CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ

Kayışdağı Mah. Gülçin Sok. No:2/2 Ataşehir
İstanbul/TÜRKİYE
Deney Raporu
Test Report

LVD-183-65

10-20

Müşterinin adı /adresi: Customer name/address	**MUTLUSAN PLASTIK ELEKTRIK SAN. VE TIC. A.Ş.** ***/ İkitelli O.S.B. Mah. Enkoop cad. No:7 Başakşehir / İstanbul /TURKEY***
Üretici/ Üretim Yeri: Manufacturer/ Manufacturing Location	**MUTLUSAN PLASTIK ELEKTRIK SAN. VE TIC. A.Ş.** ***/ İkitelli O.S.B. Mah. Enkoop cad. No:7 Başakşehir / İstanbul /TURKEY***
İstek Numarası: Order no.	***29052020nkk4R1.0***
Numunenin Adı ve Tarifi: Name and identity of test item	***001 046 253515 00 17; 25x35x15 Kapaklı Plastik Pano /*** 25x35x15 Plastic Panel with Lid
Numunenin Kabul tarihi: The date of receipt of test item	***08-06-2020***
Açıklamalar: Remarks	***Ürün ilgili testlerden geçmiştir, lütfen raporu inceleyiniz.*** / The product passes related tests, see report below.
Deneyin yapıldığı tarih: Date of Test	***01-09-2020 to 30-09-2020***
Deneyin Yapıldığı Yer: Testing Location	***CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ/ Kayışdağı Mah. Gülçin Sok. No:2/2 Ataşehir İstanbul/TURKİYE***
Deney Standartı Test Standard	***EN 60670-24:2013 to be used in conjunction with EN 60670-1:2005/A1:2013***
Raporun Sayfa Sayısı: Number of pages of the Report	***27* sayfa*/pages***

Deney ve /veya ölçüm sonuçları, genişletilmiş ölçüm belirsizlikleri (olması halinde) ve deney metotları bu sertifikanın tamamlayıcı kısmı olan takip eden sayfalarda verilmiştir.

The test and/or measurement results, the uncertainties (if applicable) with confidence probability and test methods are given on the following pages which are part of this report.

Mühür/Kaşe Seal	***Tarih*** Date	***Deney Sorumlusu*** Person in charge of test	***Onaylayan*** Approval
	03-10-2020	***Yüksel YILDIZ***	***Timur GÜSER***

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TEST REPORT

EN 60670-24

Boxes and enclosures for electrical accessories for household and similar fixed electrical installations

Part 24: Particular requirements for enclosures for housing protective devices and other power dissipating electrical equipment

Report Reference No……:	LVD-183-65
Date of issue……:	03-10-2020
Contents……:	27 pages
Testing Laboratory……:	CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ
Address……:	Kayışdağı Mah. Gülçin Sok. No:2/2 Ataşehir İstanbul/TÜRKİYE
Testing location……:	CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ
Address……:	Kayışdağı Mah. Gülçin Sok. No:2/2 Ataşehir İstanbul/TÜRKİYE
Applicant's name.....:	MUTLUSAN PLASTIK ELEKTRIK SAN. VE TIC. A.Ş.
Address .....:	İkitelli O.S.B. Mah. Enkoop cad. No:7 Başakşehir İstanbul/TURKEY
Manufacturer .....:	MUTLUSAN PLASTIK ELEKTRIK SAN. VE TIC. A.Ş.
Address .....:	İkitelli O.S.B. Mah. Enkoop cad. No:7 Başakşehir İstanbul/TURKEY
Test specification:	
Standard.....:	EN 60670-24:2013 to be used in conjunction with EN 60670-1:2005/A1:2013
Test procedure .....:	Type Test
Non-standard test method……..:	N/A
Test Report Form No. .....:	F510_69_R1.0
Test item description .....:	25x35x15 Plastic Panel with Lid
Trade Mark .....:	Mutlusan® electric
Manufacturer .....:	MUTLUSAN PLASTIK ELEKTRIK SAN. VE TIC. A.Ş.
Model/Type reference .....:	001 046 253515 00 17 (The other sub Model Annex-3)
Ratings .....:	690V AC; 800A; IP65

Summary of testing:

Tests performed (name of test and test clause):	**Testing location:**
EN 60670-24:2013 to be used in conjunction with EN 60670-1:2005/A1:2013 standard; The necessary tests were done for sample.	CGS TEST HİZMETLERİ TEKNİK KONTROL VE BELGELENDİRME ANONİM ŞİRKETİ Kayışdağı Mah. Gülçin Sok. No:2/2 Ataşehir İstanbul/TÜRKİYE
Summary of compliance with National Differences:	
Copy of marking plate: **Marking on the enclosure**  	

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
7.3	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
7.7	Boxes and enclosures for hollow walls and the like according to 7.2.1.3	☐ 7.7.1 Class Ha ☒ 7.7.3 degree of protection of the part mounted in the hollow wall: ☒ 7.7.3.2 >IP2X
7.8	Provision for fixing accessories to boxes	☐ 7.8.1 Boxes supplied with screws ☒ 7.8.2 Boxes intended to receive screws ☐ 7.8.3 Boxes intended to receive claws ☐ 7.8.4 Boxes intended to receive other means
7.101	Empty enclosure	☐ 7.101.1 GP enclosure ☒ 7.101.2 PD enclosure
7.102	Basic enclosure	☐ 7.102.2 GP enclosure ☐ 7.102.2 PD enclosure

Possible test case verdicts:	
- test case does not apply to the test object..... :	N/A
- test object does meet the requirement..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)
Testing..... :	
Date of receipt of test item ..... :	08-06-2020
Date (s) of performance of tests..... :	01-09-2020 to 30-09-2020

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:

It is a plastic panel with lid used in work in places such as product businesses and automation areas.

The other sub-models of the product are given in Annex 3.

8	MARKING		P
8.1	Enclosures shall be marked with:		P
	a) name, trade mark or identification mark of the manufacturer or the responsible vendor ..... :		P
	b) IP > 3X and/or IP > X0..... :	IP65	P
	The IP code, if applicable, shall be marked on the outside of the enclosure so as to be easily discernible when the enclosure is mounted and wired as for normal use.		P
	The visibility of the marking is also allowed after opening the door or the lid if a minimum degree of IP20 is maintained after opening.		N/A
	c) symbol for total insulation, if applicable ..... :		N/A
	d) type designation, reference number or catalogue number ..... :	001 046 253515 00 17	P
	e) letter N for terminals intended exclusively for the neutral conductor ..... :		N/A
	f) symbol for earthing terminals for the connection of the protective conductor ..... :		N/A
	Markings of neutral terminals and earthing terminals not placed on screws, or any other easily removable parts		N/A
	g) rated voltage ..... :	690V	P
	h) rated current (enclosures 7.101.2 and 7.102.2) ... :	800A	P
	i) standard reference number ..... :	See in marking plate	P
	j) maximum temperature during the building process if 90 °C ..... :		N/A
	k) information concerning the openings that can bemade during installation for enclosures without inlets (7.3.7) ..... :		N/A
	l) maximum capability to dissipate power (*P*de) for GP enclosures (7.101.1 and 7.102.1) ..... :		N/A
	m) usability for hollow wall installation (7.7) ..... :		N/A
	n) corresponding dimension sheet ..... :		N/A
	p) for enclosures classified according to:		P
	- "GP" (7.101.1 and 7.102.1) ..... :		N/A
	- "PD" (7.101.2 and 7.102.2) ..... :		P
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
8.101	Required data for instruction sheet and/or documentation		P
	provide appropriate instructions regarding the means to be used to obtain the intended degree of protection		P
	give information concerning the verification of the electrical continuity of the protective circuit		P
	give to the installer the necessary instructions:		—
	- manufacturer includes in the documentation accompanying the enclosure the necessary instructions for installation and how to integrate accessories (7.101.1 and 7.102.1)	Provided by user manual	P
	- manufacturer includes in the documentation accompanying the enclosure the necessary instructions for installation according to the appropriate mounting environment (7.101.2 and 7.102.2)		P

9	**DIMENSIONS**		N/A
	Boxes and enclosures comply with the appropriate standard sheets, if any ..... :		N/A

10	**PROTECTION AGAINST ELECTRIC SHOCK**		P
	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, tested with test probe 11 according to IEC 61032 applied for 1 min with a force of 20 N		P
	In addition, enclosures according to 7.1.1 and 7.1.3, tested with test probe 11 according to IEC 61032 applied for 1 min with a force of 75 N to all places except membranes or like, at (35 ± 2) °C.		P
10.101	Enclosures are tested completed with the necessary means and the window opening(s), if any, completely filled up with blank inserts delivered by the manufacturer and/or samples of products as declared by the manufacturer		P
	Enclosures have ≥ IPXXC, when mounted and installed as for normal use		P
	Enclosures with total insulation when mounted and installed as for normal used:		P
	a) completely enclose the installed equipment in insulating material, and		P
	b) at no point are pierced by conducting parts		P

	c) do not have conductive parts (plates, cover-plates or frames) connected to the protective circuit		P
	Enclosures, tested with test probe C according to IEC 61032 applied for 1 min with a force of 3 N		P
	Additional test at (35 ± 2) °C with test probe C according to IEC 61032 on enclosures according to 7.1.1 and 7.1.3 with parts of thermoplastic or elastomeric material applied to:		P
	- all places except membranes or the like, where yielding of insulating material could impair the safety, with a force of 3 N		P
	- knock-outs with a force of 3 N		P

11	**PROVISION FOR EARTHING**		N/A
11.1	Boxes and enclosures with exposed conductive parts:		N/A
	- provided with an earthing means of low resistance	No earthing terminal provided	N/A
	- have provision for the fitting of such an earthing means		N/A
	Earthing means or provision for fitting, located so that:		N/A
	- means is readily accessible, and		N/A
	- removal of an accessory, not disturb the continuity of earthing circuit, and		N/A
	- means is not part of removable cover…..		N/A
	Exposed conductive parts of covers or cover-plates are connected through a low resistance connection to the earthing means		N/A
	Resistance ≤ 0,05 Ω (Ω)..... :		N/A
11.2	Boxes and enclosures of insulating material classified according to 7.7.2 (Class Hb)		—
11.3	Boxes and enclosures with removable sides according to 7.1.2		N/A
	Constructed so that the electrical bond between separable parts includes at least one threaded screw connection		N/A
11.4	Earthing terminal threads		N/A
	Threads of earthing terminal are not stripped		N/A
	During the test: no damage such as impairing the further	~~See appended table 11.4~~	N/A
11.101	Except for enclosures intended to be used for total insulation, all exposed conductive parts of the enclosure are connected separately or in groups to the protective circuit terminals.		N/A
	Resistance ≤ 0,05 Ω (Ω)..... :		N/A

12	CONSTRUCTION		P
	Boxes and enclosures, constructed without sharp edges		P
	The inner and outer surfaces of a box or cover have the following characterictics:		—
	- not subject to peeling, scaling or flaking, and		P
	- smooth and free from blisters, crack and other defects		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:		P
	- are held in place effectively		P
	- are removable only by the use of a tool and/or a key		N/A
12.2	Drain holes		N/A
	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 ≥ 3mm (mm)..... :	No such part	N/A
	Drain holes: effective		N/A
12.3	Mounting of enclosures		N/A
	Enclosures have provisions for their suitable attachment according to the method of installation (7.2)	Mounting at the factory	N/A
	Conductive parts of fixing means inside the box or enclosure 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 ≥ mm	N/A
12.4	Boxes and enclosures with inlets for flexible cables		N/A
	In inlets (outlets) provided in boxes and enclosures classified according to 7.3.2 the flexible cables can be easily introduced, and	No inlets	N/A
	- no damage the flexible cable where it enter, or		N/A
	- enclosure impairing its further use		N/A
12.5	Boxes and enclosures with inlets for applications other than flexible cables		—
	Inlet openings classified according to 7.3 other than 7.3.2, if any, allow the introduction of:		N/A
	- a conduit or a suitable fitting, and/or		N/A
	- the protective covering of the cable		N/A
	Inlet opening for conduit entries:		N/A
	- capable of accepting either conduits of sizes, or a combination of sizes, according to IEC 60423 and/or IEC 60981		N/A

	- same requirement in at least two inlet openings if there are more than one		N/A
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:		—
	- suitable for the different types of flexible cable		N/A
	- 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
	Boxes and enclosures according to 7.5.2 or 7.5.3, tested at (-15 ± 2) °C and (-15 ± 2) °C respectively		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		—
12.8.1	General		N/A
	It is possible to remove knock-out by mechanical impact without damaging the box		N/A
	Chips or burrs are not accepted in knock-out for cables		N/A
	Chips and burrs are disregarded in knock-out for conduits and/or for use with a grommet or a membrane		N/A
	In order to close an open knock-out in a box or an enclosure according 7.1.2 a blanking-plug used without a locknut:		—
	- not become dislodged, and		N/A
	- its effectiveness not be impaired, and		N/A
	- it fulfil all requirements for knock-outs		N/A
12.8.2	Knock-out retention		—
	Boxes and enclosures having knock-outs, accessible after installation by means of a 6 mm diameter mandrel with a flat end that:		—
	- not provide access to live parts, a force of (30 ± 1) N applied for (15 ± 1)s		N/A
	- provide direct access to live parts, a force of (40 ± 1) N applied for (60 ± 1) s		N/A
	Box with multi-stage knock-outs, the force applied to the smallest		N/A
	During the test: knock-out remains in place		N/A
	Degree of protection unchanged 1 h after the test		N/A
12.8.3	Knock-out removal		N/A
	Removal test of knock-outs with a tool as stated by the manufacturer, without conditioning:		N/A
	During the test: no displacement of a larger stage of multi-stage knock-outs when a smaller stage is removed		N/A
	After the test: no sharp edges, box and enclosure is not damaged		N/A
	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)		N/A
	Test temperature (°C)..... :		—
	During the test: no displacement of a larger stage of multi-stage knock-outs when a smaller stage is removed		N/A
	After the test: no sharp edges, box and enclosure is not damaged		N/A

12.8.4	Flat surfaces surrounding knock-outs		N/A
	Knock-outs located in flat surface		N/A
	Projections or identification are prohibited		N/A
12.9	Screw fixings		P
	Fixing means effected by screws withstand mechanical stresses		P
	Screw or other fixing means made from insulating material without standardized thread are tested according to the manufacturer's instruction		N/A
	Thread-forming or thread-cutting screws used only if supplied together with one of the pieces in which they are intended to be inserted		N/A
	Verification of the mechanical strength of screws	~~See appended table 12.9~~	N/A
12.10	Fixing of boxes and enclosures classified according to 7.2.1.1 and 7.2.1.2		P
	Fixing means provided for flush type boxes and enclosures other than for hollow walls ..... :		N/A
	Screws not supplied with box or enclosures can be provided according to the manufacturer's instruction		P
	Screws, additional mechanical supports or design features, are considered adequate fixing means		N/A
	the block is filled by the following material ..... :		N/A
	auxiliary device described in Figure 23 is mounted on the specimen and the screw are tightened with a torque equal to 2/3 of that specified in table 4 ..... :		N/A
	After the test, according to Figure Z3, displacement of the specimen from the mounting block ≤ 0,5 mm:		N/A
12.11	Boxes and enclosures classified according to 7.7.1 (Class Ha)		N/A
	Enclosures for hollow walls classified according to 7.7.1 provide suitable means for fixing the enclosure to hollow walls.		N/A
12.12	Boxes and enclosures classified according to 7.7.2 (Class Hb)		N/A
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 ± 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

	Boxes and enclosures classified according to 7.4.3 withstand the tests of 12.14.1 and 12.14.2		N/A
12.14.1	Enclosures with inlet spout for conduits: a minimum size piece of conduit pressed for 1 min ± 5 s with a force of (100 ± 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 ± 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 ± 2) N and loaded with a bending moment of 3 Nm for 1 min in six different directions with an interval of (60 ± 2) °		N/A
	During the test: inlet spout not come loose or damaged and conduit stays within the inlet spout		N/A
12.15	Internal volume of boxes and enclosures		P
	Declared internal volume of the box or enclosure and each partitioned section of a box or enclosure, raised cover and box extension is measured	25mmX35mmX15mm	P
	The volume of a side pocket provided to increase the volume of a box or enclosure is calculated using a depth-of-pocket not more than the smallest dimension of the opening into that side pocket		N/A
	Difference in the volume of water in the measuring cylinder measured before and after the filling of the box, enclosure or raised cover indicates the volume of the box ..... :		P
12.101	Enclosures for hollow walls have provisions for retention means for cables or means to use a separate retention device or devices		N/A
12.102	Enclosures have enough space to allow mounting and connection of the accessories (fully equipped) as declared by the manufacturer, in safe way		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, glands, grommets and replaceable membranes placed in a heating cabinet at (70 ± 2) °C for (168 + 4) h and than 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, blanking-plug 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 ± 2) °C for 2 h ± 15 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, blanking-plug and/or membranes not deformed to such an extent that live parts of any included accessory become accessible		N/A
	Grommets, blanking-plug 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, blanking-plug 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, blanking-plug 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 and conduit permitted when the ambient temperature is low		N/A
	Test on enclosures fitted with grommets, blanking-plug and/or membranes not subjected to any ageing treatment kept for 2 h in a refrigerator		N/A
	Test temperature (°C) ..... :		—
	Immediately after conditioning: it is possible to pierce any blind grommets, blanking-plug and entry membranes and to introduce cables and conduit 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 foreign objects		P
	Enclosures provide a degree of protection of at least IP3X against the ingress of solid foreign objects in accordance with their declared IP code with the lid closed, if any.	IP65	P
	In the case of an enclosure with a door or a lid which can be opened without the use of a tool during normal use, a minimum degree of IP20 is maintained after opening the door or the lid.	Special key is required	N/A
	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 (mm²) ..... :		—
	- type of cable, largest cross-sectional area (mm²) ..... :		—
	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		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		N/A
13.3.1	Enclosures with IP>X0 provide a degree of protection against harmful ingress of water in accordance with the declared IP code ..... :	IP65	P
	Enclosure dimensions: reference surface S (m²) / perimeter (m) ..... :		—
	Appropriate test performed on surface, flush or semi-flush enclosures as specified in IEC 60529 under the following conditions:		N/A
	- dimension S ≤ 0,04 m² or perimeter ≤ 0,8 m according to 13.3.2 and 13.3.3		P
	- dimension S > 0,04 m² and perimeter > 0,8 m according to 13.3.2 and 13.3.4		N/A
	Enclosures with screwed glands or grommets fitted with cables as declared by the manufacturer:		N/A
	- type of cable, smallest cross-sectional area (mm²)..... :		—
	- type of cable, largest cross-sectional area (mm²) :		—
	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		P
	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 no more than 0,2 ml x S (cm²) water in the enclosure (ml)..... :		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

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:		—
	- 2 days (48 h) for enclosures classified IPX0		N/A
	- 7 days (168 h) for enclosures classified IP>X0		P
	After this treatment: no damage		N/A
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		N/A
	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:		N/A

	- (-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		N/A
15.2.1	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
	After the test: 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 IEC 60068-2-75 (test EHA) with equivalent mass of 250 g	See appended table 15.3	P
	Boxes classified according to 7.5.2 and 7.5.3 performed at the following temperature:		
	- (-15 ± 2) °C for boxes classified according to 7.5.2		N/A
	- (-25 ± 2) °C for boxes classified according to 7.5.3		P
	After the test: no damage		P
15.101	PD enclosure provide a degree of protection against external mechanical impact in accordance with their declared IK code		N/A

16	**RESISTANCE TO HEAT**		**P**
16.1	Part of insulating material necessary to retain current-carryng parts		P
	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	P
16.2	Part of insulating material not necessary to retain current-carryng parts		N/A
	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	N/A
16.3	Boxes and enclosures of insulating materials classified according to 7.7.2		N/A

17	CREEPAGE DISTANCES, CLEARANCES AND DISTANCES THROUGH SEALING COMPOUND		N/A
	Creepage distances, clearances and distances through sealing compound no less than the values shown in table	See appended table 17	N/A

18	RESISTANCE OF INSULATING MATERIAL TO ABNORMAL HEAT AND TO 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		N/A
	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		N/A
	No signs of rust		N/A

21	ELECTROMAGNETIC COMPATIBILITY (EMC)		N/A
	No tests necessary		—

101	VERIFICATION OF THE MAXIMUM CAPABILITY TO DISSIPATE POWER (P_{de})		N/A
	Enclosures according to 7.101.1 and 7.102.1 have the capability to dissipate the declared power (*P*de) according to 8.1 l).	See appended table 101	N/A

102	VERIFICATION OF TEMPERATURE RISE		N/A
	Enclosures according to 7.101.2 and 7.102.2 have an acceptable temperature rise when equipped with the most onerous configuration of electrical equipment declared by the manufacturer	See appended table 102	N/A

11.4	TABLE: Threaded earthing terminal torque test			N/A
Threaded part identification	**Diameter of thread (mm)**	**Table 4 Column number (I, II, III or IV)**	**Applied torque Table 4 (Nm)**	**No damage**
Supplementary information:				

12.9	TABLE: Threaded part torque test				N/A
Threaded part identification	**Diameter of thread (mm)**	**Table 4 Column number (I, II, III or IV)**	**Applied torque Table 4 (Nm)**	**Times (5/10)**	**No damage**
Supplementary information:					

14.2	TABLE: Insulation resistance	P
Test voltage applied between:	**Measured (MΩ)**	**Required (MΩ)**
Inner and outer surface of metal sheeting	999,9 MΩ	Not less than 5 MΩ
Plastic of the enclosure	999,9 MΩ	Not less than 5 MΩ
Supplementary information:		

14.3	TABLE: Electric strength	P
Test voltage applied between:	**Test voltage (V)**	**Flashover / breakdown (Yes/No)**
Contact between metal sheeting and metal foil	3000	No
Contact between plastic of the enclosure and metal foil	3000	No
Supplementary information:		

15.3	TABLE: Impact test			P
Part of enclosure per Table 7 (A, B, C, D, E, F, G)	**Total number of blows per part – Figure 10**	**Height of fall per Table 8 (mm)**	**Comments**	
Enclosure	5 points checked	500	No collapse	
Supplementary information:				

,

16.1 - 16.2	TABLE: Ball pressure test of insulating materials		P
Allowed impression diameter (mm) ..... :	**≤ 2 mm**		—
Part under test	**Test temperature (°C)**	**Diameter of impression (mm)**	
Enclosure	125	< 2 mm	
Supplementary information:			

17	TABLE: Creepage distances, clearances and distances through sealing compound					N/A
	Rated voltage (V) .....:					—
Creepage distance dcr, clearance cl and distance through sealing compound dtsc at/of:	**Required Cl. d. (mm)**	**Mesured Cl. d. (mm)**	**Required Cr. d. (mm)**	**Mesured Cr. d. (mm)**	**Required D. t. s. c. (mm)**	**Mesured D. t. s. c. (mm)**
	≥		≥		≥	
	≥		≥		≥	
	≥		≥		≥	
Supplementary information:						

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 (s)**	**Ignition of the tissue paper (Yes/No)**
Enclosure	Plastic	650	N	0	No
Supplementary information:					

19	TABLE: Resistance to tracking			N/A
Part under test	**material designation**	**test voltage (V)**	**Flashover / breakdown (Yes/No)**	
Supplementary information:				

101	TABLE: verification of the maximum capability to dissipate power (Pde)		N/A
	The maximum capability to dissipate power is performed with an enclosure arranged as follow:		
	- enclosures according to 7.2.1 with the specimen mounted as declared by the manufacturer		

	- enclosures according to 7.2.2 mounted on a minimum 19 mm thick plywood painted black		
	- enclosures according to 7.2.3.1 with the specimen cast in a concrete wall		
	- for mounting condition other than in concrete (appropriate Pde value and mounting condition declared in the documentation) ..... :		
	Position of the resistor(s) (Figure 103 / 104 / 105) .. :		—

Article	Number of modules	Number of heating resistors used	Power dissipated measured (W) (1)	Declared power (P_{de}) (W)	Power dissipated measured (2) ≥ P_{de} (Y/N)	No damage or deformation

Supplementary information:

(1) corresponding to a temperature rise in a steady state condition on the hottest accessible part ≤ 30 K

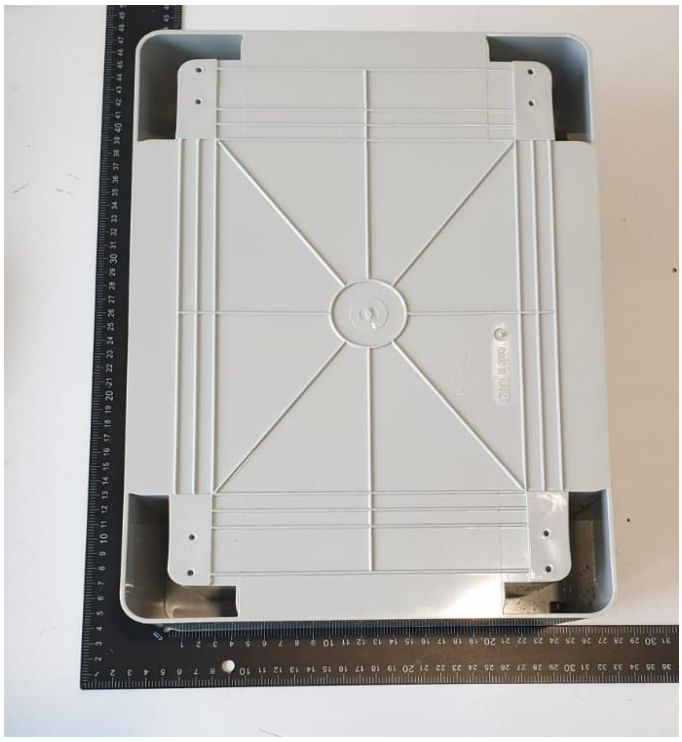
(2) value rounded to the next lower integer number

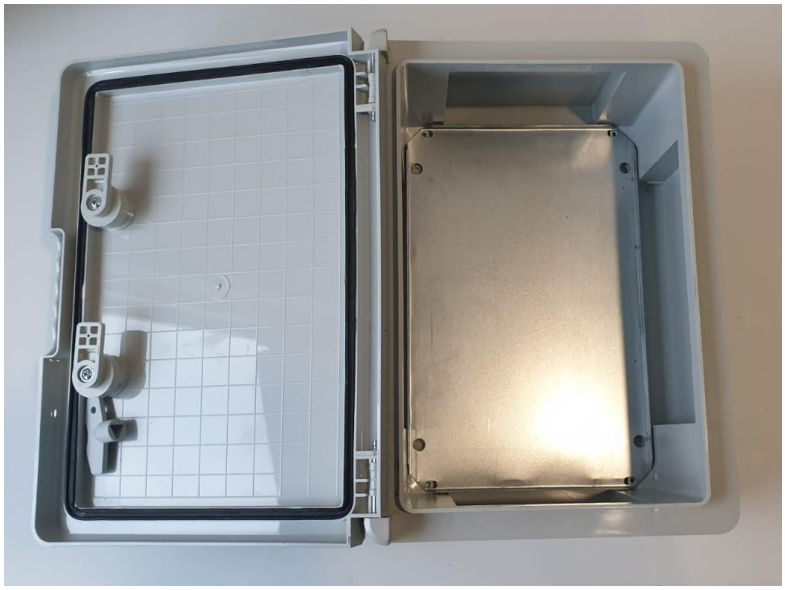
102	**TABLE: Verification of temperature rises**		N/A
	The temperature rise is performed with an enclosure arranged as follow:		
	- enclosures according to 7.2.1 with the specimen mounted as declared by the manufacturer		
	- enclosures according to 7.2.3.1 with the specimen cast in a concrete wall		
	- enclosures according to 7.2.2 mounted on a minimum 19 mm thick plywood painted black		
	- for mounting condition other than in concrete (corrector factor and mounting condition declared in the documentation) ..... :		
	rated current (A) ..... :	In:	—
	Test current is distributed amongst the smallest possible number of outgoing circuits so that each of these circuits is loaded with its rated current multiplied by the rated diversity factor, as stated in Table 102 ... :	Iout:	—

Accessible external enclosures and cover	Max. measured temperature rise (K)	Allowed temperature rise (K)

Annex 1 – Photo documentation

Photo documentation

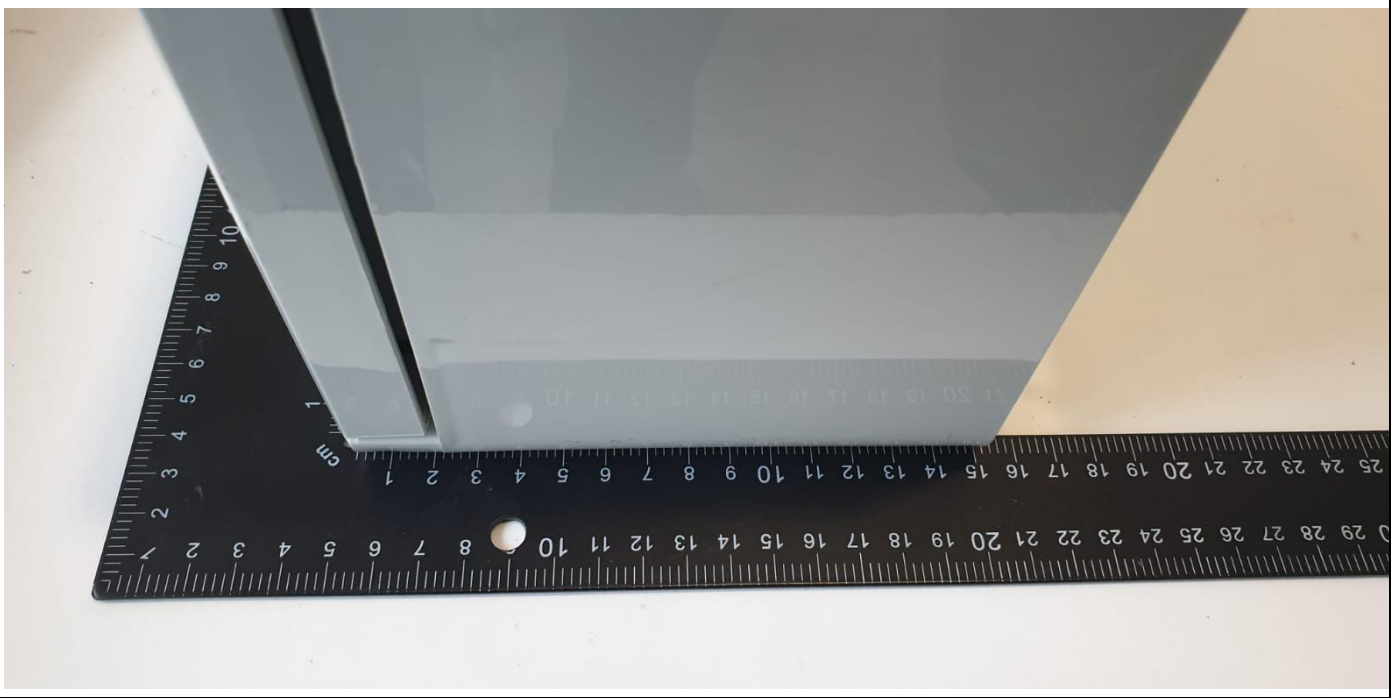
Top View

Back View



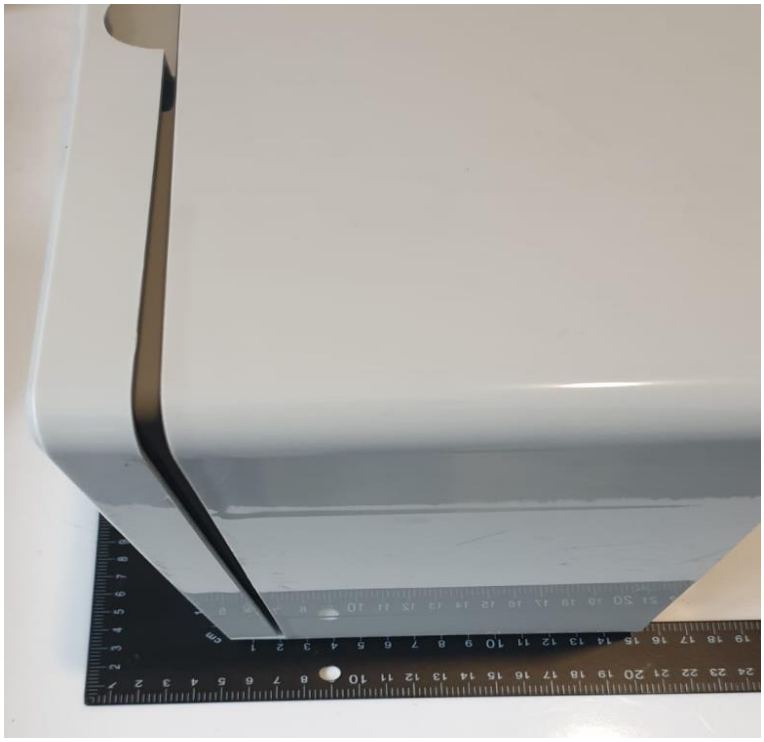
Opened View

Lid View

Side View



Side View



Side View

Side View

Annex 2
Equipment of Measurements List

Equipment No	Kind of equipment	Model Type	Manufacturer	Last Cal Date	Next Cal Date	Last Ver Date	Next Ver Date	Test Clause
E-054	CE COMPACT TESTER	C.A 6160	CHAUVIN ARNOUX	14.12.2019	14.12.2020	---	---	---
E-011	Multimeter	UT61B	UNI-T	05.10.2019	05.10.2020	---	---	---
E-004	Climatic Chamber	---	ULMEKA Mekatronik Sistemler	04.10.2019	04.10.2020	---	---	---
E-033	Temperature-Humidity Meter	30.3166.02.S2	TFA	07.10.2019	07.10.2020	---	---	---
E-003	Datalogger	DL40	CSK elektronik	01.04.2020	01.04.2021	---	---	---
E-034	Etuv Oven	T12	HERAEUS	04.10.2019	04.10.2020	---	---	---
E-024	Prob 13	TS015/1000-13	CSK Elektrik Elektronik San. ve Tic. Ltd. Şti	---	---	15.05.2020	15.11.2020	---
E-031	Test Finger	---	CSK Elektrik Elektronik San. ve Tic. Ltd. Şti	---	---	15.05.2020	15.11.2020	---
E-020	Prob A	TS015/1000-A	CSK Elektrik Elektronik San. ve Tic. Ltd. Şti	6.04.2020	6.04.2022	15.05.2020	15.11.2020	---
E-021	Prob B	TS015/1000-B	CSK Elektrik Elektronik San. ve Tic. Ltd. Şti	6.04.2020	6.04.2022	15.05.2020	15.11.2020	---
E-021	Prob C	TS015/1000-C	CSK Elektrik Elektronik San. ve Tic. Ltd. Şti	6.04.2020	6.04.2022	15.05.2020	15.11.2020	---
E-005	Glow wire	---	ULMEKA Mekatronik Sistemler	04.10.2019	04.10.2020	---	---	---
E-007	Needle flame	---	ULMEKA MEKATRONİK SİSTEMLER	13.11.2019	13.11.2020	---	---	---
E-045	Ball-pressure mass	2014/587	Teknik Mekatronik	08.04.2019	08.04.2021	---	---	---
E-069	Strip Meter	---	---	02.12.2019	02.12.2021	---	---	---
E-093	Dynamometer	SH-1000 / Digital	Geratech	02.04.2020	02.04.2021	---	---	---
E-058	Impact hammer	F22.50	PTL Dr Grabenhost Gmbh	15.11.2019	15.11.2021	---	---	---
E-065	Impact hammer	DC-01	ÖZ MAKİNA	26.02.2020	26.02.2021	---	---	---

Annex 3 – Declaration of Identity

Mutlusan electric

As Mutlusan Plastik Elektrik San ve Tic A.Ş. we declare that 001 046 253515 00 17 coded, 25X35X15 PLASTIC PANNEL OPAK COVER product is similar to the following products mechanically and in design.

PRODUCT CODE	PRODUCT NAME
001 046 203013 00 17	20X30X13 PLASTIC PANNEL OPAK COVER
001 046 203013 00 44	20X30X13 PLASTIC PANNEL (TRANS.) COVER
001 046 253515 00 17	25X35X15 PLASTIC PANNEL OPAK COVER
001 046 253515 00 44	25X35X15 PLASTIC PANNEL (TRANS.) COVER
001 046 253515 01 17	25X35X15 PLASTIC DISTRIBUTION BOARD 18 AUTOMATIC (9X2)
001 046 253515 01 44	25X35X15 PLASTIC DISTRIBUTION BOARD 18 AUTOMATIC (9X2) (TRANS)
001 046 304017 00 17	30X40X17 PLASTIC PANNEL OPAK COVER
001 046 304017 00 44	30X40X17 PLASTIC PANNEL (TRANS.) COVER
001 046 304017 01 17	30X40X17 PLASTIC DISTRIBUTION PANEL 24 AUTOMATIC (12X2)
001 046 304017 01 44	30X40X17 PLASTIC DISTRIBUTION PANEL 24 AUTOMATIC (12X2)(TRANS)
001 046 304022 00 17	30X40X22 PLASTIC PANNEL OPAK COVER
001 046 304022 00 44	30X40X22 PLASTIC PANNEL (TRANS.) COVER
001 046 355019 00 17	35X50X19 PLASTIC PANNEL OPAK COVER
001 046 355019 00 44	35X50X19 PLASTIC PANNEL (TRANS.) COVER
001 046 355019 01 17	35X50X19 PLASTIC DISTRIBUTION BOARD 45 AUTOMATIC (15X3)
001 046 355019 01 44	35X50X19 PLASTIC DISTRIBUTION BOARD 45 AUTOMATIC (15X3) (TRANS)
001 046 405018 00 17	40X50X17.5 PLASTIC PANNEL OPAK COVER
001 046 405018 00 44	40X50X17.5 PLASTIC PANNEL (TRANS.) COVER
001 046 405024 00 17	40X50X24 PLASTIC PANNEL OPAK COVER
001 046 405024 00 44	40X50X24 PLASTIC PANNEL (TRANS.)COVER
001 046 406020 00 17	40X60X20 PLASTIC PANNEL OPAK COVER
001 046 406020 00 44	40X60X20 PLASTIC PANNEL (TRANS.)COVER
001 046 406020 01 17	40X60X20 PLASTIC DISTRIBUTION PANEL 60 AUTOMATIC (15X4)
001 046 406020 01 44	40X60X20 PLASTIC DISTRIBUTION PANEL 60 AUTOMATIC (15X4) (TRANS)
001 046 507025 00 17	50X70X25 PLASTIC PANNEL OPAK COVER
001 046 507025 00 44	50X70X25 PLASTIC PANNEL (TRANS.) COVER
001 046 608026 00 17	60X80X26 PLASTIC PANNEL OPAK COVER
001 046 608026 00 44	60X80X26 PLASTIC PANNEL (TRANS.)COVER

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