



TEST REPORT IEC 60670-23 Boxes and enclosures for electrical accessories for household and similar fixed electrical installations Part 23: Particular requirements for floor boxes and enclosures	
Report Reference No.	0924072034
Date of issue	10/07/2024
Total number of pages	24
CB Testing Laboratory	Simon Tech, SLU
Address	Carrer de Sancho de Àvila, 66, Sant Martí, 08018 Barcelona.
Applicant's name	Simon Tech, SLU
Address	Carrer de Sancho de Àvila, 66, Sant Martí, 08018 Barcelona.
Test specification:	
Standard	IEC 60670-23:2015 (2 ^o Edition) IEC 60670-23:2006 (1 st Edition) with IEC 60 670-1:2002 (1 st Edition) + corrigendum 2003
Test procedure	CB
Non-standard test method	N/A
Test Report Form No.	IEC60670_23A
Test Report Form(s) Originator	IMQ
Master TRF	Dated 2007-03
Copyright © 2007 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed. This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
Test item description	CAJA DE SUELO
Trade Mark	simon
Manufacturer	SIMON S.A.U
Model/Type reference	KGT/100 – KGT/200
IP code	IP66
Dimension sheet(s), if any	CAJA UN MÓDULO - 1,5M CAJA DOS MÓDULO - 2,5M

Testing procedure and testing location:	
☐ CB Testing Laboratory: Testing location/ address:	
☐ Associated CB Test Laboratory: Testing location/ address:	
Tested by (name + signature)..... : Approved by (+ signature) :	
☐ Testing procedure: TMP Tested by (name + signature)..... : Approved by (+ signature) : Testing location/ address:	
☐ Testing procedure: WMT Tested by (name + signature)..... : Witnessed by (+ signature) : Approved by (+ signature) : Testing location/ address:	
☐ Testing procedure: RMT Tested by (name + signature)..... : Approved by (+ signature) : Supervised by (+ signature)..... :	
Testing location/ address:	
☒ Testing procedure: In hous test Tested by (name + signature)..... : Alain Calvente Martínez A.C.M Approved by (+ signature) : 	
Testing location/ address:	Carrer de Sancho de Ávila, 66, Sant Martí, 08018 Barcelona (Spain).

Summary of testing:**Tests performed (name of test and test clause):**

Chapters, 8, 9, 10, 12, 13, 14, 15, 16, 18, 20.

Testing location:

Simon Tech, SLU
Carrer de Sancho de Ávila, 66, Sant Martí, 08018
Barcelona (Spain).

Summary of compliance with National Differences:

Copy of marking plate



Test item particulars..... :			
7.1	Nature of material	☒ 7.1.1	Insulating
		☐ 7.1.2	Metallic
		☐ 7.1.3	Composite
7.2	Method of installation	☒ 7.2.1	Flush, semi-flush or embedded in:
		☒ 7.2.1.1	Non combustible walls, ceilings or floors
		☐ 7.2.1.2	Combustible walls, ceilings or floors
		☐ 7.2.1.3	Hollow walls, hollow ceilings, hollow floors or furniture
		☐ 7.2.2	Surface mounting on:
		☐ 7.2.2.1	Non combustible walls, ceilings, floors or furniture
		☐ 7.2.2.2	Combustible walls, ceilings, floors or furniture
		☐ 7.2.3	Placement:
		☐ 7.2.3.1	Suitable for installation into concrete during the casting process (see 7.6)
		☐ 7.2.3.2	Suitable for all types of installation except into concrete
		☐ 7.2.101	According to floor treatment
		☐ 7.2.101.1	Intended to be installed in floor subjected to dry treatment
		☐ 7.2.101.2	Intended to be installed in floor subjected to wet treatment
		☐ 7.2.101.3	Having a minimum IPX4 rating, intended to be installed in floor subjected to wet treatment
7.3	Type(s) of inlets (outlets)	☐ 7.3.1	With inlets for sheathed cables for fixed installations
		☒ 7.3.2	With inlets for flexible cables
		☒ 7.3.3	With inlets for plain or corrugated conduits
		☐ 7.3.4	With inlets for threaded conduits
		☐ 7.3.5	With inlets for other types of conductors/cables or conduits
		☐ 7.3.6	With spouts (hub)
		☒ 7.3.7	Without inlets. Inlet openings are made during installation
7.4	Clamping means	☐ 7.4.1	With cable retention
		☐ 7.4.2	With cable anchorage
		☐ 7.4.3	With clamping means for flexible conduit
		☒ 7.4.4	Without clamping means
7.5	Minimum and maximum temperatures during installation	☐ 7.5.1	-5 °C to +60 °C
		☐ 7.5.2	-15 °C to +60 °C
		☒ 7.5.3	-25 °C to +60 °C
7.6	Maximum temperature during the casting process	☐ 7.6.1	+60 °C
		☒ 7.6.2	+90 °C
7.101	According to the type of lid	☒ 7.101.1	With a removable lid
		☐ 7.101.2	With a fixed lid

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..... : 10/07/2024

Date of receipt of test item..... : 10/07/2024

Date (s) of performance of tests..... : 10/07/2024 – 17/10/2024

General remarks:

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 Issuing testing laboratory.

"(See Enclosure #)" refers to additional information appended to the report.

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

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

General product information:**NEW IP66 – BOX REFERENCE:**

KGT100/72 CUBETA IP66 PARA 1 K45 SUELO PAV. INOX - IP66 SCREED BOX CONCRETE FLOOR 1 K45 STEEL.

KGT100/74 CUBETA IP66 PARA 1 K45 SUELO PAV. NEGRO - IP66 SCREED BOX CONCRETE FLOOR 1 K45 BLACK.

KGT100RF/72 CUBETA IP66 PARA 1 K45 SUELO TEC. INOX - IP66 SCREED BOX RAISED FLOOR 1 K45 STEEL.

KGT100RF/74 CUBETA IP66 PARA 1 K45 SUELO TEC. NEGRO - IP66 SCREED BOX RAISED FLOOR 1 K45 BLACK.

KFH100/74 MARCO MANUAL VACIO 1 K45 C/T.CIEGA NEGRO - MANUAL FRAME EMPTY 1 K45 W/BLIND BLACK.

KFH100/72 MARCO MANUAL VACIO 1 K45 C/T.CIEGA INOX - MANUAL FRAME EMPTY 1 K45 W/BLIND STEEL.

KFH100SEC/74 MARCO SEGUR. VACIO 1 K45 C/T.CIEGA NEGRO - SAFETY FRAME EMPTY 1 K45 W/BLIND BLACK.

KFH100SEC/72 MARCO SEGUR. VACIO 1 K45 C/T.CIEGA INOX - SAFETY FRAME EMPTY 1 K45 W/BLIND STEEL.

KFH101/74 MARCO MANUAL VACIO 1 K45 C/ALoj.RJ NEGRO - MANUAL FRAME EMPTY 1 K45 W/RJ LOD. BLACK.

KFH101/72 MARCO MANUAL VACIO 1 K45 C/ALoj.RJ INOX - MANUAL FRAME EMPTY 1 K45 W/RJ LOD. STEEL.

KFH101SEC/74 MARCO SEGUR. VACIO 1 K45 C/ALoj.RJ NEGRO - SAFETY FRAME EMPTY 1 K45 W/RJ LOD. BLACK.

KFH101SEC/72 MARCO SEGUR. VACIO 1 K45 C/ALoj.RJ INOX - SAFETY FRAME EMPTY 1 K45 W/RJ LOD. STEEL.

KGT200/72 CUBETA IP66 PARA 2 K45 SUELO PAV. INOX - IP66 SCREED BOX CONCRETE FLOOR 2 K45 STEEL.

KGT200/74 CUBETA IP66 PARA 2 K45 SUELO PAV. NEGRO - IP66 SCREED BOX CONCRETE FLOOR 2 K45 BLACK.

KGT200RF/72 CUBETA IP66 PARA 2 K45 SUELO TEC. INOX - IP66 SCREED BOX RAISED FLOOR 2 K45 STEEL.

KGT200RF/74 CUBETA IP66 PARA 2 K45 SUELO TEC. NEGRO - IP66 SCREED BOX RAISED FLOOR 2 K45 BLACK.

KFH200/74 MARCO MANUAL VACIO 2 K45 C/T.CIEGA NEGRO - MANUAL FRAME EMPTY 2 K45 W/BLIND BLACK.

KFH200/72 MARCO MANUAL VACIO 2 K45 C/T.CIEGA INOX - MANUAL FRAME EMPTY 2 K45 W/BLIND STEEL.

KFH200SEC/74 MARCO SEGUR. VACIO 2 K45 C/T.CIEGA NEGRO - SAFETY FRAME EMPTY 2 K45 W/BLIND BLACK.

KFH200SEC/72 MARCO SEGUR. VACIO 2 K45 C/T.CIEGA INOX - SAFETY FRAME EMPTY 2 K45 W/BLIND STEEL.

KFH201/74 MARCO MANUAL VACIO 2 K45 C/ALOJ.RJ NEGRO - MANUAL FRAME EMPTY 2 K45 W/RJ LOD. BLACK.

KFH201/72 MARCO MANUAL VACIO 2 K45 C/ALOJ.RJ INOX - MANUAL FRAME EMPTY 2 K45 W/RJ LOD. STEEL.

KFH201SEC/74 MARCO SEGUR. VACIO 2 K45 C/ALOJ.RJ NEGRO - SAFETY FRAME EMPTY 2 K45 W/RJ LOD. BLACK.

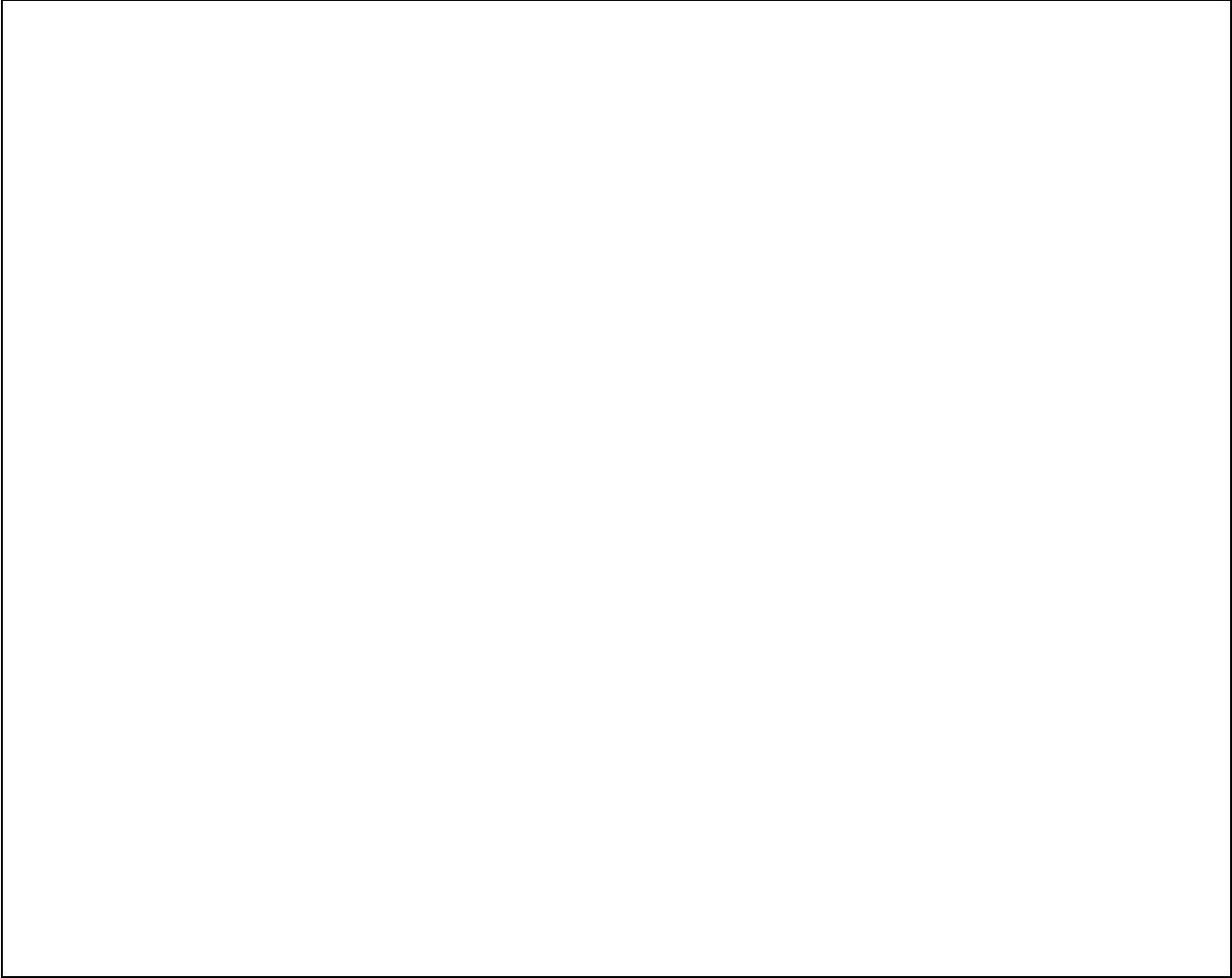
KFH201SEC/72 MARCO SEGUR. VACIO 2 K45 C/ALOJ.RJ INOX - SAFETY FRAME EMPTY 2 K45 W/RJ LOD. STEEL.

KFH256U/74 MARCO MANUAL 2 ISRAELÍS + RJ C.6U NEGRO

KFH256U/72 MARCO MANUAL 2 ISRAELÍS + RJ C.6U INOX

KFH150/74 MARCO MANUAL 1 ISRAELÍ C/T.CIEGA NEGRO

KFH150/72 MARCO MANUAL 1 ISRAELÍ C/T.CIEGA INOX



8	MARKING		P
8.1	Boxes and enclosures are marked with:		
	a) name, trade mark or identification mark of the manufacturer or the responsible vendor :	SIMON	P
	Enclosures are marked in addition with:		
	b) IP code against ingress of solid objects if >IP2X :	IP6X	P
	c) IP code against harmful ingress of water only for enclosures classified according to 7.2.101.3 :	IP6X	P
	d) marking on cover of flush enclosures for rough surfaces and where IP is dependent on the surface (Fig. 5)..... :	IP ^^^	P
	IP code marking is visible when in normal use		P
	Information marked on the boxes and enclosures or provided by the manufacturer on the smallest package unit or in the instructions of the manufacturer:		
	e) type reference, which may be a catalogue number :		P
	f) maximum temperature during the building process if 90 °C :		P
	g) necessary information concerning the openings which can be made during installation for boxes and enclosures classified according to 7.3.7 :		P
	h) minimum temperature during installation for boxes classified according to 7.5.2 and 7.5.3 :		P
	i) minimum internal volume in cm ³ for boxes and enclosures classified according to 7.7.2, inside the box or enclosure, legible after installation of the box but before installation of wiring devices and wiring..... :		P
	j) symbol Ha for boxes classified according to 7.7.1, symbol Hb for boxes classified according to 7.7.2. :		P
	k) marking placed inside the box describing the intended use :		P
	Further information given in the manufacturer's catalogue or in an instruction sheet :	See appended Annex	P
	Higher degree of protection achieved by the use of special parts: an instruction sheet is provided and it indicates the higher degree of protection		N/A
8.2	Marking is durable and easily legible		P
	Rubbing test 15 s with water and 15 s with petroleum spirit		P

	After the test: marking still legible		P
--	---------------------------------------	--	---

9	DIMENSIONS		P
	Boxes and enclosures comply with the appropriate standard sheets, if any :	See appended Annex	P

10	PROTECTION AGAINST ELECTRIC SHOCK		P
	In boxes and enclosures assembled, equipped and installed as for normal use in accordance with the manufacturer's instructions: live parts are not accessible		P
	Enclosures have IP $\geq$ XXB when assembled, equipped and installed as for normal use		P
	Test probe 11 of IEC 61032 applied for 1 min with a force of 20 N do not enter that parts which are accessible after installation where live parts are to be installed according to manufacturer's instructions		P
	Additional test at (35 ± 2) °C with probe 11 of IEC 61032 on enclosures according to 7.1.1 and 7.1.3 with parts of thermoplastic or elastomeric material applied to:		
	- all places, except membranes or the like, where yielding of insulating material could impair the safety, with a force of 75 N		P
	- knock-outs with a force of 10 N		P

11	PROVISION FOR EARTHING		N/A
11.1	Boxes and enclosures with exposed conductive parts		
	- provided with an earthing means of low resistance		N/A
	- have provision for the fitting of such an earthing means		N/A
	Exposed conductive parts of covers or cover-plates are connected through a low resistance connection to the earthing means		N/A
	Resistance $\leq 0,05 \Omega (\Omega)$:		N/A

12	CONSTRUCTION		P
12.1	Lids, covers or cover-plates or part of them		P
	Lids, covers or cover-plates or parts of them, which are intended to ensure protection against electric shock, are held in place effectively		P
12.1.1	Screw-type fixing		P

	Lids, covers or cover-plates whose fixing is of the screw-type: compliance checked by inspection		P
12.1.2	Non-screw-type fixing operable without the use of a tool or a key		N/A
	Lids, covers or cover-plates whose fixing is not dependent on screws and whose removal is obtained by applying a force according to Table 2 in a direction approximately perpendicular to the mounting/supporting surface:		N/A
	- removal give access (with test probe A of IEC 61032) to live parts		N/A
	- removal give access (with test probe A of IEC 61032) to non-earthed conductive parts separated from live parts by basic insulation		N/A
	- removal give access (with test probe A of IEC 61032) only to insulating parts, earthed conductive parts, conductive parts separated from live parts by double or reinforced insulation, or live parts of SELV circuits according to IEC 61140 having a voltage ≤ 25 V a.c. or 60 V d.c.		N/A
12.1.2.1	Verification of the non removal of the lids, covers or cover-plates		N/A
	Force according to Table 2 applied for 1 min in a direction perpendicular to the mounting surface (N) :	10 N / 20 N / 40 N / 80 N	N/A
	Lids, covers or cover-plates not come off		N/A
	For flush-mounting boxes or enclosures, test repeated on new specimens with a sheet of hard material, $(1 \pm 0,1)$ mm thick, fitted on the wall around the supporting frame according to Figure 12		N/A
	Lids, covers or cover-plates not come off		N/A
12.1.2.2	Verification of the removal of the lids, covers or cover-plates		N/A
	Force not exceeding 120 N applied 10 times in a direction perpendicular to the mounting/supporting surface: lids, covers or cover-plates come off		N/A
	After the test: no damage		N/A
	For flush-mounting boxes or enclosures, test repeated on new specimens with a sheet of hard material, $(1 \pm 0,1)$ mm thick, fitted on the wall around the supporting frame according to Figure 12		N/A
	Force not exceeding 120 N applied 10 times in a direction perpendicular to the mounting/supporting surface: lids, covers or cover-plates come off		N/A
	Lids, covers or cover-plates come off		N/A
	After the test: no damage		N/A
12.1.2.3	Verification of the outline of lids, covers and cover-plates		N/A
	Gauge of Figure 13 applied according to Figure 14 for verification of the outline of lids, covers or cover-plates: distances between face C of gauge and outline of side under test, not decrease :	complying / not complying	—
12.1.2.4	Verification of grooves, holes and reverse tapers		P

	Gauge of Figure 16 applied according to Figure 17 with a force of $(1 \pm 0,2)$ N: gauge not enter more than 1 mm	complying / not complying	—
12.1.3	Other fixings		N/A
	Lids, covers or cover-plates whose fixing is not dependent on screws and whose removal is obtained by using a tool and/or a key according to the manufacturer's instructions: tests according to 12.1.2		N/A
	Force not exceeding 120 N applied in a direction perpendicular to the mounting/supporting surface: lids, covers or cover-plates not come off		N/A
	For flush-mounting boxes or enclosures, test repeated on new specimens with a sheet of hard material, $(1 \pm 0,1)$ mm thick, fitted on the wall around the supporting frame according to Figure 12		N/A
	Lids, covers or cover-plates not come off		N/A
12.2	Drain holes		
	Surface and semi-flush mounting enclosures having IPX1 to IPX6 allow the opening of a drain hole ≥ 5 mm in diameter (mm Ø) or 20 mm ² in area (mm ²) with a width or length ≥ 3 mm (mm)		P
	Drain holes: effective		P
12.3	Mounting of enclosures		P
	Enclosures have provisions for their suitable attachment according to the method of installation (7.2)		P
	Conductive parts of internal fixing means are surrounded by insulation which projects above the top of the fixing means by an amount of ≥ 10 % of the maximum width of the cavity for the fixing means (mm).....	10% of mm $\geq$ mm	P
12.4	Boxes and enclosures with inlets for flexible cables		P
	In inlets (outlets) provided in boxes and enclosures classified according to 7.3.2 the flexible cables can be easily introduced		P
12.5	Boxes and enclosures with inlets for applications other than flexible cables		P
	Inlet openings classified according to 7.3 other than 7.3.2, if any, allow the introduction of:		
	- a conduit or a suitable fitting, and/or		P
	- the protective covering of the cable		P
	Inlet opening for conduit entries:		
	- capable of accepting either conduits of sizes, or a combination of sizes, according to IEC 60423 and/or IEC 60981		P
	- same requirement in at least two inlet openings if there are more than one		P
12.6	Boxes and enclosures with a cable anchorage(s)		N/A

	In boxes and enclosures classified according to 7.4.2 the connection of the conductors of the flexible cable are relieved from strain		N/A
	Clear how relief from strain and prevention of twisting is intended to be effected		N/A
	Cable anchorages are:		N/A
	- suitable for the different types of flexible cable		
	- at least one part of it is integral with, or permanently fixed to, one of the component parts of the box		N/A
	- of insulating material or provided with an insulating lining fixed to the metal parts		N/A
	Test of effectiveness of the cable anchorage:		N/A
	- external dimensions of flexible cable (mm) :		—
	- clamping screws tightened with a torque equal to 2/3 of that specified in Table 4 (Nm) :		—
	- glands tightened with a torque equal to that specified in Table 5 :		—
	It is not possible to push the flexible cable into the specimen by more than 1 mm with a force specified in Table 3 (N)..... :		N/A
	Pull force as specified in Table 3 applied 50 times for 1 s (N)..... :		—
	Torque as specified in Table 3 applied for (15 ± 1) s (Nm) :		—
	After the test: displacement ≤ 2 mm (mm) :		N/A
	Cable anchorage: no damage		N/A
12.7	Boxes and enclosures with cable retention means		N/A
	Cable retention means of boxes and enclosures classified according to 7.4.1 retain the cable in place		N/A
	Test with cables as declared by the manufacturer, fitted according to the manufacturer's instructions and loaded with an axial force of (20 ± 1) N applied for 1 min:		N/A
	Type of cable/maximum nominal cross-sectional area (mm ²)..... :		—
	After the test: displacement ≤ 3 mm (mm) :		N/A
	Type of cable/minimum nominal cross-sectional area (mm ²)..... :		—
	After the test: displacement ≤ 3 mm (mm) :		N/A
12.8	Knock-out inlets (outlets) intended to be removed by mechanical impact		P
	It is possible to remove knock-out inlets (outlets) by mechanical impact without damaging the box		P
	Chips or burrs are not accepted in knock-out inlets (outlets) for cables		P

	Chips and burrs are disregarded in knock-out inlets (outlets) for conduits and/or for use with a grommet or a membrane		P
12.8.1	Knock-out retention		P
	Boxes and enclosures having knock-outs accessible after installation: force of (30 ± 1) N applied for (15 ± 1) s by means of a 6 mm diameter mandrel with a flat end		P
	During the test: knock-out remains in place		P
	Degree of protection unchanged 1 h after the test		P
12.8.2	Knock-out removal		P
	Removal test of knock-outs with a tool as stated by the manufacturer, without conditioning:		P
	During the test: no displacement of a larger stage of multi-stage knock-outs when a smaller stage is removed		P
	After the test: no sharp edges, box and enclosure is not damaged		P
	Removal test of knock-outs with a tool as stated by the manufacturer, immediately following a conditioning at the minimum temperature specified according to 7.5 for 5 h ± 10 min (boxes and enclosures according to 7.1.1 or 7.1.3)		P
	Test temperature (°C) :		—
	During the test: no displacement of a larger stage of multi-stage knock-outs when a smaller stage is removed		P
	After the test: no sharp edges, box and enclosure is not damaged		P
12.9	Screw fixings		P
	Fixing means effected by screws withstand mechanical stresses		P
	Thread-forming or thread-cutting screws used only if supplied together with the piece in which they are intended to be inserted		P
	Verification of the mechanical strength of screws	See appended table 12.9	P
12.10	Fixing of boxes and accessories		P
	Boxes intended to receive accessories are provided with:		
	- fixing means for their suitable attachment according to the method of installation		P
	- means to fix the accessories in order to remain fixed so that in normal use neither the boxes nor the accessories become displaced		P
12.11	Boxes and enclosures classified according to 7.7.1 (Class Ha)		N/A
	Boxes and enclosures for hollow walls classified according to 7.7.1 provide suitable means for fixing the box or the enclosure to hollow walls		N/A
	Box or enclosure mounted in a test wall:		N/A

	- according to the manufacturer's instructions		N/A
	- sheet of plywood 500 mm wide x 500 mm high, (10 ± 1) mm thick		N/A
	a) Pull and torque test: lever loaded with a torque of 3 Nm (Figure 18a) and a force of 100 N (Figure 18b) for 1 min		N/A
	After the tests: no damage, displacement of the lever no more than 2 ° (°)		N/A
	b) Displacement test: lever loaded with a torque of 3 Nm (Figure 18c) for 1 min		N/A
	After the test: edge of the box not displaced by more than 1 mm (mm)		N/A
12.12	Boxes and enclosures classified according to 7.7.2 (Class Hb)		N/A
	Boxes and enclosures classified according to 7.7.2 provide suitable means for fixing the box or the enclosure to hollow walls and the like		N/A
	Verification of the declared minimum internal volume (see 12.12.4)		N/A
12.12.1	Boxes intended for mounting to a wood structural member of a wall		N/A
	Box mounted to a (45 x 90) mm wood structural member in a vertical position; force of 225 N applied for 5 min		N/A
	After the test: no pulling out of the nails or screws		N/A
	No movement of the face of the box of more than 3 mm (mm)		N/A
12.12.2	Boxes intended for mounting to a wood structural member of a ceiling		N/A
	Box fastened to a (35 x 180) mm wood structural member in a horizontal position facing downwards; force of 225 N applied for 1 min		N/A
	During the test: deflection of the face of the box does not exceed 6 mm (mm)		N/A
12.12.3	Boxes intended for mounting to a steel-stud structural member of a wall		N/A
	Box mounted to a steel-stud structural member according to Figure 19; force of 180 N applied for 5 min in the direction to push the box into the wall opening		N/A
	During the test with a force of 180 N applied for 5 min in the direction to push the box into the wall opening: deflection of the box does not exceed 2 mm (mm)		N/A
	During the test with a force of 180 N applied for 5 min in the direction to pull the box out of the wall opening: deflection of the box does not exceed 2 mm (mm)		N/A
12.12.4	Internal volume of boxes and enclosures classified according to 7.7.2 (Class Hb)		P
	Difference in the volume of water in the measuring cylinder measured before and after the filling of the box, enclosure or raised cover (Figure 4) (cm³)		P
12.13	Cable gland entry		N/A

	Torque test: glands provided with a metal rod tightened and loosened 10 times with a torque specified in Table 5 for 1 min $\pm$ 5 s	N/A
	- diameter of test rod (mm)	—
	- type of material (metal / insulating).....	—
	- torque (Nm)	—
	After the test: no damage	N/A
12.14	Boxes and enclosures with inlets (outlets) for conduits or spouts (hubs)	N/A
	Boxes and enclosures classified according to 7.3.4 and conical spouts as in 7.3.6 withstand the tests of 12.14.1, 12.14.2 and 12.14.3	N/A
12.14.1	Enclosures with inlet spout for conduits: a minimum size piece of conduit pressed for 1 min $\pm$ 5 s with a force of (100 $\pm$ 2) N	N/A
	During the test: inlet spout prevents further entry of the conduit into the box	N/A
12.14.2	Pull-out test after the test according to 12.14.1: conduit with the minimum size corresponding to the insert opening loaded for 1 min with a tensile force of (20 $\pm$ 2) N	N/A
	During the test: conduit not come loose from the inlet spout of the enclosure	N/A
12.14.3	Resistance to bending strain of an inlet spout: piece of conduit inserted into the inlet spout with a compressible force of (100 $\pm$ 2) N and loaded with a bending moment of 3 Nm for 1 min in six different directions with an interval of (60 $\pm$ 2) °	N/A
	During the test: inlet spout not come loose or damaged and conduit stays within the inlet spout	N/A
12.101	Openings for the passage of cables for connected equipment	P
	Openings in floor boxes and enclosures protect cables or cords for connected equipment from damage	P
	All openings of a surface accessible flush floor box or enclosure classified according to 7.2.101.1	P
	- when in use (cable or cord attached to equipment), need not be covered if one dimension of each uncovered opening is < 20 mm in one direction	P
	- in the unused condition, have IP $\geq$ 20 or are able to be closed and the closure is flush with the surface to which it is attached	P
	Such openings are permitted in floor boxes or enclosures classified according to 7.2.101.2	P
12.102	Enclosures protect the accessories and inserted plug from traffic load	P
	In enclosures classified according to 7.101.2 the lid cannot be removed without the use of a tool	P
12.103	Floor enclosures classified according to 7.2.101.2 have a protuberance from the floor greater than 19 mm (mm).....	P

13	RESISTANCE TO AGEING, PROTECTION AGAINST INGRESS OF SOLID OBJECTS AND AGAINST HARMFUL INGRESS OF WATER		P
13.1	Resistance to ageing		P
13.1.1	Specimens of insulating and composite boxes and enclosures, seals, grommets and replaceable membranes placed in a heating cabinet at $(70 \pm 2) ^\circ\text{C}$ for $(168 + 4)$ h and then kept at room temperature for $(96 + 4)$ h		P
	Glands tightened with a torque equal to 2/3 of the torque applied during the test of 12.13 (Nm) :		—
	Greater torque value stated by the manufacturer, if any (Nm) :		—
	After the test: no harmful deformation or similar damage		P
13.1.2	Grommets and entry membranes in inlet openings and protecting membranes are reliably fixed and are not displaced by the mechanical and thermal stresses occurring in normal use		N/A
	Specimens that have been subjected to the treatment specified in 13.1.1 placed in a heating cabinet at $(40 \pm 2) ^\circ\text{C}$ for $2 \text{ h} \pm 15 \text{ min}$		N/A
	Immediately after this period the tip of test probe 11 of IEC 61032 is applied for (5 ± 1) s with a force of $(30 - 2)$ N. During the tests: grommets and/or membranes not deformed to such an extent that live parts of any included accessory become accessible		N/A
	Grommets and/or membranes likely to be subjected to an axial pull: axial pull of $(30 - 2)$ N applied for (5 ± 1) s. During the tests: grommets and/or membranes not deformed to such an extent that live parts of any included accessory become accessible		N/A
	Test repeated on same enclosures fitted with grommets and/or membranes not subjected to any treatment		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
13.1.3	Grommets and entry membranes in inlet openings of boxes and enclosures classified according to 7.5.2 and 7.5.3: introduction of the cables permitted when the ambient temperature is low		N/A
	Test on enclosures fitted with grommets and/or membranes not subjected to any ageing treatment kept for 2 h in a refrigerator		N/A
	Test temperature ($^\circ\text{C}$) :		—

	Immediately after conditioning: it is possible to pierce any blind grommets and entry membranes and to introduce cables of the maximum diameter intended		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
13.2	Protection against the ingress of solid objects		P
	Enclosures provide a degree of protection against the ingress of solid objects in accordance with the declared IP code :	IP6x	P
	Enclosures mounted as in normal use with screwed glands or grommets fitted with cables as declared by the manufacturer:		N/A
	- type of cable, smallest cross-sectional area (mm ²)		—
	- type of cable, largest cross-sectional area (mm ²)		—
	Enclosures mounted as in normal use with screwed glands or grommets fitted with conduits as declared by the manufacturer:		N/A
	- smallest diameter or dimensions (mm)		—
	- largest diameter or dimensions (mm)		—
	Fixing screws of the cover or cover-plate tightened with a torque equal to 2/3 of the value of Table 4 used for the test of 12.9 (Nm)		—
	Greater torque value stated by the manufacturer, if the relevant information is provided (Nm)		—
	- IP5X: test performed as specified in IEC 60529 category 2 with the drain holes, if any, not opened		N/A
	- IP≤4X: test probe does not pass through any opening other than drain holes		N/A
	- IP≤4X: test probe applied on drain holes does not touch live parts within the enclosure		N/A
	- IP5X: dust does not cover the whole inner surface		N/A
	- IP6X: there is no dust inside the box or enclosure		P
13.3	Protection against harmful ingress of water		P
13.3.1	Enclosures with IP>X0 provide a degree of protection against harmful ingress of water in accordance with the declared IP code :	IPX6	P
	Enclosure dimensions: reference surface S (m ²) / perimeter (m)		—
	Appropriate test performed on surface, flush or semi-flush enclosures as specified in IEC 60529 under the following conditions:		

	- dimension $S \leq 0,04 \text{ m}^2$ or perimeter $\leq 0,8 \text{ m}$ according to 13.3.2 and 13.3.3		N/A
	- dimension $S > 0,04 \text{ m}^2$ and perimeter $> 0,8 \text{ m}$ according to 13.3.2 and 13.3.4		P
	Enclosures with screwed glands or grommets fitted with cables as declared by the manufacturer:		N/A
	- type of cable, smallest cross-sectional area (mm^2)		—
	- type of cable, largest cross-sectional area (mm^2)		—
	Enclosures with screwed glands or grommets fitted with conduits as declared by the manufacturer:		N/A
	- smallest diameter or dimensions (mm)		—
	- largest diameter or dimensions (mm)		—
	Fixing screws of the cover or cover-plate tightened with a torque equal to 2/3 of the value of Table 4 used for the test of 12.9 (Nm)		—
13.3.2	Surface-mounting enclosures mounted as for normal use		N/A
	Flush type and semi-flush type enclosures fixed in a test wall:		N/A
	- according to the manufacturer's instructions		N/A
	- according to Figure 5		N/A
	Enclosures fitted with cables having conductors of the largest and smallest cross-sectional area as declared by the manufacturer		—
	IPX3 and IPX4 enclosures: use of oscillating tube (Figure 4) or spray nozzle according to IEC 60529 (Figure 5)		—
13.3.3	Immediately after the test there is no water in the box or enclosure		P
	Specimens withstand an electric strength test specified in 14.3 started within 5 min of the completion of IP test		P
13.3.4	Immediately after the test: indicator paper still dry		P
13.3.101	Floor enclosures classified under 7.2.101.1 have a degree of protection $\text{IP} \geq 20$		P
	Floor enclosures classified under 7.2.101.2 are tested for a degree of protection IPX4, all joints greater than 19 mm above the plane of the floor are permitted to be masked		P
	Floor enclosures classified under 7.2.101.3 are tested for a degree of protection IPX4		P

14	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
14.1	Insulation resistance and electric strength of enclosures classified according to 7.1.1 and 7.1.3 is adequate		P
	Specimens placed in a humidity cabinet containing air with relative humidity between 91 % and 95 % and air temperature between 20 °C and 30 °C for:		P
	- 2 days (48 h) for enclosures classified IPX0		P
	- 7 days (168 h) for enclosures classified IP>X0		N/A
	After this treatment: no damage		P
14.2	Insulation resistance measured 1 min after application of 500 V d.c.	See appended table 14.2	P
14.3	Electric strength: a.c. test voltage applied for 1 min	See appended table 14.3	P

15	MECHANICAL STRENGTH		P
	Boxes and enclosures have adequate mechanical strength		P
15.1	Impact test at low temperature		P
	Non-metallic boxes and enclosures for use in cast concrete according to 7.3.2.1: impact test with a vertical hammer test apparatus (Figure 8) placed together with the specimens for 2 h ± 15 min in a refrigerator at:		P
	- (-5 ± 2) °C for boxes and enclosures classified according to 7.5.1		N/A
	- (-15 ± 2) °C for boxes and enclosures classified according to 7.5.2		N/A
	- (-25 ± 2) °C for boxes and enclosures classified according to 7.5.3		P
	Specimens subjected to 5 blows with a mass of 1 kg falling from a height of 100 mm: no damage		P
15.2	Compression test		P
15.2.1	Boxes and enclosures according to 7.6.2: specimen placed in a heating cabinet at (90 ± 5) °C for (60 ± 15) min		P
	After cool down to ambient temperature: neither deformation nor damage		P
	Boxes and enclosures then placed between two flat hardwood plates and loaded with a force of (500 ± 5) N for 1 min ± 5 s		P
	No deformation or damage		P
15.2.2	Boxes and enclosures according to 7.7.2: tests are under consideration		—
15.3	Impact test for boxes and enclosures		P

	Specimens subjected to blows by means of an impact test apparatus as described in Annex D of IEC 60068-2-75 with a height of fall of 500 mm (Figures 7, 9 and 10)	See appended table 15.3	P
	After the test: no damage		P
15.101	Compression test for all floor mounting boxes		
	a) deflection ≤ 3 mm when the cover of the box is loaded with a force of 500 N on area of 1 cm ² for 1 min (Figure 101) (mm)		P
	1 h after the test: permanent deformation ≤ 1 mm (mm).....		P
	b) force of 50 N/cm ² applied on the whole area of the cover (maximum 1000 N) (N)		—
	No damage to the means supporting the box in the floor		P

16	RESISTANCE TO HEAT		
16.1	Parts of insulating material necessary to retain current-carrying parts and/or parts of the earthing circuit in position: ball-pressure test according to IEC 60695-10-2 at (125 ± 2) °C for (60 ± 5) min	See appended table 16.1-16.2	N/A
16.2	Parts of insulating material not necessary to retain current-carrying parts and/or parts of the earthing circuit in position, even though in contact with them, and parts necessary to retain earthing terminals in position: ball-pressure test according to 16.1 but at (70 ± 2) °C	See appended table 16.1-16.2	N/A
	Parts of insulating material of flush-mounted enclosures classified according to 7.6.2: ball-pressure test according to 16.1 but at (90 ± 2) °C	See appended table 16.1-16.2	P
16.3	Boxes and enclosures of insulating materials classified according to 7.7.2 (Class Hb): adequate mechanical strength at high temperature		N/A
	Rigid crossbar (Figure 20) secured across the face of the box with screws tightened with a torque according to Table 4 (Nm)		—
	Total force of 180 N applied for 24 h to the face of the box at:		N/A
	- (80 ± 2) °C for boxes and enclosures classified according to 7.7.2.1		N/A
	- (105 ± 2) °C for boxes and enclosures classified according to 7.7.2.2		N/A
	After the assembly has been cooled down to ambient temperature:		
	- screws not have pulled out more than 6,3 mm (mm).....		N/A
	- torque used for removal the screws not exceeding 2,3 Nm (Nm)		N/A

17	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		N/A
	No requirements prescribed		—
18	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT AND FIRE		P
	Glow-wire test according to Clauses 4 to 10 if IEC 60695-2-11	See appended table 18	P
19	RESISTANCE TO TRACKING		N/A
	Parts of insulating material retaining live parts in position of boxes and enclosures having IP>X0: PTI 175, 50 drops, solution A of IEC 60112	See appended table 19	N/A
20	RESISTANCE TO CORROSION		P
	Test made after having removed all grease by immersion in a degreasing agent for (10 ± 1) min, (10 ± 1) min in a 10 % solution of ammonium chloride, (10 ± 1) min in a box containing air saturated with moisture and (10 ± 1) min at (100 ± 5) °C		P
	No signs of rust		P
21	ELECTROMAGNETIC COMPATIBILITY (EMC)		N/A
	No tests necessary		—

12.9	TABLE: mechanical strength of screws					P
threaded part identification (e.g. fixing means for cover)	diameter of screw thread (mm)	column number – Table 4 (I, II, III or IV)	applied torque – Table 4 (Nm)	times (5/10)	no damage	
Screw fixing cover *(1)	3,9	II	1,2	5	P	
Screw fixing cover *(2)	3,9	II	1,2	5	P	
supplementary information: *(1) THE SAMPLE MA1, MA2, MA3 *(2) THE SAMPLE MB1, MB2, MB3						

14.2	TABLE: insulation resistance			P
test voltage applied between:		measured (MΩ)	required (MΩ)	
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(1)		5.741 GΩ	>5MΩ	
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(1)		5.935 GΩ	>5MΩ	
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(1)		4.400 GΩ	>5MΩ	
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(2)		2.159 GΩ	>5MΩ	
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(2)		UUUUU GΩ	>5MΩ	
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(2)		18.73 GΩ	>5MΩ	
supplementary information: *(1) THE SAMPLE MA1, MA2, MA3 *(2) THE SAMPLE MB1, MB2, MB3				

14.3	TABLE: electric strength			P
	rated insulation voltage (V)	250		—
test voltage applied between:		test voltage (V)	flashover / breakdown (Yes/No)	
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(1)		2000	NO	
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(1)		2000	NO	

Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(1)	2000	NO
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(2)	2000	NO
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(2)	2000	NO
Between any metal enclosure and a metal sheet applied to the inner face of any insulating coating. *(2)	2000	NO
supplementary information: *(1) THE SAMPLE MA1, MA2, MA3 *(2) THE SAMPLE MB1, MB2, MB3		

15.3	TABLE: impact test			P
part of enclosure tested per Table 7 (A, B, C, D, E, F, G)	Total number of blows per part – Figure 10	height of fall (mm)	comments	
A+B	9	A – 80 B – 120	MA*(1)	
A+B	9	A – 80 B – 120	MB*(2)	
supplementary information:				
*(1) THE SAMPLE MA1, MA2, MA3				
*(2) THE SAMPLE MB1, MB2, MB3				

16.1-16.2	TABLE: ball pressure test of insulating materials		P
	allowed impression diameter (mm):	≤ 2 mm	—
part under test		test temperature (°C)	impression diameter (mm)
INSULATING MATERIAL THAT HOLDS THE PLUG *(1)		90	0,7
INSULATING MATERIAL THAT HOLDS THE PLUG *(2)		90	0,7
supplementary information:			
*(1) THE SAMPLE MA1, MA2, MA3			
*(2) THE SAMPLE MB1, MB2, MB3			

18	TABLE: glow-wire test					P
part under test	material designation	test temperature (°C)	visible flame and sustained glowing (Y/N)	flames and glowing extinction time	ignition of the tissue paper (Y/N)	
INSULATING MATERIAL THAT HOLDS THE PLUG *(1)	PC	650	N	N/A	N	
COVER *(1)	PA	650	N	N/A	N	
INSULATING MATERIAL THAT HOLDS THE PLUG *(2)	PC	650	N	N/A	N	
supplementary information: *(1) THE SAMPLE MA1, MA2, MA3 *(2) THE SAMPLE MB1, MB2, MB3 The cover of the samples MA is PA, but the cover of the samples MB is PC.						

19	TABLE: resistance to tracking			N/A
part under test	material designation	test voltage (V)	flashover / breakdown (Yes/No)	
		175		
supplementary information:				



TEST REPORT IEC 60670-23 Boxes and enclosures for electrical accessories for household and similar fixed electrical installations Part 23: Particular requirements for floor boxes and enclosures	
Report Reference No.	0924072034
Date of issue	10/07/2024
Total number of pages	24
CB Testing Laboratory	Simon Tech, SLU
Address	Carrer de Sancho de Àvila, 66, Sant Martí, 08018 Barcelona.
Applicant's name	Simon Tech, SLU
Address	Carrer de Sancho de Àvila, 66, Sant Martí, 08018 Barcelona.
Test specification: Standard..... IEC 60670-23:2015 (2 ^o Edition) IEC 60670-23:2006 (1 st Edition) with IEC 60 670-1:2002 (1 st Edition) + corrigendum 2003 Test procedure CB Non-standard test method..... N/A	
Test Report Form No.	IEC60670_23A
Test Report Form(s) Originator	IMQ
Master TRF	Dated 2007-03
Copyright © 2007 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved. This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context. If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed. This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
Test item description	CAJA DE SUELO
Trade Mark.....	simon
Manufacturer	SIMON S.A.U
Model/Type reference	KGT/100 – KGT/200
IP code	IP66
Dimension sheet(s), if any	CAJA UN MÓDULO - 1,5M CAJA DOS MÓDULO - 2,5M

Testing procedure and testing location:☐ **CB Testing Laboratory:**

Testing location/ address :

☐ **Associated CB Test Laboratory:**

Testing location/ address :

Tested by (name + signature) :

Approved by (+ signature) :

☐ Testing procedure: TMP

Tested by (name + signature) :

Approved by (+ signature) :

Testing location/ address :

☐ Testing procedure: WMT

Tested by (name + signature) :

Witnessed by (+ signature) :

Approved by (+ signature) :

Testing location/ address :

☐ Testing procedure: SMT

Tested by (name + signature) :

Approved by (+ signature) :

Supervised by (+ signature) :

Testing location/ address :

☐ Testing procedure: RMT

Tested by (name + signature) :

Approved by (+ signature) :

Supervised by (+ signature) :

Testing location/ address :

☒ Testing procedure: In hous test

Tested by (name + signature) : Alain Calvente Martínez
A.C.M

Approved by (+ signature)..... :

G.Roda -



Testing location/ address : Carrer de Sancho de Ávila, 66, Sant Martí, 08018
Barcelona (Spain).

Summary of testing:**Tests performed (name of test and test clause):**

Chapters, 8 and 13.

Testing location:

Simon Tech, SLU

Carrer de Sancho de Ávila, 66, Sant Martí, 08018
Barcelona (Spain).**Summary of compliance with National Differences:**

Copy of marking plate



Test item particulars..... :			
7.1	Nature of material	☒ 7.1.1	Insulating
		☐ 7.1.2	Metallic
		☐ 7.1.3	Composite
7.2	Method of installation	☒ 7.2.1	Flush, semi-flush or embedded in:
		☒ 7.2.1.1	Non combustible walls, ceilings or floors
		☐ 7.2.1.2	Combustible walls, ceilings or floors
		☐ 7.2.1.3	Hollow walls, hollow ceilings, hollow floors or furniture
		☐ 7.2.2	Surface mounting on:
		☐ 7.2.2.1	Non combustible walls, ceilings, floors or furniture
		☐ 7.2.2.2	Combustible walls, ceilings, floors or furniture
		☐ 7.2.3	Placement:
		☐ 7.2.3.1	Suitable for installation into concrete during the casting process (see 7.6)
		☐ 7.2.3.2	Suitable for all types of installation except into concrete
		☐ 7.2.101	According to floor treatment
		☐ 7.2.101.1	Intended to be installed in floor subjected to dry treatment
		☐ 7.2.101.2	Intended to be installed in floor subjected to wet treatment
		☐ 7.2.101.3	Having a minimum IPX4 rating, intended to be installed in floor subjected to wet treatment
7.3	Type(s) of inlets (outlets)	☐ 7.3.1	With inlets for sheathed cables for fixed installations
		☒ 7.3.2	With inlets for flexible cables
		☒ 7.3.3	With inlets for plain or corrugated conduits
		☐ 7.3.4	With inlets for threaded conduits
		☐ 7.3.5	With inlets for other types of conductors/cables or conduits
		☐ 7.3.6	With spouts (hub)
		☒ 7.3.7	Without inlets. Inlet openings are made during installation
7.4	Clamping means	☐ 7.4.1	With cable retention
		☐ 7.4.2	With cable anchorage
		☐ 7.4.3	With clamping means for flexible conduit
		☒ 7.4.4	Without clamping means
7.5	Minimum and maximum temperatures during installation	☐ 7.5.1	-5 °C to +60 °C
		☐ 7.5.2	-15 °C to +60 °C
		☒ 7.5.3	-25 °C to +60 °C
7.6	Maximum temperature during the casting process	☐ 7.6.1	+60 °C
		☒ 7.6.2	+90 °C
7.101	According to the type of lid	☒ 7.101.1	With a removable lid
		☐ 7.101.2	With a fixed lid

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 : 10/07/2024

Date of receipt of test item : 10/07/2024

Date (s) of performance of tests : 10/07/2024 – 17/10/2024

General remarks:

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 Issuing testing laboratory.

"(See Enclosure #)" refers to additional information appended to the report.

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

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

General product information:**NEW IP66 – BOX REFERENCE:**

KGT100/72 CUBETA IP66 PARA 1 K45 SUELO PAV. INOX - IP66 SCREED BOX CONCRETE FLOOR 1 K45 STEEL.

KGT100/74 CUBETA IP66 PARA 1 K45 SUELO PAV. NEGRO - IP66 SCREED BOX CONCRETE FLOOR 1 K45 BLACK.

KGT100RF/72 CUBETA IP66 PARA 1 K45 SUELO TEC. INOX - IP66 SCREED BOX RAISED FLOOR 1 K45 STEEL.

KGT100RF/74 CUBETA IP66 PARA 1 K45 SUELO TEC. NEGRO - IP66 SCREED BOX RAISED FLOOR 1 K45 BLACK.

KFH100/74 MARCO MANUAL VACIO 1 K45 C/T.CIEGA NEGRO - MANUAL FRAME EMPTY 1 K45 W/BLIND BLACK.

KFH100/72 MARCO MANUAL VACIO 1 K45 C/T.CIEGA INOX - MANUAL FRAME EMPTY 1 K45 W/BLIND STEEL.

KFH100SEC/74 MARCO SEGUR. VACIO 1 K45 C/T.CIEGA NEGRO - SAFETY FRAME EMPTY 1 K45 W/BLIND BLACK.

KFH100SEC/72 MARCO SEGUR. VACIO 1 K45 C/T.CIEGA INOX - SAFETY FRAME EMPTY 1 K45 W/BLIND STEEL.

KFH101/74 MARCO MANUAL VACIO 1 K45 C/ALOJ.RJ NEGRO - MANUAL FRAME EMPTY 1 K45 W/RJ LOD. BLACK.

KFH101/72 MARCO MANUAL VACIO 1 K45 C/ALOJ.RJ INOX - MANUAL FRAME EMPTY 1 K45 W/RJ LOD. STEEL.

KFH101SEC/74 MARCO SEGUR. VACIO 1 K45 C/ALOJ.RJ NEGRO - SAFETY FRAME EMPTY 1 K45 W/RJ LOD. BLACK.

KFH101SEC/72 MARCO SEGUR. VACIO 1 K45 C/ALOJ.RJ INOX - SAFETY FRAME EMPTY 1 K45 W/RJ LOD. STEEL.

KGT200/72 CUBETA IP66 PARA 2 K45 SUELO PAV. INOX - IP66 SCREED BOX CONCRETE FLOOR 2 K45 STEEL.

KGT200/74 CUBETA IP66 PARA 2 K45 SUELO PAV. NEGRO - IP66 SCREED BOX CONCRETE FLOOR 2 K45 BLACK.

KGT200RF/72 CUBETA IP66 PARA 2 K45 SUELO TEC. INOX - IP66 SCREED BOX RAISED FLOOR 2 K45 STEEL.

KGT200RF/74 CUBETA IP66 PARA 2 K45 SUELO TEC. NEGRO - IP66 SCREED BOX RAISED FLOOR 2 K45 BLACK.

KFH200/74 MARCO MANUAL VACIO 2 K45 C/T.CIEGA NEGRO - MANUAL FRAME EMPTY 2 K45 W/BLIND BLACK.

KFH200/72 MARCO MANUAL VACIO 2 K45 C/T.CIEGA INOX - MANUAL FRAME EMPTY 2 K45 W/BLIND STEEL.

KFH200SEC/74 MARCO SEGUR. VACIO 2 K45 C/T.CIEGA NEGRO - SAFETY FRAME EMPTY 2 K45 W/BLIND BLACK.

KFH200SEC/72 MARCO SEGUR. VACIO 2 K45 C/T.CIEGA INOX - SAFETY FRAME EMPTY 2 K45 W/BLIND STEEL.

KFH201/74 MARCO MANUAL VACIO 2 K45 C/ALOJ.RJ NEGRO - MANUAL FRAME EMPTY 2 K45 W/RJ LOD. BLACK.

KFH201/72 MARCO MANUAL VACIO 2 K45 C/ALOJ.RJ INOX - MANUAL FRAME EMPTY 2 K45 W/RJ LOD. STEEL.

KFH201SEC/74 MARCO SEGUR. VACIO 2 K45 C/ALOJ.RJ NEGRO - SAFETY FRAME EMPTY 2 K45 W/RJ LOD. BLACK.

KFH201SEC/72 MARCO SEGUR. VACIO 2 K45 C/ALOJ.RJ INOX - SAFETY FRAME EMPTY 2 K45 W/RJ LOD. STEEL.

8	MARKING		P
8.1	Boxes and enclosures are marked with:		
	a) name, trade mark or identification mark of the manufacturer or the responsible vendor :	SIMON	P
	Enclosures are marked in addition with:		
	b) IP code against ingress of solid objects if >IP2X :	IP6X	P
	c) IP code against harmful ingress of water only for enclosures classified according to 7.2.101.3 :	IP6X	P
	d) marking on cover of flush enclosures for rough surfaces and where IP is dependent on the surface (Fig. 5)..... :	IP ^^^	P
	IP code marking is visible when in normal use		P
	Information marked on the boxes and enclosures or provided by the manufacturer on the smallest package unit or in the instructions of the manufacturer:		
	e) type reference, which may be a catalogue number :		P
	f) maximum temperature during the building process if 90 °C :		P
	g) necessary information concerning the openings which can be made during installation for boxes and enclosures classified according to 7.3.7 :		P
	h) minimum temperature during installation for boxes classified according to 7.5.2 and 7.5.3 :		P
	i) minimum internal volume in cm ³ for boxes and enclosures classified according to 7.7.2, inside the box or enclosure, legible after installation of the box but before installation of wiring devices and wiring..... :		P
	j) symbol Ha for boxes classified according to 7.7.1, symbol Hb for boxes classified according to 7.7.2. :		P
	k) marking placed inside the box describing the intended use :		P
	Further information given in the manufacturer's catalogue or in an instruction sheet :	See appended Annex	P
	Higher degree of protection achieved by the use of special parts: an instruction sheet is provided and it indicates the higher degree of protection		N/A
8.2	Marking is durable and easily legible		P
	Rubbing test 15 s with water and 15 s with petroleum spirit		P

	After the test: marking still legible		P
--	---------------------------------------	--	---

13	RESISTANCE TO AGEING, PROTECTION AGAINST INGRESS OF SOLID OBJECTS AND AGAINST HARMFUL INGRESS OF WATER		P
13.1	Resistance to ageing		P
13.1.1	Specimens of insulating and composite boxes and enclosures, seals, grommets and replaceable membranes placed in a heating cabinet at $(70 \pm 2) ^\circ\text{C}$ for (168 ± 4) h and then kept at room temperature for (96 ± 4) h		P
	Glands tightened with a torque equal to 2/3 of the torque applied during the test of 12.13 (Nm) :		—
	Greater torque value stated by the manufacturer, if any (Nm) :		—
	After the test: no harmful deformation or similar damage		P
13.1.2	Grommets and entry membranes in inlet openings and protecting membranes are reliably fixed and are not displaced by the mechanical and thermal stresses occurring in normal use		N/A
	Specimens that have been subjected to the treatment specified in 13.1.1 placed in a heating cabinet at $(40 \pm 2) ^\circ\text{C}$ for $2 \text{ h} \pm 15 \text{ min}$		N/A
	Immediately after this period the tip of test probe 11 of IEC 61032 is applied for (5 ± 1) s with a force of $(30 - 2)$ N. During the tests: grommets and/or membranes not deformed to such an extent that live parts of any included accessory become accessible		N/A
	Grommets and/or membranes likely to be subjected to an axial pull: axial pull of $(30 - 2)$ N applied for (5 ± 1) s. During the tests: grommets and/or membranes not deformed to such an extent that live parts of any included accessory become accessible		N/A
	Test repeated on same enclosures fitted with grommets and/or membranes not subjected to any treatment		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
13.1.3	Grommets and entry membranes in inlet openings of boxes and enclosures classified according to 7.5.2 and 7.5.3: introduction of the cables permitted when the ambient temperature is low		N/A
	Test on enclosures fitted with grommets and/or membranes not subjected to any ageing treatment kept for 2 h in a refrigerator		N/A
	Test temperature ($^\circ\text{C}$) :		—

	Immediately after conditioning: it is possible to pierce any blind grommets and entry membranes and to introduce cables of the maximum diameter intended		N/A
	After the test: no harmful deformation, cracks or similar damage		N/A
13.2	Protection against the ingress of solid objects		P
	Enclosures provide a degree of protection against the ingress of solid objects in accordance with the declared IP code :	IP6x	P
	Enclosures mounted as in normal use with screwed glands or grommets fitted with cables as declared by the manufacturer:		N/A
	- type of cable, smallest cross-sectional area (mm ²)		—
	- type of cable, largest cross-sectional area (mm ²)		—
	Enclosures mounted as in normal use with screwed glands or grommets fitted with conduits as declared by the manufacturer:		N/A
	- smallest diameter or dimensions (mm)		—
	- largest diameter or dimensions (mm)		—
	Fixing screws of the cover or cover-plate tightened with a torque equal to 2/3 of the value of Table 4 used for the test of 12.9 (Nm)		—
	Greater torque value stated by the manufacturer, if the relevant information is provided (Nm)		—
	- IP5X: test performed as specified in IEC 60529 category 2 with the drain holes, if any, not opened		N/A
	- IP≤4X: test probe does not pass through any opening other than drain holes		N/A
	- IP≤4X: test probe applied on drain holes does not touch live parts within the enclosure		N/A
	- IP5X: dust does not cover the whole inner surface		N/A
	- IP6X: there is no dust inside the box or enclosure		P
13.3	Protection against harmful ingress of water		P
13.3.1	Enclosures with IP>X0 provide a degree of protection against harmful ingress of water in accordance with the declared IP code :	IPX6	P
	Enclosure dimensions: reference surface S (m ²) / perimeter (m)		—
	Appropriate test performed on surface, flush or semi-flush enclosures as specified in IEC 60529 under the following conditions:		

	- dimension $S \leq 0,04 \text{ m}^2$ or perimeter $\leq 0,8 \text{ m}$ according to 13.3.2 and 13.3.3		N/A
	- dimension $S > 0,04 \text{ m}^2$ and perimeter $> 0,8 \text{ m}$ according to 13.3.2 and 13.3.4		P
	Enclosures with screwed glands or grommets fitted with cables as declared by the manufacturer:		N/A
	- type of cable, smallest cross-sectional area (mm^2)		—
	- type of cable, largest cross-sectional area (mm^2)		—
	Enclosures with screwed glands or grommets fitted with conduits as declared by the manufacturer:		N/A
	- smallest diameter or dimensions (mm)		—
	- largest diameter or dimensions (mm)		—
	Fixing screws of the cover or cover-plate tightened with a torque equal to 2/3 of the value of Table 4 used for the test of 12.9 (Nm)		—
13.3.2	Surface-mounting enclosures mounted as for normal use		N/A
	Flush type and semi-flush type enclosures fixed in a test wall:		N/A
	- according to the manufacturer's instructions		N/A
	- according to Figure 5		N/A
	Enclosures fitted with cables having conductors of the largest and smallest cross-sectional area as declared by the manufacturer		—
	IPX3 and IPX4 enclosures: use of oscillating tube (Figure 4) or spray nozzle according to IEC 60529 (Figure 5)		—
13.3.3	Immediately after the test there is no water in the box or enclosure		P
	Specimens withstand an electric strength test specified in 14.3 started within 5 min of the completion of IP test		P
13.3.4	Immediately after the test: indicator paper still dry		P
13.3.101	Floor enclosures classified under 7.2.101.1 have a degree of protection $\text{IP} \geq 20$		P
	Floor enclosures classified under 7.2.101.2 are tested for a degree of protection IPX4, all joints greater than 19 mm above the plane of the floor are permitted to be masked		P
	Floor enclosures classified under 7.2.101.3 are tested for a degree of protection IPX4		P

**IPX6 POST TEST OBSERVATION: NO WATER
INGRESSION OBSERVED INSIDE THE ENCLOSURE**



IP6X TEST SET UP



IPX6 TEST SET UP



IPX6 TEST SET UP



Test Report issued under the responsibility of:



TEST REPORT

EN 62262

Degree of protection provided by enclosures

IK code

Test Report number. : 0924072034

Tested by (name + signature) : Alain Calvente – A.C.M
Laboratory Technician

Approved by (name + signature) : G.Roda -
Technical Director
(Document signed by means of electronic signature)

A handwritten signature in black ink, appearing to read "G. Roda".

Date of issue..... : 21/05/2025

Total number of pages : 9

Applicant's name : Simon Tech, SLU

Address : C/Sancho de Ávila,66, 1-2. 08018 Barcelona

Testing laboratory : Simon Tech, SLU

Address : C/Sancho de Ávila,66, 1-2. 08018 Barcelona

Test specifications:

Standard : UNE-EN 62262:2002

Test procedure : CE SAFE

Non-standard test method : N/A

Test Report Form No. : UNE-EN 62262:2002

Test Report Form(s) Originator : SIMON TECH

Master Test Report Form : Dated 2007-03

The reflected results are property of the applicant and without his/her previous authorisation they will not be communicated to a mediator.

Testing laboratory accepts no responsibility for damages resulting for use or improper interpretation of the information contained in this document.

Test item description : BOXES

Trade mark : The logo for Simon, featuring the word "simon" in blue.

Manufacturer : SIMON, S.A.U.

Model/Type reference : NEW IP66 – KGT100xx, KGTRF100xx,
KGT200xx, KGTRF200xx.

List of attachments (including a total number pages in each attachment):

Attachment No. 1: Degrees of protection by enclosures for electrical equipment against external mechanical impacts - IK code IEC/UNE-EN 62262, total 2 pages.

Attachment No. 3: Photo document, total 2 pages.

Summary of testing:**Test performed (name of test and clause):**

Chapters, 4,5,6 and 7.

Testing location:

Simon Tech, SLU

Carrer de Sancho de Ávila, 66, Sant Martí, 08018
Barcelona (Spain).

Summary of compliance with National Differences:

☒ The product fulfils the requirements of UNE-EN 62262

Possible test of 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 : 10/06/2024

Date (s) of performance of test : 10/06/2024 – 18/10/2024

Environmental conditions:

Temperature (min. / max.) : 22 °C / 25 °C

Relative humidity (min. / max) : 46 % / 51 %

General remarks:

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 Issuing testing laboratory.

"(See Enclosure #)" refers to additional information appended to the report.

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

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

General product information:

BOXES NEW IP66

Model/Type reference

KFH150/72 MARCO MANUAL 1 ISRAELÍ C/T.CIEGA INOX
 KFH150/74 MARCO MANUAL 1 ISRAELÍ C/T.CIEGA NEGRO
 KFH156U/72 MARCO MANUAL 1 ISRAELÍ + RJ C.6U INOX
 KFH156U/74 MARCO MANUAL 1 ISRAELÍ + RJ C.6U NEGRO
 KGT100/72 CUBETA IP66 PARA 1 K45 SUELO PAVIMENTO gris
 KGT100/74 CUBETA IP66 PARA 1 K45 SUELO PAVIMENTO negra
 KGT100RF/72 CUBETA IP66 PARA 1 K45 SUELO TEC. INOX
 KGT100RF/74 CUBETA IP66 PARA 1 K45 SUELO TEC. NEGRO
 KFH100/74 MARCO MANUAL VACIO 1 K45 C/T.CIEGA NEGRO
 KFH100/72 MARCO MANUAL VACIO 1 K45 C/T.CIEGA INOX
 KFH100SEC/74 MARCO SEGUR. VACIO 1 K45 C/T.CIEGA NEGRO
 KFH100SEC/72 MARCO SEGUR. VACIO 1 K45 C/T.CIEGA INOX
 KFH101/74 MARCO MANUAL VACIO 1 K45 C/ALOJ.RJ NEGRO
 KFH101/72 MARCO MANUAL VACIO 1 K45 C/ALOJ.RJ INOX
 KFH101SEC/74 MARCO SEGUR. VACIO 1 K45 C/ALOJ.RJ NEGRO
 KFH101SEC/72 MARCO SEGUR. VACIO 1 K45 C/ALOJ.RJ INOX
 KFH250/72 MARCO MANUAL 2 ISRAELÍS C/T.CIEGA INOX
 KFH250/74 MARCO MANUAL 2 ISRAELÍS C/T.CIEGA NEGRO
 KFH256U/72 MARCO MANUAL 2 ISRAELÍS + RJ C.6U INOX
 KFH256U/74 MARCO MANUAL 2 ISRAELÍS + RJ C.6U NEGRO
 KGT200/72 CUBETA IP66 PARA 2 K45 SUELO PAV. INOX
 KGT200/74 CUBETA IP66 PARA 2 K45 SUELO PAV. NEGRO
 KGT200RF/72 CUBETA IP66 PARA 2 K45 SUELO TEC. INOX
 KGT200RF/74 CUBETA IP66 PARA 2 K45 SUELO TEC. NEGRO
 KFH200/74 MARCO MANUAL VACIO 2 K45 C/T.CIEGA NEGRO
 KFH200/72 MARCO MANUAL VACIO 2 K45 C/T.CIEGA INOX
 KFH200SEC/74 MARCO SEGUR. VACIO 2 K45 C/T.CIEGA NEGRO
 KFH200SEC/72 MARCO SEGUR. VACIO 2 K45 C/T.CIEGA INOX
 KFH201/74 MARCO MANUAL VACIO 2 K45 C/ALOJ.RJ NEGRO
 KFH201/72 MARCO MANUAL VACIO 2 K45 C/ALOJ.RJ INOX
 KFH201SEC/74 MARCO SEGUR. VACIO 2 K45 C/ALOJ.RJ NEGRO
 KFH201SEC/72 MARCO SEGUR. VACIO 2 K45 C/ALOJ.RJ INOX
 KFH210/74 MARCO MANUAL 2 SCHUKO C/T.CIEGA NEGRO

Tests order requirements behind relevant specification EN 60670-1:2006:

Model/Type reference	Tests					
	(0) IPX6	(1) IK09	(2) IK07	(3) IP6X	(4) IPX5	(5) IPX6
KGT100xx, KGTRF100xx KGT200xx, KGTRF200xx (IPX6/IK09)	☒	☒	N/A	N/A	N/A	N/A

--

Attachment No. 1	Degrees of protection by enclosures for electrical equipment against external mechanical impacts Test according to IEC 62262:2002 & EN 62262:2002		
4	DESIGNATIONS		
4.1	Arrangement of the IK code	IK09	P
4.2	Relation between IK code and impact energy:		P
	IK00	Not protected	N/A
	IK01	Energy 0,14 J	N/A
	IK02	Energy 0,2 J	N/A
	IK03	Energy 0,35 J	N/A
	IK04	Energy 0,5 J	N/A
	IK05	Energy 0,7 J	N/A
	IK06	Energy 1 J	N/A
	IK07	Energy 2 J	N/A
	IK08	Energy 5 J	N/A
	IK09	Energy 10 J	P
	IK10	Energy 20 J	N/A
4.3	Application of the IK code		P
	Degree of protection applied to the complete enclosure	Yes ☒ No ☐	
	Enclosures have differing degrees of protection	Yes ☐ No ☒	

UNE-EN 62262			
Clause	Requirement + Test	Result - Remark	Verdict

5	GENERAL CONDITIONS		
5.1	Atmospheric conditions for tests	Tª 25 °C RH 45 %	P
5.2	Enclosures under test		P
	Clean	Yes ☒ No ☐	
	New	Yes ☒ No ☐	
5.3	Specifications of the relevant product standard		P
	Test equipment		P
	Number of samples to be tested : 6		P
	Conditions of the sample		P
	Mounting		N/A
	Assembling		N/A
	Positioning		P
	Pre-conditioning, if applicable	Yes ☒ No ☐	
	Test energized	Yes ☒ No ☐	
	Test with any moving parts in motion	Yes ☐ No ☒	
	Number of impacts : (see below)		P
	Point of application	(see below)	P

6	TEST TO VERIFY THE PROTECTION AGAINST MECHANICAL IMPACTS		
6.3	Mounting condition : Pendulum hammer support		P
6.4	Number and position of impacts : 5		P
6.5	Test evaluation		P
	- admissible damage	No damage	P
	- criteria for safety and reliability		P

UNE-EN 62262			
Clause	Requirement + Test	Result - Remark	Verdict

7	TEST APPARATUS			
	Pendulum hammer according EN 60068-2-75	Yes ☒ No ☐		
	Spring hammer according EN 60068-2-75	Yes ☐ No ☒		
	Vertical hammer according EN 60068-2-75	Yes ☐ No ☒		

15	MECHANICAL STRENGTH			
15.3	Impact test for boxes and enclosures			P
	Specimens subjected to blows by means of an impact test apparatus as described in Annex D of IEC 60068-2-75			P
	Pre-conditioning, if applicable	-25 °C / 2h ± 15 min		P
	After the test: no damage			P

UNE-EN 62262			
Clause	Requirement + Test	Result - Remark	Verdict

Attachment No. 3	PHOTO DOCUMENT	Model: KGT100xx (IPX6/IK09) KGTRF100xx (IPX6/IK09) KGT200xx (IPX6/IK09) KGTRF200xx (IPX6/IK09)	
------------------	----------------	--	--

Test IK impact



UNE-EN 62262			
Clause	Requirement + Test	Result - Remark	Verdict

