

2022

DATA SHEET

PITTAS-DRAGNIS LIGHTNING PROTECTION SOLUTIONS

Supplied by



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A member of The Electrical and
Electronics Association of Malaysia



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PRODUCT CATALOGUE

LIGHTNING PROTECTION MATERIALS
EARTHING MATERIALS
SURGE PROTECTION OBO-BETTERMANN
EXOTHERMIC WELDING KUMWELL

catalogue

LIGHTNING PROTECTION | EARTHING | SURGE PROTECTION | EXOTHERMIC WELDING



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PITTAS-DRAGNIS LTD is a highly specialized Greek company operating for more than 30 years in the field of Lightning - Surge Protection and Grounding Systems.

SERVICES

- Design - Project implementation in new Lightning Protection and Earthing installations
- Installations from specialized and experienced personnel
- Technical support
- Removals of prohibited Radioactive Lightning Conductors
- Seminars with scope Lightning protection and Earthing systems
- Research for development and design of new materials and arrangements
- Laboratory test services for Lightning Protection - Earthing components & materials

APPLICATIONS



Industries



Buildings



Stadiums



Telecoms



R.E.S.

CERTIFICATES – TEST REPORTS – SCIENTIFIC REFERENCES

- Laboratory BET Germany
- Laboratory LCOE Spain
- Laboratory ICMET Romania
- National Technical University of Athens
- Greek Atomic Energy Commission
- East London University
- TGMU U.S.A.
- EUROPES Marbella Spain
- IASTED International Conference
- P.P.C. Research Centre
- SGS ISO 9001:2008
- EUROCERT ISO 9001:2008

LABORATORY TESTS

LIGHTNING PROTECTION - EARTHING COMPONENTS & MATERIALS

With reference to European standards series **ΕΛΟΤ EN 62561 (EN 50164)**

PITTAS - DRAGNIS is equipped with the latest instruments and modern facilities to ensure reliable procedures and test results in order to fully respond to the specifications that Standards require.

The laboratory tests which the components and materials are subject are the following:

1. Electrical tests
2. Mechanical tests
3. Environmental tests



STANDARDS

EAOT EN 62305.01	Protection against lightning Part 1: General principles
EAOT EN 62305.02	Protection against lightning Part 2: Risk management
EAOT EN 62305.03	Protection against lightning Part 3: Physical damage to structures and life hazard
EAOT EN 62305.04	Protection against lightning Part 4: Electrical and electronic systems within structures
EAOT EN 62561.01	Lightning protection components (LPC) Part 1: Requirements for connection components
EAOT EN 62561.02	Lightning protection components (LPC) Part 2: Requirements for conductors and earth electrodes
EAOT EN 62561.03	Lightning protection components (LPC) Part 3: Requirements for isolating spark gaps
EAOT EN 62561.04	Lightning protection components (LPC) Part 4: Requirements for conductor fasteners
EAOT EN 62561.05	Lightning protection components (LPC) Part 5: Requirements for earth electrode inspection housings and earth electrode seals
EAOT EN 62561.06	Lightning protection components (LPC) Part 6: Requirements for lightning strike counters
EAOT EN 62561.07	Lightning protection components (LPC) Part 7: Requirements for earthing enhancing compounds
EAOT EN 61643.11	Low-voltage surge protective devices Part 11: Surge protective devices connected to low-voltage power systems - Requirements and test methods
EAOT TS 61643.12	Low-voltage surge protective devices Part 12: Surge protective devices connected to low-voltage power distribution systems - Selection and application principles
EAOT EN 61643.21	Low voltage surge protective devices Part 21: Surge protective devices connected to telecommunications and signalling networks - Performance requirements and testing methods
EAOT TS 50539.12	Low-voltage surge protective devices - Surge protective devices for specific application including d.c. - Part 12: Selection and application principles - SPDs connected to photovoltaic installations
EAOT TS 50539.22	Low-voltage surge protective devices - Surge protective devices for specific application including d.c. - Part 12: Selection and application principles - Wind turbine applications
EAOT HD 384 E2	Requirements for electrical installations

Material abbreviations

MATERIALS		ABBREVIATION
ΧΑΛΥΒΑΣ	STEEL	St
ΧΑΛΥΒΑΣ ΘΕΡΜΑ ΕΠΙΨΕΥΔΑΡΓΥΡΩΜΕΝΟΣ	HOT-DIP GALVANIZED STEEL	St/tZn
ΧΑΛΥΒΑΣ ΕΠΙΨΕΥΔΑΡΓΥΡΩΜΕΝΟΣ	GALVANIZED STEEL	St/galZn
ΧΑΛΥΒΑΣ ΕΠΙΧΑΛΚΩΜΕΝΟΣ	STEEL-COPPER PLATED	St/Cu
ΧΑΛΥΒΑΣ ΘΕΡΜΑ ΕΠΙΨΕΥΔΑΡΓΥΡΩΜΕΝΟΣ ΕΠΕΝΔΕΔΥΜΕΝΟΣ	HOT-DIP GALVANIZED STEEL PVC COATED	St/tZn-PVC
ΧΑΛΚΟΣ ΗΛΕΚΤΡΟΛΥΤΙΚΟΣ	ELECTROLYTIC COPPER	Cu-E
ΧΑΛΚΟΣ ΕΠΙΚΑΣΣΙΤΕΡΩΜΕΝΟΣ	COPPER TIN PLATED	Cu/eSn
ΧΑΛΚΟΣ ΕΠΙΝΙΚΕΛΩΜΕΝΟΣ	COPPER NICKEL PLATED	Cu/eNi
ΧΑΛΚΟΣ ΗΛΕΚΤΡΟΛΥΤΙΚΟΣ ΕΠΕΝΔΕΔΥΜΕΝΟΣ	ELECTROLYTIC COPPER PVC COATED	Cu-E/PVC
ΚΡΑΜΑ ΑΛΟΥΜΙΝΙΟΥ	ALUMINIUM ALLOY	AlMgSi
ΑΛΟΥΜΙΝΙΟ	ALUMINIUM	Al
ΑΝΟΞΕΙΔΩΤΟΣ ΧΑΛΥΒΑΣ	STAINLESS STEEL	INOX
ΑΝΟΞΕΙΔΩΤΟΣ ΧΑΛΥΒΑΣ ΕΠΙΧΑΛΚΩΜΕΝΟΣ	STAINLESS STEEL-COPPER PLATED	INOX/eCu
ΧΑΛΚΟΣ - ΑΛΟΥΜΙΝΙΟ ΔΙΜΕΤΑΛΛΙΚΟ	CU-AL BIMETALLIC	Cu/Al
ΚΡΑΜΑ ΧΑΛΚΟΥ	COPPER ALLOY	Ms-Cu
ΚΡΑΜΑ ΧΑΛΚΟΥ ΕΠΙΚΑΣΣΙΤΕΡΩΜΕΝΟ	COPPER ALLOY TIN PLATED	Ms-Cu/eSn
ΟΡΕΙΧΑΛΚΟΣ	BRASS	Ms-Cu/Zn
ΟΡΕΙΧΑΛΚΟΣ ΕΠΙΧΑΛΚΩΜΕΝΟΣ	BRASS COPPER PLATED	Ms/eCu
ΟΡΕΙΧΑΛΚΟΣ ΕΠΙΚΑΣΣΙΤΕΡΩΜΕΝΟΣ	BRASS TIN PLATED	Ms/eSn
ΟΡΕΙCOPPER ΕΠΙΝΙΚΕΛΩΜΕΝΟΣ	BRASS NICKEL PLATED	Ms/eNi
ΟΡΕΙΧΑΛΚΟΣ ΕΠΙΧΡΩΜΙΩΜΕΝΟΣ		Ms/eChr
ΚΡΑΜΑ ΨΕΥΔΑΡΓΥΡΟΥ	ZINC ALLOY	ZAMAK
ΚΡΑΜΑ ΨΕΥΔΑΡΓΥΡΟΥ ΕΠΙΧΑΛΚΩΜΕΝΟ	ZINC ALLOY COPPER PLATED	ZAMAK/eCu
ΠΟΛΥΒΙΝΥΛΟΧΛΩΡΙΔΙΟ	POLYVINYLCHLORIDE	PVC
ΠΟΛΥΑΜΙΔΙΟ	POLYAMIDE	PA
NEOPRENE Ή ΠΟΛΥΧΛΩΡΟΠΡΕΝΙΟ	NEOPRENE OR POLYCHLOROPRENE	PCR

Material combination

	Steel (St), Hot dip galvanized steel (St/tZn)	Aluminium (Al)	Copper (Cu)	Stainless Steel (INOX)	Tin (Tin)
Steel (St), Hot dip galvanized steel (St/tZn)					
Aluminium (Al)					
Copper (Cu)					
Stainless Steel (INOX)					
Tin (Tin)					

-  Recommended
-  Not Recommended
-  Feasible

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Earthing Materials
Surge Protection **OBO-BETTERMANN**
Exothermic welding **KUMWELL**

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Lightning Protection Materials



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- 1.3 Air terminal rods
- 1.4 Fasteners
- 1.5 Connectors
- 1.6 Pipe clamps
- 1.7 Accessory components

1.1 1

Solid round conductors



Material	Diameter (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
St/tZn	Ø 8	50	400	EN 62561-2	111111-001
	Ø 10	78,5	620		111111-002

- Zinc coating 350 gr/m²



Material	Diameter (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
St/Cu	Ø 8	50	410	EN 62561-2	111112-001
	Ø 10	78,5	630		111112-002

- Copper coating 70 µm
- High resistant in corrosive environment



Material	Diameter (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
Cu-E	Ø 8	50	450	EN 62561-2	111113-002
	Ø 10	78,5	700		111113-003



Material	Diameter (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
Cu/eSn	Ø 8	50	450	EN 62561-2	111114-001



Material	Diameter (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
AlMgSi	Ø 8	50	135	EN 62561-2	111115-001
	Ø 9	63,6	170		111115-002
	Ø 10	78,5	210		111115-003

- Above ground



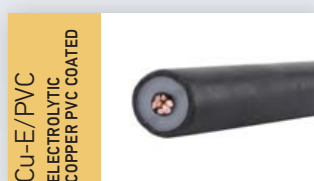
Material	Diameter (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
INOX V2A	Ø 8	50	395	EN 62561-2	111116-001
	Ø 10	78,5	617		111116-003
INOX V4A	Ø 8	50	395		111116-002
	Ø 10	78,5	617		111116-004

- High resistant in corrosive environment

1.1 2

Conductor isCon®

Surface discharge-free and high voltage-resistant insulated arrestor to maintain the separation distance $s \leq 1$ m.



Material	Cross section (mm ²)	Diameter (mm)	Item No.
Cu-E/PVC	35	Ø 23	111211-001

1.1 3

Stranded conductors

Cu-E
ELECTROLYTIC COPPER



Material	Diameter (mm)	Cross section (mm²)	Number of strands	Weight ~ gr/m	Standard	Item No.
Cu-E	Ø 5,3	16	7 x 1,70	135	EN 62561-2	111313-001
	Ø 6,6	25	7 x 2,14	213		111313-002
	Ø 7,9	35	7 x 2,52	295		111313-003
	Ø 9,1	50	7 x 3,00	405		111313-004
	Ø 11,0	70	19 x 2,14	588		111313-005
	Ø 12,9	95	19 x 2,52	814		111313-006
	Ø 14,5	120	19 x 2,80	1.035		111313-008
	Ø 16,2	150	37 x 2,25	1.271		111313-009
	Ø 18,0	185	37 x 2,50	1.589		111313-010
	Ø 20,6	240	61 x 2,25	2.102		111313-011

Cu/eSn
COPPER TIN PLATED



Material	Diameter (mm)	Cross section (mm²)	Number of strands	Weight ~ gr/m	Standard	Item No.
Cu/eSn	Ø 5,3	16	7 x 1,70	135	EN 62561-2	111314-001
	Ø 6,6	25	7 x 2,14	213		111314-002
	Ø 7,9	35	7 x 2,52	295		111314-003
	Ø 9,1	50	7 x 3,00	405		111314-004
	Ø 11,0	70	19 x 2,14	588		111314-005
	Ø 12,9	95	19 x 2,52	814		111314-006
	Ø 14,5	120	19 x 2,80	1.035		111314-007

Cu-E/PVC (H07V-R NYA)
ELECTROLYTIC COPPER PVC COATED



Material	Diameter (mm)	Cross section (mm²)	Number of strands	Weight ~ gr/m	Item No.
Cu-E/PVC	6,7	10	7 x 1,35	110	111317-002
	7,8	16	7 x 1,70	165	111317-003
	9,7	25	7 x 2,14	260	111317-004
	10,9	35	7 x 2,52	350	111317-005
	12,8	50	19 x 1,78	480	111317-006
	14,6	70	19 x 2,14	675	111317-007
	17,1	95	19 x 2,52	930	111317-008
	18,8	120	37 x 2,03	1.150	111317-009
	20,9	150	37 x 2,25	1.420	111317-011
	23,3	185	37 x 2,52	1.790	111317-012
	26,6	240	61 x 2,25	2.350	111317-013

• G/Y insulation

St/tZn
HOT DIP GALVANIZED STEEL



Material	Diameter (mm)	Cross section (mm²)	Number of strands	Weight ~ gr/m	Standard	Item No.
St/tZn	Ø 6	28,26	6 x 19	131	EN 62561-2	111311-001
	Ø 8	50,24		209		111311-002
	Ø 10	78,50		346		111311-003

INOX
STAINLESS STEEL



Material	Diameter (mm)	Cross section (mm²)	Number of strands	Weight ~ gr/m	Standard	Item No.
INOX	Ø 8	50,24	7 x 19	258	EN 62561-2	111316-001
	Ø 10	78,50		375		111316-002

1.1 4

Flexible stranded conductors

Cu-E
ELECTROLYTIC COPPER

Material	Diameter (mm)	Cross section (mm ²)	Item No.
Cu-E	Ø 6	16	111413-001
	Ø 8	25	111413-002
	Ø 9	35	111413-003
	Ø 11	50	111413-004
	Ø 13	70	111413-005
	Ø 16	95	111413-006

Cu/eSn
COPPER TIN PLATED

Material	Diameter (mm)	Cross section (mm ²)	Item No.
Cu/eSn	Ø 6	16	111414-001
	Ø 8	25	111414-002
	Ø 9	35	111414-003
	Ø 11	50	111414-004
	Ø 13	70	111414-005
	Ø 16	95	111414-006

Cu-E/PVC (H07V-K NYAF)
ELECTROLYTIC COPPER PVC COATED

Material	Diameter (mm)	Cross section (mm ²)	Weight (gr/m)	Item No.
Cu-E/PVC	Ø 8	16	175	111417-005
	Ø 9,9	25	270	111417-006
	Ø 11,1	35	370	111417-007
	Ø 13,3	50	500	111417-008
	Ø 15,2	70	700	111417-009
	Ø 16,9	95	955	111417-010
	Ø 20	120	1.180	111417-011

1.1 5

Preformed flexible stranded conductors

Preformed flexible stranded conductors with PVC insulation, used for equipotential bonding of metallic surfaces. The terminals are tin plated copper.

Cu-E/PVC
ELECTROLYTIC COPPER PVC COATED

Material	Cross section (mm ²)	Length (mm)	Item No.
Cu-E/PVC	16	200	111511-004
	25	200	111511-005
	35	200	111511-006
	16	300	111511-009
	25	300	111511-010
	35	300	111511-011
	16	400	111511-013
	25	400	111511-014
	35	400	111511-015

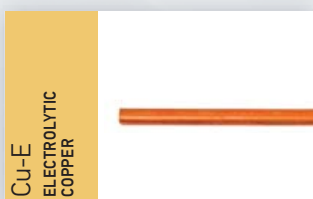
1.1 6

Straight round conductors

Straight round conductors diameter Ø 16 mm used for lightning protection - earthing.



Material	Diameter (mm)	Length (mm)	Standard	Item No.
St/tZn	Ø 16	4.000	EN 62561-2	111611-003
	Ø 16	6.000		111611-004



Material	Diameter (mm)	Length (mm)	Standard	Item No.
Cu-E	Ø 16	4.000	EN 62561-2	111613-002

1.1 7

Earth lead-in rods

Earth lead-in rods diameter Ø 16 mm, which connect the lightning protection system down conductors and the earthing system, so as to protect the down conductor system from mechanical stresses at the lowest heights above the ground.



Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
St/tZn	Ø 16	1.500	EN 62561-1 & 2	111711-001
	Ø 16	2.000		111711-002
	Ø 16	2.500		111711-003

Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
St/tZn	Ø 16	1.500	EN 62561-1 & 2	111711-004
	Ø 16	2.000		111711-005
	Ø 16	2.500		111711-006

- Connection with the down conductor is accomplished by Item No. 163111-004



Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
Cu-E	Ø 16	1.500	EN 62561-1 & 2	111713-001
	Ø 16	2.000		111713-002
	Ø 16	2.500		111713-003

Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
Cu-E	Ø 16	1.500	EN 62561-1 & 2	111713-004
	Ø 16	2.000		111713-005
	Ø 16	2.500		111713-006

- Connection with the down conductor is accomplished by Item No. 163111-007

1.1 8

Tape conductors

Tape conductors (strips) used in earthing systems. They are also used in lightning protection systems for equipotential bonding.



ZINC COATING 500gr/m2

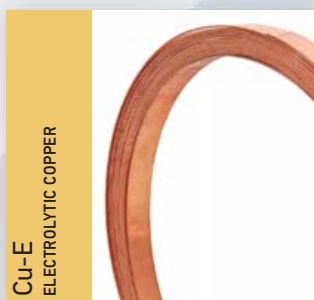
Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
St/tZn	30	3	90	710	EN 62561-2	121111-001
	30	3,5	105	830		121111-005
	40	4	160	1.260		121111-006



COPPER COATING 70 µm

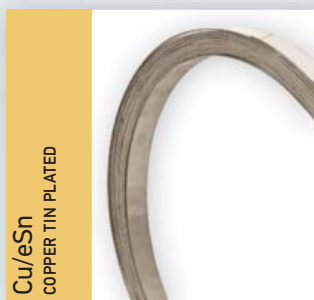
Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
St/Cu	30	3,5	105	900	EN 62561-2	121112-001
	40	4	160	1.320		121112-002

- High resistant in corrosive environment

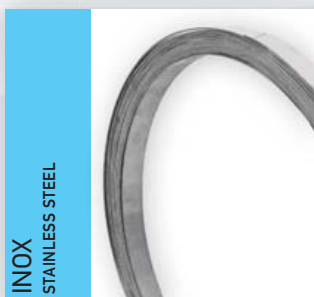


Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
Cu-E	20	2,5	50	440	EN 62561-2	121113-002
	25	3	75	670		121113-003
	30	2	60	530		121113-005
	30	3	90	800		121113-006
	40	3	120	1.060		121113-009
	40	4	160	1.420		121113-010

- Available in other dimensions as well



Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
Cu/eSn	20	2,5	50	440	EN 62561-2	121114-001
	25	3	75	670		121114-002
	30	2	60	530		121114-005
	30	3	90	800		121114-006
	40	3	120	1.060		121114-007
	40	4	160	1.420		121114-008



Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
INOX V2A	30	3,5	105	825	EN 62561-2	121116-001
INOX V4A						121116-003

- High resistant in corrosive environment

1.1 9

Flexible stranded tapes

Flexible stranded copper tapes constructed by strands with diameter 0.2mm used for equipotential bonding of metallic surfaces.



Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Item No.
Cu-E	17	2,0	16	121311-001
	20	2,5	25	121311-002
	22	3,0	35	121311-003
	30	4,0	50	121311-004
	45	3,5	70	121311-005



Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Item No.
Cu/eSn	17	2,0	16	121312-001
	20	2,5	25	121312-002
	22	3,0	35	121312-003
	30	4,0	50	121312-004
	45	3,5	70	121312-005

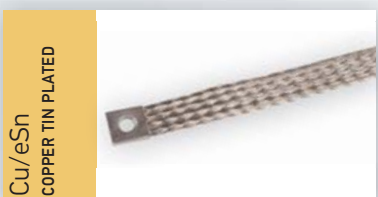
1.1 10

Preformed flexible stranded tapes

Preformed flexible stranded tapes, in length 300 - 500 mm used for equipotential bonding of metallic surfaces. The terminals are tin plated copper.



Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Length (mm)	Hole (mm)	Item No.
Cu	30	3,0	35	300	Ø 12	121411-001
				500		121411-002

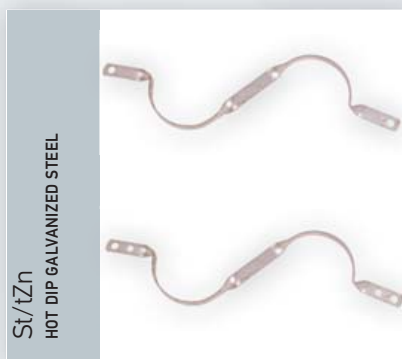


Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Length (mm)	Hole (mm)	Item No.
Cu/eSn	30	3,0	35	300	Ø 12	121412-001
				500		121412-002

1.111

Contraction-expansion absorbing conductor

Contraction-expansion absorbing component which is installed at intervals of approximately 20 meters of straight or crossing air termination system conductors Ø 8-10 mm to absorb the contraction-expansion due to temperature changes.



SINGLE POINT

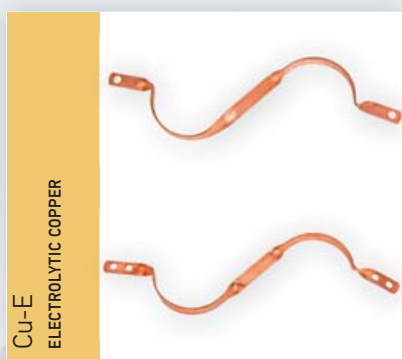
Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
St/tZn	Ø 8-10	400	EN 62561-1 & 2	131111-002

- Connection with the conductor is accomplished by Item No. 163011-001

DOUBLE POINT

Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
St/tZn	Ø 8-10	400	EN 62561-1 & 2	131111-001

- Connection with the conductor is accomplished by Item No. 163111-004



SINGLE POINT

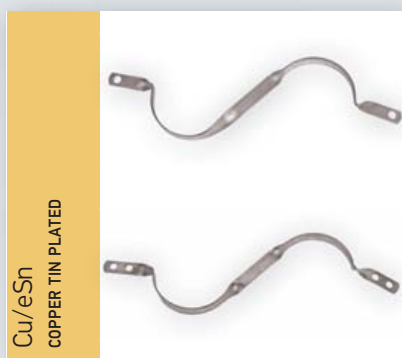
Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
Cu-E	Ø 8-10	400	EN 62561-1 & 2	131112-002

- Connection with the conductor is accomplished by Item No. 163011-005

DOUBLE POINT

Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
Cu-E	Ø 8-10	400	EN 62561-1 & 2	131112-001

- Connection with the conductor is accomplished by Item No. 163111-007



SINGLE POINT

Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
Cu/eSn	Ø 8-10	400	EN 62561-1 & 2	131113-002

- Connection with the conductor is accomplished by Item No. 163011-008

DOUBLE POINT

Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
Cu/eSn	Ø 8-10	400	EN 62561-1 & 2	131113-001

- Connection with the conductor is accomplished by Item No. 163111-008



Material	Diameter (mm)	Length (mm)	Standard	Item No.
AlMgSi	Ø 9	400	EN 62561-1 & 2	131114-001

- Connection with the conductor is accomplished by Item No. 162211-005 or Item No. 161511-005

1.1 12

Contraction-expansion absorbing conductor cross

Contraction-expansion absorbing conductor cross which is installed in the junction of crossing conductors Ø 8-10 mm.

St/tZn
HOT DIP GALVANIZED STEEL



SINGLE POINT

Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
St/tZn	Ø 8-10	400	EN 62561-1 & 2	131211-002

- Connection with the conductor is accomplished by Item No. 163011-001
- Cross connector Item No. 161611-001

DOUBLE POINT

Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
St/tZn	Ø 8-10	400	EN 62561-1 & 2	131211-001

- Connection with the conductor is accomplished by Item No. 163111-004
- Cross connector Item No. 161611-001

Cu-E
ELECTROLYTIC COPPER



SINGLE POINT

Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
Cu-E	Ø 8-10	400	EN 62561-1 & 2	131212-002

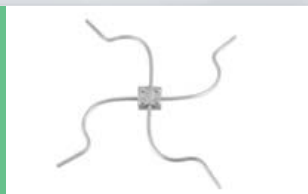
- Connection with the conductor is accomplished by Item No. 163011-005
- Cross connector Item No. 161611-006

DOUBLE POINT

Material	Diameter Round (mm)	Length (mm)	Standard	Item No.
Cu-E	Ø 8-10	400	EN 62561-1 & 2	131212-001

- Connection with the conductor is accomplished by Item No. 163111-007
- Cross connector Item No. 161611-006

AlMgSi
ALUMINIUM ALLOY



Material	Diameter (mm)	Length (mm)	Standard	Item No.
AlMgSi	Ø 9	400	EN 62561-1 & 2	131213-001

- Connection with the conductor is accomplished by Item No. 162211-005 or Item No. 161511-005
- Cross connector Item No. 161511-005

1.2

E.S.E. Lightning Rod TESLA-S®



New Generation pulsed excitation
Lightning head with enhanced
ionization system in compliance with
the French Standard NFC 17 102

TESLA-S® lightning conductor - Principle of operation

The TESLA-S lightning head carries a sharp pointed rod, made from special bronze alloy to attract and capture lightning. This rod incorporates a safety arc gap for the main lightning current and is attached to a sphere shape casing. A metal horizontal disc is fitted symmetrically around the casing, making electrical contact with it and the rod. The disc will react to the bad weather electric field and will be charged inductively with the field rise.

A special high-tension converter is located inside the sphere shape casing. High tension is achieved by the natural instability and negative resistance of a plasma arc placed inside a transverse magnetic field produced by a coil. The circuit is characterized by a series connection of an arc's negative resistance to an inductance and capacitance. A very high ionizing tension is produced at the area around the head's rod. The TESLA-S type is powered by the induction of the bad weather thunder field itself, a phenomenon that typically lasts a few to several minutes of an hour.

The head of the TESLA-S is equipped with a safety arrangement to protect its own circuitry during a lightning capture. The internal gap mechanism, the sparking device and the circuitry are placed in a waterproof and enforced sphere shape casing. The sphere shape of the casing allows the lightning current to pass freely through the grounding cathode. Additionally the casing's base acts like an external spark gap between the head and the cathode.

TYPES OF TESLA-S®

Depending on the size and dispersion of produced ionization the head of the lightning rod is supplied on the following types:

- Types **TESLA - S15, 30, 45 and 60**

Technical characteristics

- Inductance: over 20 Henries.
- Capacitance: 200 pF.
- L/R constant: 8-10 msec.
- Gap of leading spark: 0.1 mm.
- Arc gap of main lightning current (internal): 2 mm.
- Arc gap of main lightning current (external): 40 mm.
- Repetition rate of leading spark: 10-20 µsec.
- Operating range in thunder field intensity: 5-200 kV/m (instantly).
- Weight of head: 8.9 kgr.
- Size: 85 cm, 40 cm diameter respectively.
- Junction of lightning head: internal thread 1+1/4" inch.
- Head material: 304 A Stainless Steel
- NO of International Classification: H 02 G 13 / 00.

TESLA-S® Type	Item No.
TESLA-S15	181116-001
TESLA-S30	181117-001
TESLA-S45	181118-001
TESLA-S60	181119-001

Support mast

Telescopic support mast made from steel heavy type with deep infiltration welding (MIG-MAG).

Available in hot dip galvanized steel, stainless steel or in antioxidant painted steel to fit to the appropriate environment.

Depending on the installation requirements the available heights of masts are from 1 to 23 meters.

Masts higher than 8 meters have self-supporting tension cables.

Hot dip galvanized steel (St/tZn)

Material	Height (m.)	Item No.
St/tZn	2	181212-002
	3	181212-003
	4	181212-004
	5	181212-005
	6	181212-006
	7	181212-007
	8	181212-008
	9	181212-009
	10	181212-010
	11	181212-011
	12	181212-012
	13	181212-013
	14	181212-014
	15	181212-015
	16	181212-016
	17	181212-017
	18	181212-018
	19	181212-019
	20	181212-020
	21	181212-021
	22	181212-022
	23	181212-023

Stainless Steel (INOX)

High resistant in corrosive environment

Material	Height (m.)	Item No.
INOX	2	181211-001
	3	181211-002
	4	181211-003
	5	181211-004
	6	181211-005

Down conductor

It is used bare electrolytic copper stranded conductor of cross section 50 mm². The down conductor should be perpendicular so as the lightning current flow as smooth as possible.

Earthing

Earth rods copper plated with brass clamps are usually installed in triangle arrangement in order to achieve low earth resistance. Λαμβάνεται μέριμνα για την επίτευξη χαμηλής ωμικής αντίστασης. In case of hard or rocky ground, copper plates along with earthing enhancement compound EARTHPLUS® can be used.

Accessories

For the installation of down conductor on the mast or the walls appropriate fasteners are used accordingly.

Along the down conductor a test connector for earthing measurements and a magnetic card for recording lightning impulse current are inserted.

Two meters above the ground the down conductor is inserted on a pipe to be protected from mechanical stresses.

For visual inspection and earthing measurement an earth pit 30x30x30 cm with earth sign is installed.

The good operation if the lightning conductor head is tested with TESLA-S TESTER.

Testing & Certificates

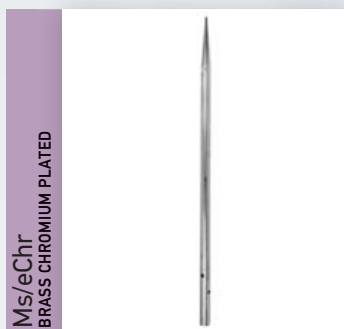
- BET laboratory, GERMANY
- ICMET laboratory, ROMANIA
- NATIONAL TECHNICAL UNIVERSITY OF ATHENS
- Greek Atomic Energy Commission
- East London University
- TGMC U.S.A.
- EUROPES Marbella Spain
- IASTED International Conference

The Tesla-S® is friendly to the environment. Laboratory tested according to EN 62561-1

1.3 1

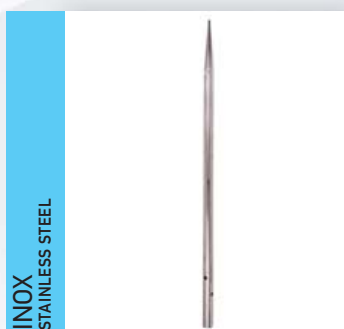
Air terminal rods Franklin Heavy Type

Air terminal rods Franklin Heavy Type which are installed either independently or in combination with the meshed air termination system (FARADAY cage), to cover protruding points of the building. The connection with the down conductor is accomplished using special connector.



Material	Diameter (mm)	Length (mm)	Standard	Item No.
Ms/eChr	Ø 30	1.000	EN 62561-1 & 2	141311-001

- Franklin connector Item No. 171116-001



Material	Diameter (mm)	Length (mm)	Standard	Item No.
INOX	Ø 30	1.000	EN 62561-1 & 2	141312-001

- Franklin connector Item No. 171116-002

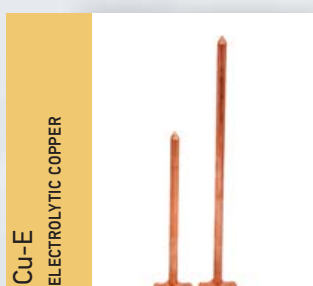
1.3 2

Air terminal rods on fasteners

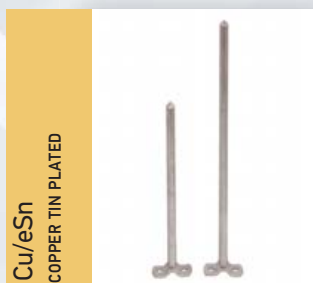
Air terminal rods on wall fasteners. They are mounted on a perpendicular to the ground surface. The fastener provides direct connection to the down conductor.



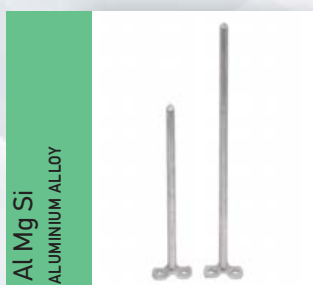
Material	Diameter (mm)	Length (mm)	Standard	Item No.
St/tZn	Ø 10	200	EN 62561-1 & 2	141411-001
		300		141411-002
		500		141411-003



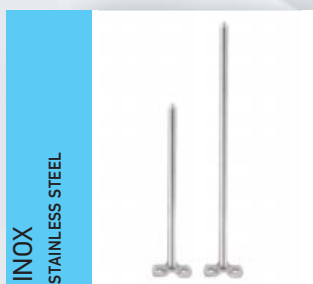
Material	Diameter (mm)	Length (mm)	Standard	Item No.
Cu-E	Ø 10	200	EN 62561-1 & 2	141412-001
		300		141412-002
		500		141412-003



Material	Diameter (mm)	Length (mm)	Standard	Item No.
Cu/eSn	Ø 10	200	EN 62561-1 & 2	141413-001
		300		141413-002
		500		141413-003



Material	Diameter (mm)	Length (mm)	Standard	Item No.
AlMgSi	Ø 10	200	EN 62561-1 & 2	141414-002
		300		141414-003
		500		141414-004



Material	Diameter (mm)	Length (mm)	Standard	Item No.
INOX	Ø 10	200	EN 62561-1 & 2	141415-001
		300		141415-002
		500		141415-003

1.3 3

Air terminal rods on bases

Air terminal rods which are mounted on bases. The base has a protrusive thread M8 on which the rod is screwed. The rods have a special made fastener with notch to connect the down conductor.



Material	Diameter (mm)	Length (mm)	Standard	Item No.
St/tZn	Ø 16	300	EN 62561-1 & 2	141511-003
	Ø 16	600		141511-004

- Base Item No. 141611-001



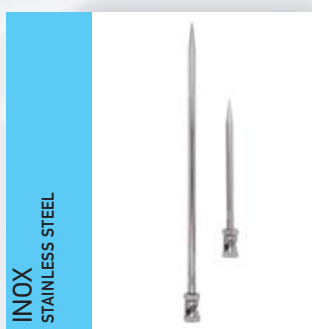
Material	Diameter (mm)	Length (mm)	Standard	Item No.
Cu-E	Ø 16	300	EN 62561-1 & 2	141512-002
	Ø 16	600		141512-003

- Base Item No. 141614-001



Material	Diameter (mm)	Length (mm)	Standard	Item No.
Ms/eChr	Ø 16	300	EN 62561-1 & 2	141513-001
	Ø 16	600		141513-002

- Base Item No. 141611-001



Material	Diameter (mm)	Length (mm)	Standard	Item No.
INOX	Ø 16	300	EN 62561-1 & 2	141514-001
	Ø 16	600		141514-002

- Base Item No. 141614-001

1.3

4

Air terminal rod bases

Air terminal rod bases (round), with protrusive thread M8 for mounting.



Material	Diameter (mm)	Item No.
St/tZn	Ø 100	141611-001



Material	Diameter (mm)	Item No.
INOX	Ø 100	141614-001

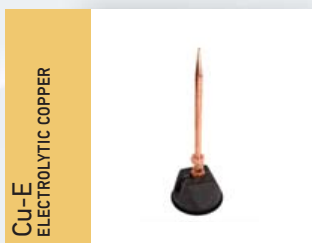
1.3 5

Air terminal rods with PVC base

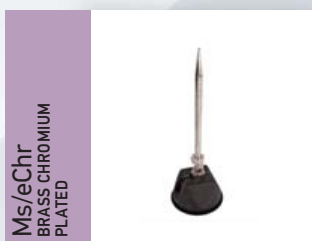
Air terminal rods which are mounted on PVC base filled with concrete. The rods are screwed on a protrusive thread M8. They are used in Lightning protection systems and especially on insulating roofs. The rods have a special made fastener with notch to connect the down conductor.



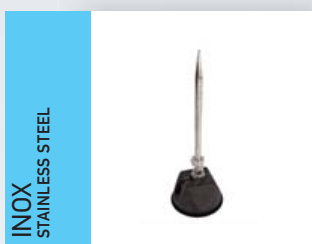
Terminal Material	Material Base	Terminal Diameter (mm)	Terminal Length (mm)	Standard	Item No.
St/tZn	PVC	Ø 16	300	EN 62561-1 & 2	141711-001
			600		141711-002



Terminal Material	Material Base	Terminal Diameter (mm)	Terminal Length (mm)	Standard	Item No.
Cu-E	PVC	Ø 16	300	EN 62561-1 & 2	141712-001
			600		141712-002



Terminal Material	Material Base	Terminal Diameter (mm)	Terminal Length (mm)	Standard	Item No.
Ms/eChr	PVC	Ø 16	300	EN 62561-1 & 2	141713-002
			600		141713-003



Terminal Material	Material Base	Terminal Diameter (mm)	Terminal Length (mm)	Standard	Item No.
INOX	PVC	Ø 16	300	EN 62561-1 & 2	141714-001
			600		141714-002

1.3

6

Air terminal rods lateral support

Air terminal rods for lateral support on perpendicular surfaces and on protrusive parts of the building (as parapets, chimneys and other constructions on the roof) with wall fasteners Ø 16 mm. On the lower part end they have receptacle to connect the down conductor using a double point connector.

St/tZn
HOT DIP GALVANIZED STEEL



Material	Diameter (mm)	Length (mm)	Standard	Item No.
St/tZn	Ø 16	1.000	EN 62561-1 & 2	141811-001
		1.500		141811-002

- Fastener Item No.151112-001
- Connection with the conductor is accomplished by Item No.163111-004

Cu-E
ELECTROLYTIC COPPER



Material	Diameter (mm)	Length (mm)	Standard	Item No.
Cu-E	Ø 16	1.000	EN 62561-1 & 2	141812-001
		1.500		141812-002

- Fastener Item No.151112-024
- Connection with the conductor is accomplished by Item No. 163111-007

INOX
STAINLESS STEEL



Material	Diameter (mm)	Length (mm)	Standard	Item No.
INOX	Ø 16	1.000	EN 62561-1 & 2	141813-002
		1.500		141813-003

- Fastener Item No.151112-001
- Connection with the conductor is accomplished by Item No.163612-009

1.3 7

Air terminal rod mushroom type

Air terminal rod mushroom type used in flat roofs accesible in puplic (ex. parking).



Al
ALUMINIUM

Material	Diameter (mm)	Height (mm)	Diameter Round (mm)	Standard	Item No.
Al	Ø 80	70	Ø 8-10	EN 62561-1 & 2	141911-001

1.3 8

Multiple air terminal rod



Ms/eChr
BRASS CHROMIUM
PLATED

Terminal Material	Terminal Diameter (mm)	Terminal number	Standard	Item No.
Ms/eChr	Ø 14	4	EN 62561-1 & 2	142011-001

1.4.1 1_A

Conductor fasteners Ø 8-10 HILTI type

Fasteners Hilti type of vertical/horizontal Ø 8-10 mm conductors on walls, panels e.t.c. They have internal thread to be supported on threaded drive pin.



Material	Diameter Round (mm)	Fastener Height (mm)	Thread	Standard	Item No.
St/tZn	Ø 8-10	20	M6	EN 62561-4	151111-001
		20	M8		151111-002
		30	M6		151111-004
		30	M8		151111-005
		50	M6		151111-006
		50	M8		151111-007
		60	M6		151111-008
		60	M8		151111-009
		100	M6		151111-011
		100	M8		151111-012



Material	Diameter Round (mm)	Fastener Height (mm)	Thread	Standard	Item No.
Cu-E	Ø 8-10	20	M6	EN 62561-4	151111-025
		20	M8		151111-026
		30	M6		151111-027
		30	M8		151111-028
		50	M6		151111-029
		50	M8		151111-030
		60	M6		151111-031
		60	M8		151111-032
		100	M6		151111-033
		100	M8		151111-034



Material	Diameter Round (mm)	Fastener Height (mm)	Thread	Standard	Item No.
ZAMAK	Ø 8-10	20	M6	EN 62561-4	151111-015
		20	M8		151111-021
		30	M6		151111-016
		30	M8		151111-022
		50	M6		151111-017
		50	M8		151111-023
		60	M6		151111-018
		60	M8		151111-024
		100	M6		151111-014
		100	M8		151111-019

1.4.1 1_B

Conductor fasteners Ø 16 HILTI type

Fasteners Hilti type of vertical/horizontal Ø 16 mm conductors on walls, panels e.t.c. They have internal thread to be supported on threaded drive pin.

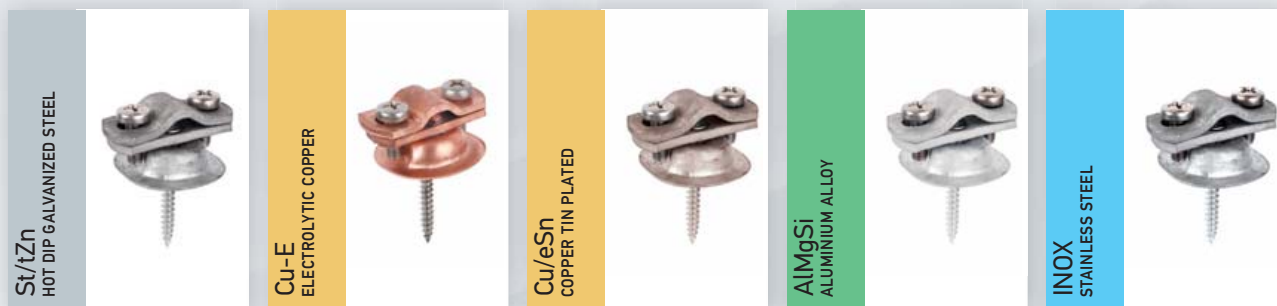


Material	Diameter Round (mm)	Fastener Height (mm)	Thread	Standard	Item No.
St/tZn	Ø 16	20	M8	EN 62561-4	151111-013
Cu-E		20	M8		151111-035
ZAMAK		20	M8		151111-020

1.4.1 2_A

Conductor fasteners Ø 6 with metallic spacer

Fasteners of vertical/horizontal Ø 6 mm conductors, with metallic spacer, to be supported on walls, with woodscrew and "upat".

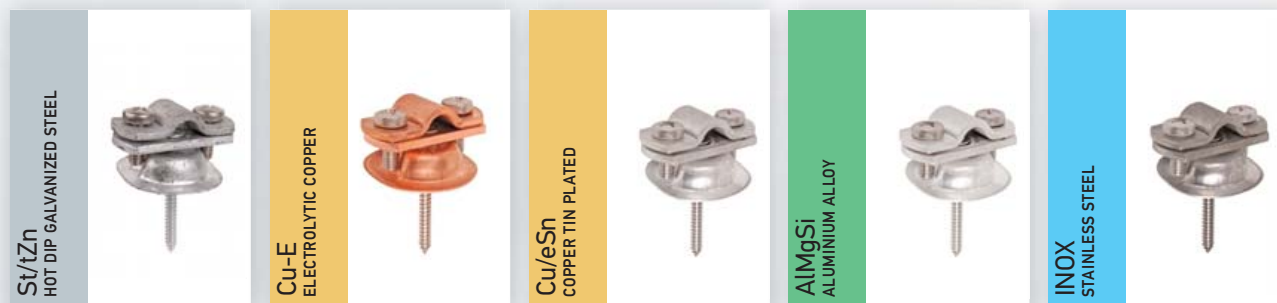


Material	Diameter Round (mm)	Fastener Length (mm)	Fastener Width (mm)	Standard	Item No.
St/tZn	Ø 6	44	20	EN 62561-4	151112-002
Cu-E					151112-029
Cu/eSn					151112-036
AlMgSi					151112-016
INOX					151112-005

1.4.1 2_B

Conductor fasteners Ø 8-10 with metallic spacer

Fasteners of vertical/horizontal Ø 8-10 mm conductors, with metallic spacer, to be supported on walls, with woodscrew and "upat".

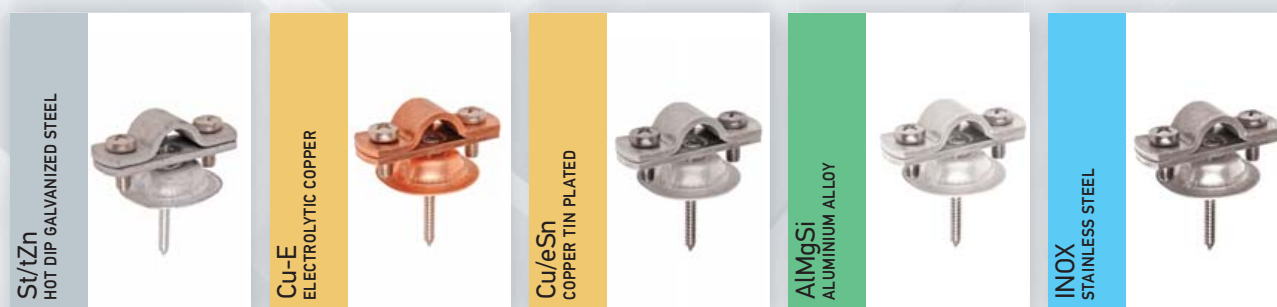


Material	Diameter Round (mm)	Fastener Length (mm)	Fastener Width (mm)	Standard	Item No.
St/tZn	Ø 8-10	44	20	EN 62561-4	151112-003
Cu-E					151112-030
Cu/eSn					151112-037
AlMgSi					151112-017
INOX					151112-006

1.4.1 2_r

Conductor fasteners Ø 16 with metallic spacer

Fasteners of vertical/horizontal Ø 16 mm conductors, with metallic spacer, to be supported on walls, with woodscrew and "upat".

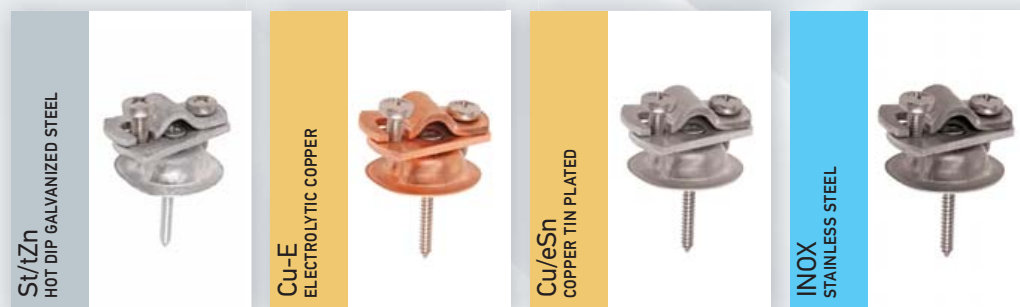


Material	Diameter Round (mm)	Fastener Length (mm)	Fastener Width (mm)	Standard	Item No.
St/tZn	Ø 16	56	20	EN 62561-4	151112-001
Cu-E					151112-024
Cu/eSn					151112-032
AlMgSi					151112-015
INOX					151112-014

1.4.1 3_A

Conductor fasteners Ø 8-10 with metallic spacer and open slot

Fasteners of vertical/horizontal Ø 8-10 mm conductors, with metallic spacer and open slot, to be supported on walls, with woodscrew and "upat".

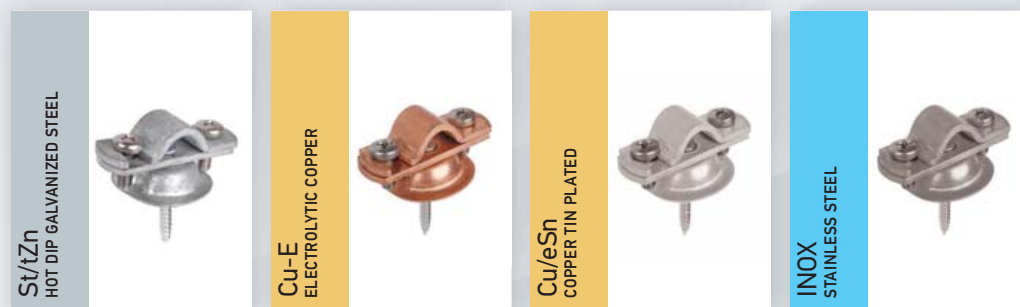


Material	Diameter Round (mm)	Fastener Length (mm)	Fastener Width (mm)	Standard	Item No.
St/tZn	Ø 8-10	44	20	EN 62561-4	151112-007
Cu-E					151112-031
Cu/eSn					151112-035
INOX					151112-009

1.4.1 3_B

Conductor fasteners Ø 16 with metallic spacer and open slot

Fasteners of vertical/horizontal Ø 16 mm conductors, with metallic spacer and open slot, to be supported on walls, with woodscrew and "upat".



Material	Diameter Round (mm)	Fastener Length (mm)	Fastener Width (mm)	Standard	Item No.
St/tZn	Ø 16	56	20	EN 62561-4	151112-008
Cu-E					151112-023
Cu/eSn					151112-041
INOX					151112-013

1.4.1 4

Conductor fasteners Φ 8-10 with plastic body and swelling neoprene

Fasteners of Φ 8-10 mm conductors with plastic body and swelling neoprene. Installation on tiles or panel roofs. The Φ 10 mm opening should be made with a non-impact drill.

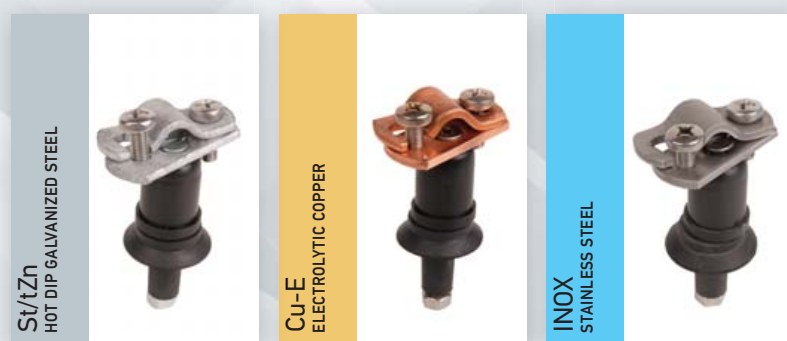


Material	Diameter Round (mm)	Fastener Length (mm)	Neoprene Diameter (mm)	Standard	Item No.
St/tZn	Φ 8-10	57	10	EN 62561-4	151113-002
Cu-E					151113-007
INOX					151113-003

1.4.1 5

Conductor fasteners Φ 8-10 with plastic body, swelling neoprene and open slot

Fasteners of Φ 8-10 mm conductors with plastic body, swelling neoprene and open slot. Installation on tiles or panel roofs. The Φ 10 mm opening should be made with a non-impact drill.



Material	Diameter Round (mm)	Fastener Length (mm)	Neoprene Diameter (mm)	Standard	Item No.
St/tZn	Φ 8-10	57	10	EN 62561-4	151113-004
Cu-E					151113-008
INOX					151113-006

1.4.1 6

Conductor fasteners Ø 8-10 «clip» type with swelling neoprene

Fasteners of Ø 8-10 mm conductors "clip" type with swelling neoprene. Installation on tiles or panel roofs. The Ø 10 mm opening should be made with a non-impact drill.



Material	Diameter Round (mm)	Standard	Item No.
INOX	Ø 8-10	EN 62561-4	151113-001
INOX/eCu			151113-005

1.4.1 7_A

Conductor fasteners Ø 8-10 with stainless steel base

Fasteners of Ø 8-10 mm conductors Hilti type with stainless steel base. Installation on steel roof panels.



Material	Diameter Round (mm)	Fastener Length (mm)	Fastener Width (mm)	Standard	Item No.
St/tZn	Ø 8-10	43	20	EN 62561-4	151118-001
Cu-E					151118-004

1.4.1 7_B

Conductor fasteners Ø 8-10 «clip» type with stainless steel base

Fasteners of Ø 8-10 mm conductors "clip" type with stainless steel base. Installation on steel roof panels.

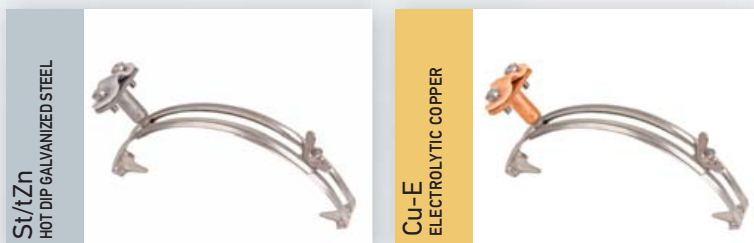


Material	Diameter Round (mm)	Standard	Item No.
INOX	Ø 8-10	EN 62561-4	151118-003
INOX/eCu			151118-005

1.4.1 8

Conductor fasteners Ø 8-10 with adjustable base

Fasteners of Ø 8-10 mm conductors with stainless steel adjustable base. Installation on tiles.



Material	Diameter Round (mm)	Base opening (mm)	Standard	Item No.
St/tZn	Ø 8-10	210 - 370	EN 62561-4	151115-001
Cu-E				151115-003

1.4.1 9_A

Conductor fasteners Ø 8-10 for water proof flat roofs Type A

Fasteners of Ø 8-10 mm conductors for water proof flat roofs. PVC filled with concrete.



Material	Diameter Round (mm)		Weight ~ gr	Standard	Item No.
PVC	Ø 8-10	Filled with concrete	1.000	EN 62561-4	151117-001
		Without concrete	60		151117-002

1.4.1 9_B

Conductor fasteners Ø 8-10 for water proof flat roofs Type B

Fasteners of Ø 8-10 mm conductors for water proof flat roofs. PVC with concrete block.

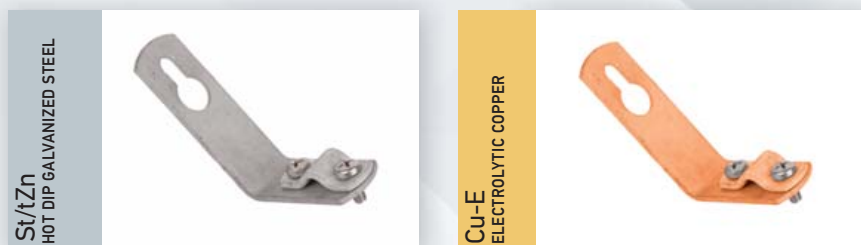


Material	Diameter Round (mm)	Weight ~ gr	Standard	Item No.
PVC/μπετόν	Ø 8-10	1.000	EN 62561-4	151117-003

1.4.1 10

Conductor fasteners Ø 8-10 on panels

Fasteners of Ø 8-10 mm conductors. Installation on steel roof panels or at the edge of structures.



Material	Round (mm)	Standard	Item No.
St/tZn	Ø 8-10	EN 62561-4	151118-002
Cu-E			151118-007

1.4.1 11

Conductor fasteners Ø 8-10 on gutter

Fasteners of Ø 8-10 mm conductors. Installation on gutter.



Material	Round (mm)	Standard	Item No.
St/tZn	Ø 8-10	EN 62561-4	151119-001
Cu-E			151119-002

1.4.1 12_A

Conductor fasteners Ø 8-10 for metallic ridges «H» type

Fasteners of Ø 8-10 mm conductors. Installation on metallic ridges «H» type.

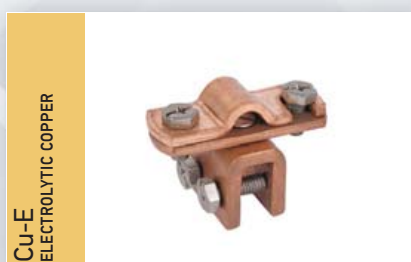


Material	Round (mm)	Ridge Thickness (mm)	Standard	Item No.
St/tZn	Ø 8-10	5 – 18	EN 62561-4	151120-001
St/tZn Cu-E		5 – 18		151120-005
St/tZn		18 – 35		151120-002
St/tZn Cu-E		18 – 35		151120-006

1.4.1 12_B

Conductor fasteners Ø 8-10 for metallic ridges

Fasteners of Ø 8-10 mm conductors. Installation on metallic ridges.



Material	Round (mm)	Ridge Thickness (mm)	Standard	Item No.
St/tZn	Ø 8-10	10	EN 62561-4	151120-003
Cu-E				151120-007

1.4.1 12_r

Conductor fasteners Ø 8-10 for metallic ridges

Fasteners of Ø 8-10 mm conductors. Installation on metallic ridges.



Material	Round (mm)	Ridge Thickness (mm)	Standard	Item No.
St/tZn	Ø 8-10	5	EN 62561-4	151120-004
Cu-E				151120-008

1.4.1 13

Conductor fasteners Ø 8-10 for grates and cable trays

Fasteners of Ø 8-10 mm conductors. Installation on cable trays and grates.

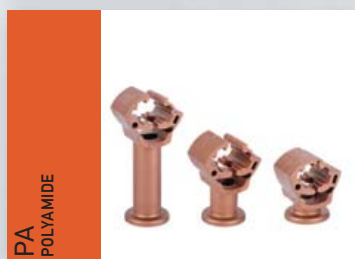
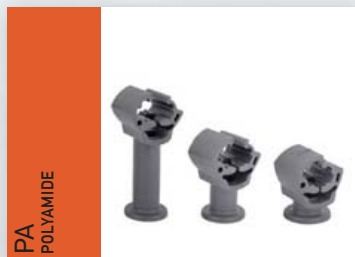


Material	Round (mm)	Standard	Item No.
St/tZn	Ø 8-10	EN 62561-4	151121-001
Cu-E			151121-002

1.4.1 14_A

Conductor fasteners Ø 8-10 by PA

Fasteners of Ø 8-10 mm conductors, by Polyamide (PA) with internal thread. Installation on walls.

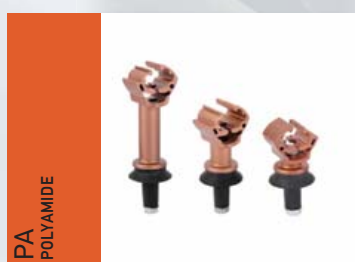
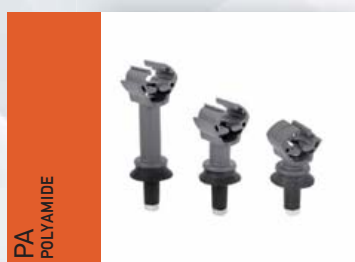


Material	Round (mm)	Height (mm)	Thread	Standard	Item No.
PA gray	Ø 8-10	25	M6	EN 62561-4	151122-002
		40			151122-004
		20	M 8		151122-001
		30			151122-003
		55			151122-005
PA brown		25	M6		151122-007
		40			151122-009
		20	M 8		151122-006
		30			151122-008
		55			151122-010

1.4.1 14_B

Conductor fasteners Ø 8-10 by PA with swelling neoprene

Fasteners of Ø 8-10 mm conductors, by Polyamide (PA) with swelling neoprene. Installation on tiles or panel roofs. The Ø 10 mm opening should be made with a non-impact drill.

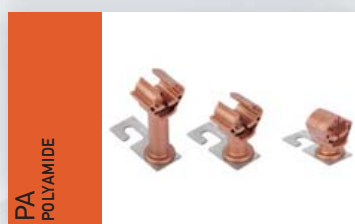
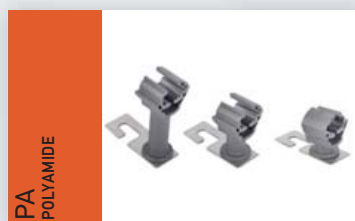


Material	Round (mm)	Fastener Height (mm)	Neoprene Diameter (mm)	Standard	Item No.
PA gray	Ø 8-10	20	Ø 11,5	EN 62561-4	151122-011
		30			151122-012
		55			151122-013
PA brown		20			151122-014
		30			151122-015
		55			151122-016

1.4.1 14_r

Conductor fasteners Ø 8-10 by PA with stainless steel base

Fasteners of Ø 8-10 mm conductors, by Polyamide (PA) with stainless steel base. Installation on steel roof panels.



Material	Round (mm)	Fastener Height (mm)	Standard	Item No.
PA gray	Ø 8-10	20	EN 62561-4	151122-017
		30		151122-018
		55		151122-019
PA brown		20		151122-020
		30		151122-021
		55		151122-022

1.4.2 1

Tape fasteners 30 HILTI type

Fasteners Hilti type of vertical/horizontal 30 mm tape conductors on walls, panels e.t.c. They have internal thread to be supported on threaded drive pin.



Material	Width Tape (mm)	Fastener Height (mm)	Thread	Standard	Item No.
St/tZn	30	20	M6	EN 62561-4	151211-001
			M8		151211-002

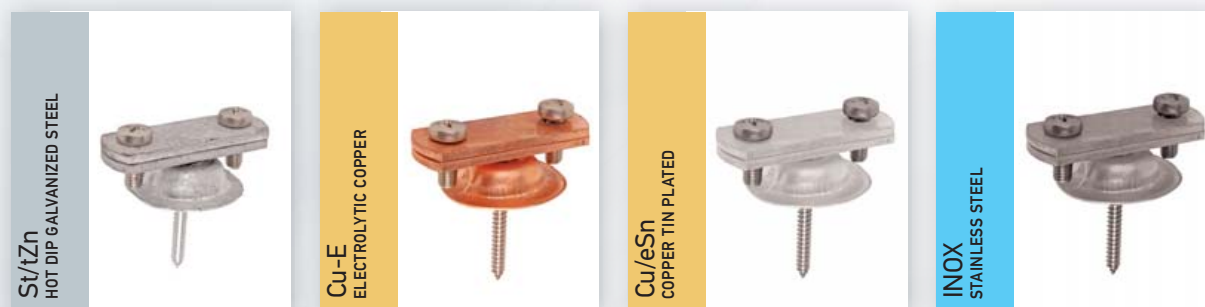
Material	Width Tape (mm)	Fastener Height (mm)	Thread	Standard	Item No.
Cu-E	30	20	M6	EN 62561-4	151211-003
			M8		151211-004

1.4.2

2_A

Tape fasteners 30 with metallic spacer

Fasteners of vertical/horizontal up to 30 mm tape conductors, with metallic spacer, to be supported on walls, with woodscrew and "upat".



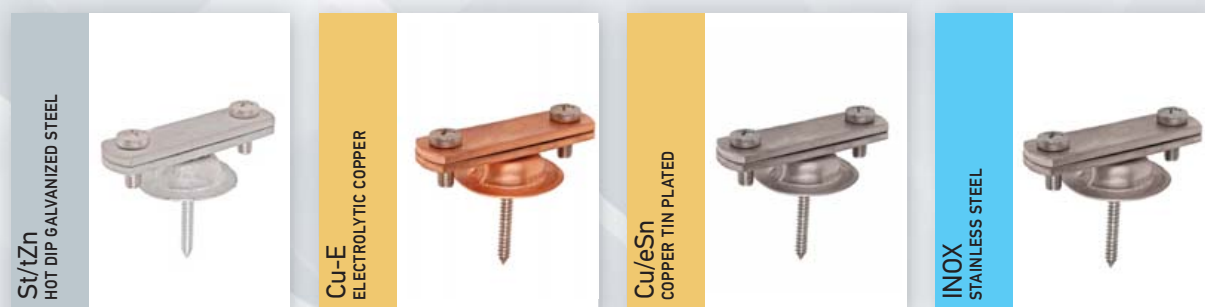
Material	Width Tape (mm)	Fastener Length (mm)	Fastener Width (mm)	Standard	Item No.
St/tZn	30	57	20	EN 62561-4	151212-001
Cu-E					151212-005
Cu/eSn					151212-007
INOX					151212-003

1.4.2

2_B

Tape fasteners 40 with metallic spacer

Fasteners of vertical/horizontal up to 40 mm tape conductors, with metallic spacer, to be supported on walls, with woodscrew and "upat".



Material	Width Tape (mm)	Fastener Length (mm)	Fastener Width (mm)	Standard	Item No.
St/tZn	40	67	20	EN 62561-4	151212-002
Cu-E					151212-006
Cu/eSn					151212-008
INOX					151212-004

1.5.1

1

Connectors H. T. round conductors Ø 8-10/Ø 8-10

Connectors Heavy Type for round conductors Ø 8-10/Ø 8-10 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 60x60x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Round - Round (mm)	Standard	Item No.
St/tZn	60x60x4	Ø 8-10/Ø 8-10	EN 62561-1	161411-001
Cu-E				161411-003
Cu/eSn				161411-004
INOX				161411-002

1.5.1

2

Connectors H. T. round conductors Ø 8-10/Ø 16

Connectors Heavy Type for round conductors Ø 8-10/Ø 16 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 60x60x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Round - Round (mm)	Standard	Item No.
St/tZn	60x60x4	Ø 8-10/Ø 16	EN 62561-1	161412-001
Cu-E				161412-004
Cu/eSn				161412-005
INOX				161412-003

1.5.1 3

Connectors H. T. round conductors Ø 8-10/Ø 20

Connectors Heavy Type for round conductors Ø 8-10/Ø 20 mm. Connections "+", "I", "T", "II". It consists by 3 plates 60x60x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Round - Round (mm)	Standard	Item No.
St/tZn	60x60x4	Ø 8-10/Ø 20	EN 62561-1	161413-001
Cu-E				161413-003
Cu/eSn				161413-004
INOX				161413-002

1.5.1 4

Connectors H. T. round conductors Ø 16/Ø 16

Connectors Heavy Type for round conductors Ø 16/Ø 16 mm. Connections "+", "I", "T", "II". It consists by 3 plates 60x60x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Round - Round (mm)	Standard	Item No.
St/tZn	60x60x4	Ø 16/Ø 16	EN 62561-1	161414-001
Cu-E				161414-003
Cu/eSn				161414-004
INOX				161414-002

1.5.1

5

Connectors H. T. round conductors
Ø 16/Ø 20

Connectors Heavy Type for round conductors Ø 16/Ø 20 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 60x60x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



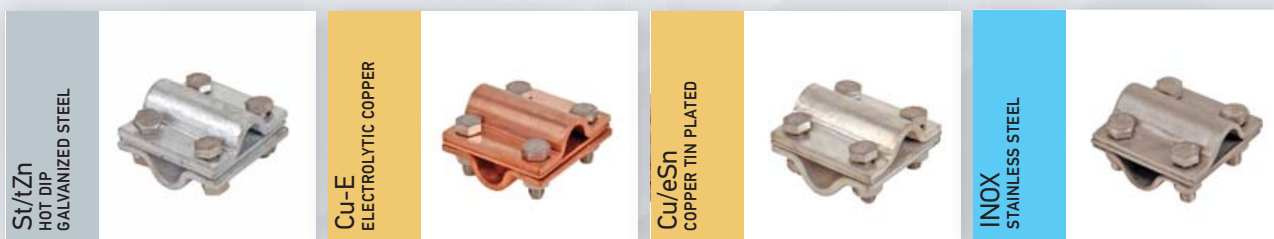
Material	Connector dimensions (mm)	Round - Round (mm)	Standard	Item No.
St/tZn	60x60x4	Ø 16/Ø 20	EN 62561-1	161415-001
Cu-E				161415-003
Cu/eSn				161415-004
INOX				161415-002

1.5.1

6

Connectors H. T. round conductors
Ø 20/Ø 20

Connectors Heavy Type for round conductors Ø 20/Ø 20 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 60x60x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Round - Round (mm)	Standard	Item No.
St/tZn	60x60x4	Ø 20/Ø 20	EN 62561-1	161416-001
Cu-E				161416-003
Cu/eSn				161416-004
INOX				161416-002

1.5.2

1

Connectors H. T. round/tape conductors Ø 8-10/30

Connectors Heavy Type for round Ø 8-10 mm and tape conductors up to 30 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 60x60x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Round - Tape (mm)	Standard	Item No.
St/tZn	60x60x4	Ø 8-10/30	EN 62561-1	161811-001
Cu-E				161811-005
Cu/eSn				161811-006
INOX				161811-003

1.5.2

2

Connectors H. T. round/tape conductors Ø 16/30

Connectors Heavy Type for round Ø 16 mm and tape conductors up to 30 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 60x60x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Round - Tape (mm)	Standard	Item No.
St/tZn	60x60x4	Ø 16/30	EN 62561-1	161812-001
Cu-E				161812-003
Cu/eSn				161812-004
INOX				161812-002

1.5.2 3

Connectors H. T. round/tape conductors Ø 20/30

Connectors Heavy Type for round Ø 20 mm and tape conductors up to 30 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 60x60x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Round - Tape (mm)	Standard	Item No.
St/tZn	60x60x4	Ø 20/30	EN 62561-1	161813-001
Cu-E				161813-003
Cu/eSn				161813-004
INOX				161813-002

1.5.2 4

Connectors H. T. round/tape conductors Ø 8-10/40

Connectors Heavy Type for round Ø 8-10 mm and tape conductors up to 40 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 70x70x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.

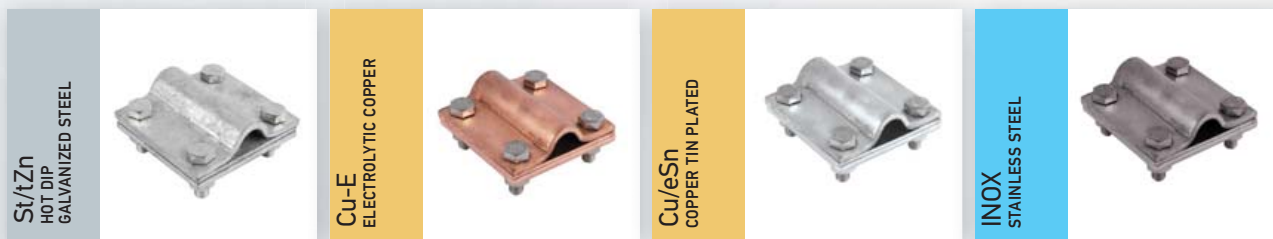


Material	Connector dimensions (mm)	Round - Tape (mm)	Standard	Item No.
St/tZn	70x70x4	Ø 8-10/40	EN 62561-1	161814-001
Cu-E				161814-003
Cu/eSn				161814-004
INOX				161814-002

1.5.2 5

Connectors H. T. round/tape conductors Ø 16/40

Connectors Heavy Type for round Ø 16 mm and tape conductors up to 40 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 70x70x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Round - Tape (mm)	Standard	Item No.
St/tZn	70x70x4	Ø 16/40	EN 62561-1	161815-001
Cu-E				161815-003
Cu/eSn				161815-004
INOX				161815-002

1.5.2 6

Connectors H. T. round/tape conductors Ø 20/40

Connectors Heavy Type for round Ø 20 mm and tape conductors up to 40 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 70x70x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Round - Tape (mm)	Standard	Item No.
St/tZn	70x70x4	Ø 20/40	EN 62561-1	161816-001
Cu-E				161816-004
Cu/eSn				161816-006
INOX				161816-002

1.5.3

1

Connectors H. T. tape conductors 30/30

Connectors Heavy Type for tape conductors up to 30 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 60x60x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Tape - Tape (mm)	Standard	Item No.
St/tZn	60x60x4	30/30	EN 62561-1	161611-001
Cu-E				161611-006
Cu/eSn				161611-008
INOX				161611-004

1.5.3

2

Connectors H. T. tape conductors 30/30 without intermediate plate

Connectors Heavy Type for tape conductors up to 30 mm. Connections "+", "Γ", "T", "II". It consists by 2 plates 60x60x4 mm, **(no intermediate plate)**. Usage above and under ground.

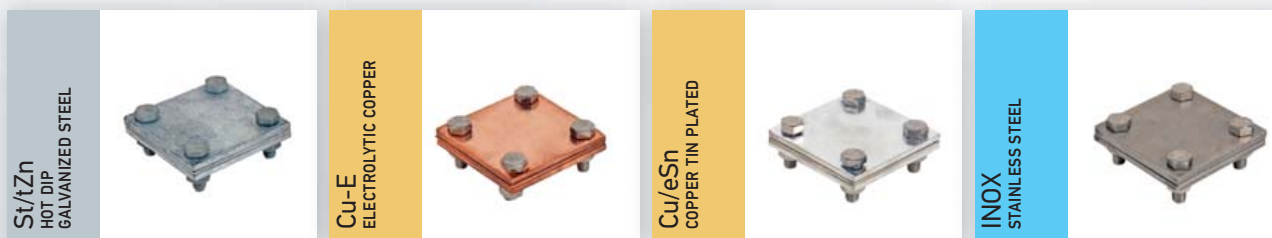


Material	Connector dimensions (mm)	Tape - Tape (mm)	Standard	Item No.
St/tZn	60x60x4	30/30	EN 62561-1	161611-003
Cu-E				161611-007
Cu/eSn				161611-009
INOX				161611-005

1.5.3 3

Connectors H. T. tape conductors 40/40

Connectors Heavy Type for tape conductors up to 40 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 70x70x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Connector dimensions (mm)	Tape - Tape (mm)	Standard	Item No.
St/tZn	70x70x4	40/40	EN 62561-1	161612-001
Cu-E				161612-005
Cu/eSn				161612-008
INOX				161612-003

1.5.3 4

Connectors H. T. tape conductors 40/40 without intermediate plate

Connectors Heavy Type for tape conductors up to 40 mm. Connections "+", "Γ", "T", "II". It consists by 2 plates 70x70x4 mm, **(no intermediate plate)**. Usage above and under ground.



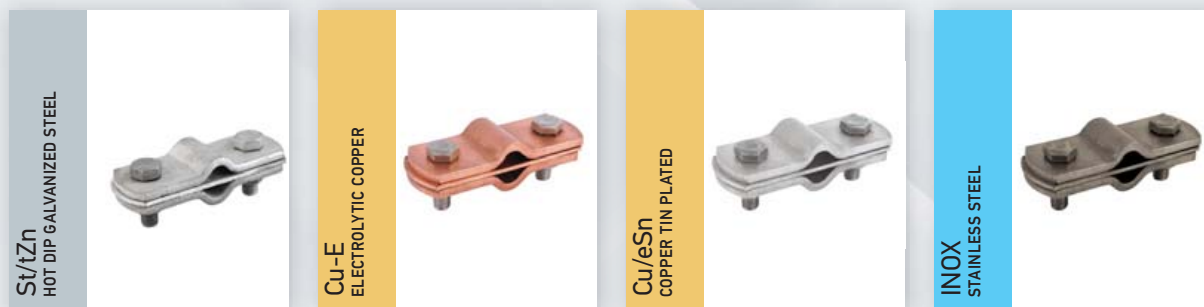
Material	Connector dimensions (mm)	Tape - Tape (mm)	Standard	Item No.
St/tZn	70x70x4	40/40	EN 62561-1	161612-002
Cu-E				161612-007
Cu/eSn				161612-009
INOX				161612-004

1.5.4

1

Connectors H. T. with two bolts (quickconnectors) round conductors Ø 8-10/Ø 8-10

Connectors Heavy Type with two bolts (quickconnectors) for round conductors Ø 8-10/Ø 8-10 mm. Connections "II". It consists by 3 plates 85x30x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



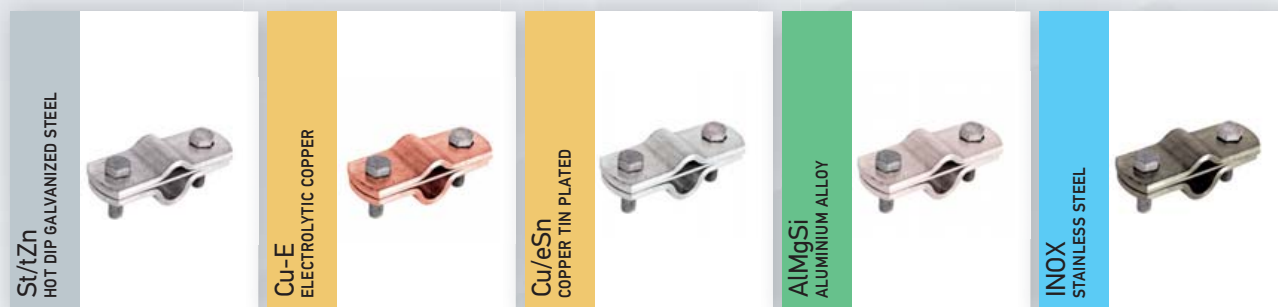
Material	Round - Round (mm)	Standard	Item No.
St/tZn	Ø 8-10/Ø 8-10	EN 62561-1	163611-001
Cu-E			163611-005
Cu/eSn			163611-008
INOX			163611-003

1.5.4

2

Connectors H. T. with two bolts (quickconnectors) round conductors Ø 16/Ø 8-10

Connectors Heavy Type with two bolts (quickconnectors) for round conductors Ø 16/Ø 8-10 mm. Connections "II". It consists by 3 plates 85x30x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Round - Round (mm)	Standard	Item No.
St/tZn	Ø 16/Ø 8-10	EN 62561-1	163612-002
Cu-E			163612-004
Cu/eSn			163612-008
AlMgSi			163612-001
INOX			163612-009

1.5.5

1

Connectors H. T. with two bolts (quickconnectors) round/tape conductors Ø 8-10/30-40

Connectors Heavy Type with two bolts (quickconnectors) for round Ø 8-10 mm and tape conductors up to 40 mm. Connections "II". It consists by 3 plates 85x30x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Round - Tape (mm)	Standard	Item No.
St/tZn	Ø 8-10/30-40	EN 62561-1	163811-001
Cu-E			163811-004
Cu/eSn			163811-008
INOX			163811-003

1.5.6

1

Connectors H. T. with two bolts (quickconnectors) tape conductors 30-40/30-40

Connectors Heavy Type with two bolts (quickconnectors) for tape conductors up to 40 mm. Connections "II". It consists by 3 plates 85x30x4 mm, thickness of intermediate plate 2 mm. Usage above and under ground.



Material	Tape - Tape (mm)	Standard	Item No.
St/tZn	30-40/30-40	EN 62561-1	163711-001
Cu-E			163711-005
Cu/eSn			163711-008
INOX			163711-003

1.5.7

1

Connectors L.T. round conductors 16-35/16-35

Connectors Light Type for round conductors 16-35 mm². Connections "+", "Γ", "T", "II". It consists by 3 plates 50x50x3 mm, thickness of intermediate plate 2 mm. Usage above ground.



Material	Connector dimensions (mm)	Round - Round (mm ²)	Standard	Item No.
St/tZn	50x50x3	16-35/16-35	EN 62561-1	161512-001
Cu-E				161512-003
Cu/eSn				161512-004
INOX				161512-002

1.5.7

2

Connectors L.T. round conductors Ø 8-10/Ø 8-10

Connectors Light Type for round conductors Ø 8-10/Ø 8-10 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 50x50x3 mm, thickness of intermediate plate 2 mm. Usage above ground.



Material	Connector dimensions (mm)	Round - Round (mm)	Standard	Item No.
St/tZn	50x50x3	Ø 8-10/Ø 8-10	EN 62561-1	161511-005
Cu-E				161511-007
Cu/eSn				161511-008
INOX				161511-002

1.5.8

1

Connectors L.T. round/tape conductors 16-35/30

Connectors Light Type for round 16-35 mm² and tape conductors up to 30 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 50x50x3 mm, thickness of intermediate plate 2 mm. Usage above ground.

St/tZn
HOT DIP GALVANIZED STEEL



Cu-E
ELECTROLYTIC COPPER



Cu/eSn
COPPER TIN PLATED



INOX
STAINLESS STEEL



Material	Connector dimensions (mm)	Round (mm ²) - Tape (mm)	Standard	Item No.
St/tZn	50x50x3	16-35/30	EN 62561-1	161912-001
Cu-E				161912-003
Cu/eSn				161912-004
INOX				161912-002

1.5.8

2

Connectors L.T. round/tape conductors Ø 8-10/30

Connectors Light Type for round Ø 8-10 mm and tape conductors up to 30 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 50x50x3 mm, thickness of intermediate plate 2 mm. Usage above ground.

St/tZn
HOT DIP GALVANIZED STEEL



Cu-E
ELECTROLYTIC COPPER



Cu/eSn
COPPER TIN PLATED



INOX
STAINLESS STEEL



Material	Connector dimensions (mm)	Round - Tape (mm)	Standard	Item No.
St/tZn	50x50x3	Ø 8-10 /30	EN 62561-1	161911-001
Cu-E				161911-004
Cu/eSn				161911-006
INOX				161911-003

1.5.9

1

Connectors L.T. tape conductors 30/30

Connectors Light Type for tape conductors up to 30 mm. Connections "+", "Γ", "T", "II". It consists by 3 plates 50x50x3 mm, thickness of intermediate plate 2 mm. Usage above ground.



Material	Connector dimensions (mm)	Tape - Tape (mm)	Standard	Item No.
St/tZn	50x50x3	30 / 30	EN 62561-1	161711-001
Cu-E				161711-004
Cu/eSn				161711-006
INOX				161711-002

1.5.10

1

Parallel connectors for round conductors Ø 8-10

Parallel connectors for round conductors with diameter Ø 8-10 mm.



Material	Diameter conductors (mm)	Standard	Item No.
St/tZn	Ø 8-10/Ø 8-10	EN 62561-1	162011-001
Cu-E			162011-002
Cu/eSn			162011-003

- χρήση: εκτός εδάφους

1.5.10 2

Extension connectors for round conductors Ø 8-10

Connectors for extension of conductors with diameter Ø 8-10 mm. The connector is suitable for hot dip galvanized steel and aluminum conductors.

ZAMAK
ZINC ALLOY



Material	Diameter conductors (mm)	Standard	Item No.
ZAMAK	Ø 8	EN 62561-1	162111-001

- Usage above ground

1.5.11 1

Connectors H.T. multipurpose

Heavy type connectors multipurpose for conductors with diameter Ø 8 -10 mm or bonding metallic surfaces. For connection type "+", "Γ", "T", "II". Usage above ground.

St/tZn
HOT DIP GALVANIZED STEEL



Cu-E
ELECTROLYTIC COPPER



Cu/eSn
COPPER TIN PLATED



INOX
STAINLESS STEEL



Material	Round - Round (mm)	Standard	Item No.
St/tZn	Ø 8-10/Ø 8-10	EN 62561-1	162211-005
Cu-E			162211-009
Cu/eSn			162211-011
INOX			162211-002

1.5.11

2

Connectors L.T. multipurpose

Light type connectors multipurpose for conductors with cross section 16-35 mm² or bonding metallic surfaces. For connection type "+", "T", "T", "II". Usage above ground.



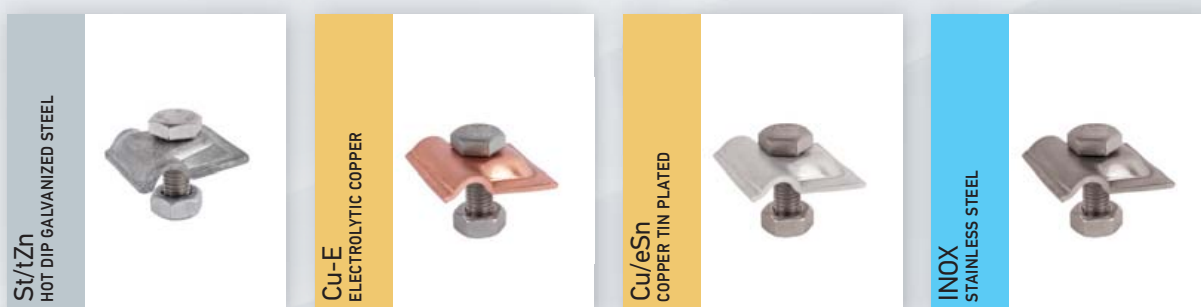
Material	Round - Round (mm ²)	Standard	Item No.
St/tZn	16-35/16-35	EN 62561-1	162212-001
Cu-E			162212-003
Cu/eSn			162212-004
INOX			162212-002

1.5.12

1

Connectors H.T. round conductors - metallic surface

Heavy type connectors for conductors with diameter Ø 8 - 10 mm to metallic surfaces. Usage above ground.



Material	Round (mm)	Standard	Item No.
St/tZn	Ø 8-10	EN 62561-1	162311-001
Cu-E			162311-004
Cu/eSn			162311-005
INOX			162311-003

1.5.12 2

Connectors L.T. round conductors - metallic surface

Light type connectors for conductors with cross section 16-35 mm² to metallic surfaces. Usage above ground.

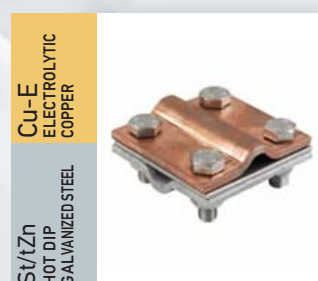


Material	Round (mm ²)	Standard	Item No.
St/tZn	16-35	EN 62561-1	162312-001
Cu-E			162312-003
Cu/eSn			162312-004
INOX			162312-002

1.5.13 1.1

Bimetallic connectors H.T. round conductors Ø 8-10/Ø 8-10

Bimetallic connectors H.T. for round conductors Ø 8-10 mm for connection type "+", "Γ", "T", "II". The connector consists of three plates with dimensions 60x60x4 mm, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.

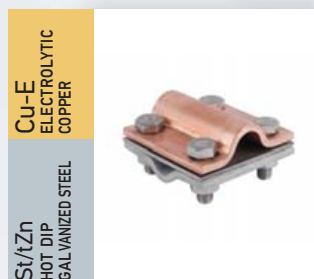


Material	Round - Round (mm)	Standard	Item No.
St/tZn Cu-E	Ø 8-10 St/tZn / Ø 8-10 Cu-E	EN 62561-1	162411-002

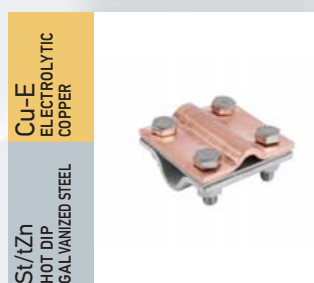
1.5.13 1.2

Bimetallic connectors H.T. round conductors Ø 8-10/Ø 16

Bimetallic connectors H.T. for round conductors Ø 8-10 mm and Ø 16 mm for connection type "+", "Γ", "T", "II". The connector consists of three plates with dimensions 60x60x4 mm, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.



Material	Round - Round (mm)	Standard	Item No.
St/tZn Cu-E	Ø 8-10 St/tZn / Ø 16 Cu-E	EN 62561-1	162412-001

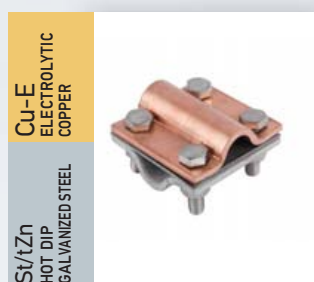


Material	Round - Round (mm)	Standard	Item No.
St/tZn Cu-E	Ø 16 St/tZn / Ø 8-10 Cu-E	EN 62561-1	162412-002

1.5.13 1.3

Bimetallic connectors H.T. round conductors Ø 16/Ø 16

Bimetallic connectors H.T. for round conductors Ø 16 mm for connection type "+", "Γ", "T", "II". The connector consists of three plates with dimensions 60x60x4 mm, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.



Material	Round - Round (mm)	Standard	Item No.
St/tZn Cu-E	Ø 16 St/tZn / Ø 16 Cu-E	EN 62561-1	162413-001

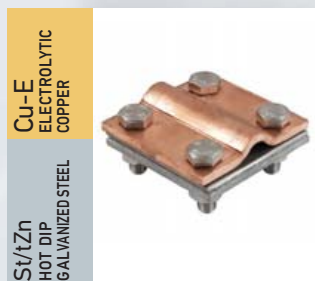
1.5.13 2.1

Bimetallic connectors H.T. round/tape conductors Ø 8-10/30

Bimetallic connectors H.T. for round Ø 8-10 mm and tape conductors up to 30 mm for connection type "+", "Γ", "T", "II". The connector consists of three plates with dimensions 60x60x4 mm, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.



Material	Round - Tape (mm)	Standard	Item No.
St/tZn Cu-E	Ø 8-10 St/tZn / 30 Cu-E	EN 62561-1	162611-001



Material	Round - Tape (mm)	Standard	Item No.
St/tZn Cu-E	Ø 8-10 Cu-E / 30 St/tZn	EN 62561-1	162611-002

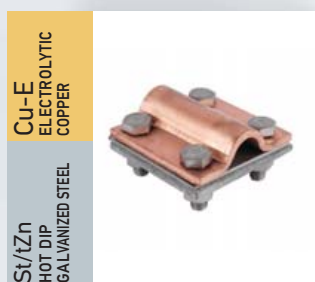
1.5.13 2.2

Bimetallic connectors H.T. round/tape conductors Ø 16/30

Bimetallic connectors H.T. for round Ø 16 mm and tape conductors up to 30 mm for connection type "+", "Γ", "T", "II". The connector consists of three plates with dimensions 60x60x4 mm, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.



Material	Round - Tape (mm)	Standard	Item No.
St/tZn Cu-E	Ø 16 St/tZn / 30 Cu-E	EN 62561-1	162612-001

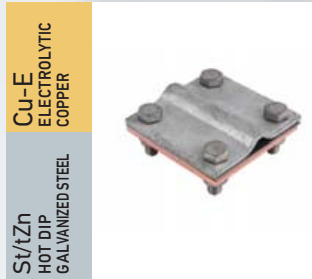


Material	Round - Tape (mm)	Standard	Item No.
St/tZn Cu-E	Ø 16 Cu-E / 30 St/tZn	EN 62561-1	162612-002

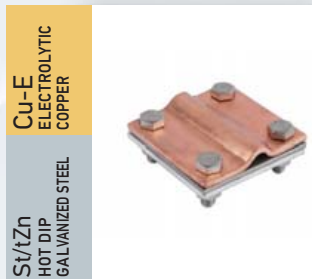
1.5.13 2.3

Bimetallic connectors H.T.
round/tape conductors Ø 8-10/40

Bimetallic connectors H.T. for round Ø 8-10 mm and tape conductors up to 40 mm for connection type "+", "Γ", "T", "II". The connector consists of three plates with dimensions 70x70x4 mm, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.



Material	Round - Tape (mm)	Standard	Item No.
St/tZn Cu-E	Ø 8-10 St/tZn / 40 Cu-E	EN 62561-1	162613-001

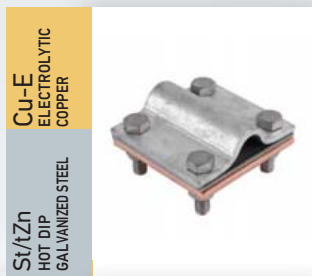


Material	Round - Tape (mm)	Standard	Item No.
St/tZn Cu-E	Ø 8-10 Cu-E / 40 St/tZn	EN 62561-1	162613-002

1.5.13 2.4

Bimetallic connectors H.T.
round/tape conductors Ø 16/40

Bimetallic connectors H.T. for round Ø 16 mm and tape conductors up to 40 mm for connection type "+", "Γ", "T", "II". The connector consists of three plates with dimensions 70x70x4 mm, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.



Material	Round - Tape (mm)	Standard	Item No.
St/tZn Cu-E	Ø 16 St/tZn / 40 Cu-E	EN 62561-1	162614-001

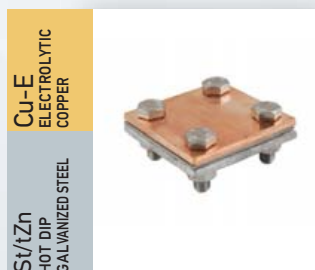


Material	Round - Tape (mm)	Standard	Item No.
St/tZn Cu-E	Ø 16 Cu-E / 40 St/tZn	EN 62561-1	162614-002

1.5.13 3.1

Bimetallic connectors H.T. tape conductors 30/30

Bimetallic connectors H.T. for tape conductors up to 30 mm for connection type "+", "Γ", "T", "II". The connector consists of three plates with dimensions 60x60x4 mm, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.

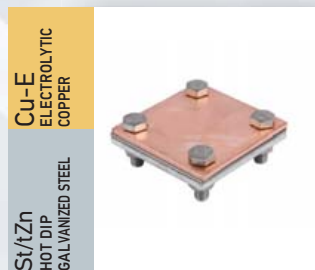


Material	Tape - Tape (mm)	Standard	Item No.
St/tZn Cu-E	30 St/tZn / 30 Cu-E	EN 62561-1	162511-001

1.5.13 3.2

Bimetallic connectors H.T. tape conductors 40/40

Bimetallic connectors H.T. for tape conductors up to 40 mm for connection type "+", "Γ", "T", "II". The connector consists of three plates with dimensions 70x70x4 mm, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.

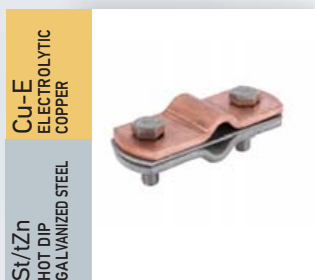


Material	Tape - Tape (mm)	Standard	Item No.
St/tZn Cu-E	40 St/tZn / 40 Cu-E	EN 62561-1	162512-001

1.5.14 1.1

Bimetallic connectors H.T. with two bolts (quickconnectors) round conductors Ø 8-10/Ø 8-10

Bimetallic connectors H.T. with two bolts (quickconnectors) for round conductors Ø 8-10 mm for connection type "II". The connector consists of three plates, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.



Material	Round - Round (mm)	Standard	Item No.
St/tZn Cu-E	Ø 8-10 St/tZn / Ø 8-10 Cu-E	EN 62561-1	163611-007

1.5.14 2.1

Bimetallic connectors H.T. with two bolts (quickconnectors) round/tape conductors Ø 8-10/30-40

Bimetallic connectors H.T. with two bolts (quickconnectors) for round Ø 8-10 mm and tape conductors up to 40 mm for connection type "II". The connector consists of three plates, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.



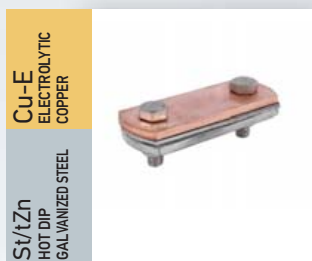
Material	Round - Tape (mm)	Standard	Item No.
St/tZn Cu-E	Ø 8-10 Cu-E / 30-40 St/tZn	EN 62561-1	163811-006

Material	Round - Tape (mm)	Standard	Item No.
St/tZn Cu-E	Ø 8-10 St/tZn / 30-40 Cu-E	EN 62561-1	163811-007

1.5.14 3.1

Bimetallic connectors H.T. with two bolts (quickconnectors) tape conductors 30-40/30-40

Bimetallic connectors H.T. with two bolts (quickconnectors) for tape conductors up to 40 mm for connection type "II". The connector consists of three plates, the intermediate plate is stainless steel with thickness 2mm. Usage above and under ground.



Material	Tape - Tape (mm)	Standard	Item No.
St/tZn Cu-E	30-40 Cu-E / 30-40 St/tZn	EN 62561-1	163711-007

1.5.15

1

Test connectors round conductors Ø 8-10/Ø 8-10 Type A

Test connectors for conductors Ø 8-10 mm, which connect the lightning protection system with the earthing system and is suitable for earthing inspection. The connector is installed about 1,5 m above ground level.

St/tZn
HOT DIP GALVANIZED STEEL



Ms-Cu
COPPER ALLOY



Ms-Cu/eSn
COPPER ALLOY TIN PLATED



Material	Round - Round (mm)	Standard	Item No.
St/tZn	Ø 8-10/Ø 8-10	EN 62561-1	162711-001
Ms-Cu			162711-007
Ms-Cu/eSn			162711-011

1.5.15

2

Test connectors round conductors Ø 8-10/Ø 8-10 Type B

Test connectors for conductors Ø 8-10 mm, which connect the lightning protection system with the earthing system and is suitable for earthing inspection. The connector is installed about 1,5 m above ground level.

St/tZn
HOT DIP GALVANIZED STEEL



Cu-E
ELECTROLYTIC COPPER



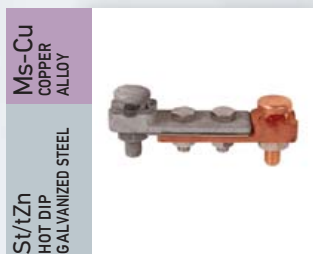
Material	Round - Round (mm)	Standard	Item No.
St/tZn	Ø 8-10/Ø 8-10	EN 62561-1	162711-003
Cu-E			162711-009

1.5.16

1

Bimetallic test connectors round conductors Ø 8-10/Ø 8-10 Type A

Bimetallic test connectors for conductors Ø 8-10 mm with intermediate stainless steel plate, which connect the lightning protection system with the earthing system and is suitable for earthing inspection. The connector is installed about 1,5 m above ground level.



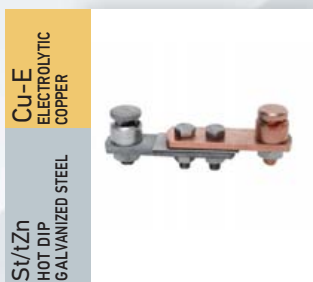
Material	Round - Round (mm)	Standard	Item No.
St/tZn Ms-Cu	Ø 8-10 St/tZn Ø 8-10 Ms-Cu	EN 62561-1	162811-001

1.5.16

2

Bimetallic test connectors round conductors Ø 8-10/Ø 8-10 Type B

Bimetallic test connectors for conductors Ø 8-10 mm with intermediate stainless steel plate, which connect the lightning protection system with the earthing system and is suitable for earthing inspection. The connector is installed about 1,5 m above ground level.



Material	Round - Round (mm)	Standard	Item No.
St/tZn Cu-E	Ø 8-10 St/tZn Ø 8-10 Cu-E	EN 62561-1	162811-004

1.5.17

1

Test connectors round/tape conductors Ø 8-10/30

Test connectors for round conductors Ø 8-10 mm and tapes up to 30 mm, which connect the lightning protection system with the earthing system and is suitable for earthing inspection. The connector is installed about 1,5 m above ground level.



Material	Round - Tape (mm)	Standard	Item No.
St/tZn	Ø 8-10/30	EN 62561-1	162911-001
Ms-Cu			162911-004

1.5.18

1

Single point connectors round conductors multipurpose Type A

Multipurpose single point connectors for conductors Φ 8-10 mm. It is used for bonding metallic structures, pipe clamps e.t.c . Usage above ground.

ZAMAK
ZINC ALLOY

Material	Diameter Round (mm)	Standard	Item No.
ZAMAK	Ø 8-10	EN 62561-1	163011-003

ZAMAK/eCu
ZINC ALLOY
COPPER PLATED

Material	Diameter Round (mm)	Standard	Item No.
ZAMAK/eCu	Ø 8-10	EN 62561-1	163011-007

1.5.18

2

Single point connectors round conductors multipurpose Type B

Multipurpose single point connectors for conductors Φ 8-10 mm. It is used for bonding metallic structures, pipe clamps e.t.c . Usage above ground.

Al
ALUMINIUM

Base Material	Screw Material	Diameter Round (mm)	Standard	Item No.
Al	St/tZn	Ø 8-10	EN 62561-1	163011-002

Ms/eCu
BRASS COPPER PLATED

Base Material	Screw Material	Diameter Round (mm)	Standard	Item No.
Ms/eCu	Ms/eCu	Ø 8-10	EN 62561-1	163011-006

Ms/eSn
BRASS TIN PLATED

Base Material	Screw Material	Diameter Round (mm)	Standard	Item No.
Ms/eSn	Ms/eSn	Ø 8-10	EN 62561-1	163011-008

INOX
STAINLESS STEEL

Base Material	Screw Material	Diameter Round (mm)	Standard	Item No.
INOX	INOX	Ø 8-10	EN 62561-1	163011-004

1.5.18 3

Single point connectors round conductors multipurpose Type C

Multipurpose single point connectors for conductors Φ 8-10 mm. It is used for bonding metallic structures, pipe clamps e.t.c . Usage above and under ground.



Material	Diameter Round (mm)	Standard	Item No.
St/tZn	Ø 8-10	EN 62561-1	163011-001



Material	Diameter Round (mm)	Standard	Item No.
Ms-Cu	Ø 8-10	EN 62561-1	163011-005

1.5.19 1

Double point connectors round conductors multipurpose Type A

Multipurpose double point connectors for conductors Φ 8-10 mm. It is used for contraction-expansion absorbing conductors , lead-in rods e.t.c . Usage above ground.



Material	Diameter Round (mm)	Standard	Item No.
ZAMAK	Ø 8-10	EN 62561-1	163111-002



Material	Diameter Round (mm)	Standard	Item No.
ZAMAK/eCu	Ø 8-10	EN 62561-1	163111-005

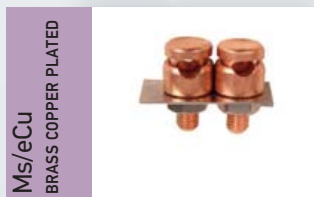
1.5.19 2

Double point connectors round conductors multipurpose Type B

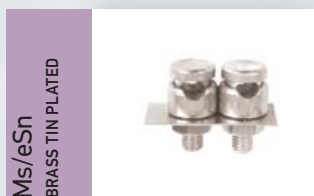
Multipurpose double point connectors with stainless steel plate for conductors Φ 8-10 mm. It is used for contraction-expansion absorbing conductors , lead-in rods e.t.c . Usage above ground.



Base Material	Screw Material	Diameter Round (mm)	Standard	Item No.
Al	St/tZn	Ø 8-10	EN 62561-1	163111-003



Base Material	Screw Material	Diameter Round (mm)	Standard	Item No.
Ms/eCu	Cu-E	Ø 8-10	EN 62561-1	163111-006



Base Material	Screw Material	Diameter Round (mm)	Standard	Item No.
Ms/eSn	Ms/eSn	Ø 8-10	EN 62561-1	163111-008



Base Material	Screw Material	Diameter Round (mm)	Standard	Item No.
INOX	INOX	Ø 8-10	EN 62561-1	163111-001

1.5.19 3

Double point connectors round conductors multipurpose Type C

Multipurpose double point connectors for conductors Φ 8-10 mm. It is used for contraction-expansion absorbing conductors , lead-in rods e.t.c . Usage above and under ground.



Material	Diameter Round (mm)	Standard	Item No.
St/tZn	Ø 8-10	EN 62561-1	163111-004



Material	Diameter Round (mm)	Standard	Item No.
Ms-Cu	Ø 8-10	EN 62561-1	163111-007

1.5.20

1

Connectors / clamps straight
Type A

Connectors / clamps straight for conductors Ø 8-10 mm, used for bonding metallic structures.

St/tZn
HOT DIP GALVANIZED STEEL



Ms-Cu
COPPER ALLOY



Ms-Cu/eSn
COPPER ALLOY TIN PLATED



Material	Diameter Round (mm)	Standard	Item No.
St/tZn	Ø 8-10	EN 62561-1	163211-001
Ms-Cu			163211-004
Ms-Cu/eSn			163211-006

1.5.20

2

Connectors / clamps straight
Type B

Connectors / clamps straight for conductors Ø 8-10 mm, used for bonding metallic structures.

St/tZn
HOT DIP GALVANIZED STEEL



Cu-E
ELECTROLYTIC COPPER



Cu/eSn
COPPER TIN PLATED



INOX
STAINLESS STEEL



Material	Diameter Round (mm)	Standard	Item No.
St/tZn	Ø 8-10	EN 62561-1	163211-002
Cu-E			163211-005
Cu/eSn			163211-007
INOX			163211-003

1.5.20

3

Connectors / clamps angled Type A

Connectors / clamps angled for conductors Ø 8-10 mm, used for bonding metallic structures.

St/tZn
HOT DIP GALVANIZED STEEL



Ms-Cu
COPPER ALLOY



Ms-Cu/eSn
COPPER ALLOY TIN PLATED



Material	Diameter Round (mm)	Standard	Item No.
St/tZn	Ø 8-10	EN 62561-1	163212-001
Ms-Cu			163212-007
Ms-Cu/eSn			163212-009

1.5.20

4

Connectors / clamps angled Type B

Connectors / clamps angled for conductors Ø 8-10 mm, used for bonding metallic structures.

St/tZn
HOT DIP GALVANIZED STEEL



Cu-E
ELECTROLYTIC COPPER



Cu/eSn
COPPER TIN PLATED



INOX
STAINLESS STEEL



Material	Diameter Round (mm)	Standard	Item No.
St/tZn	Ø 8-10	EN 62561-1	163212-004
Cu-E			163212-008
Cu/eSn			163212-010
INOX			163212-005

1.6

1_A

Pipe clamps single point

Pipe clamps with one point of connection. It is made by hot dip galvanized steel bar with dimensions 40 x 3 mm.

St/tZn
HOT DIP GALVANIZED STEEL

Material	Pipe Diameter (inch)	Standard	Item No.
St/tZn	½"	EN62561-1	171111-007
	¾"		171111-008
	1"		171111-001
	1 ¼"		171111-010
	1 ½"		171111-009
	2"		171111-002
	2 ½"		171111-011
	3"		171111-003
	3 ½"		171111-012
	4"		171111-004
	5"		171111-005
	6"		171111-006

1.6

1_B

Pipe clamps double point

Pipe clamps with two points of connection. It is made by hot dip galvanized steel bar with dimensions 40 x 3 mm.

St/tZn
HOT DIP GALVANIZED STEEL

Material	Pipe Diameter (inch)	Standard	Item No.
St/tZn	½"	EN62561-1	171112-007
	¾"		171112-008
	1"		171112-001
	1 ¼"		171112-010
	1 ½"		171112-009
	2"		171112-002
	2 ½"		171112-011
	3"		171112-003
	3 ½"		171112-012
	4"		171112-004
	5"		171112-005
	6"		171112-006

1.6 2

Pipe clamps Type 925

Galvanized steel pipe clamps, single point connection, pipe diameter 1/4 - 1 1/2" or Ø 11,5 - 48,3 mm. Conductor up to 16 mm².

St/galZn
GALVANIZED STEEL



Material	Pipe Diameter (mm)	Pipe Diameter (inch)	Item No.
St/galZn	11,5 - 13,5	1/4	171113-001
	15,2 - 17,2	3/8	171113-002
	19,3 - 21,3	1/2	171113-004
	24,9 - 26,9	3/4	171113-006
	31,7 - 33,7	1	171113-003
	40,4 - 42,4	1 1/4	171113-005
	46,3 - 48,3	1 1/2	171113-007

1.6 3

Pipe clamps Type 942

Copper nickel plated pipe clamps, single point connection, pipe diameter 1/8 - 1 1/2" or Ø 8 - 49 mm. Conductor up to 16 mm².

Cu/eNi
COPPER NICKEL PLATED



Material	Pipe Diameter (mm)	Pipe Diameter (inch)	Item No.
Cu/eNi	8 - 11	1/8	171114-001
	13 - 15	1/4	171114-002
	16 - 18	3/8	171114-003
	19 - 22	1/2	171114-004
	24 - 28	3/4	171114-005
	30 - 35	1	171114-006
	39 - 43	1 1/4	171114-007
	44 - 49	1 1/2	171114-008

1.6 4

Pipe clamps Type 950

Zinc alloy pipe clamps, single point connection, pipe diameter 1/4 - 2" or Ø 12 - 61,5 mm. Conductor up to 35 mm².

ZAMAK
ZINC ALLOY



Material	Pipe Diameter Ø (mm)	Pipe Diameter (inch)	Item No.
ZAMAK	12 - 14	1/4	171115-001
	15,5 - 17,5	3/8	171115-002
	20 - 22,5	1/2	171115-003
	25 - 28	3/4	171115-004
	31,5 - 34,5	1	171115-005
	40,5 - 43,5	1 1/4	171115-006
	46,5 - 49,5	1 1/2	171115-007
	51 - 54	1 3/4	171115-008
	58,5 - 61,5	2	171115-009

1.6 5

Clamp for Franklin air terminal rods

Franklin air terminal rod clamp with single point connector.

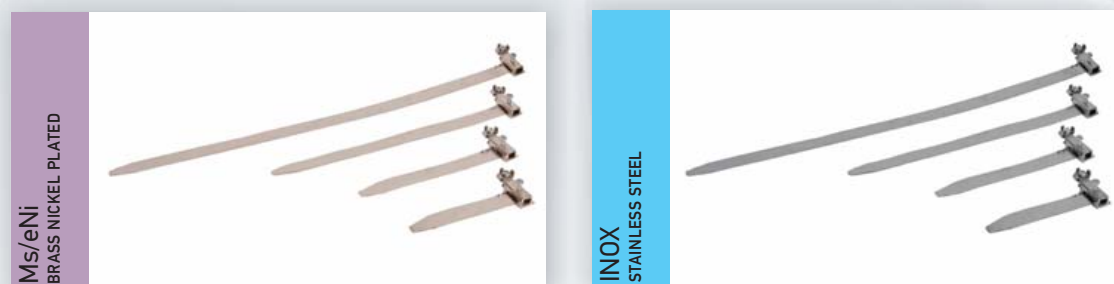


Material	Pipe Diameter Ø (mm)	Conductor Diameter (mm)	Standard	Item No.
Cu/eSn	30	Ø 8-10	EN 62561-1	171116-001
INOX				171116-002

1.6 6

Adjustable pipe clamps

Adjustable pipe clamps with one point connection which are used for bonding pipes. Suitable for 2 x 16 mm² conductors.



Material	Pipe Diameter "	Pipe Diameter Ø (mm)	Standard	Item No.
Ms/eNi	3/8" - 1"	14 - 38	EN 62561-1	171117-005
	3/8" - 1 1/2"	14 - 52		171117-006
	3/8" - 4"	14 - 114		171117-007
	3/8" - 6"	14 - 168		171117-008
INOX	1/8" - 1"	10 - 38		171117-001
	1/8" - 1 1/2"	10 - 52		171117-002
	1/8" - 4"	10 - 114		171117-003
	1/8" - 6"	10 - 168		171117-004

1.7 1

Bimetallic contact

Bimetallic tape (copper-aluminum) CUPAL, which is inserted between copper and steel surface, to avoid electrochemical corrosion.



Material	Width Tape (mm)	Thickness Tape (mm)	Length Tape (mm)	Item No.
Cu – Al	40	0,5	500	121211-001

1.7 1_A

Bimetallic contact single point

Bimetallic or stainless steel contact single point which are inserted between surfaces to avoid electrochemical corrosion.

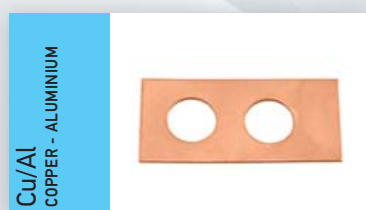


Material	Width (mm)	Thickness (mm)	Length (mm)	Pin Hole (mm)	Item No.
Cu – Al	25	1	30	1 x Ø 14	171211-001
INOX					171211-003

1.7 1_B

Bimetallic contact double point

Bimetallic or stainless steel contact double point which are inserted between surfaces to avoid electrochemical corrosion.



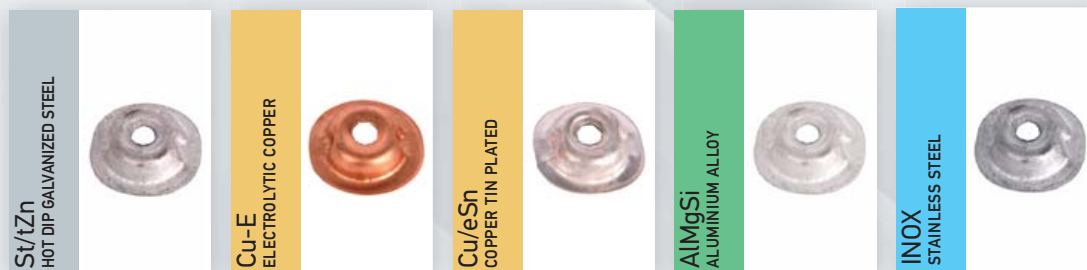
Material	Width (mm)	Thickness (mm)	Length (mm)	Pin Holes (mm)	Item No.
Cu – Al	28	1	52	2 x Ø 14	171211-002
INOX					171211-004

1.7

2

Metallic spacers

They are used with wall conductor fasteners to maintain a distance between the conductor and surface.



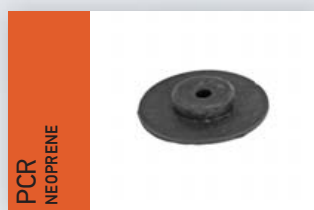
Material	Diameter (mm)	Item No.
St/tZn	Ø 40	171212-004
Cu		171212-005
Cu/eSn		171212-006
AlMgSi		171212-007
INOX		171212-008

1.7

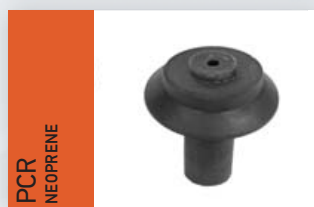
3

Sealing washers for metallic spacers

Sealing washers made by neoprene. They are used for sealing of drilled surfaces (fastener installation) and are placed inside the metallic spacer.



Material	Diameter (mm)	Item No.
PCR	Ø 40	171212-002



Material	Diameter (mm)	Height (mm)	Item No.
PCR	Ø 30	30	171212-003

1.7

4

Roof penetration

Roof penetration for conductors and tapes. It is installed where the conductor or tape should pass through roof tiles.



PVC
POLYVINYLCHLORIDE

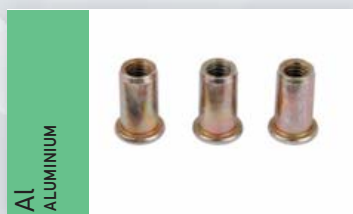
Material	Diameter (mm)	Diameter conductor (mm)	Dimensions tape (mm)	Item No.
PVC	Ø 250	Ø 8 – 16	20 - 30	171299-003

1.7

5

Blind rivet nuts

Aluminum Blind rivet nuts with inner thread for metal surfaces.



Al
ALUMINIUM

Material	Thread	Surface Thickness (mm)	Item No.
Al	M5	0,5 - 3	171213-001
	M6	0,7 - 3	171213-002

1.7

6

Threaded screws

Threaded screw for HILTI fastener.



St/tZn
HOT DIP
GALVANIZED STEEL

Material	Thread	Drive Length (mm)	Thread Length (mm)	Item No.
St/tZn	M6	25	8	171214-001
	M6	35	8	171214-002
	M8	35	10	171214-003

1.7 7

Magnetic card PCS

Installed on the down conductor, recording the lightning current in kA.



Material	Dimensions (mm)	Item No.
Magnetic card	85x53	171299-005
Sealable holder	105x70	171299-006

1.7 8

Lightning strike counter

The strike counter is inserted on the down conductor and records the number of lightning currents which have passed along.



Type	Dimensions (mm)	Item No.
Lightning strike counter	60x185x60	171299-007

1.7 9

Straightener round/tape conductors

Tool of shaping and straightening conductors and tapes.



Material	Diameter (mm)	Length (mm)	Item No.
St/tZn	Ø 34	500	171299-010

1.7

10

Zinc Spray

Zinc spray for repairing exposed surfaces.



Material	Content (ml)	Item No.
zsf	400	171299-011

1.7

11_A

Spark gap closed type

Closed spark gap capable to carry lightning current used for equipotential bonding or for corrosion protection.



Type	Impulse current (10/350) kA	Nom. Discharge Impulse current (8/20) kA	Protection level kV	Contact voltage kV	Item No.
481	50	100	< 5	2,5	171299-008

1.7

11_B

Protective spark gap

Protective spark gap for bridging a proximity point between roof standard of low-voltage system and components of outer lightning protection system.



Type	Protection level kV	Contact voltage kV	Item No.
482	< 5	10	171299-009

2

Earthing Materials



- 2.1 Round - Tape conductors - Plates
- 2.2 Earth Rods
- 2.3 Fasteners
- 2.4 Connectors
- 2.5 Equipotential bonding bars
- 2.6 Accessory components
- 2.7 Test Instruments

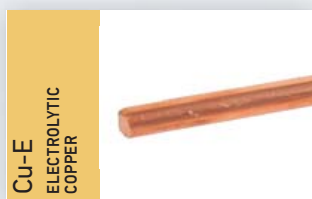
2.1 1

Solid round conductors



Material	Diameter (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
St/tZn	Ø 10	78,5	620	EN 62561-2	111111-002

- Zinc coating 350 gr/m²



Material	Diameter (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
Cu-E	Ø 8	50	450	EN 62561-2	111113-002
	Ø 10	78,5	700		111113-003



Material	Diameter (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
INOX V2A	Ø 8	50	395	EN 62561-2	111116-001
	Ø 10	78,5	617		111116-003
INOX V4A	Ø 8	50	395		111116-002
	Ø 10	78,5	617		111116-004

- High resistant in corrosive environments
- Connection with galvanized steel or copper elements

2.1

2

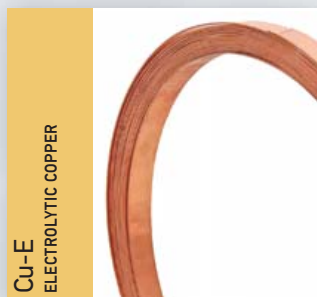
Tape conductors

Tape conductors used in earthing systems (foundation - perimetric), equipotential bonding.



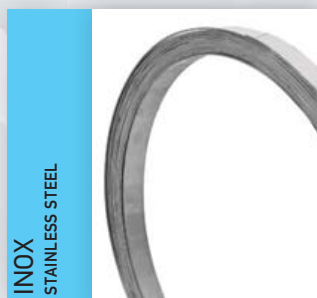
Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
St/tZn	30	3,5	105	830	EN 62561-2	121111-005
	40	4	160	1.260		121111-006

- Zinc coating 500gr/m²



Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
Cu-E	25	3	75	670	EN 62561-2	121113-003
	30	2	60	530		121113-005
	30	3	90	800		121113-006
	40	3	120	1.060		121113-009
	40	4	160	1.420		121113-010

- Available in various other dimensions according to specifications



Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Weight ~ gr/m	Standard	Item No.
INOX V2A	30	3,5	105	825	EN 62561-2	121116-001
INOX V4A	30	3,5	105	825		121116-003

- High resistant in corrosive environments
- Connection with galvanized steel or copper elements

2.1 3

Flexible stranded tapes

Flexible stranded tapes with small diameter strands (high conductivity) for equipotential bonding of metallic structures.



Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Item No.
Cu-E	17	2	16	121311-001
	20	2,5	25	121311-002
	28	2,5	35	121311-003
	30	3,6	50	121311-004
	45	3,5	70	121311-005

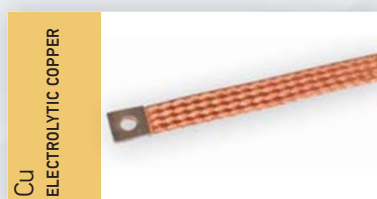


Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Item No.
Cu/eSn	17	2	16	121312-001
	20	2,5	25	121312-002
	28	2,5	35	121312-003
	30	3,6	50	121312-004
	45	3,5	70	121312-005

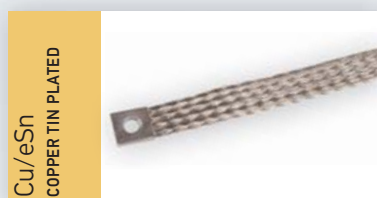
2.1 4

Preformed flexible stranded tapes

Preformed flexible stranded tapes in lengths of 300 mm and 500 mm for equipotential bonding of metallic structures.



Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Length (mm)	Hole (mm)	Item No.
Cu	30	3	35	300	Ø 12	121411-001
				500		121411-002



Material	Width (mm)	Thickness (mm)	Cross section (mm ²)	Length (mm)	Hole (mm)	Item No.
Cu/eSn	30	3	35	300	Ø 12	121412-001
				500		121412-002

2.1

5

Plates

Earth plates in various dimensions with single point connector for round conductors.

St/tZn
HOT DIP GALVANIZED STEEL



Material	Length (mm)	Width (mm)	Thickness (mm)	Standard	Item No.
St/tZn	500	500	3	EN 62561-2	191211-009
	500	500	5		191211-011
	500	1.000	3		191211-006
	500	1.000	5		191211-008
	1.000	1.000	3		191211-001
	1.000	1.000	5		191211-002

Cu-E
ELECTROLYTIC COPPER



Material	Length (mm)	Width (mm)	Thickness (mm)	Standard	Item No.
Cu-E	500	500	2	EN 62561-2	191212-009
	500	500	3		191212-010
	500	500	5		191212-012
	500	1.000	3		191212-006
	500	1.000	5		191212-008
	1.000	1.000	3		191212-001
	1.000	1.000	5		191212-002

2.2

1

Earth rod cross

Earth rod cross profile (50 x 50 x 3 mm) hot dip galvanized steel with welded receptacle for single or double connector.

St/tZn

HOT DIP GALVANIZED STEEL



Material	Dimensions (mm)	Thickness (mm)	Length (mm)	Standard	Item No.
St/tZn	50 x 50	3	1.500	EN 62561-1 & 2	191311-001
			2.000		191311-002
			2.500		191311-003
			3.000		191311-004

2.2

2

Earth rods

Solid round earth rods.

St/tZn

HOT DIP GALVANIZED STEEL



Material	Diameter (mm)	Length (mm)	Thread	Standard	Item No.
St/tZn	16	1.500	M 16	EN 62561-1 & 2	191411-012
	20	1.500	M 20		191411-007
	20	2.000	M 20		191411-008

St/Cu

STEEL COPPER PLATED



Material	Diameter (mm)	Length (mm)	Copper plating (µm)	Thread	Item No.
St/Cu	Ø 14	1.500	50	M 16	191412-004

Material	Diameter (mm)	Length (mm)	Copper plating (µm)	Thread	Standard	Item No.
St/Cu	Ø 14,2	1.500	250	5/8"	EN 62561-1 & 2	191412-003
	Ø 17,2	1.500		3/4"		191412-005
	Ø 17,2	2.000		3/4"		191412-006
	Ø 17,2	3.000		3/4"		191412-007
	Ø 20	1.500		M20		191412-011

2.3

1

Vertical installation round/tape conductor fasteners

Fasteners for vertical installation of tapes up to 40 mm and round conductors Ø 8-10 mm.

St/tZn
HOT DIP GALVANIZED STEEL



St/Cu
STEEL COPPER PLATED



Cu-E
ELECTROLYTIC COPPER



Material	Fastener Length (mm)	Item No.
St/tZn	250	151311-001
	400	151311-002
St/Cu	250	151311-003
	400	151311-004
Cu-E	250	151311-005
	400	151311-006

2.3

2

Tape fasteners (Equipotential ring)

Wall fasteners for tapes which are used mainly for indoor equipotential ring in substations.

St/tZn
HOT DIP GALVANIZED STEEL



Cu-E
ELECTROLYTIC COPPER



Cu/eSn
COPPER TIN PLATED



Material	Width Tape (mm)	Thickness Tape (mm)	Standard	Item No.
St/tZn	έως 40	έως 6	EN 62561-4	151213-001
Cu-E				151213-002
Cu/eSn				151213-003

2.3 3

Conductor fasteners (Brass)

Brass conductor fasteners with internal thread. It is suitable to fasten round conductors on flat metallic surface.

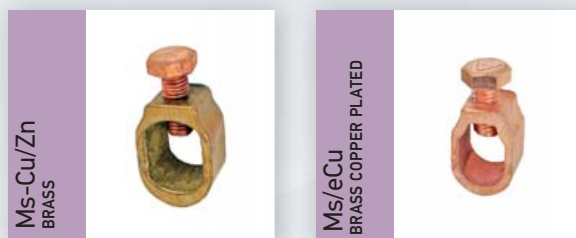


Material	Cross section Round mm ²	External fastener diameter (mm)	Thread	Standard	Item No.
Ms-Cu/Zn	16-35	Ø 20	M6	EN 62561-4	151123-001
	16-35	Ø 20	M8		151123-005
	50-70	Ø 22	M6		151123-003
	50-70	Ø 22	M8		151123-008
	95-120	Ø 25	M8		151123-009
	120-185	Ø 32	M8		151123-004
	185-240	Ø 35	M8		151123-006

2.4 1

Earth rod clamps

Clamps which connect the earth rod with stranded round conductors.



Material	Earth rod Diameter (mm)	Standard	Item No.
Ms-Cu/Zn	Ø 14	EN 62561-1	163311-002
	Ø 17		163311-006
	Ø 20		163311-008
Ms/eCu	Ø 16		163311-004

2.4

2

Earth rod coupler

Couplers for earth rods made by brass with internal thread. Used for extension or driving.

Ms-Cu/Zn
BRASS



Material	Earth rod Diameter (mm)	Standard	Item No.
Ms-Cu/Zn	Ø 14	EN 62561-1	191511-001
	Ø 16		191511-002
	Ø 17		191511-003
	Ø 20		191511-004

2.4

3

Rebar connector

Reinforcement rebar's connector, for reinforcement steel up to Ø 25 mm, with round conductor Ø 8-10 or Tape up to 40x4 mm.

St/tZn
HOT DIP GALVANIZED STEEL



Material	Conductor (mm)	Rebar (mm)	Tape (mm)	Standard	Item No.
St/tZn	Ø 8-10	Ø 25	40 x 4	EN 62561-1	163411-001

Single reinforcement rebar's connector, for reinforcement steel up to Ø 25 mm, with round conductor Ø 8-10 or Tape up to 40x4 mm.

St/tZn
HOT DIP GALVANIZED STEEL



Material	Conductor (mm)	Rebar (mm)	Tape (mm)	Standard	Item No.
St/tZn	Ø 8-10	Ø 25	40 x 4	EN 62561-1	163411-003

Reinforcement rebar's connector (quickconnector), for reinforcement steel up to Ø 24 mm and Tape 30x3,5 or up to 40x4 mm.

St/tZn
HOT DIP GALVANIZED STEEL



Material	Rebar (mm)	Tape (mm)	Standard	Item No.
St/tZn	Ø 24	40 x 4	EN 62561-1	163411-002

2.4 4

Connector «C» type

Compression connector "C" type.



Material	Cross section Round A (mm²)	Cross section Round B (mm²)	Item No.
Cu-E	16	16	163511-014
	25	25	163511-016
	35	16	163511-017
	35	35	163511-019
	50	25	163511-020
	50	50	163511-021
	70	50	163511-022
	70	70	163511-023
	95	70	163511-025
	95	95	163511-026
	120	95	163511-007
	120	120	163511-002
	150	150	163511-003
	185	185	163511-005
	240	240	163511-006
Cu/eSn	16	16	163512-006
	25	25	163512-008
	35	16	163512-009
	35	35	163512-011
	50	25	163512-012
	50	50	163512-013
	70	50	163512-014
	70	70	163512-015
	95	70	163512-017
	95	95	163512-019
	120	95	163512-001
	120	120	163512-002
	150	150	163512-020
	185	185	163512-022
	240	240	163512-003

2.5 1

Equipotential bonding rail (standard)

Equipotential bonding rail, dimensions 170x50x50 mm (PVC base and cover).

1 Tape 30 x 3,5 mm / 1 Round conductor Ø 8-10 mm / 7 Conductors 2,5 – 25 mm²



Material	Slots	Standard	Item No.
PVC - Ms-Cu/Zn	(9)	EN 62561-1	201111-001
PVC - Inox			201112-001

2.5

2

Equipotential bonding rail (custom)

Equipotential bonding rails are available on various materials and in various dimensions according to the installation requirements.

Selection

- Material (Hot dip galvanized steel, Copper, Tin plated copper, Stainless Steel)
- Length, Width, Thickness
- Connection elements (round conductors or tape)
- Fixation (Straight with insulators, Prefixed)

Equipotential bonding rail examples

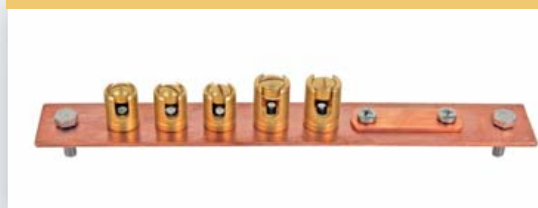
Cu-E

ELECTROLYTIC COPPER



Cu-E

ELECTROLYTIC COPPER



2.5

3

Equipotential bonding rail insulator



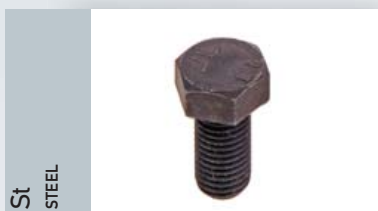
External Diameter (mm)	Height (mm)	Thread	Item No.
Ø 40	40	M 8	171299-004

2.6

1

Driving studs

Steel driving stud, which is screwed onto earth rod coupler and is used to drive the earth rod.



Material	Earth rod Diameter (mm)	Item No.
St	Ø 14	171215-001
	Ø 16	171215-002
	Ø 17	171215-003

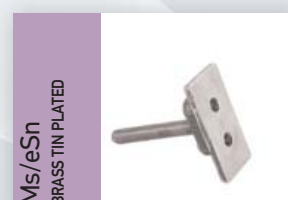
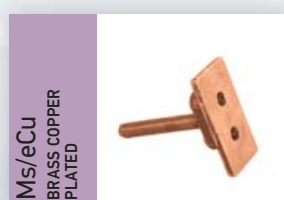
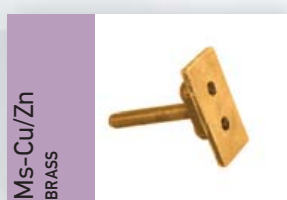
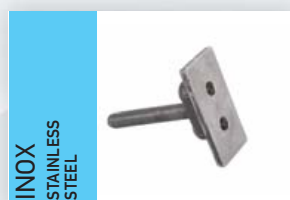
2.6 2

Earthing fixed point

Wall earthing receptacles which provide fixed earthing point. The connection with the earthing conductors is succeeded either by connector or by exothermic welding.



Material	Diameter (mm)	Length (mm)	Thread	Standard	Item No.
INOX	Ø 70	180	1 x M 10	EN 62561-1	171220-004



Material	Length (mm)	Thread	Standard	Item No.
INOX	60	2 x M 8	EN 62561-1	171216-002
		2 x M 10		171216-001
Ms-Cu/Zn		2 x M 8		171216-006
		2 x M 10		171216-003
Ms/eCu		2 x M 8		171216-005
		2 x M 10		171216-004
Ms/eSn		2 x M 8		171216-008
		2 x M 10		171216-007

2.6 3

Earthing optimizer EarthPlus®

High quality earthing compound which improves the resistivity of the ground. It also protects the ground rods from corrosion. It is available in plastic container of 18lt. Weight 19kg



Material	Standard	Item No.
Earthing optimizer EarthPlus®	EN 62561-7	191612-001

2.6

4

Earthing optimizer Conducrete®

Earthing compound for direct improvement of earth resistance. It is available in bags of 25 kg.



Material	Standard	Item No.
Earthing optimizer Conducrete®	EN 62561-7	191612-003

2.6

5

Press terminals (cable lugs)



Cu/eSn
COPPER TIN PLATED

Material	Cross section mm²	Hole Diameter mm	Item No.
Cu/eSn	6	5	231612-002
		6	231612-003
		8	231612-004
	10	6	231612-005
		8	231612-006
		10	231612-007
	16	12	231612-008
		6	231612-017
		8	231612-018
	25	10	231612-019
		12	231612-020
		6	231612-029
	35	8	231612-030
		10	231612-031
		12	231612-032
	35	6	231612-034
		8	231612-035
		10	231612-036
	35	12	231612-037
		14	231612-038

Material	Cross section mm²	Hole Diameter mm	Item No.
Cu/eSn	50	8	231612-040
		10	231612-041
		12	231612-042
		14	231612-043
	70	8	231612-046
		10	231612-047
		12	231612-048
		14	231612-049
	95	10	231612-051
		12	231612-052
		14	231612-053
		16	231612-054
	120	10	231612-009
		12	231612-010
		14	231612-011
		16	231612-012
	150	12	231612-013
		14	231612-014
		16	231612-015
		20	231612-016
	185	12	231612-021
		14	231612-022
		16	231612-023
		20	231612-024
	240	12	231612-025
		14	231612-026
		16	231612-027
		20	231612-028

2.6 6

Earth sign

Earthing sign which indicates the position of earth electrodes.

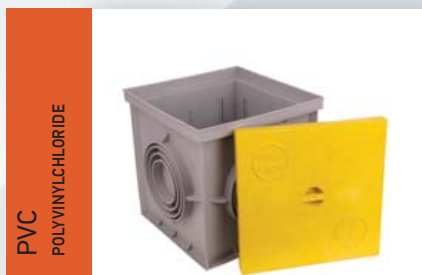


Material	Dimensions (mm)	Item No.
Al	140 x 200	191613-001

2.6 7

Earth pit

The earth pit is used for the inspection of grounding rods and their connection points (tightening of earth ground clamp) and enables the measuring of earth resistance. With earthing symbol indication.



Material	Dimensions (mm)	Standard	Item No.
PVC	200 x 200	EN 62561-5	171218-001
PVC	300 x 300		171218-005

2.6 8

Anti corrosion tapes

Anti corrosion tapes used for protection of underground connections but also for conductors or tapes which are exited from concrete or soil in the air.



Material	Width (mm)	Roll Length (m.)	Thickness (mm)	Item No.
PVC	19	20	0,18	171219-003
	19	20	0,20	171219-004
	50	33	0,18	171219-006
	50	20	0,20	171219-005
PETROLATUM	50	10	1,1	171219-001

2.7 1

Earth resistance tester SEAWARD ERT 1557

New high specification Earth Resistance Tester.



Item No.

221111-001

TESTS:

Earth resistance 2,3 and 4 wire method

Display Range	0.00ohm – 50.0kohm
Measuring Frequency	125 Hz +/- 1 Hz
Measuring current	<20mA
Measuring voltage	<50V effective sine wave

ADDITIONAL INFORMATION:

Weight & Dimensions	0.8kg / 26cm x 10cm x 55 mm
Power supply	6 Batteries AA 1.5V
Communication	USB
Store up to	500 records
Compliance	EN 61557-1, -5, IEC61010-1, 300V CAT II

Earth resistance using current clamp

Display Range	0.00ohm – 2.00kohm
Measuring Frequency	125 Hz +/- 1 Hz
Measuring current	<20mA
Measuring voltage	<50V effective sine wave

The unit is supplied with four earth spikes and full test lead set, batteries, manual.

Specific earth resistance (ρ)

Display Range	0.00ohm – 1999kohm
Measuring Frequency	125 Hz +/- 1 Hz
Measuring current	<20mA
Measuring voltage	<50V effective sine wave

2.7 2

Installation Tester TESTBOY TV 455

Installation tester TESTBOY TV 455 can test the safety of electrical installation in household, commercial and industrial applications. It can assure that the wiring is safe and proper installed in order to comply the requirements of standard HD 60364 Part 6: Verification



Item No.

221111-003

Technical data

- Display: Dot Matrix LCD 128x64 pixel with backlighting and integrated GOD/BAD indication
- Supply: 9VDC (6x1,5V AA, LR06) Rechargeable batteries NiMH or Alkaline
- Environmental conditions: Temperature: 0 to 40 °C, Altitude: 0 to 2000μ
- Degree of protection: IP 40
- Over range protection: CAT III 600 V / CAT IV 300 V
- Automatic shut down after 5 minutes
- Memory: 1.700 records
- Interface: USB or RS 232
- Standards: EAOT HD 384, EN 61326, EN 61010-1, EN 61010-031, EN 61008, EN 61009, EN 60364, EN 61557

Tests

- Voltage: 0 – 550 V AC, - Frequency: 0,14– 500 Hz
- Earth resistance: 0,01 – 19,99 Ω, 20,00 – 199,9 Ω
- Insulation resistance: 0,01 – 19,99 Ω, 20,00 – 199,9 MΩ
- RCD analysis, Tripping time: 0 – 2.500 ms, Contact voltage: 0 – 100V, Tripping current: 10 – 30 – 100 – 300 – 500 and 1.000 mA

Supplied with:

Operation manual | Carry bag and strap | Test tips (3x - blue, black and green) | Crocodile clips (3x - blue, black and green) | Test cable Schuko | Test cable 3 x 1,5μ. | Calibration certificate | Earth resistance kit | PC Software | Cable USB & RS 232 | Rechargeable NiMH batteries 6x1,5V AA, LR06 and charger

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