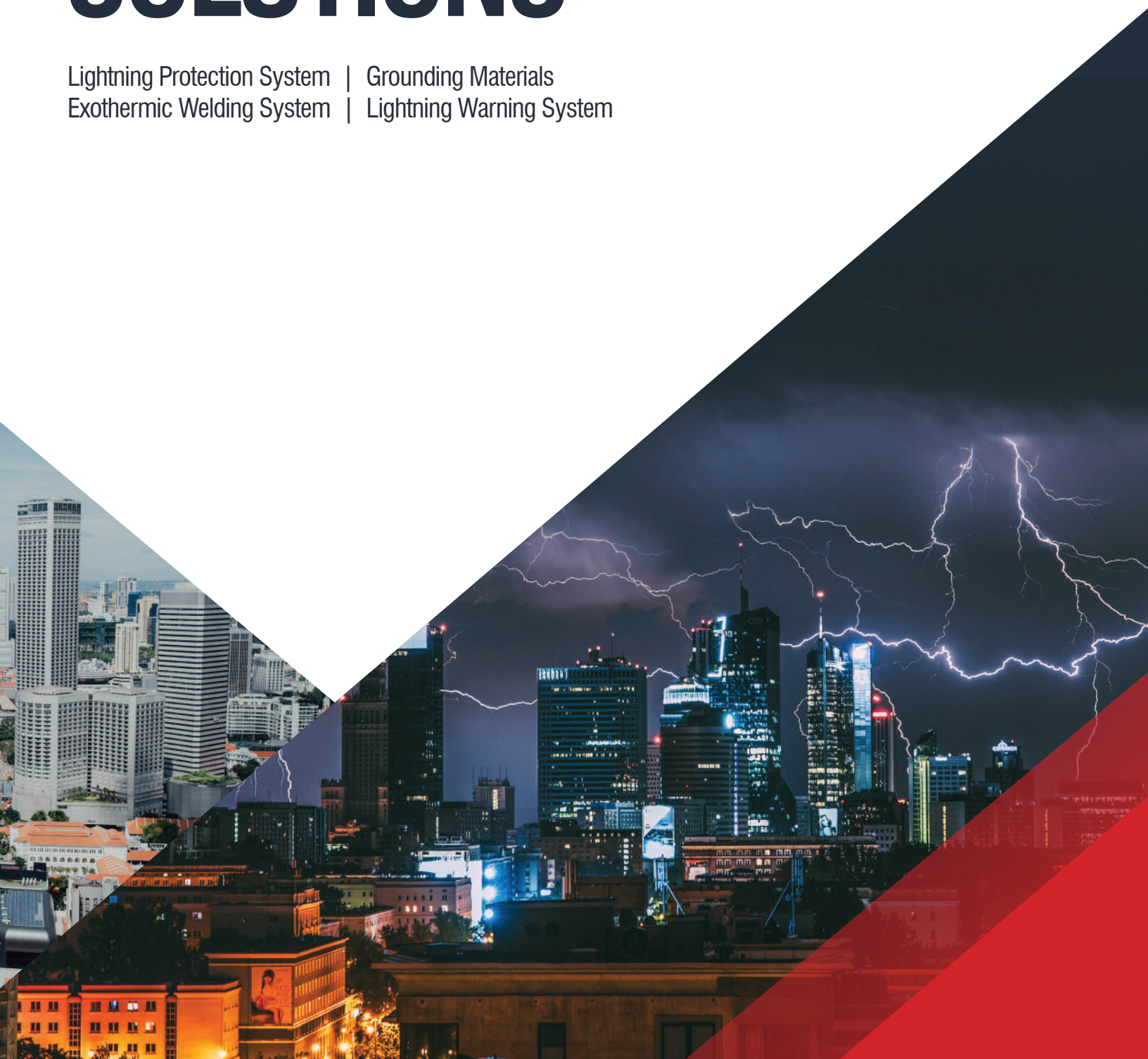
Kumwell®

TOTAL SOLUTIONS

Lightning Protection System | Grounding Materials
Exothermic Welding System | Lightning Warning System

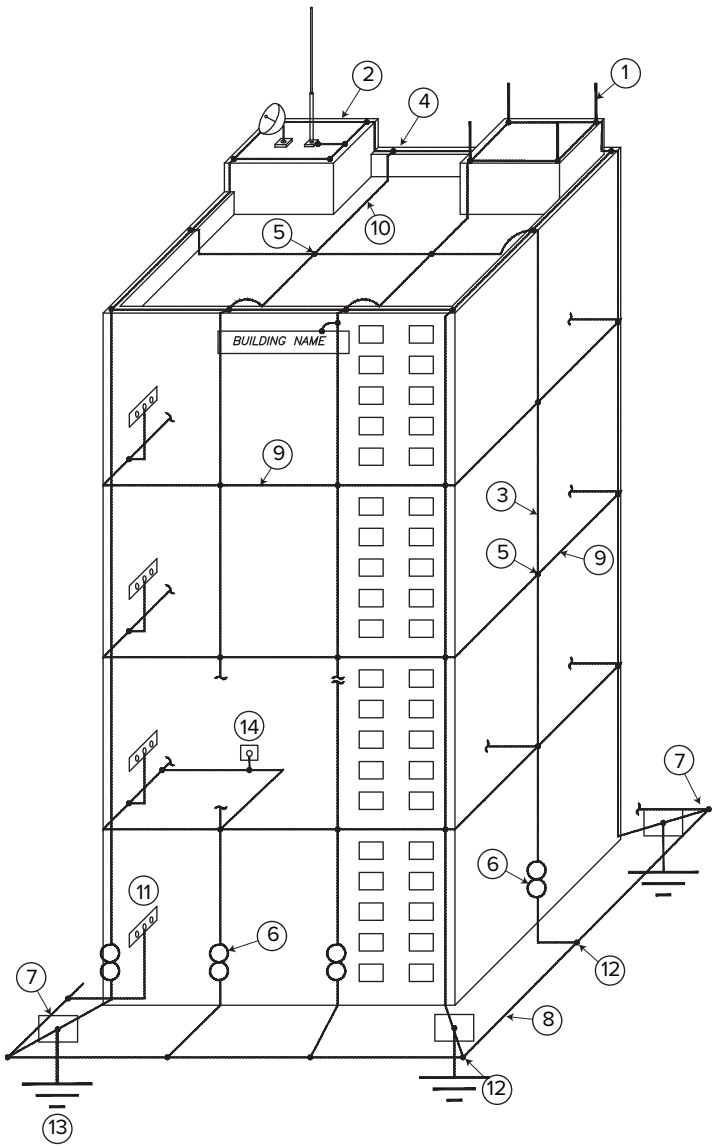


Protection Against Lightning

Lightning is one of nature's most powerful and destructive phenomena. Lightning strikes present a real and significant threat to life, to the structures in which we live and work, and to the electronic systems which support us in our daily lives.

The effects of a direct strike are obvious and immediately apparent - structures damaged, personal injuries and even loss of life. However, the secondary effects of lightning - the surge overvoltages and lightning electromagnetic impulse (LEMP) can cause damage to electrical and electronic systems within structures.

A reliable lightning protection system must encompass external lightning protection, effective grounding and surge protection of electrical and electronic system as well as the LEMP protection measures.



That's why the protection against lightning according to IEC 62305 Series is essential.

IEC 62305-1 (General Principles):
Describe the purpose of IEC 62305 Series and the connection between each part.

IEC 62305-2 (Risk Management):
Determine the need for protection, the economic benefits of installing protection measures and the selection of adequate protection measures.

IEC 62305-3
(Physical Damage to Structures and Life Hazard):
Main protection measures in and around a structure against physical damage and injury to living beings due to touch and step voltages.

IEC 62305-4
(Electrical and Electronics Systems within Structures):
Provides information on protection measures to reduce the risk of permanent failures of electrical and electronic systems within structures caused by the lightning electromagnetic impulse (LEMP).

Description	
1	Air Terminals
2	Conductors
3	Down Conductors
4	Three Way Connection
5	Four Way Connection
6	Test Box
7	Concrete Inspection Pit
8	Ring Earth Electrode
9	Ring Conductor
10	Fastener
11	Bonding Bar
12	Exothermic welding
13	Ground Rod
14	Earth Point

Test and Certificate

Using components and devices which have been tested in compliance with the latest standards is a basic prerequisite for a functional lightning protection system. Installers of lightning protection systems must select components according to the requirements at the installation site and install them in accordance with the manufacturer specifications.

All of lightning protection components used for installing the external lightning protection system shall meet the requirements of IEC 62561 Series as following;

IEC62561-1: Connection Component

IEC62561-2: Conductors and Earth Electrodes

IEC62561-3: Isolating Spark Gaps (ISG)

IEC62561-4: Conductors Fasteners

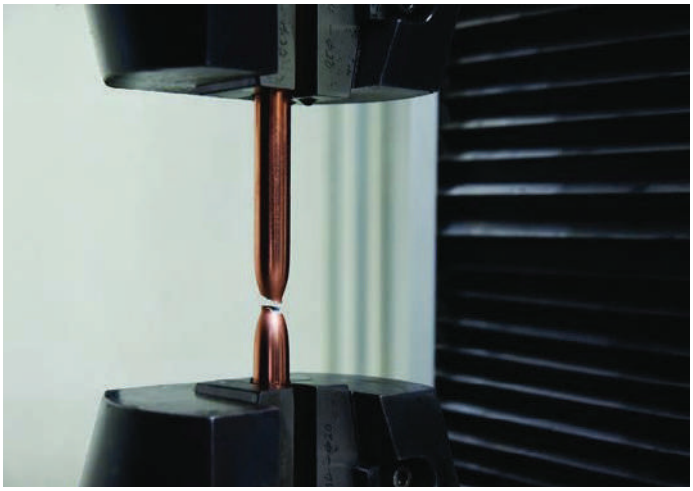
IEC62561-5: Earth Electrode Inspection Housings and Electrode Seals

IEC62561-6: Lightning Strike Counters

IEC62561-7: Earthing Enhancing Compounds

IEC62561-8: Components for Isolated LPS

All of Kumwell components are tested according to IEC 62561 Series and certified by accredited third-party.



Copper-bonded Ground Rod

Kumwell Copper-Bonded Ground Rods meet the requirements of the rigorous standard-UL. The copper layer whose minimum thickness is 254 micron met the UL standard.

Standard size diameters commonly used are 1/2”, 5/8”, 3/4”, and 1”.
Standard lengths commonly used are 4’ to 10’.
Thread type ground rods are available to extend the length of ground rods by using coupling.

Kumwell Intensive Test and Inspection of Ground Rod

Ground Rods should pass the following criterions of international standards as shown;

Thickness Inspection

Copper shell of each ground rod shall pass the thickness inspection to ensure its protective coating.
The copper shell shall not be less than 0.254 mm (254 micron) thick at any point to meet UL 467 standard.

Adherence of Coating Test

There shall be no separation of the coating from the steel core when subjected to the test described to meet UL 467 standard requirements.
Peeling of the coating by the steel plates or the jaws of the vise shall be allowed.

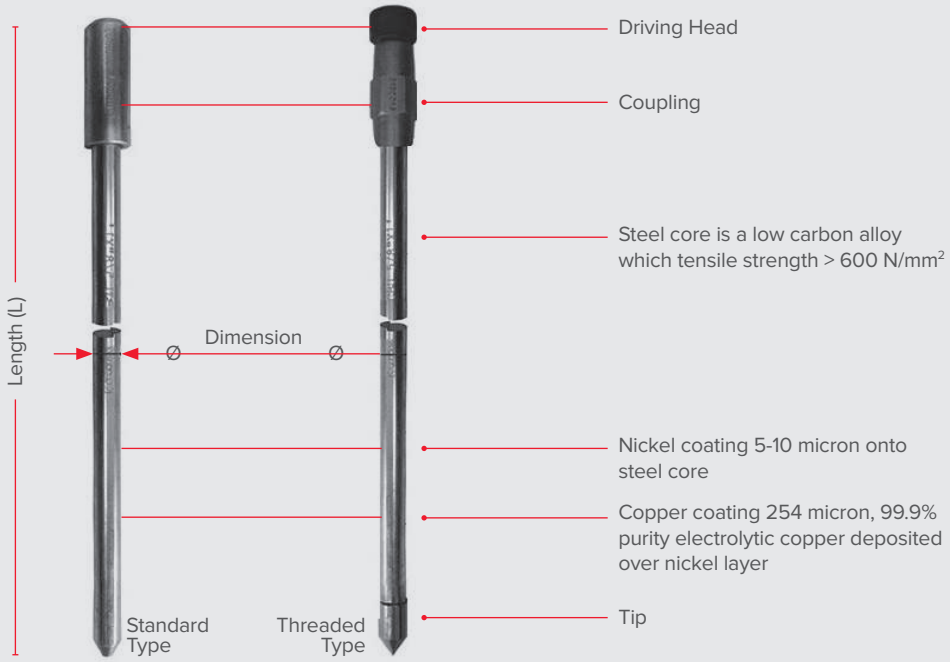
Bending Strength Test

There shall be no cracking of the coating when subjected to the test to meet UL 467 standard requirements.
The application of force shall be such that the rod is permanently bent through a 30° angle.

Straightness Test

Ground rod should be passed straightness test to ensure its straightness and high tensile with acceptable sag. The deviation of every 305 mm ground rod shall be less than 3.05 mm.

Kumwell Copper-Bonded Ground Rod is made by special progress, molecular bonding pure electrolytic coating of copper 99.9% deposited over a layer of nickel, onto a low carbon, with high tensile steel core 600 N/mm^2 and ensurer a longer life span.



Grounding Protection System

The proper selection of grounding system has significant implications for the safety and protection of building structure, a functional ground system serves a purpose other than protecting people and property against electrical shock but also carry current during the normal operation of a device such as surge suppression and electromagnetic compatibility setback.

- Long life
- High resistance to corrosion
- Ability to carry high currents
- Low resistance path to ground
- Cost effective

Ground Rods

Catalog No.	Description
GRCBU 5810	Copper Bonded (Unthreaded) 5/8” (14.2mm) x 10ft
GRCBU 3410	Copper Bonded (Unthreaded) 3/4” (17.2mm) x 10ft
GRCBU 110	Copper Bonded (Unthreaded) 1” (23.1mm) x 10ft
GRCBUT 5810	Copper Bonded (Threaded) 5/8” (14.2mm) x 10ft
GRCBUT 3410	Copper Bonded Threaded) 3/4” (17.2mm) x 10ft
GRCBUT 110	Copper Bonded (Threaded) 1” (23.1mm) x 10ft
GRCBH 110B	Copper Bonded, 1” (22.8mm) Ø x 10ft Standard series, (100 micron) non-UL
GRGA 5810	Hot dipped galvanized. 5/8â€ (16mm) Ã˜ x 10ft. (100 micron) non-UL

Ground Rod Coupling

Catalog No.	Description
GRBCO 58	High strength silicone bronze (Threaded) 5/8” Ø
GRBCO 34	High strength silicone bronze (Threaded) 3/4” Ø
GRBCO 1	High strength silicone bronze (Threaded) 1” Ø
GRD-00177	High strength silicone bronze (Standard) 3/4” Ø
GRD-00199	High strength silicone bronze (Standard) 1” Ø
GRD-00203	High strength silicone bronze (Standard) 5/8" Ø

Ground Rod Driving Head

Catalog No.	Description
GRDSR 58	Zinc plated steel, 5/8” for Unthreaded ground rod
GRDSR 34	Zinc plated steel, 3/4” for Unthreaded ground rod
GRBDH 58	High tensile steel, 5/8” for Threaded ground rod
GRBDH 34	High tensile steel, 3/4” for Threaded ground rod
GRBDH 1	High tensile steel, 1” for Threaded ground rod

Hammer Driving Ground Rod

Catalog No.	Description
GHDG-SP12	Hammer slide driving ground rod set Prove rod- Black steek pipe; Hammer- Mild steel

Inspection Pit

Catalog No.	Description
GXCIP	Concrete 310 x 310 x192 mm, compressive strength 6000kg
GXFIP H	Concrete Inspection Pit, 310 X 310 X 192mm, compressive strength 6000kg
GXCIP-404050-4P	Concrete Inspection Pit 400 X 400 X 500mm, compressive strength 6000kg.
GXFIP	Fiber Reinforced Polyester 306 x 306 x 215 mm, compressive strength 5000kg
GXCIP-WS	Stainless steel 300 x 300 x 2 mm

Grounding Test Box

Catalog No.	Description
GYATB	Aluminum box copper connection bar (50-120 mm^2) 265 x 153 x 70 mm
GYPTB	ABS copper connection bar (16-120 mm^2) 200 x 150 x 100 mm

Disconnecting Link

Catalog No.	Description
GBDL-253	Tin Plated Copper Bar - BS EN 13601, (16-120 mm²) 125 x 90 x 90 mm

Earth Point

Catalog No.	Description
GXEP 120 (2)	Copper Alloy BSEN 1982, 2-Holes, 35-120 mm²
GXEP 120 (4)	Copper Alloy BSEN 1982, 4-Holes, 35-120 mm²
GYSER 663	Copper Alloy BSEN 1982

Rod to Cable Clamp

Catalog No.	Description
GXC 142-70	Copper Alloy BSEN 1982, 16-70 mm² to 5/8" Ø
GXC 172-95	Copper Alloy BSEN 1982, 35-95 mm² to 3/4" Ø
GXC 231-120	Copper Alloy BSEN 1982, 70-120 mm² to 1" Ø
GXCC 127-70	Copper Alloy BSEN 1982, 1/2" (12.7mm)Ø to 35-70mm²
GXCC 172-70	Copper Alloy BSEN 1982, 3/4" (17.2mm)Ø to 16-70mm²
GXCC 172-150	Copper Alloy BSEN 1982, 3/4" Ø to 70-150 mm² cable
GXCC 142-95	Copper Alloy BSEN 1982, 5/8" Ø to 16-95 mm² cable
GXCC-231-150	Copper Alloy BSEN 1982, 1" Ø to 70-150 mm² cable
GXCT 142-302	Copper Alloy BSEN 1982, 5/8" x 14.2 mm
GXCT 172-2610	Copper Alloy BSEN 1982, 3/4" x 17.2 mm
GXCTH 172-120	Copper Alloy BSEN 1982, 5/8-3/4" Ø to 95-120 mm² cable
GXCTH 231-120	Copper Alloy BSEN 1982, 1" Ø to 150-240 mm² cable
GXCTW 172-70	Copper Alloy BSEN 1982, 5/8-3/4"Ø to Cable 2 x 25-70 mm²
LGRC-A	Copper Alloy BSEN 1982, 95-120 mm²
GXCPC 25-120	Copper Alloy BSEN 1982, 1" Ø to 70-120 mm²
GXCPC 40-120	Copper Alloy BSEN 1982, 1 1/4" – 1 1/2" Ø to 70-120 mm²

Cable Clamp for Flat Bar

Catalog No.	Description
GXCCF-G2P	Copper Alloy BSEN 1982, 70-120 mm
GXCCP-G2P	Copper Alloy BSEN 1982, 95-120 mm²

More Effective Grounding

Catalog No.	Description
GRMEG-25LBS	Soil Conditioning Agent, 25 lbs / 11.5 kg / bag 0.01 Ω.m resistivity

Ground Station

Catalog No.	Description
GBPGSS-6	Tin Plated Copper BSEN 13601, 6 holes, 350Lx148Wx75H mm
GBPGSS-6D	Tin Plated Copper BSEN 13601, 12 holes, 148Lx350Wx75H mm
GBPGSS-8	Tin Plated Copper BSEN 13601, 8 holes, 440Lx148Wx75H mm
GBPGSS-8D	Tin Plated Copper BSEN 13601, 16 holes, 148Lx440Wx75H mm
GBPGSS-12	Tin Plated Copper BSEN 13601, 12 holes, 610Lx148Wx75H mm
GBPGSS-12D	Tin Plated Copper BSEN 13601, 24 holes, 610Lx148Wx83H mm

Lightning Protection System

Kumwell Lightning Protection products are in accordance to international standards:
IEC 62305 - Protection against lightning
BS 6651 - Code of practice for protection of structures against lightning
NFPA 780 - Standard for the installation of Lightning Protection System
UL 96 - Lightning protection components

Air Terminal

Catalog No.	Description
LTATT-58-50	Taper Point, Copper Alloy BSEN 13601, 5/8”Ø x 500 mm
LTATT-58-100	Taper Point, Copper Alloy BSEN 13601, 5/8”Ø x 1000 mm
LTATT 34-60	Taper Point, Copper Alloy BSEN 13601, 3/4”Ø x 600 mm
LTATT-34-100	Taper Point, Copper Alloy BSEN 13601, 3/4”Ø x 1000 mm
LMAT-34	Multi Point, Copper Alloy BSEN 13601, 3/4”

Air Terminal Bases (Saddles)

Catalog No.	Description
LROS-58	Round Saddle Copper Alloy BSEN 1982, 5/8”Ø
LROS-58-C4/0	Round Saddle Copper Alloy BSEN 1982, 5/8”Ø 4/0 awg
LROS-34	Round Saddle Copper Alloy BSEN 1982, 3/4”Ø
LDOS 58	Double Saddle Copper Alloy BSEN 1982, 5/8”Ø (25-70 mm^2)
LDOS 58 C4/0	Double Saddle Copper Alloy BSEN 1982, 5/8”Ø (25-100 mm^2) 4/0awg
LDOS 34 C4/0	Double Saddle Copper Alloy BSEN 1982, 3/4”Ø 4/0awg
LDAS 58	Adjustable Saddle 5/8”Ø (25-120mm^2)
LTAS-34	Tape Saddle Copper Alloy BSEN 1982, 3/4”Ø, 25mmx3mm tape

Strike Pad

Catalog No.	Description
AS-SPTSC-S383	Aluminum Alloy BS 2898, 112 mm Ø
AS-SPR-SA-S383	Copper Alloy BS 2898, 112 mm Ø

Digital Lightning Strike Counter

Catalog No.	Description
KLSC- 01	Threshold Current (8/20 µs) : 1 kA Max. withstand current (10/350 µs): 100 kA Number of events logged: up to 999 Temperature range: -20°C to + 60°C Degree of protection : IP65 Housing material : Polycarbonate

Cable Support

Catalog No.	Description
LCAS 50-70	Copper Alloy BSEN 1982, 50-70 mm^2
LCAS 95-120	Copper Alloy BSEN 1982, 95-120 mm^2

One Hole Cable Grip

Catalog No.	Description
LOCG 25-35	Copper Alloy BSEN 13601, 25-35 mm
LOCG 50-70	Copper Alloy BSEN 13601, 50-70 mm
LOCG 95-120	Copper Alloy BSEN 13601, 95-120 mm

Clamp

Catalog No.	Description
LTEC - B	Tee Clamp, Copper Alloy BSEN 13601, 95-120 mm^2
LBC 35-120	Beam Clamp, Copper Alloy BSEN 13601, 35-120 mm^2
LOCG 35-70	Cable Cross Clamp, Copper Alloy BSEN 13601, 35-70 mm^2
LOCG 95-120	Cable Cross Clamp, Copper Alloy BSEN 13601, 95-120 mm^2

C Clamp

Catalog No.	Description
CCC 120-120	C-Clamp, Copper Alloy BSEN 13601, Run-120mm^2 Tap-120mm^2

Lightning Conductors

When designing a structural lightning protection system using the Faraday Cage principle, it is possible to use one or more of a variety of available conductor systems; namely tape conductor, or stranded conductor. The decision about which type to use is often based more on country-specific historical preferences or aesthetic considerations than the superiority of one type over another.

Tape Conductor

Catalog No.	Description
COBCT 253	Copper tape conductor, BSEN 13601, 25mm x 3mm (72mm^2); 100cm/coil
COBCT 253T	Tinned copper tape conductor, BSEN 13601, 25mm x 3mm (72mm^2); 100cm/coil

Tape Supports

Catalog No.	Description
LTAS-253	Tape support for copper tape conductor 25mm x 3mm, copper alloy BSEN 1982
LSQS-253	Square tape support for copper tape conductor 25mm x 3mm, copper alloy BSEN 1982

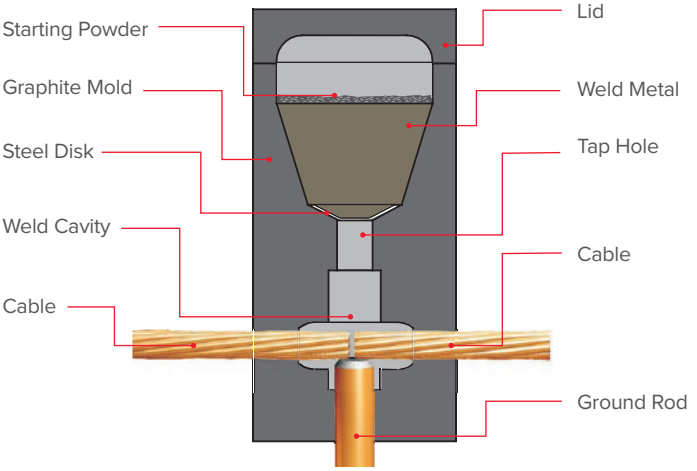
Exothermic Welding

Grounding Connection

There are several main objectives providing for well-designed grounding system: first, personal safety, followed by equipment protection, signal reference quality, return path for faults and surges and static dissipation.

Process

Kumwell Exothermic Welding process is a molecular chemical reaction between copper oxide and aluminum that generates a tremendous superheat with molten metals reaching temperatures up to 4,000°F (2600°C). The process can be completed itself automatically without external source of power heat.



The process use finely divided aluminum particles as the reducing agent with copper oxide to produce the chemical reaction.

$$3CuO + 2Al \longrightarrow 3\,Cu + Al_2O_3$$

Completed Connection

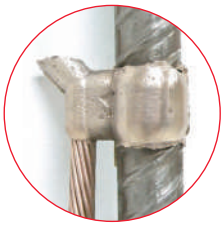
Exothermic Welding

Starting and weld metal powder

- Non toxic and heavy metal
- Non self-ignite
- Ignition temperature at least 400°C
- Smooth reaction

Mould

- Earnest design: cavity, flow path
- High quality raw material
- Accurate tolerance
- Duration: at least 50 times in normal usage



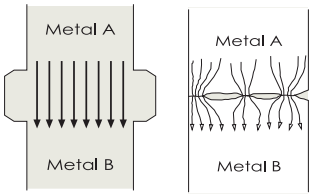
• 95 mm^2 Copper Cable to 40mm Rebar

Welding Metal

- Non toxic and heavy metal
- Steady burn without pop and fire out
- No slag and porosity
- Consistency of color
- High conductivity with at least 93% Cu

Technical comparison

Exothermic welding withstands about 5 times higher than clamp's connection in mechanical force. Unlike compression and bolt clamp, exothermic welded joint become a homogeneous metal.



Exothermic Welding
3000 lbf

Clamp
500 lbf

Maximum result of connector's mechanical force with 70 mm^2 cable

Standard

Criteria of Test

Kumwell Exothermic welding connections have been succesfully tested in accordance with

IEEE Std. 837 Standard for Qualifying Permanent Connection

1. Mechanical pullout
2. Electromagnetic force
3. Sequential test group has 3 main procedures to test each steps if it passes the set standard of each procedure
   a. Current temperature Cycling
   b. Freeze thaw Cycling
   c. Corrosion Sequence Run: Salt Spray Test, Acid Test

UL 467 Standard for Grounding & Bonding Equipment/ UL Inspection Witness

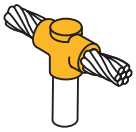
1. Weld metal powder quality: Percentage of material, Particle size, Density of each composition, Starting powder and ignition
2. Reaction: Steady burn, No pop, No drastic color change, No porosity in the resulting copper, Consistency of color
3. Short Time Current Test
4. Mechanical Sequence from UL 486

Horizontal Cable End to End

Horizontal Tap to Horizontal Run

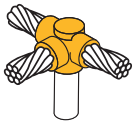
Horizontal to Horizontal Cable Cross

Horizontal Cable to Ground Rod

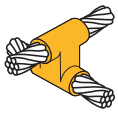


Horizontal Thru Cable to Ground Rod

Horizontal Cable Cross to Ground Rod



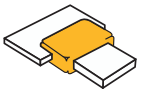
Horizontal Cable Tap and Run to Ground Rod



Horizontal to Horizontal Cable Cross

Angular Cable Drop to Vertical Steel Surface

Horizontal Flat Bus Bar Cross (Uncut)



Horizontal Flat Bus Bar Run and Tap

Busbar to busbar Horizontal, End to End

Graphite Mould

Weld Metal Powder Type KW

Handle Clamp Type C

Chain support “X” for Handle Clamp

Vertical Beam Support “Y” Handle Clamp

Mould Brush

Tool Box

Cable Clean

Mould Scraper

Butane Torch

Flint Gun

Flint Stone

Busbar Brush

Kumwell

Exothermic Welding Process

1. Assemble mould with handle clamp

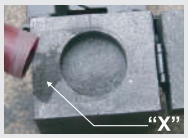
2. Preheat by butane torch to ensure the mould is totally dry

3. Clean the surface of conductor and rod by cable clean brush and preheadt by butane torch to ensure the cindustor is totally dry

4. Fit conductors and ground rod snugly into the mould and lock the handle clamp. Always make sure the mould is in a level position.

5. Place retaining disk ensuring the disk sits well at the base of the weld metal cavity

6. Pour a recommended size of weld metal into the mould crucible. Check for leaks of weld metal. Repeat step 4 in case of leak



7. Loosen starting powder from the bottom of tube. Pour 2/3 of it on top of the weld metal and the mouth of mould lid marked “x”

8. Ignite the starting powder at the lid opening by flint gun
The process takes 3.-60 seconds

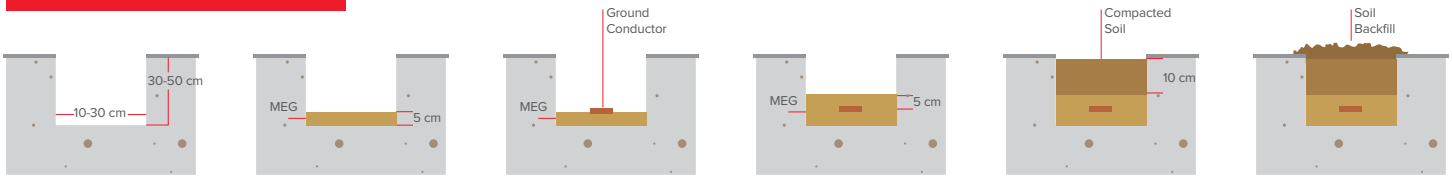
9. Gently rub slag from the crucible by scraper
Clean the crucible and weld cavity by mould cleaning brush to endure the mould

10. Complete connection

More Effective Grounding Installation

IEC 62561-7 IEEE 80-2013

Horizontal Installation

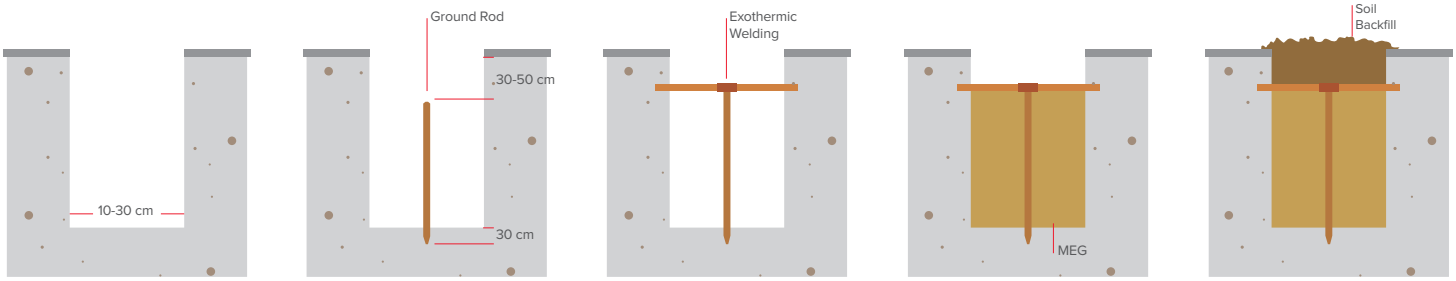


1. Mix MEG into a slurry form, by using a standard cement mixer or bucket. Use 10 to 14 liters of clean water per 25lbs. bag MEG.
2. Spreading MEG to uniformly cover bottom of trench about 2.5cm thickness. Let the MEG harden about 15 -20 minutes to prevent the conductor from sinking to the bottom of the trench.
3. Place conductor on top of MEG.
4. Spreading more MEG on top of conductor to completely cover conductor about 2.5 cm (thickness). Allow MEG to harden about one hour before filling the trench with compacted soil.
5. Carefully cover the MEG with soil, making sure not to expose the conductor.

Estimated trench length per bag (MEG 25lbs)

Trench Width	MEG THICKNESS	
	5 cm (2 inches)	10 cm (4 inches)
10 cm (4 inches)	4 m	2 m
15 cm (6 inches)	2.7 m	1.3 m
20 cm (8 inches)	2 m	1 m
25 cm (10 inches)	1.6 m	0.8 m
30 cm (12 inches)	1.3 m	0.7 m

Vertical Installation



1. Auger a 10 cm or larger diameter hole.
2. Place ground rod into center of augered hole and drive 30 cm (if possible) into bottom of the hole. The tip of the ground rod will be approximately 30 cm to 50 cm below grade.
3. Make connections to ground rod using exothermic welding.
4. Premix MEG into a slurry form. Use 10 to 14 liters of clean water per 25lbs. bag of MEG . Then pour the appropriate amount of MEG around the ground rod. To ensure the MEG material completely fills the hole, stamp around the ground rod. Wait about 1 hour before filling the hole with soil backfill.
5. Fill remainder of augered hole with soil which removed during augering.

Estimated trench length per bag (MEG 25lbs)

MEG Hole Diameter	MEG Hole Depth
10 cm (4 inches)	2.5 m
15 cm (6 inches)	1.1 m
20 cm (8 inches)	0.6 m
25 cm (10 inches)	0.4 m
30 cm (12 inches)	0.3 m

K-Max Electronic Ignitor – Ultra Safety

K-MAX is an innovative system that provides a safer and easier exothermic welding process. Eliminates the need for ignition by Flint Gun in traditional way. K-MAX enables safe ignition from a safety distance and reducing exposure to smoke and flame. Trust in K-MAX to provide a robust solution to ensure the safety and integrity of your grounding system.

K-MAX Elitor: Remote electronic ignitor with 1.8m cable cord

K-MAX Mold: Graphite mold for specific connection type

K-MAX Powder: Moisture-Resistance packed and sealed cartridge

Smart Lightning Management System (SLMS)

SLMS is a smart innovation that can monitor the status of lightning protection, grounding and surge protection systems. It can immediately notify electromagnetic and lightning threats providing securities and reducing losses to assets, properties, communication, and operation systems. All data is connected to the central system to monitor, analyze, and assess lightning protection plans. Thus, the system can stand by for any critical situation.

Smart Ground Monitoring

It is designed to calculate the ground loop resistance and provide real-time information for any error in the grounding system, thus, enabling detection and activation of the alarm function when the value setting of the grounding changes.

Power Supply: 220-240 VAC
Resistance Range: 0.01 – 200 Ω
Data Display Mode: 4 digits LCD direct indication
Degree of Protection: IP54

Smart Lightning Counter

It is designed to count and store the date and time of lightning strike incident, the number of strikes, and measures the current flow through the lightning protection system.

Operating Voltage: 12VDC
Triggering Value: 1 kA
Max. Measuring Current: 40 kA
Degree of Protection: IP20
Mounting: DIN rail

Smart Surge Counter

It is designed to count and store the date and time of lightning strike incident, the number of strikes, and measures the current flow through the lightning protection system.

Operating Voltage: 85-265 VAC
Threshold Current: 1 kA
Max. Counting Discharge Current: 100 kA
Indicator: 2-digits
Degree of Protection: IP20
Mounting: DIN rail 35mm

Smart Leakage Current Monitoring

Real-time leakage current monitoring and tracking of the variations. An alert will be triggered when the leakage current exceeds the limit.

Power Supply: Adaptor 12VDC, 2A
Current Range: 0.00mA – 60.000A AC
Current Resolution: Min. 0.01 mA AC
Current Accuracy: ± 2%rdg ± 5dgt

Lightning Warning System (LWS)

LWS is a cutting-edge solution designed to enhance safety by providing early warning of the incoming lightning strike. It is suitable for use in open areas such as airports, seaports, large construction sites, golf courses, outdoor stadiums, large multi-purpose parks, and school grounds.

- M-Field Sensor
- E-Field Sensor
- Indoor Annunciator
- Outdoor Annunciator
- Alarm Viewer Software

How does common LWS work?

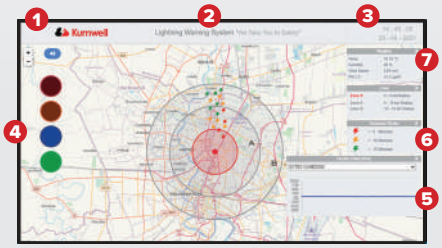
The common Lightning Warning System (LWS) predicts lightning using E-Field Sensors to detect changes in the electric field in the atmosphere when there is a sudden change of electric field's intensity, the system will alert. However, the weakness is related to sudden changes in the electric field intensity due to factors other than lightning such as sandstorms, wind, interference from other electric field waves. This results in approximately 30% accuracy in correctly notifying lightning events, making it ineffective for practical use.

Why do we need KLWS?

Kumwell Smart Lightning Warning System (KLWS) gathers real-time lightning strikes from Lightning Detection Network cooperates with E-Field sensor in order to analyze the movement of lightning strikes. If lightning moves towards covered area and there are sudden changes in the electric field, the system will notify the users with precision real-time accuracy and practical usability.

Alarm Viewer Software

The software will provide users with alerts if there is a tendency for lightning to occur in their area. The system can display lightning data on an interactive screen that is easy to use. The system's Probability of Detection (POD) is more than 95%, meaning it effectively detects lightning events, and the Fail to Alarm Ratio (FAR) is less than 5%, indicating that false alarms are minimal. Additionally, the system can automatically generate reports and notifications about the alarm results.



1. Main Menu
- Continuing Command
- Export Alarm Log
- Log out

2. Location Site
- Display automatic alert locations.

3. Date & Time
- Display the Date & Time

4. Lightning Alarm Level
- Display the through colors according to the respective status

5. Electric Field
- Display the electric field when lightning strike or about to occur.

6. Historical Stroke
- Display the lightning event happened

7. Weather Forecast
- Real-Time weather forecast such as Temperature, Humidity, Wind speed, PM2.5

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