a drain hole		N/A
	Switches provided with a drain hole: it is not less than 5 mm in diameter, or 20 mm <sup>2</sup> in area with a width and a length not less than 3 mm ..... : Ø mm / mm <sup>2</sup>		N/A
	Drain hole: effective		N/A
	Lid springs (if any): of corrosion resistant material (bronze or stainless steel)		N/A
13.10	<b>Installation in a box</b>		-
	Switches to be installed in a box: conductor ends can be prepared after the box is mounted in position, but before the switch is fitted in the box		N/A
	Main part has adequate stability when mounted in the box		N/A
13.11	<b>Connection of a second current-carrying conductor</b>		-
	Surface-type switches with IP > IPX0, pattern numbers 1, 5 and 6, with more than one inlet opening, provided with:		-
	- fixed additional terminal complying with the requirements of clause 12, or		N/A
	- adequate space for a floating terminal		N/A
13.12	<b>Inlet openings</b>		-
	Inlet openings: allow the introduction of the conduit or the sheath of the cable		N/A

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Surface-type switches: intended conduit or the sheath of the cable can enter at least 1 mm into the enclosure		N/A
	Inlet openings for conduit entries of surface-type switches: capable of accepting conduit sizes of 16, 20, 25 or 32 or a combination of at least two of these sizes not excluding two of the same size ..... :		N/A
	Inlet openings for cable entries of surface-type switches: capable of accepting cables having the dimensions specified in table 13 or be as specified by the manufacturer: rated current (A); limits of external diameter of cables min/max (mm)..... :		N/A
13.13	<b>Provision for back entry from a conduit</b>		-
	Surface-type switches: provision for back entry (if are intended)		N/A
13.14	<b>Switch provided with membranes or the like for inlet openings</b>		-
	Switch is provided with membranes or the like for inlet openings: replaceable		N/A
13.15	<b>Requirements for membranes in inlet openings</b>		-
13.15.1	Membranes are reliably fixed and not displaced by the mechanical and thermal stresses occurring in normal use		N/A
	Test on membranes subjected to the ageing treatment specified in 15.1 and fitted with the switches		-
	Switches placed at 40 °C for 2 h. Force of 30 N applied for 5 s by means of the tip of test probe 11 of IEC 61032. During the test: no deformation, live parts not accessible		N/A
	Membranes likely to be subjected to an axial pull: axial pull of 30 N applied for 5 s. During the test: membranes not come out		N/A
	Test repeated with membranes not subjected to any treatment		N/A
13.15.2	Membranes be so designed and made of such material that: Introduction of the cables into the switch is permitted when the ambient temperature is low.		N/A
	Test on membranes not subjected to the ageing treatment, those without opening being suitably pierced:		-
	Switches kept at a temperature of $(-15 \pm 2) ^\circ\text{C}$ for 2 h: possibility to introduce cables of the heaviest type through the membranes		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
13.16	<b>Pilot light units</b>		-
	Pilot light units comply with IEC 60669-2-1:2002, IEC 60669-2-1:2002/AMD1:2008 and IEC 60669-2-1:2002/AMD2:2015, 101.1.1.1 and Clause 102, as far as applicable		N/A

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>15</b>	<b>RESISTANCE TO AGEING, PROTECTION PROVIDED BY ENCLOSURES OF SWITCHES, AND RESISTANCE TO HUMIDITY</b>		<b>P</b>
15.1	<b>Resistance to ageing</b>		<b>P</b>
	Switches are resistant to ageing		P
	Parts intended for decorative purposes only, such as certain lids, are removed		P
	Switches and boxes placed for 7 days (168 h) in a heating cabinet at 70 °C ± 2 °C		P
	- no crack visible after test with normal or corrected vision without additional magnification		P
	- no sticky or greasy material as a result of heat		P
	- no trace of cloth (forefinger pressed with 5 N)		P
	- no damage		P
15.2	<b>Protection provided by enclosures of switches</b>		<b>P</b>
15.2.1	<b>General</b>		<b>P</b>
	Enclosure of the switch provides protection against access to hazardous parts, against harmful effect due to ingress of solid foreign objects and against effects due to ingress of water in accordance with the IP classification of the switch		P
15.2.2	Protection against access to hazardous parts and against harmful effects due to ingress of solid foreign objects		<b>P</b>
15.2.2.1	<b>General</b>		<b>P</b>
	Glands: torque (Nm) (2/3 of torque applied in 20.4) ..... :		N/A
	Screws of the enclosure: torque (Nm) (2/3 table 5)..... :		N/A
	Parts which can be removed without the aid of a tool are removed	For cover frame tool needed according to manufacturer instructions	N/A
	Glands are not filled with sealing compound or the like		N/A
15.2.2.2	<b>Protection against access to hazardous parts</b>		<b>P</b>
	Appropriate test according to IEC 60529 ..... : IP44		P
15.2.2.3	<b>Protection against harmful effects due to ingress of solid foreign objects</b>		<b>P</b>
	Appropriate test according to IEC 60529 ..... : IP44		P
	For the test of the first characteristic numeral 5, enclosures of switches are considered to be of category 2 (see IEC 60529:1989 and IEC 60529:1989/AMD1:1999, 13.4); dust not penetrate in a quantity to interfere with satisfactory operation or impair safety		N/A
	For the test of the first characteristic numeral 6, enclosures of switches are considered to be of category 1 (see IEC 60529:1989, 13.6); no dust penetrate		N/A
15.2.3	<b>Protection against harmful effects due to ingress of water</b>		<b>P</b>

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Enclosure of switches provide a degree of protection against harmful effects due to ingress of water in accordance with their IP classification	Tested on smooth wall	P
	Appropriate test according to IEC 60529 ..... : IP44		P
	Flush-type and semi-flush-type switches fixed:		P
	- in a test wall using an appropriate box in accordance with the manufacturer's instructions		P
	- in a test wall according to figure 21		N/A
	Screws of the enclosure: torque (Nm) (2/3 table 5)..... :		N/A
	Glands: torque (Nm) (2/3 of torque applied in table 22)..... :		N/A
	Specimens withstand an electric strength test specified in 16.3 which is started within 5 min of completion of the test to 15.2	Tested with switches of art.62644; art.E62644; art.609I44; art.E609I44 No breakdown	P
15.3	<b>Resistance to humidity</b>		P
	Switches proof against humidity which may occur in normal use		P
	Compliance checked by a humidity treatment described in 15.3, carried out in a humidity cabinet containing air with relative humidity maintained between 91 % and 95 %. Specimens kept in the cabinet for:		P
	- 2 days (48 h) for switches with IPX0		N/A
	- 7 days (168 h) for switches with IP>X0		P
	After this treatment: specimens show no damage		P
16	<b>INSULATION RESISTANCE AND ELECTRIC STRENGTH</b>		P
16.1	<b>General</b>		P
	One pole of any pilot lights (if available), are disconnected for this test		N/A
	Insulation resistance and electric strength of switches be adequate		P
16.2	<b>Test for measuring the insulation resistance</b>		-
	The insulation resistance measured 1 min after application of 500 V DC	See appended table 16.2	P
	In addition, if electrically independent pattern numbers are combined in a common base, additional tests for each combination performed		N/A
16.3	<b>Electric strength test</b>		-
	Electric strength: AC test voltage applied for 1 min	See appended table 16.3	P
	In addition, if electrically independent pattern numbers are combined in a common base, additional tests for each combination performed		N/A
20	<b>MECHANICAL STRENGTH</b>		P
20.1	<b>General</b>		-

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Accessories, surface mounting boxes, screwed glands and shrouds have adequate mechanical strength so as to withstand the stresses imposed during installation and use		P
20.2	<b>Pendulum hammer test</b>		-
	For all types of switches and for boxes: impact test (9 blows)	See appended table 20.2	P
	After the test: no damage, live parts no become accessible		P
20.3	<b>Test on the main parts of surface-type switches</b>		-
	Main parts of surface-type switches are first fixed to a cylinder of rigid steel sheet of radius equal to 4,5 times the distance between fixing holes (mm) :		N/A
	Main parts are then fixed in a similar manner to a flat steel sheet		N/A
	Torque applied to fixing screws (Nm)..... :		N/A
	During and after the test: main parts show no damage		N/A
20.4	<b>Screwed glands</b>		-
	Screwed glands of switches with that have IP code higher than IP20: torque test		-
	- diameter of cylindrical metal test rod (mm) ..... :		N/A
	- type of material ..... :		N/A
	- torque for 1 min (table 22) (Nm) ..... :		N/A
	After the test: no damage of glands and enclosure of the specimens		N/A
20.5	<b>Covers, cover plates or actuating members – accessibility to live parts</b>		P
20.5.1	General		-
	Force necessary for covers, cover-plates or actuating members to come off or not to come off (accessibility with the test finger to live parts)		-
20.5.2	Verification of the non-removal of covers, cover-plates or actuating member		-
	Force applied for 1 min in direction perpendicular to the mounting surface..... :	Front cover plate of switch 80 N	P
	Covers, cover-plates or actuating members not come off	Front cover plate secured by 4 snap fits	P
	Test repeated on new specimens with a sheet of hard material, 1 mm ± 0,1 mm thick, fitted around the supporting frame (fig. 13)		P
	Covers, cover-plates or actuating members not come off		P
	After the test: no damage		P
20.5.3	Verification of the removal of covers, cover plates or actuating members		-
	Force not exceeding 120 N applied 10 times in direction perpendicular to the mounting / supporting surface: covers, cover-plates or actuating members come off	Removable by use of a tool	N/A

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Test repeated on new specimens with a sheet of hard material, 1 mm $\pm$ 0,1 mm thick, fitted around the supporting frame (fig. 13)		N/A
	Covers, cover-plates or actuating members come off		N/A
	After the test: no damage		N/A
20.6	<b>Covers, cover plates or actuating members – accessibility to non-earthed metal parts separated from live parts</b>		-
	Test is made as described in 20.5, but applying, for 20.5.2, the following forces:	10 N / 20 N	N/A
20.7	<b>Covers, cover plates or actuating members – accessibility to insulating parts, earthed metal parts, the live parts of SELV <math>\leq</math> 25 V AC or metal parts separated from live parts</b>		-
	Test is made as described in 20.5, but applying, for 20.5.2, the force of 10 N for all covers, cover plates, or actuating members	Button and decorative frame	P
20.8	<b>Covers, cover plates or actuating members – application of gauges</b>		-
	Test with gauge of figure 14 applied according to figure 15 for verification of the outline of covers, cover-plates or actuating members: distances between face C of gauge and outline of side under test, not decrease ..... : <u>complying / not complying</u>		P
20.9	<b>Grooves, holes and reverse tapers</b>		-
	Test with gauge according to figure 17 applied as shown in figure 18 (1 N): gauge not enter more than 1 mm ..... : <u>complying / not complying</u>		P
20.10	<b>Additional test for cord-operated switch</b>		-
	Operating members of cord-operated switch have adequate strength		N/A
	Pull test: pull 100 N for 1 min (normal use); pull of 50 N for 1 min (unfavourable direction). After the test:		-
	- switch show no damage		N/A
	- operating member not broken and cord-operated switch still operate		N/A
<b>21</b>	<b>RESISTANCE TO HEAT</b>		P
21.1	<b>General</b>		P
	Switches and boxes are sufficiently resistant to heat		P
	Decorative parts are not subjected to the test		P
21.2	<b>Basic heating test</b>		P
	Switches kept for 1 h in a heating cabinet at a temperature of 100 °C $\pm$ 2 °C		P
	During the test: no change impairing their further use and sealing compound, if any, not flow		P
	After the test: no access to live parts, markings still legible		P
21.3	<b>Ball-pressure test on parts of insulating material necessary to retain current-carrying parts and parts of the earthing circuit in position</b>		N/A

IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict

	Parts of insulating material necessary to retain current-carrying parts and parts of the earthing circuit in position: ball-pressure test (1 h, 125 °C)	See appended table 21.3	N/A
21.4	<b>Ball-pressure test on parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position</b>		P
	Parts of insulating material not necessary to retain current-carrying parts and parts of the earthing circuit in position, even though in contact with them: ball-pressure test (1 h)	See appended table 21.4	P
24	<b>RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT, TO FIRE AND TO TRACKING</b>		P
24.1	<b>Resistance to abnormal heat and to fire</b>		P
	Parts of insulating material which might be exposed to thermal stresses due to electric effects and the deterioration of which might impair the safety are not unduly affected by abnormal heat and fire		P
	Glow-wire test according to IEC 60695-2-10 and IEC 60695-2-11	See appended table 24.1	P
24.2	<b>Resistance to abnormal heat and to fire</b>		P
	Parts of insulating material retaining live parts in position of switches with IP>X0: of material resistant to tracking	Performed on main part of switch	P
	Tracking test with solution A of IEC 60112	See appended table 24.2	P

16.2	<b>TABLE: Insulation resistance</b>			P
Item per table 15	test voltage applied between:	measured (MΩ)	required (MΩ)	
1	All poles together – outside of enclosure	> 100	> 5	
Supplementary information: For this test SM10 switch was used and appropriate test was performed				

16.3	<b>TABLE: Dielectric strength</b>			P
	Rated voltage (V) .....	250 V		
item per table 15	test voltage applied between:	test voltage (V)	flashover / breakdown (Yes/No)	
1	All poles together – outside of enclosure	2000 V	No	
Supplementary information: For this test SM10 switch was used and appropriate test was performed				

20.2	<b>TABLE: Impact resistance</b>			P
part of enclosure tested per table 21 (A, B, C, D)	blows per part	height of fall (mm)	comments	
A	5	80	No damage	
Supplementary information:				

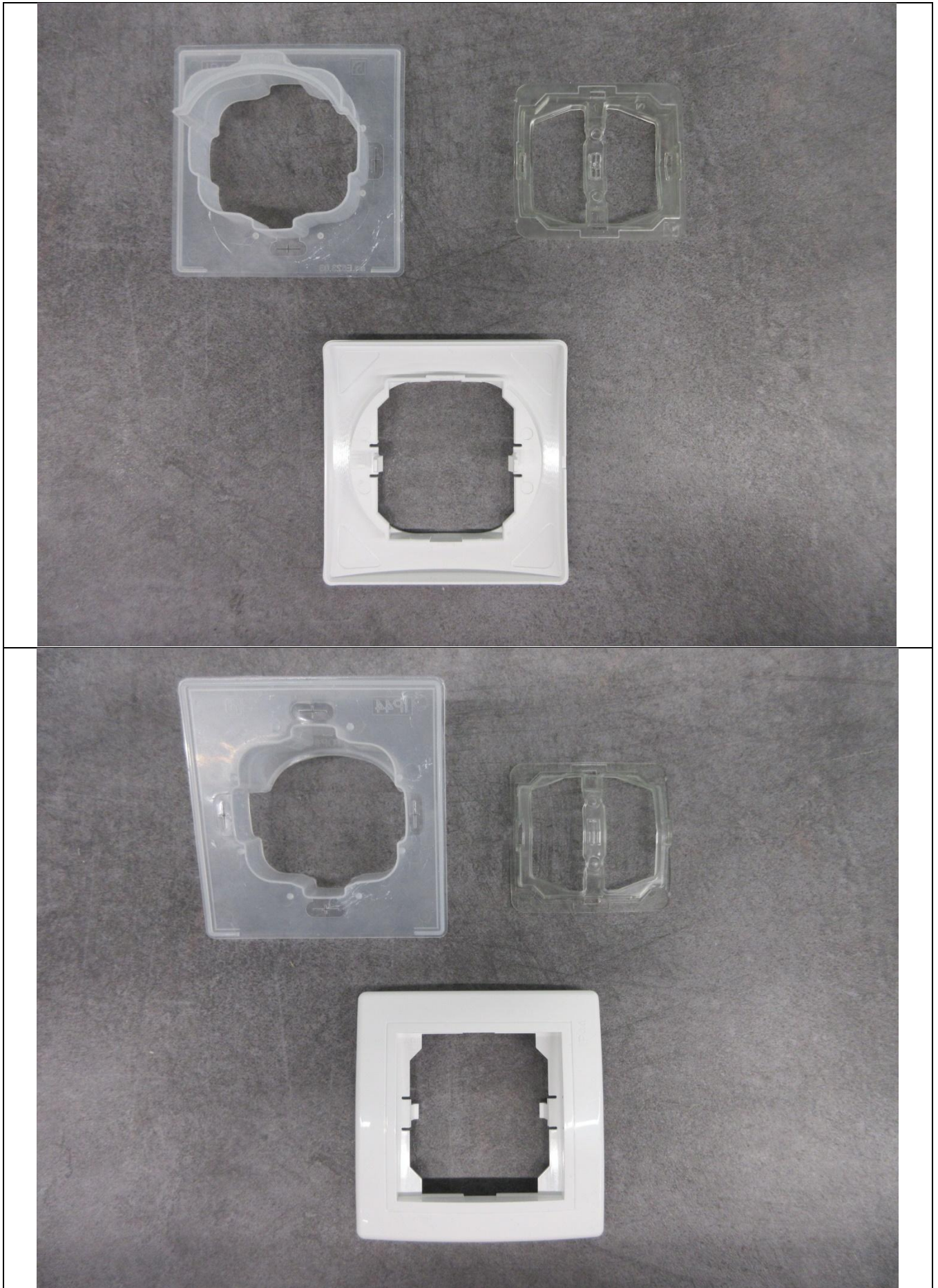
IEC 60669-1			
Clause	Requirement + Test	Result - Remark	Verdict

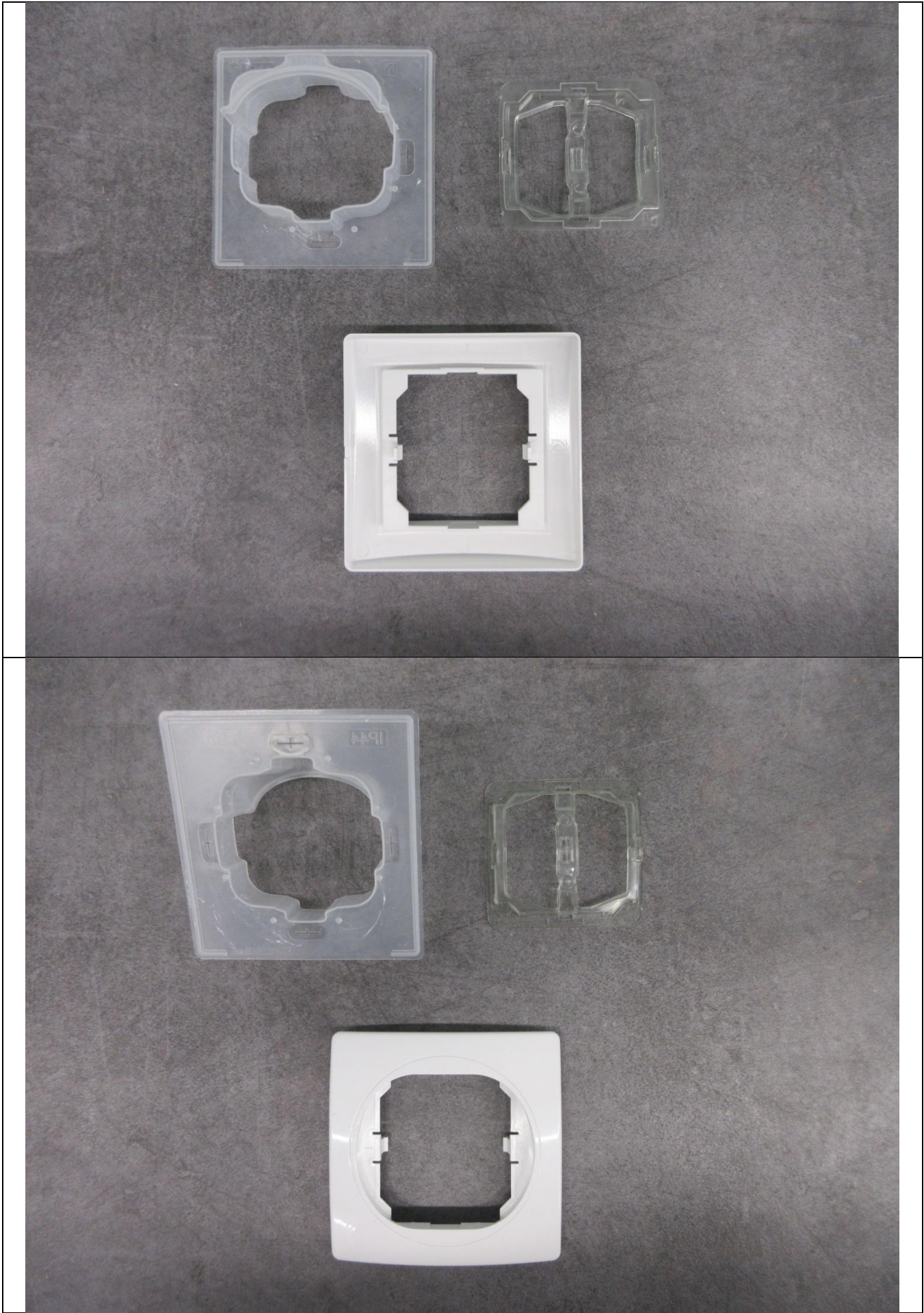
21.4	<b>TABLE: Ball pressure test of thermoplastic materials</b>			P
	Allowed impression diameter (mm) .....	≤ 2 mm		
part under test	material designation	test temperature (°C) <sup>(1)</sup>	impression diameter (mm)	
Decorative frame	ELIX ABS P2H-AT	70°C	< 1,0 mm	
<i>Supplementary information:</i> <sup>(1)</sup> 70 °C / 40 °C + highest temperature rise determined during the test of clause 17				

24.1	<b>TABLE: Glow-wire test</b>			P
part under test	material designation	test temperature (°C)	remarks	
External enclosure	ELIX ABS P2H-AT	650°C	0/0*	
Supplementary information: *No fire. No drops.				

24.2	<b>TABLE: Resistance to tracking</b>			P
	Number of drops .....	50		
part under test	material designation	test voltage (V)	flashover / breakdown (Yes/No)	
Main part	PC Lexan 223R	175	No	
Supplementary information:				

**4 PHOTOS OF PRODUCT**







5 DOCUMENTATION



- The declared protection rating can only be achieved through proper installation

- Be sure to turn off the electrical power supply (main fuse) during installation
- Installation may only be performed by qualified personnel with appropriate experience
- Voditi računa o pravilnom postavljanju

**SAFETY PRECAUTIONS**

Ensure that the wall has a suitable surface for sealing. The maximum allowed roughness and deviation from a flat surface is 1 mm. Installation on porous surfaces, grainy facades, etc., is not recommended. **The installation may only be carried out by a professional electrician in accordance with national installation regulations.** The maximum load for luminaires with built-in ballast is 100W for 10A switches.

**INSTALLATION INSTRUCTION**

Placing the gasket on the wall and threading the conductors (Figure 1)

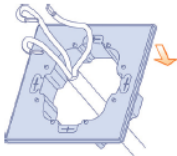


Figure 1

Connecting the switch mechanism and installing it in the wall (Figure 2)

After tightening the clamps, check if the gasket fits properly on the wall surface.

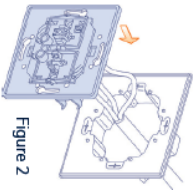


Figure 2

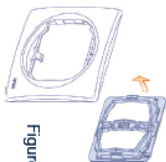


Figure 3

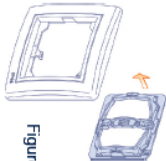


Figure 4

Placing the gasket on the switch cover (Figure 3, Figure 4)

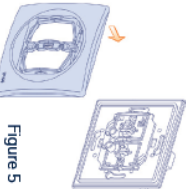


Figure 5

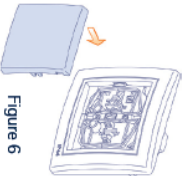


Figure 6

Pressing the cover and gasket assembly onto the switch mechanism (Figure 5)

Pressing the button onto the switch cover (Figure 6)



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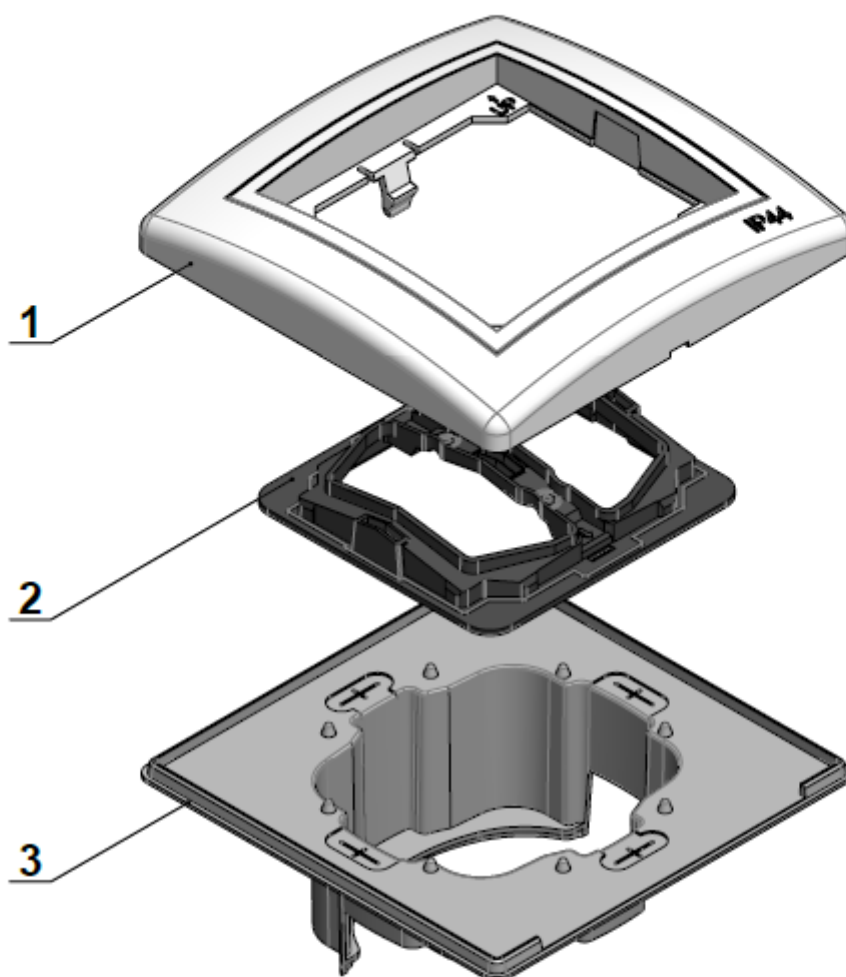
**INSTRUCTIONS FOR INSTALLATION  
AND OPERATION  
IP44 SWITCH**




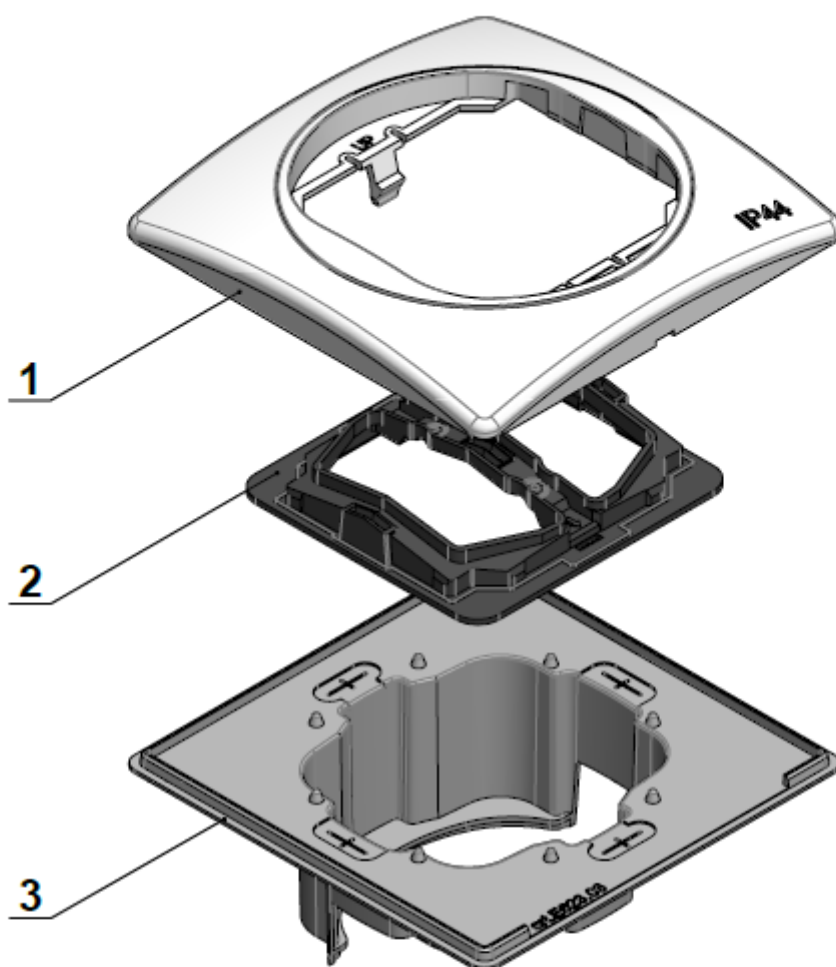
art.E60544




art.60544



3	Zaptivka za zid IP44 PRESTIGE	art.623.03	1	LDPE		
2	Zaptivka sklopke IP44	art.60544.02	1	PVC transp 73 Shore		
1	Maska sklopke IP44 PRESTIGE	art.60544.01	1	ABS		
Poz.	Naziv	Oznaka	Kom.	Materijal	Dim./Šifra za nabavku	Napomena
	Materijal				Površinska zaštita	Termička obrada
	Dim./Šifra za nabavku				ID Broj	Masa
Sklop	Kom.				095060	21.073
Pripadnost				Naziv		
605-Sklopke_PRESTIGE				<b>SET ZA SKLOPKE IP44 PRESTIGE</b>		
Tolerancije slobodnih mera						
	Datum	Ime				
Konstruisao	29.08.25	Miljan Matijević				
Crtao	29.08.25	Miljan Matijević				
Pregledao						
Odobrio						
 <b>ALING-CONEL GAJDOBRA</b>				Oznaka		Revizija
				<b>art.60544.X</b>		



3	Zaptivka za zid IP44 EON		art.E623.03		1	LDPE		
2	Zaptivka sklopke IP44		art.60544.02		1	PVC transp 73 Shore		
1	Maska sklopke IP44 EON		art.E60544.01		1	ABS		
Poz.	Naziv		Oznaka	Kom.	Materijal	Dim./ Šifra za nabavku		Napomena
		Materijal					Površinska zaštita	Termička obrada
							ID Broj	Masa
		Dim./Šifra za nabavku					095066	19.605
	Sklop	Kom.						Razmera
								1:1
Pripadnost						Naziv		
82000-Sklopke_EON						SET ZA SKLOPKE IP44 EON		
			Tolerancije slobodnih mera					
	Datum	Ime						
Konstruisao	29.08.25	Miljan Matijević						
Crtao	29.08.25	Miljan Matijević						
Pregledao								
Odobrio								
			 ALING-CONEL GAJDOBRA			Oznaka		Revizija
						art.E60544.X		