

# NSI



LIGHTNING PROTECTION SYSTEM | 防雷系统

EARTHING SYSTEM | 接地系统

ELECTRICAL ACCESSORIES | 电器配件

### COMPANY PROFILE

New Starlight Industries (NSI) is a Singapore incorporated company established since 1970s. We are manufacturer of Lightning Protection & Earthing System and various Electrical Accessories, marketed under our own brand name NSI.

Our products are manufactured and tested in strict accordance to international and local standards such as SS 555:2018 / IEC 62305 (Protection Against Lightning), IEC 62561 (Lightning Protection System Components), SS 551:2009 (Code of practice for earthing), SS 322:2015 (Singapore Standard Specification for Earthing and Bonding), IEC 60998-1 & IEC 60998-2-1 (International Electrotechnical Commission) and other industry codes and specifications as applicable.

By having our own manufacturing facilities in Singapore, we ensure quality consistency to our products & offer fast & flexible response to customers' requirement for customized products. Over the years, we have accumulated excellent track records and gained outstanding reputation in the market as manufacturer of top-notch quality lightning protection & earthing products and electrical accessories.

Our company philosophy is : **“Business with Integrity”**

新星光工业（简称 NSI）是建立于 1970 年代的新加坡注册公司。我们是专业从事防雷与接地系统和各种电器配件的制造商。

我们的产品设计严格的符合国际和新加坡标准，如 SS 555:2018 / IEC 62305 (防雷系统规范), IEC 62561 (防雷系统组件规范), SS 551:2009 (接地系统规范), SS 322:2015 (接地规范和测试粘接), IEC 60998-1 & IEC 60998-2-1 (国际电工委员会标准) 和其他业内适用的规范。

我们在新加坡拥有自己的生产设施，因此可以保证我们产品质量的一致性并且能快速和灵活的供应客户各种定制产品的需求。多年来，我们已积累了良好的记录，并取得市场上卓越的信誉，成为新加坡杰出品质的防雷与接地系统和电器配件的制造商。

我们的公司经营理念是： **“诚信经商”**

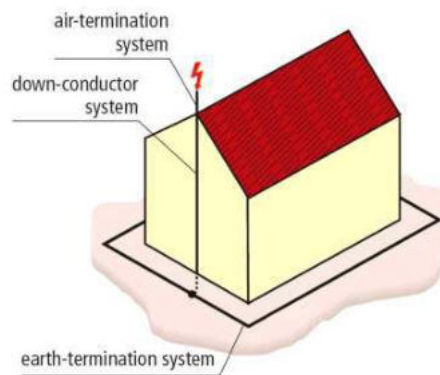
## LIGHTNING PROTECTION SYSTEM

An external Lightning Protection System (LPS) is intended to:

- intercept a lightning current to the structure (with an *air-termination system*);
- conduct the lightning current safely towards earth (using a *down-conductor system*);
- disperse the lightning current into the earth (using an *earth-termination system*).

### Components of Lightning Protection System

- Air Termination Network
- Down Conductors
- Earth Termination



## AIR TERMINATION NETWORK

Air termination network is made up of vertical air terminals and / or a lattice of copper conductors mounted on the roof and edges of the structure to protect the structure from a lightning strike.

### Protection Level

There are four levels of lightning protection. Level I is the highest degree of protection. For the purpose of complying with Singapore Building Control Regulations, a minimum of Class III LPS is required.

Class of LPS	Rolling Sphere Radius $r$	Roof Mesh Conductors	Down Conductor Spacing
I	20	5 x 5	10
II	30	10 x 10	10
III	45	15 x 15	15
IV	60	20 x 20	20

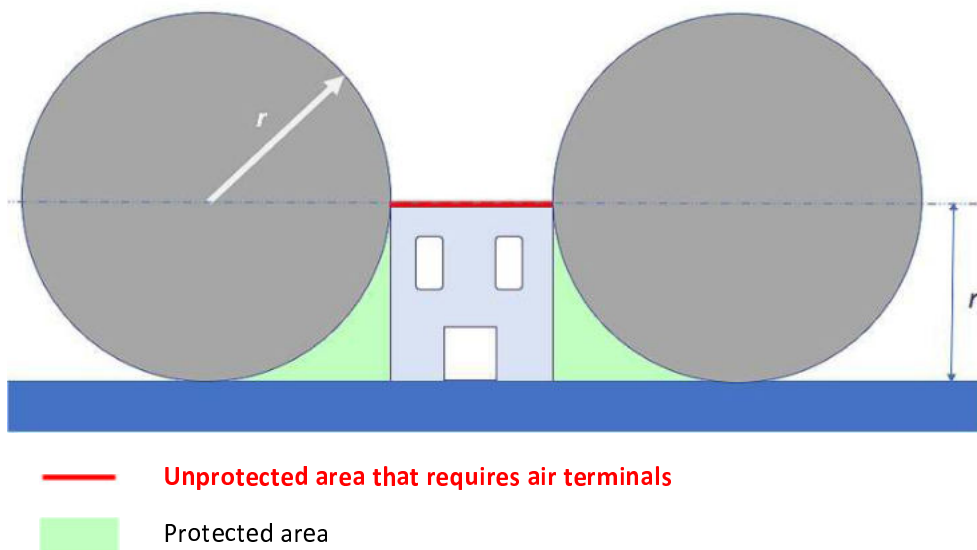
Table 1

### Rolling Sphere Method

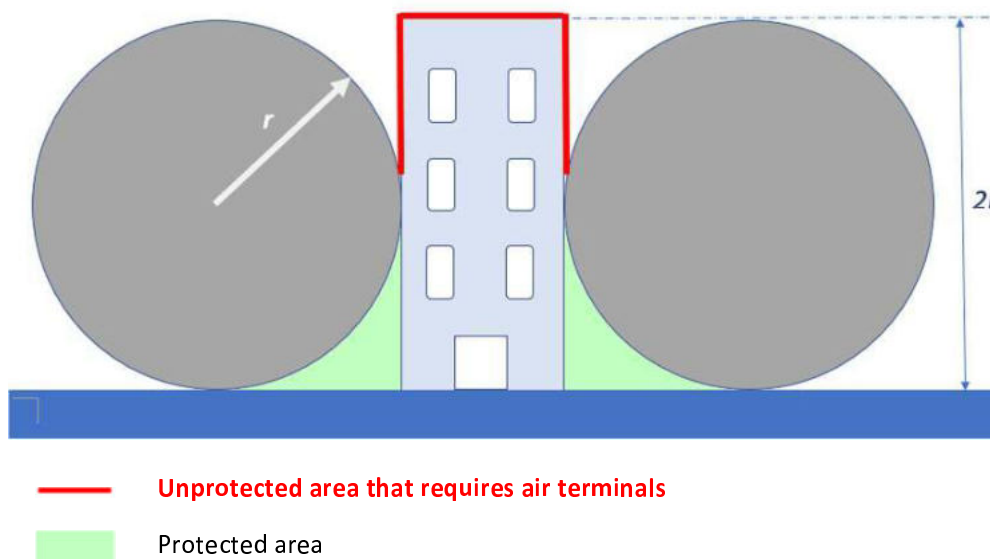
In the rolling sphere method, a sphere of radius  $r$  is imagined to be rolling over the structure. Parts of the building touched by the sphere are at risk and require air terminals; portions that aren't touched are safe.

Examples

- 1) Sphere is rolled over a building whose height is equal or less than the sphere radius:



- 2) Sphere is rolled over a building whose height is greater than the sphere radius:



### DOWN CONDUCTORS

Air terminals should be connected to as many down conductors as possible. Lightning rods on a house should be connected to at least two down conductors (at opposite corners of the house for example). Separation distance of the down conductors has to be in accordance to the Class of LPS based on *Table 1*.



### EARTH TERMINATION SYSTEM



Each down conductor must have a separate earth termination. Provision should be made in each down conductor for disconnection from the earth for testing purposes.

There are two basic earth electrode arrangements being used:

1. Type A arrangement : consists of horizontal or vertical earth electrodes, connected to each down conductor fixed on the outside of the structure. The total number of earth electrodes shall not be less than two.
2. Type B arrangement : a ring earth electrode that is sited around the periphery of the structure.

### BONDING

All metal work, including water pipes, gas pipes, handrails, air conditioning units, metal cladding, metal roofs etc, in the vicinity of the LPS must be bonded to it, to avoid the danger of side flashing.

For the same reason, the LPS earth should be bonded to the main electrical earth, as well as any other earthing system present in the structure.



### INSPECTION & MAINTENANCE OF LPS

All LPS systems should be inspected:

- (i) During the installation of the LPS, paying particular attention to those components which will ultimately become concealed within the structure and unlikely to be accessible for further inspection.
- (ii) After the LPS installation has been completed

LPS should be checked on a regular basis to ensure its effectiveness.

## **DESIGN STANDARD**

The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees).

Singapore Standard SS 555 : 2018 is a modified adoption of IEC 62305 and defines the general principles to be followed for protection of structures against lightning, including their installations and contents, as well as persons.

**SS 555** - Protection against Lightning

**IEC 62305** - Protection Against Lightning

Part 1: General Principles

(Exclude railway system, vehicles, ships, aircraft, offshore , underground high pressure pipelines, pipe, power and telecommunication lines not connected to a structure)

Part 2: Risk Management

Part 3: Physical Damage to Structures and Life Hazard

Part 4: Electrical and Electronic Systems within Structures

## **PRODUCT STANDARD**

IEC 62561 deals with the requirements and tests for lightning protection system components (LPSC) used for the installation of a LPS designed and implemented according to the IEC 62305 standards

**IEC 62561** - Lightning Protection System Components (LPSC)

Part 1: Requirements for connection components

Part 2: Requirements for Conductors and Earth Electrodes

Part 3: Requirements for Isolating Spark Gaps

Part 4: Requirements for Conductor Fasteners

Part 5: Requirements for Earth Electrode Inspections Housings and Earth Electrode Seals

Part 6: Requirements for Lightning Strike Counters (LSC)

Part 7: Requirements for Earthing Enhancing Compounds

## AIR TERMINAL



Model	Material	Diameter Ø	Height
Al-300-16	Aluminium	16mm	300mm
Al-500-16	Aluminium	16mm	500mm
Al-600-16	Aluminium	16mm	600mm
Al-1000-16	Aluminium	16mm	1000mm
Cu-300-16	Copper	16mm	300mm
Cu-500-16	Copper	16mm	500mm
Cu-600-16	Copper	16mm	600mm
Cu-1000-16	Copper	16mm	1000mm

**Note:** Custom fabricated height available

## AIR TERMINAL FIXING BASE



### FLAT BASE

Model	Material	Terminal Thread	Conductor Width
Al-16	Aluminium Alloy	5/8"	25mm
GM-16	Copper Alloy	5/8"	25mm

**Application:** To support air terminal on flat roof surfaces



### SLANT BASE

Model	Material	Terminal Thread	Conductor Width
Al-16S	Aluminium Alloy	5/8"	25mm
GM-16S	Copper Alloy	5/8"	25mm

**Application:** To support air terminal on roof ridges

## SIDE MOUNT AIR TERMINAL BRACKET



Model	Material	Terminal Ø	Width
Al-16sm	Aluminium Alloy	16mm	25mm
Br-16sm	Copper Alloy	16mm	25mm

**Application:** For fixing air terminal onto side of the building where it is not possible to mount on roof

## AIR TERMINAL TO TAPE COUPLING



Model	Material	Terminal Thread	Conductor Width
Al-16c	Aluminium Alloy	5/8"	25mm
Br-16c	Copper Alloy	5/8"	25mm

**Application:** For connecting flat tape to side mount air terminal

## STRIKE PAD



Model	Material	Thread	Diameter
AL-Stk	Aluminium Alloy	5/8"	100mm
Br-Stk	Copper Alloy	5/8"	100mm

**Application:** As an exposed attractive point on roof or side of building for hidden/embedded conductor



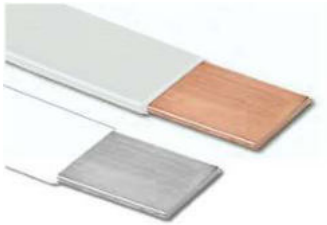
## CONDUCTING FLAT TAPE



Model	Material	Size	C.S.A
Al-253	Aluminium	25x3mm	75mm <sup>2</sup>
Cu-253	Copper	25x3mm	75mm <sup>2</sup>

**Note:** Custom sizes/lengths available

## PVC COVERED FLAT TAPE



Model	Material	Size	C.S.A
Al-253PC	Aluminium	25x3mm	75mm <sup>2</sup>
Cu-253PC	Copper	25x3mm	75mm <sup>2</sup>

## NON-METALLIC DC TAPE CLIP



Model	Material	Conductor Size
PDC-1	Polypropylene	25x3mm
PDC-2	Polypropylene	PVC Covered 25x3mm

## HEAVY DUTY DC TAPE CLIP



Model	Material	Conductor Size
Al-315DC	Aluminium Alloy	25x3mm
Br-315DC	Copper Alloy	25x3mm

## TAPE CLIP & SADDLE



Model	Material	Conductor Size
Al-315	Aluminium Alloy	25x3mm
Br-315	Copper Alloy	25x3mm

## SQUARE TEST & JUNCTION CLAMP



### TAPE TO TAPE

Model	Material	Conductor Size
Al-SQ	Aluminium Alloy	25x3mm
Br-SQ	Copper Alloy	25x3mm

**Application:** To form cross, tee, through or right angle joints between overlapping flat tapes



### TAPE TO CABLE

Model	Material	Tape Size	Cable Size
GM-SQ	Gunmetal	25x3mm	Up to 70mm <sup>2</sup>

**Application:** To form cross, tee, through or right angle joints between flat tape and cable

## ROUND TEST & JUNCTION CLAMP



Model	Material	Diameter Ø	Conductor Width
GM-R	Gunmetal	175mm	25mm

**Application:** To form a disconnecting link between down conductor and earthing system

## OBLONG CLAMP



Model	Material	Conductor Size
OBL	Copper Alloy	25 x 3-6 mm

**Application:** To form through joints between overlapping flat tapes

## TAPE SADDLE ROOF CLIP

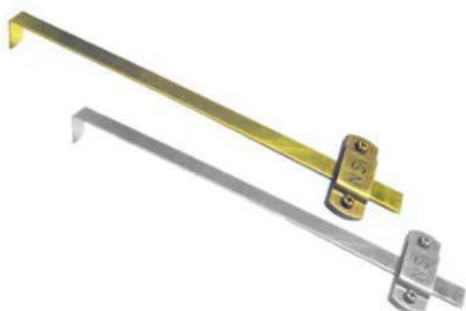


### 'U' CLIP

Model	Material	Width	Height
SRU-Al	Alum. Alloy	25mm	25mm
SRU-Br	Copper Alloy	25mm	25mm

**Application:** To hold conductor on clip lock roof

**Note:** Custom fabricated shapes/sizes available



### 'L' CLIP

Model	Material	Length
SRL-Al	Alum. Alloy	240mm
SRL-Br	Copper Alloy	240mm

**Application:** Slot in between overlapping tiles to hold conductor on tiled roof

**Note:** Custom fabricated shapes/sizes available



### 'SEMI-CIRCLE' CLIP

Model	Material	Length
SRSC-Al	Alum. Alloy	340mm
SRSC-Br	Copper Alloy	340mm

**Application:** To hold conductor on tiled roof ridge

**Note:** Custom fabricated shapes/sizes available

### GLAZING BAR HOLDFAST



Model	Material	Dimensions
GBH-Al	Aluminium Alloy	Made to measure
GBH-Br	Copper Alloy	Made to measure

**Application:** To hold conductor onto structure sections that cannot be drilled

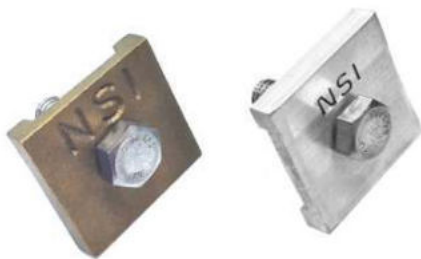
### BACK PLATE HOLDFAST



Model	Material	Height
BPH-Al	Aluminium Alloy	Made to measure
BPH-Br	Copper Alloy	Made to measure

**Application:** To hold the conductor away from building surface

### B - BOND



Model	Material	Conductor Size
Al-25	Aluminium Alloy	25x3mm
GM-25	Gunmetal	25x3mm

**Application:** To bond flat tape to steel structures

### CABLE CLIP & SADDLE



Model	Material	Cable Size
CS-Al	Aluminium Alloy	50mm <sup>2</sup> , 70mm <sup>2</sup>
CS-Br	Copper Alloy	50mm <sup>2</sup> , 70mm <sup>2</sup>

**Note:** Custom fabricated sizes available

### TEST LINK BOX



Model	Material	Dimensions
TLB-125	Aluminium Cover/Frame Galvanised Steel Base	125x125x40mm
TLB-125NM	Aluminium (Non-Magnetic)	125x125x40mm

**Application:** As an access point for monitoring/testing concealed lightning protection system

### BIMETALLIC CONNECTOR



#### ALUMINIUM - COPPER

Model	Material	Conductor Size
Bi-20	Aluminium & Copper	25x3mm

**Application:** To connect aluminium and copper conductors



#### COPPER - COPPER

Model	Material	Conductor Size
Bi-Cu2	Copper	25x3mm

**Application:** To connect copper conductors

### PIPE BONDING CLAMP



Model	Material	Diameter
BC-1246	Body: Electroplated Copper Alloy	1" / 2" / 3"
	Strap: Stainless Steel	4" / 6" / 8"
	Warning Label: Aluminium	10" / 12"

**Note:** Custom length available



### COPPER BRAID



Model	Material	Conductor Size
Brd253	Copper	25x3mm
Brd253T	Tinned Copper	25x3mm

**Application:** For bonding metal gates, doors, fences etc

**Note:** Custom size/ length available



### LPS WARNING SIGN



Model	Material	Size
LWS	Aluminium	210x300mm

**Application:** Display at entrances to roof-top area to alert people of lightning danger



## EARTH ROD



Model	Material	Thread	Length
ER-586	Copper Coated Steel	5/8"	1800mm
ER-346	Copper Coated Steel	3/4"	1800mm
CR-58L	Copper	5/8"	Custom
CR-34L	Copper	3/4"	Custom

## EARTH ROD COUPLING



Model	Material	Thread
AB-70	Copper Alloy	5/8"
AB-7034	Copper Alloy	3/4"

## EARTH ROD DRIVING STUD



Model	Material	Thread
DS-58	Hardened Steel	5/8"
DS-34	Hardened Steel	3/4"

**Application:** Protects the top of the rod from damage when being driven into the ground

## EARTH ROD SPIKE



Model	Material	Thread
ERSP	Copper Alloy	5/8"
ERSP34	Copper Alloy	3/4"

**Application:** Enables rod to be driven easily into the ground

## EARTH ROD END CAP



Model	Material	Size
ECP	Copper Alloy	5/8" or 3/4"
PECP	PVC	5/8" or 3/4"

## EARTH PLATE



Material	Size
Copper	Custom fabricate

**Application:** Used where earth rod installations are not suitable

## EARTH LATTICE MAT



Material	Size	Grid
Copper	600mm x 600mm	5 bar

**Application:** As a more economical option to copper earth plate, installed for step & touch voltage avoidance

## GROUND ENHANCEMENT COMPOUND

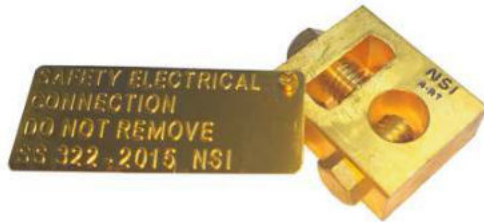


Weight	Packaging
25lbs / 11.36kg	Bag with handle

**Application:** Use for achieving lower earth electrode resistance



## ROD TO TAPE CLAMP c/w warning label



Model	Material	Rod Size	Flat Tape Size
A-RT	Copper Alloy	5/8"	25 x 3mm
A-RT34	Copper Alloy	3/4"	25 x 3mm

## ROD TO CABLE CLAMP c/w warning label



Model	Material	Rod Size	Cable Size
B RC 16-25	Copper Alloy	5/8" or 3/4"	16 – 25mm <sup>2</sup>
B RC 50	Copper Alloy	5/8" or 3/4"	35 – 50mm <sup>2</sup>
B RC 70	Copper Alloy	5/8" or 3/4"	70mm <sup>2</sup>

**Note:** All cable sizes available

## TAPE TO ROD TO TAPE CLAMP c/w warning label



Model	Material	Rod Size	Flat Tape Size
TRT	Copper Alloy	5/8" or 3/4"	25 x 3mm

## TAPE TO ROD TO CABLE CLAMP c/w warning label



Model	Material	Rod Size	Cable Size
TRC	Copper Alloy	5/8" or 3/4"	16 – 300mm <sup>2</sup>

**Note:** All cable sizes available

## ROD TO CABLE LUG CLAMP



Model	Material	Rod Size	Bolt Size
RCL58	Copper Alloy	5/8"	M12
RCL34	Copper Alloy	3/4"	M12

## A CLAMP



Model	Material	Conductor
AC58	Copper Alloy	5/8" Rod to 25x3mm Flat tape

## G CLAMP



Model	Material	Conductor
GC58	Copper Alloy	5/8" Rod to (16-70)mm <sup>2</sup> Cable

## C CLAMP



Model	Material	Cable Size
CC35	Copper	35mm <sup>2</sup> – 35mm <sup>2</sup>
CC70	Copper	70mm <sup>2</sup> – 70mm <sup>2</sup>
CC95	Copper	95mm <sup>2</sup> – 95mm <sup>2</sup>
CC120	Copper	120mm <sup>2</sup> – 120mm <sup>2</sup>
CC240	Copper	240mm <sup>2</sup> – 240mm <sup>2</sup>

**Note:** Other sizes available

## U BOLT CLAMP



### 2 PIECE SET

Model	Material	Conductor
UBC-2	Copper Alloy	Tape to Rod/Rebar Cable to Rod/Rebar

**Note:** Custom sizes available



### 3 PIECE SET

Model	Material	Conductor
UBC-3	Copper Alloy	Tape to 2x Rod/Rebar Cable to 2x Rod/Rebar

**Note:** Custom sizes available

## REBAR CLAMP



Model	Material	Rebar Size
RTR1	Galvanised Steel	T10-T10 / T13-T13 / T16-T16
RTR2	Galvanised Steel	T10-T20 / T13-T20
RR1	Galvanised Steel	T10-T10 / T13-T13 / T16-T16

**Note:** Custom sizes available

## STATIC EARTH RECEPTACLE



Model	Material	Diameter	Stem
SER	Copper Alloy	100mm	10.7mm(70mm <sup>2</sup> )

**Application:** As a static discharge point for aircrafts, tankers, vehicles and boats

## FOUR HOLE EARTH POINT



Model	Material	Stem Diameter
4HEP	Copper Alloy	10.7mm (70mm <sup>2</sup> )

**Application:** Cast in concrete as connection point for rebar to earthing or lightning protection system

**Optional:** Available with pre-welded earth cable or rebar

## EARTH BOSS



Model	Material	Size	Thread
EBCS	Carbon Steel	OD 50 x H 50mm	M12
EB304	Stainless Steel 304	OD 40 x H 40mm	M8 or M10
		OD 50 x H 50mm	M12
EB316	Stainless Steel 316	OD 50 x H 50mm	M12

**Application:** Welded onto vessels, tanks or other steel structures as an earth connection point

**Note:** Custom sizes available

## EARTH INSPECTION PIT



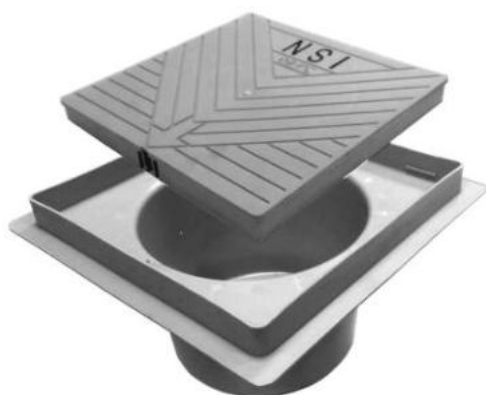
### PVC BOX C/W HDG FRAME & COVER

Model	Material	Size
99-66 (9")	Base – Hi Grade Polymer Cover + Frame – Hot Dipped Galvanised	L 250 x W 250 x H 200mm
99-66 (6")	Base – Hi Grade Polymer Cover + Frame – Hot Dipped Galvanised	L 180 x W 180 x H 170mm



### PVC BOX C/W HDG COVER

Model	Material	Size
PB-99 + 99-66	Base – Hi Grade Polymer Cover – Hot Dipped Galvanised	L 260 x W 260 x H 170mm



### FULL PVC

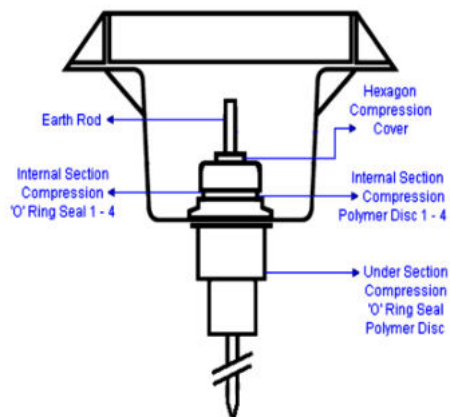
Model	Material	Size
PB-99 + PC-99	Base – Hi Grade Polymer Cover – Hi Grade Polymer	L 260 x W 260 x H 170mm

## EARTH INSPECTION PIT



### FULL CONCRETE

Type	Material	Size
Square	Concrete	L 280 x W 280 x H 200mm
Round	Concrete	OD 300 x H 200mm



### EARTH PIT C/W ROD WATERPROOF SEALS

Model	Material	Rod Size
WPS-1	Hi Grade Polymer	14.2mm

## EXOTHERMIC WELDING



### MOULD SET & WELDING POWDER

Item	Model
Mould	Base on connection required
Handle Clamp	B104 / B105
Flint Gun	FG1



### WELDING POWDER

Item	Model
Welding Powder	#65 / #90 / #115 / #150 / #200 / #250

**Note:** Other sizes powder available

## INSTALLATION INSTRUCTIONS



1  
Position cleaned conductors in mold.



2  
Place metal disc in bottom of mold crucible.



3  
Pour powder into crucible.



4  
Place a small amount of starting powder in the ignition pocket.



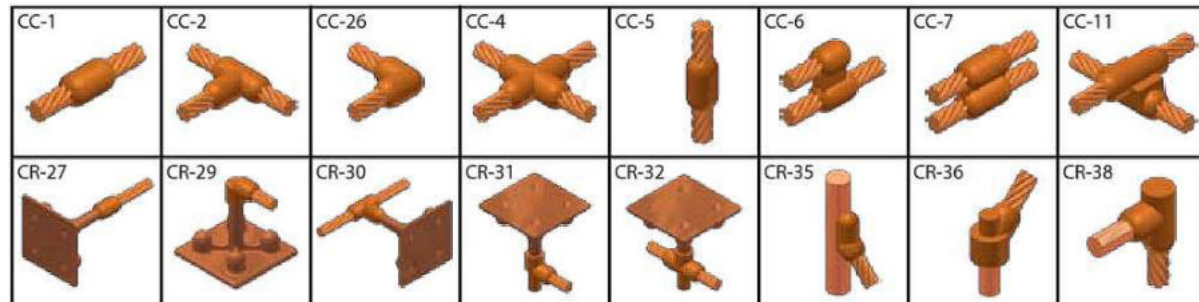
5  
Ignite the starting powder with the Flint Ignitor.



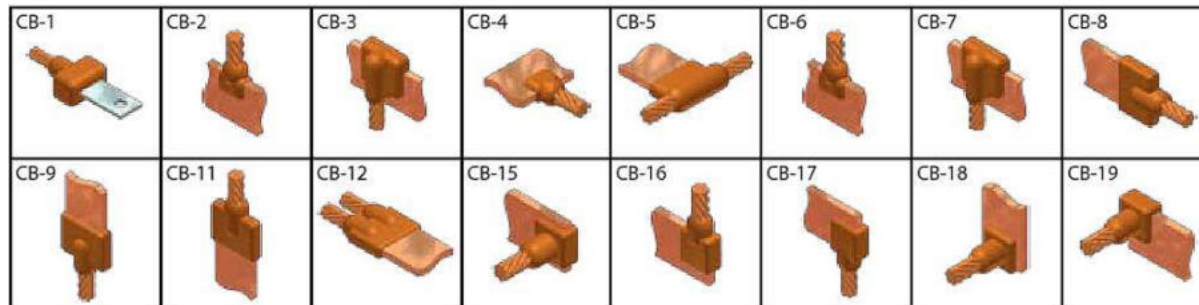
6  
Remove weld and clean mold before making next connection.



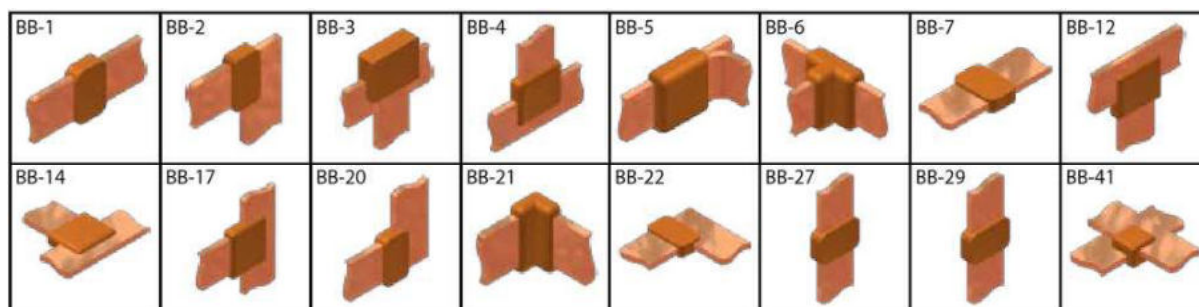
## Cable to Cable / Round Rod



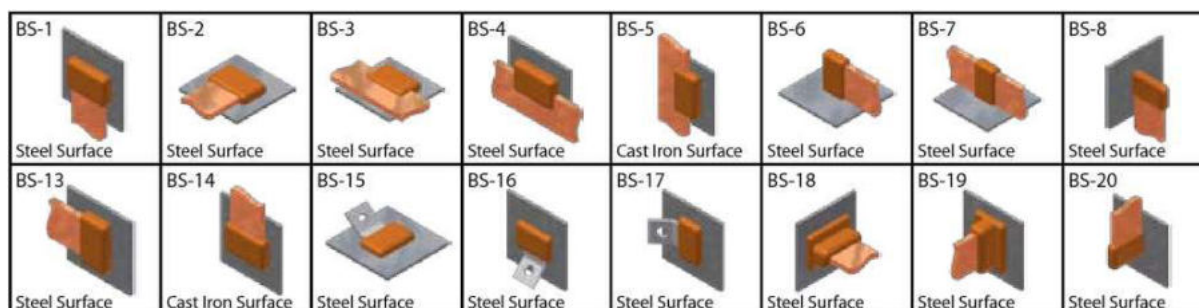
## Flat Tape to Cable / Rebar



## Flat Tape to Flat Tape



## Flat Tape to Steel Plate



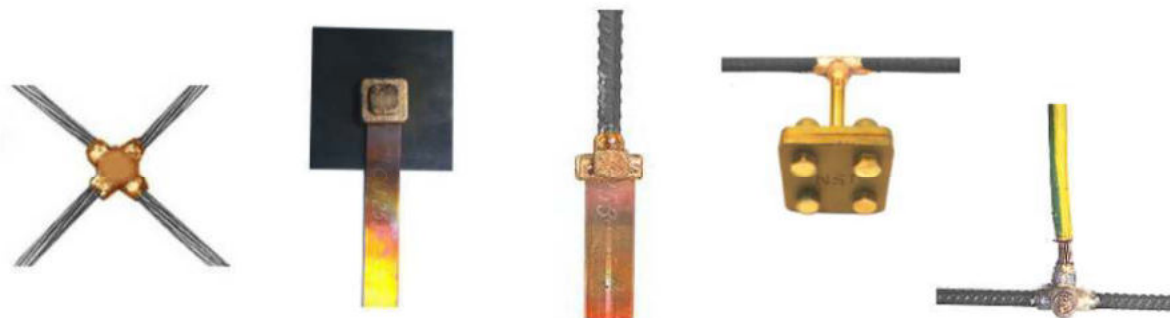


## EXOTHERMIC WELDING



### PRE-WELDED JOINTS

Model	Material
All kinds of joints available	Copper Tape / Copper plate / Rebar / Steel plate / Cable etc.



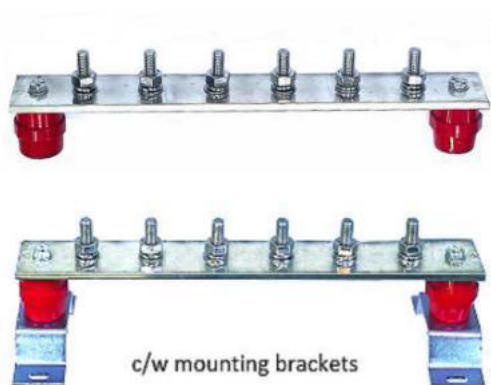
## POTENTIAL EQUALIZATION CLAMP



Model	Spark Over Voltage	Max Discharge Current
PEC-100	350V	100kA

**Application:** Equipotential device used to minimize damage in applications where separated ground systems are required

## TINNED COPPER BUSBAR



### NEUTRAL BUSBAR c/w insulators

Model	Material	No. of ways	Bolt Size
25x6N	Tinned Copper	4 / 6 / 8 / 10 / 12	M8
50x6N	Tinned Copper	4 / 6 / 8 / 10 / 12	M10

**Note:** Custom size / number of ways available

**Optional:** Available with mounting brackets



### EARTH BUSBAR

Model	Material	No. of ways	Bolt Size
25x6E	Tinned Copper	4 / 6 / 8 / 10 / 12	M8

**Note:** Custom size / number of ways available



### DISCONNECTING LINK

Model	Material	Bolt Size
50x6DC	Tinned Copper	M10

**Note:** Custom size available



### INSULATOR

Model	Material	Size
BB135	Moulded Polyester	OD 28mm x H 35mm
BB140	Moulded Polyester	OD 35mm x H 40mm
BB151	Moulded Polyester	OD 29mm x H 51mm
BB176	Moulded Polyester	OD 36mm x H 76mm

**Note:** Other sizes available

### 16A 3-WAY CABLE CONNECTOR



#### 3-Way Cable Connector

Model	Specifications	
BC-2.5	Casing:	Fire Retardant Polycarbonate
	Plug & Socket:	Electroplated Copper Alloy
	Voltage Rating:	250V
	Current Rating:	16A
	Cable Size:	1.5 to 4mm <sup>2</sup>
	In Compliance:	IEC-998-1 / IEC-998-2-1

Incoming:



Outgoing:



#### 3-Way (2-1) Cable Connector

Model	Specifications	
BC-321	Casing:	Fire Retardant Polycarbonate
	Plug & Socket:	Electroplated Copper Alloy
	Voltage Rating:	250V
	Current Rating:	16A
	Cable Size:	1.5 to 2.5mm <sup>2</sup>
	In Compliance:	IEC-998-1 / IEC-998-2-1

Incoming:



Outgoing:



#### 3-Way (2-2) Cable Connector

Model	Specifications	
BC-6	Casing:	Fire Retardant Polycarbonate
	Plug & Socket:	Electroplated Copper Alloy
	Voltage Rating:	250V
	Current Rating:	16A
	Cable Size:	1.5 to 2.5mm <sup>2</sup>
	In Compliance:	IEC-998-1 / IEC-998-2-1

Incoming:



Outgoing:



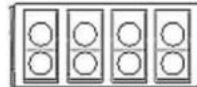
### 16A 4-WAY CABLE CONNECTOR



#### 4-Way (2-1) Cable Connector

Model	Specifications	
BC-421	Casing:	Fire Retardant Polycarbonate
	Plug & Socket:	Electroplated Copper Alloy
	Voltage Rating:	250V
	Current Rating:	16A
	Cable Size:	1.5 to 2.5mm <sup>2</sup>
	In Compliance:	IEC-998-1 / IEC-998-2-1

Incoming:



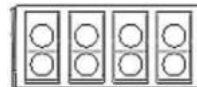
Outgoing:



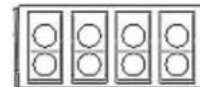
#### 4-Way (2-2) Cable Connector

Model	Specifications	
BC-8A	Casing:	Fire Retardant Polycarbonate
	Plug & Socket:	Electroplated Copper Alloy
	Voltage Rating:	250V
	Current Rating:	16A
	Cable Size:	1.5 to 2.5mm <sup>2</sup>
	In Compliance:	IEC-998-1 / IEC-998-2-1

Incoming:



Outgoing:





### (1-1) Terminal Connector

Model	Specifications	
C-ON-1	Casing:	Fire Retardant Polycarbonate
	Connection:	Electroplated Copper Alloy
	Voltage Rating:	250/415V
	Current Rating:	60A
	Cable Size:	16 – 25mm <sup>2</sup>



### (1-2) Terminal Connector

Model	Specifications	
TC-122	Casing:	Fire Retardant Polycarbonate
	Connection:	Electroplated Copper Alloy
	Voltage Rating:	250/415V
	Current Rating:	60A
	Cable Size:	1 x 25mm <sup>2</sup> (Incoming) 2 x 16mm <sup>2</sup> (outgoing)



### (1-4) Terminal Connector

Model	Specifications	
TC-124	Casing:	Fire Retardant Polycarbonate
	Connection:	Electroplated Copper Alloy
	Voltage Rating:	250/415V
	Current Rating:	60A
	Cable Size:	1 x 25mm <sup>2</sup> (Incoming) 4 x 16mm <sup>2</sup> (outgoing)



### (2-3) Terminal Connector

Model	Specifications	
TC-223	Casing:	Fire Retardant Polycarbonate
	Connection:	Electroplated Copper Alloy
	Voltage Rating:	250/415V
	Current Rating:	100A
	Cable Size:	2 x 35mm <sup>2</sup> (Incoming) 3 x 16mm <sup>2</sup> (outgoing)



### Terminal Connector

Model	Specifications
TC-444	Casing:
	Connection:
	Voltage Rating:
	Current Rating:
	Cable Size:
	Bakelite
	Electroplated Copper Alloy
	250/415V
	60A
	1 x 25mm <sup>2</sup>
	3 x 25mm <sup>2</sup>



### Terminal Connector

Model	Specifications
TC-555	Casing:
	Connection:
	Voltage Rating:
	Current Rating:
	Cable Size:
	Bakelite
	Electroplated Copper Alloy
	250/415V
	100A
	1 x 50mm <sup>2</sup> (Incoming)
	4 x 35mm <sup>2</sup> (outgoing)



### Terminal Connector

Model	Specifications
UK-160	Casing:
	Connection:
	Voltage Rating:
	Current Rating:
	Cable Size:
	Fire Retardant Polycarbonate
	Electroplated Copper Alloy
	250/415V
	160A
	1 x 70mm <sup>2</sup> + 1 x 16mm <sup>2</sup> (Incoming)
	6 x 16mm <sup>2</sup> (outgoing)



### 4-Pole Terminal Block

Current Rating	Type
60A / 100A / 150A / 200A	Panel Mounted

### EARTH & NEUTRAL LINK



Type	Cable Size
Earth	10mm <sup>2</sup> / 16mm <sup>2</sup> / 25mm <sup>2</sup> / 35mm <sup>2</sup>
Neutral c/w insulators	10mm <sup>2</sup> / 16mm <sup>2</sup> / 25mm <sup>2</sup> / 35mm <sup>2</sup>

**Note:** Custom number of ways available

### DINRAIL



Material	Length
Galvanised Steel	1 Metre
Aluminium	1 Metre

### MCB BUSBAR



Model	Material	No. of pole	Current Rating
Pin	Copper	1 / 2 / 3 / 4	100A
Fork	Copper	1 / 2 / 3 / 4	100A

## KNOCK OUT BOXES



### Galvanised KO Box

Type	Material	Height
1-Gang / 2-Gang	Galvanised Steel	35mm
1-Gang / 2-Gang c/w extension	Galvanised Steel	50mm / 70mm



### Household Shelter KO Box

Type	Material
1-Gang / 2-Gang	Stainless Steel
1-Gang / 2-Gang	Hot-Dipped Galvanised
2G + 1G + 1G	Hot-Dipped Galvanised

**Note:** Custom combinations available

## EARTH POINT



Type	Material	Screw Size
Square	Copper Alloy	M3
Cylinder	Copper Alloy	M4

**Application:** Provide earthing point within K.O. Box

## EARTH TAG



Size	Material	Fittings
20 / 25 / 32 mm	Copper Alloy	c/w brass screw & washer



### BAR SADDLE



Material	Size
Hot-Dipped Galvanised c/w SS304 screws	20mm / 25mm
Galvanised Steel	20mm / 25mm, $\frac{3}{4}$ " , 1" , 1 $\frac{1}{4}$ " , 1 $\frac{1}{2}$ "

### PLAIN SADDLE



Material	Size
Galvanised Steel	20mm / 25mm

### HALF SADDLE



Material	Size
Galvanised Steel	$\frac{3}{8}$ " , 5/8" , $\frac{3}{4}$ " , 1" , 1 $\frac{1}{4}$ "

### PVC BUSH



Material	Size
PVC	5/8" , 3/4" , 1" , 1 $\frac{1}{4}$ " , 1 $\frac{1}{2}$ " , 2"

### CEILING PLATE



Material	Size
Galvanised Steel	5/8" , 3/4" , 1"

### DOME COVER



Material	Size
Galvanised Steel	3/4" , 1" , 20mm

### BALL & SOCKET



Material	Size
Galvanised Steel	3/4" , 20mm

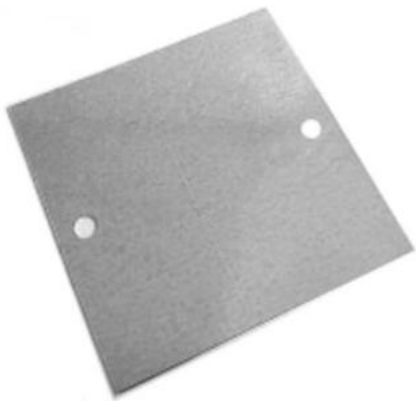
### ROUND BOX COVER



Material	Mounting Centre
Hot-Dipped Galvanised (Class 4)	50.8mm
Galvanised Steel	50.8mm / 71.5mm

**Note:** Custom size available

### G.I. KO BOX COVER



Type	Material	Mounting Centre
1-Gang	Galvanised Steel	60.3mm
2-Gang	Galvanised Steel	120.6mm

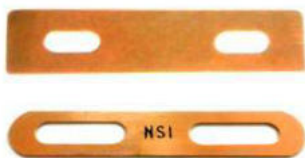
### FIXING SCREWS



Material	Size
Galvanised Steel	2BA x 5mm/ 8mm/ 10mm/ 19mm
	4BA x 12mm
	M4 x 4mm/ 8mm/ 10mm/ 12mm

**Note:** Other sizes available

## TRUNKING/ CABLE TRAY LINK



Type	Material	Size
Cable Tray	Copper	Adjustable to fit all sizes
Trunking	Copper	Adjustable to fit all sizes

**Note:** Custom dimensions available

## Z BRACKET



Material	Height
Galvanised Steel	2" , 2 ½" , 3"

## COPPER PIPE PLAIN SADDLE



Material	Size
Copper	Custom make

## COPPER EARTH CLIP



Material	Pipe Diameter
Copper	16 / 20 / 25 / 32 mm ½" , ¾" , 1" , 1 ¼" , 1 ½" , 2"

**Note:** Custom dimensions available

## BIMETALLIC CABLE LUG



Material	Cable Size
Copper-Aluminium	16 / 25 / 35 / 50 / 70 / 95 / 120 / 150 / 185 / 240 / 300 / 400 / 500 / 630 mm <sup>2</sup>

**Note:** All cable sizes available

## HIGH TENSION CABLE CLAMP



Material	Cable Size
Aluminium Alloy	30 – 40 mm
	40 – 50 mm
	50 – 60 mm
	60 – 70 mm
	70 – 80 mm
	80 – 90 mm
	90 – 100 mm
	100 – 110mm

## 13A WEATHER PROOF SWITCH SOCKET



Model	Specifications	
8399 (1-Gang)	Current Rating:	13A
	Current Rating:	250V
	Protection Rating:	IP66

## A+B EPO PUTTY



Weight	Application
500g	Use for bonding of steel and concrete materials; applicable on both wet and dry surfaces

## ANTI OXIDE COMPOUND



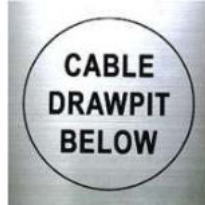
Weight	Application
100g	For use on Copper-Aluminium or Aluminium-Aluminium joints to prevent oxidation / galvanic corrosion of copper and aluminium. Also to reduce contact resistance and provide efficient electrical contact

## SOLDER / FLUX PASTE



Weight	Application
250g	Use for soft soldering / tinning of copper

## CABLE MARKER



Material	Wording	Size
Stainless Steel	Custom make	Custom make
Aluminium	Custom make	Custom make

## HANDLAMP c/w PROTECTION NET

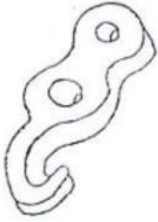
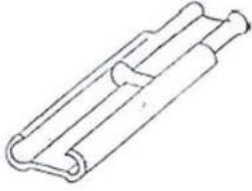
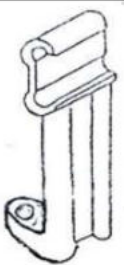
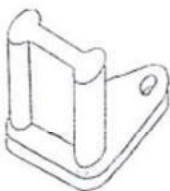
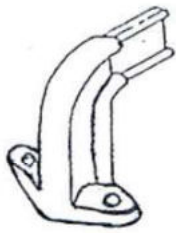
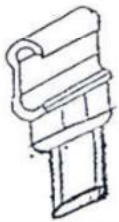

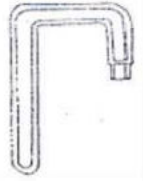


Model	Material	Type
ES	PVC Handle c/w steel wired protection net	E27 lamp holder
BC	PVC Handle c/w steel wired protection net	B22 lamp holder

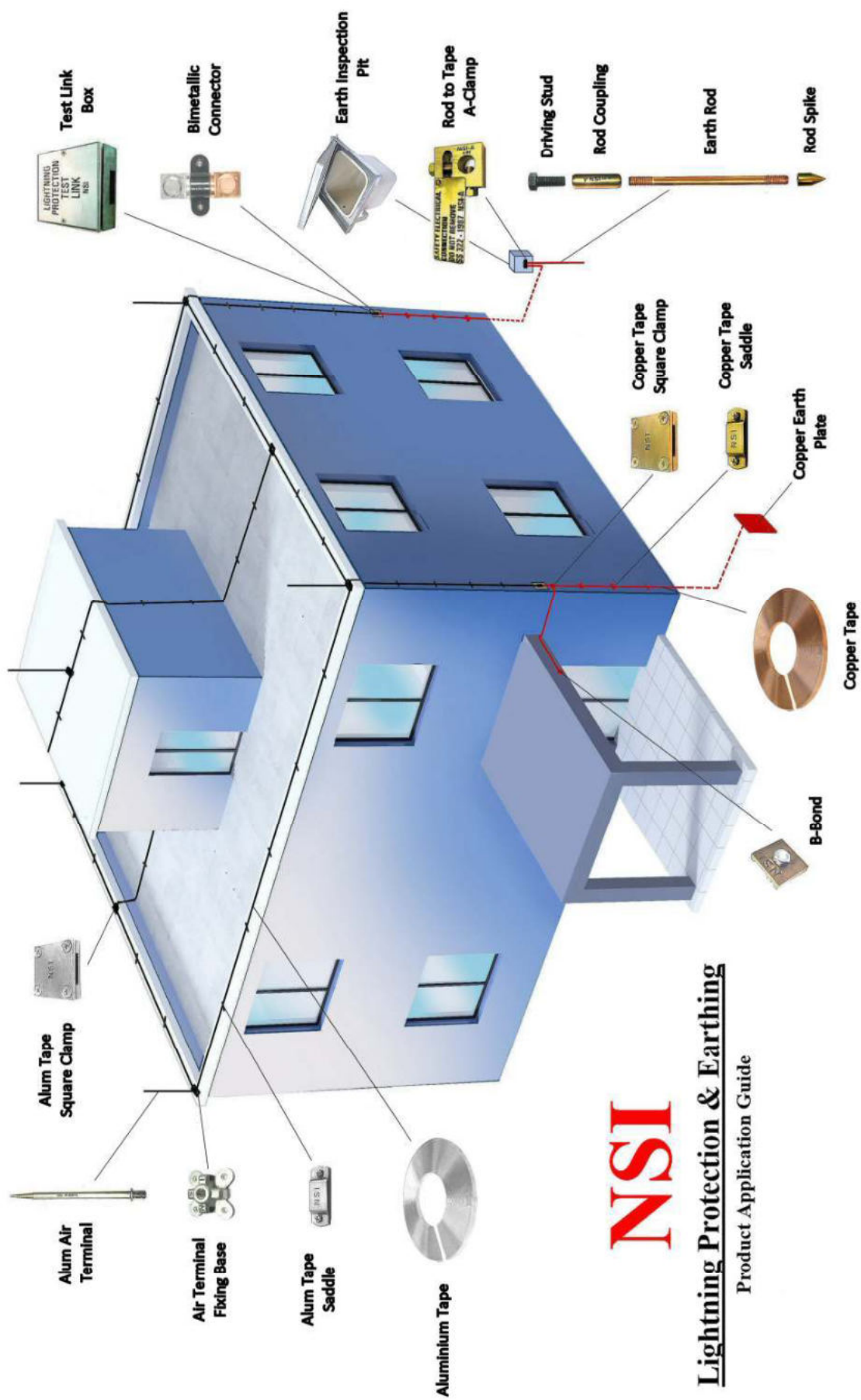
## CAT LADDER BRACKET



Model	Material	Size
Centre Bracket	Casted Aluminium	4.5"/ 6.5"/ 7.5"/ 9.5"/ 13"
Elbow Bracket	Casted Aluminium	4.5"/ 6.5"/ 7.5"/ 9.5"/ 13"
Floor Bracket	Casted Aluminium	Standard
Joint Bracket	Casted Aluminium	90°/ 180°/ Centre/ Hand
Ladder Hook	Casted Aluminium	Standard

 <p>Ladder Hook</p>	 <p>90 Joint Bracket</p>	 <p>180 Joint Bracket Size: 6.5" / 11"</p>
 <p>Centre Bracket Size: 4.5"/ 6.5"/ 7.5"/ 9.5"/ 13"</p>	 <p>Floor Bracket</p>	 <p>Elbow Bracket Size: 4.5"/ 6.5"/ 7.5"/ 9.5"/ 13"</p>
 <p>Centre Joint Bracket</p>	 <p>Hand Joint Bracket</p>	 <p>"J" Bracket</p>





# NSI

## Lightning Protection & Earthing

Product Application Guide

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**NEW STARLIGHT INDUSTRIES PTE LTD**

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