One of the key product groups in the offer of PAWBOL S.A. is a group of lightning protection systems. PAWBOL S.A. is developing and manufacturing that category for over 30 years now. The high quality of our products and services is confirmed by the ISO 9001:2008 certificate, which ensures the level of compliance of the offer with all required standards. PAWBOL S.A. company has professional production facilities equipped with modern machinery, and is always using only the high quality steel grade to produce lightning protection system elements. Moreover, products are subject to regular quality control.

PAWBOL S.A. product offer consists of a wide range of lightning protection installation elements divided into few subgroups:

- Connectors (through, gutter, cross, control)
- >> Holders (tile, roof, ridge, tension, universal)
- Earthing rods
- » Lightning masts
- » Lightning protection boxes
- » Additional accessories for lightning protection installations



Elements of the lightning protection system in the offer of PAWBOL S.A. are available in a hot-dip galvanized version, which guarantees an anti-corrosion coating that is resistant to mechanical damage, abrasion, corrosion, impacts and has very good adhesion to the substrate. The hot-dip zinc coating on the elements of the lightning protection system ensures protection of the steel for many years. The components do not require maintenance, because zinc, as a metal, is more active than steel and oxidizes itself, thus protecting the actual material. i.e. steel.

All elements of the lightning protection system available in the offer of PAWBOL S.A. are in compliance with the requirements contained in the standards: PN-EN 62561-1, PN-EN IEC 62561-2, PN-EN 62305-1 and PN-EN 62305-3

PAWBOL S.A. offers selected lightning protection system elements in four RAL colors – 7024, 8004, 8017, 9005. The elements available in the colors include: gutter connectors, angle brackets, ridge tile connectors, roof tile connectors, roof connectors, universal connectors. Delivery time: 5 days from the order date.



RAL 7024



**RAL 8004** 

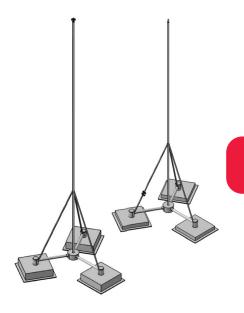


RAL 8017



**RAL 9005** 

Among the products in the group of lightning protection installation elements, PAWBOL S.A. offers a box for a lightning connector, the design of which has been registered in the Patent Office under the number Wp-19870. The modular design of the box allows the quick and easy assembly, even in an unusual position, and it provides very effective protection of the control connector of the lightning protection system against atmospheric conditions.

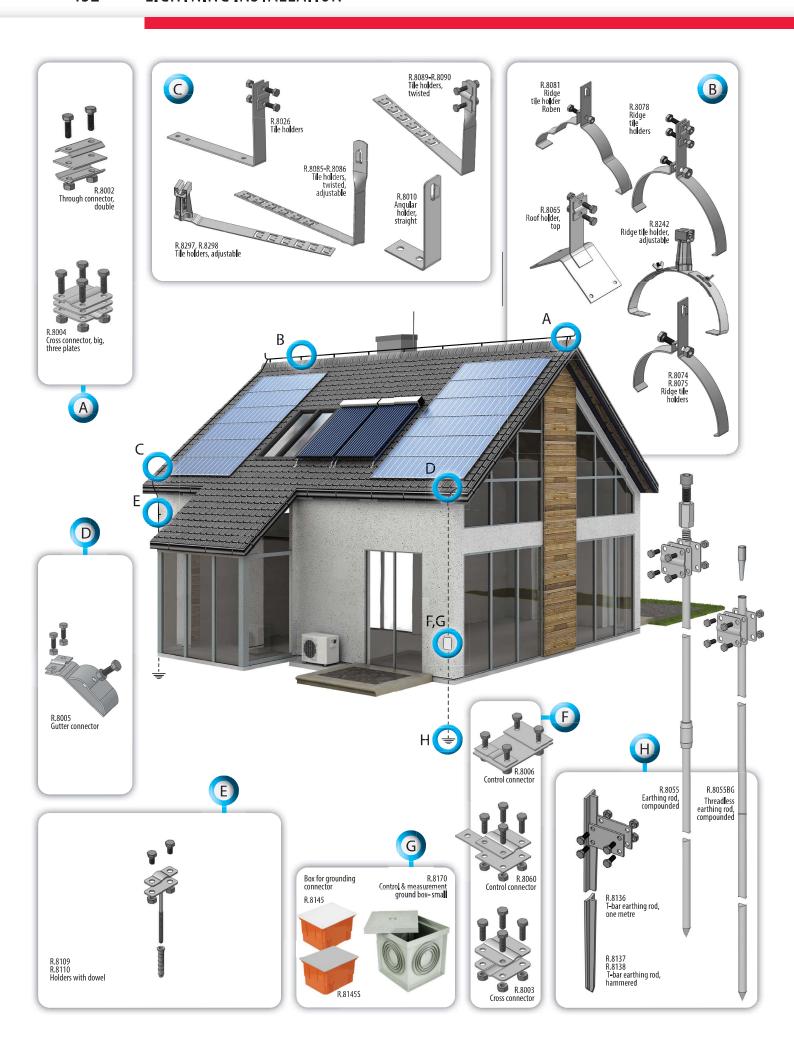


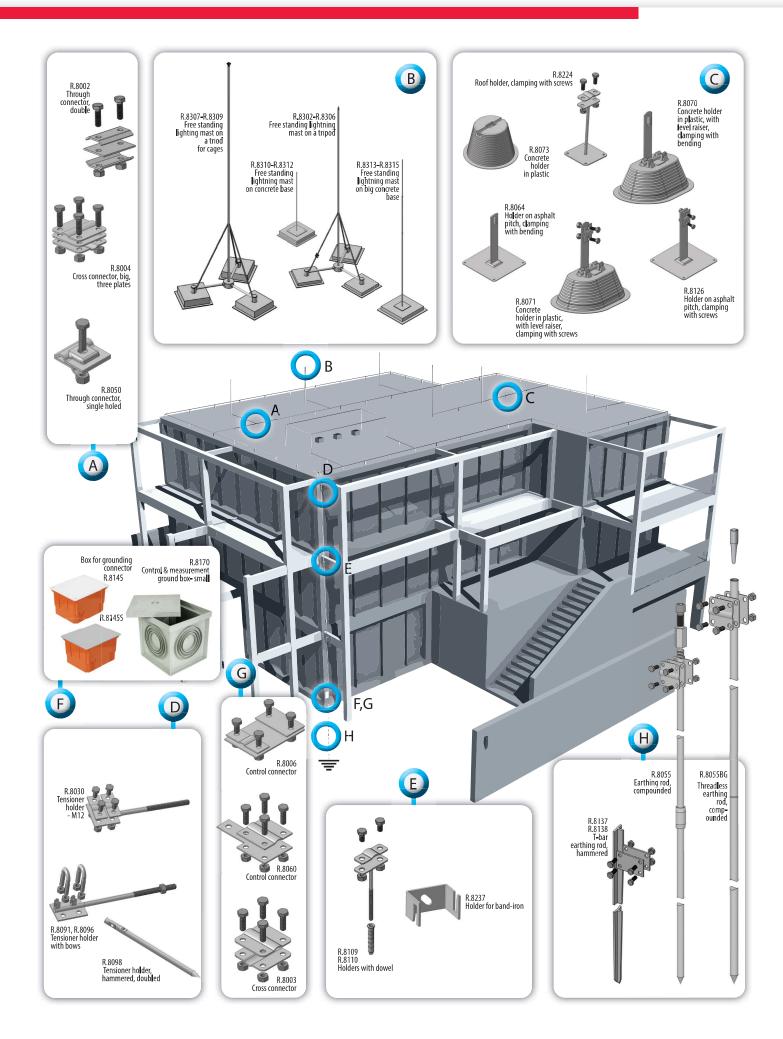
#### PAWBOL S.A. company provides high-quality products:

- » Compliant with the EU standards
- Protected against corrosion thanks to hot-dip galvanizing
  - Easy to assemble
- With highly attractive price

# Our products. Your safety.

3 years warranty on lightning protection installation elements made in a hot-dip galvanized version





#### **BOX FOR GROUNDING CONNECTOR**



NORM PN-EN-62561

The lightning protection connector box made of PS material is characterized by high functionality and customizability. The box is designed for flush mounting of the lightning protection system control connector. The box itself consists of two basic elements connected together. The design of the box allows it to slide in and out, resulting in a smooth height adjustment, so it may be use for different wall thicknesses, which is particularly effective for insulated walls. The box is suitable for installation in insulated walls up to 20 cm thick. The lid of this box is made of polystyrene. The cover, fixed with steel screws, effectively protects the connector from unauthorized access and accidental contact with the connector. The cover material is UV resistant, so it can be safely installed on sunny walls. The modular design of the box allows for quick and easy installation, even in unusual locations. The installed box provides very effective weather protection for the control connector of the lightning protection system.





#### Box for grounding connector

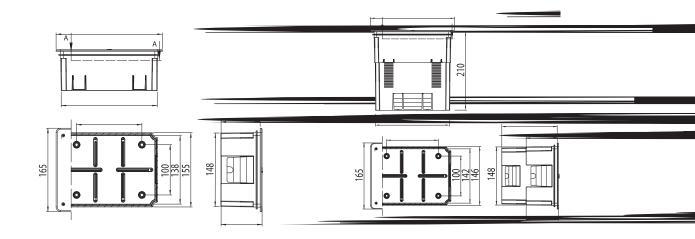


#### Depth adjustment range R.8145: 82-150mm

#### Depth adjustment range R.8147: 149-210mm

R.8145 - dimensions

R.8147 - dimensions



# **BOX FOR GROUNDING CONNECTOR**

NORM PN-EN-62561

- Advantages of box for grounding connector
- UV resistant cover
- Effective protection of the connector against weather conditions
- Simple installation of the control connector
- Perfect solution for installation in walls up to 15 cm thanks to smooth depth adjustment
- The simple design ensures comfortable installation

Many new applications for the boxes in the versions with doors.

Now in addition to protect the connector you can use lightning protection boxes with doors, e.g additional protection and installation of BETA surface-mounting sockets.



Socket BETA is not part of the set - it is shown for demonstration purposes

#### Box for grounding connector





#### R.8144 # H D 😭 ₩ w IP 79-141mm 145 mm 175 mm IP20

#### Box for grounding connector with doors





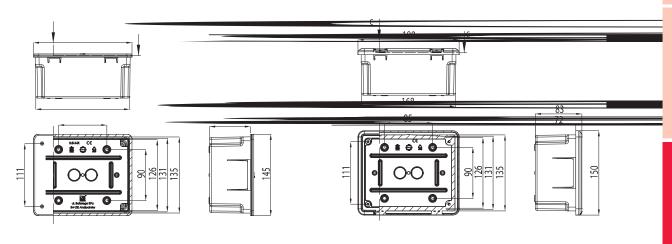
Н	D 🖽	₩w	IP IP	#	
83-145 mm	150 mm	180 mm	IP20	1	

#### Depth adjustment range: R.8144: 79-141mm

#### Depth adjustment range: R.8144D: 83-145mm

#### R.8144 - dimensions

#### R.8144D - dimensions



### **THROUGH CONNECTORS**



NORM PN-EN-62561-1

Through connectors are used to connect lightning wire with wire. They are made from 2 mm thick, hot-dip galvanized steel plates.



R.8001

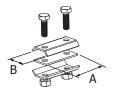
A / B = 50 / 40 mm For wire: Ø8, Ø10 mm



Through connector, Single Clamping with 2 screws M8

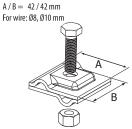
R.8002

A / B = 50 / 40 mm For wire: Ø8, Ø10 mm



Through connector, Double Clamping with 2 screws M8

R.8050



Through connector, single holed Clamping with 1 screws M10



#### **CROSS CONNECTORS**



NORM PN-EN-62561-1

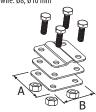


Cross connectors are used for connections wire - wire, wire - hoop, hoop - hoop.

They are available in different versions made of 2mm thick steel sheet.
Connected with 4 M8 (M10) screws.

#### R.8295

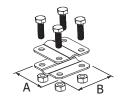
A / B = 55 / 55 mm Distance between screws: 30 mm For wire: Ø8, Ø10 mm



Universal connector Three plates 4 x M8

#### R.8003

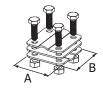
A / B = 65 / 65 mm, Distance between screws: 42 mm, For wire: Ø8, Ø10 mm



Cross connector, big Two plates, 4 x M8

#### R.8004

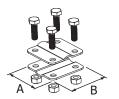
A / B = 65 / 65 mm Distance between screws: 42 mm For wire:  $\emptyset$ 8,  $\emptyset$ 10 mm



Cross connector, big Three plates, 4 x M8

#### R.8051

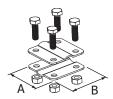
A / B = 70 / 70 mm Distance between screws: 40 mm For wire:  $\emptyset$ 8,  $\emptyset$ 10 mm



Large cross connector, Two plates, 4 x M10 Sheet thickness: 2 mm, Screw height: 37 mm

#### R.8052

A / B = 55 / 55 mm Distance between screws: 30 mm For wire: Ø8, Ø10 mm

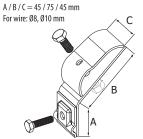


Cross connector, small Two plates, 4 x M8

#### **GUTTER CONNECTORS**

NORM PN-EN-62561-1





Gutter connectors are used to connect gutters with lightning wire. They are made from 2 mm thick, hot-dip galvanized, steel plates.

Gutter connectors Clamping with 1 screw M8, 1 screw M10





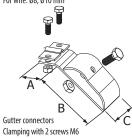


R.8231

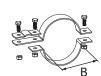
R.8233

B = 100 mm

A / B / C = 25 / 75 / 45 mm For wire: Ø8, Ø10 mm



B = 100 mm For wire: Ø8, Ø10 mm



Holder for drainpipe Clamping with 2 screws M6



Holder for drainpipe Clamping with bending

B = 100 mm

For wire: Ø8, Ø10 mm



Holder for drainpipe

For wire: Ø8 mm

## CONTROL CONNECTOR



NORM PN-EN-62561-1

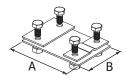


Control connectors are used for quick and efficient measurement of earthing resistance to check correctness operation of the entire system .

For connections of connectors, made of 2mm thick hot galvanized metal sheet, a M  $\boldsymbol{6}$  and M  $\boldsymbol{8}$  screws are being used.

R.8006

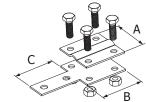
A / B = 100 / 65 mm For wire: Ø8, Ø10 mm



Control connector Clamping with - 4 screws M8

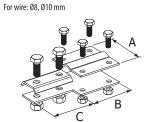
R.8060

A / B / C = 57 / 57 / 57 mm For wire: Ø8, Ø10 mm



Control connector Clamping with - 4 screws M8

R.8061 A / B / C = 57 / 57 / 57 mm



Control connector Clamping with - 4 screws M6, 2 screws M8



# **ANGULAR HOLDERS**

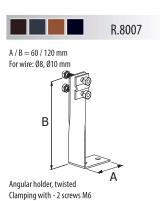


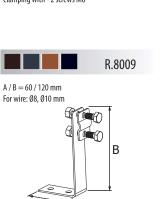
NORM PN-EN-62561-1

Angular holders are used for leading lightning wire above protected area. They are made from 2 mm thick, hot-dip galvanized steel plates.

The lightning wire is mounted to holder with bending, or with screws.

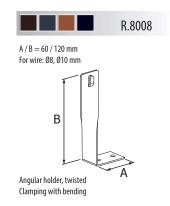


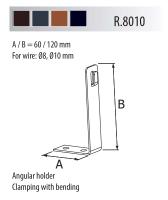




Angular holder

Clamping with - 2 screws M6

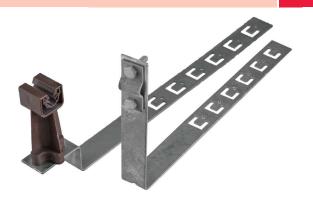




### **TILE HOLDERS**



NORM PN-EN-62561-1



 $A = 400 \, \text{mm}$ 

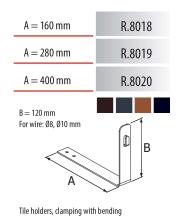
Tile holders are used to attach lightning wire to roofs covered with tiles. These handles are made of 2mm thick, hot-dip galvanized steel sheet.

They are attached to the battens by nailing or hooking.

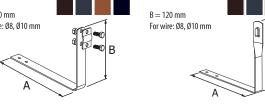
R.8021

R.8023

В



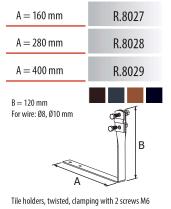




A = 160 mm

 $A = 400 \, \text{mm}$ 

R.8026



R.8083

R.8084

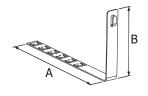
Tile holders, clamping with 2 screws M6

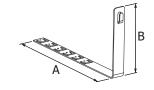
R.8088

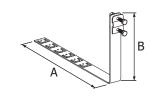
A / B = 280 / 135 mm For wire: Ø8, Ø10 mm

A / B = 420 / 135 mm For wire: Ø8, Ø10 mm

A / B = 420 / 135 mm For wire: Ø8, Ø10 mm







Tile holder, adjustable, Clamping with bending

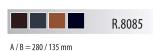
For wire: Ø8, Ø10 mm

Tile holder, twisted

adjustable, clamping with bending

Tile holder, adjustable, Clamping with bending

Tile holder, adjustable, Clamping with 2 screws M6

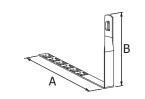


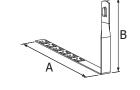


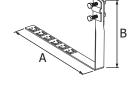


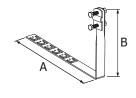
Tile holders, twisted, clamping with bending











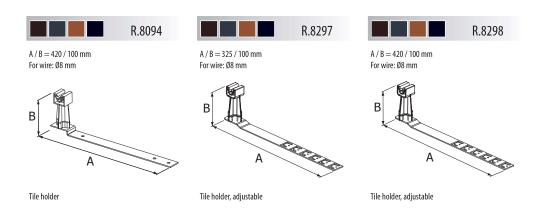
Tile holder, twisted adjustable, clamping with bending

Tile holder, twisted adjustable, Clamping with 2 screws M6

Tile holder, twisted adjustable, Clamping with 2 screws M6

CZ. Pipes, ducts

## LIGHTNING INSTALLATION



#### **ROOF HOLDERS**



NORM PN-EN-62561-1

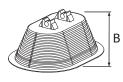
Roof holders are used to guide the lightning wire on flat and sloping roofs. They are made of plastic and 2 mm thick hot galvanized sheet metal.

The lightning wire is attached to the holder with screws or a bent clamping mechanism, and for plastic versions, it is fixed by inserting it into the groove.





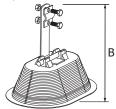
B = 60 mmFor wire: Ø8 mm



Concrete handle in plastic Base made of concrete and plastic

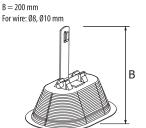
R.8071

B = 200 mm For wire: Ø8, Ø10 mm



Concrete handle in plastic with an extension Base made of concrete and plastic Clamping with 2 screws M6

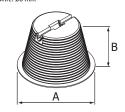
R.8070



Concrete handle in plastic with an extension Base made of concrete and plastic Clamping with bending

R.8073

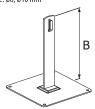
A = 150 mm, B = 80 mm For wire: Ø8 mm



Concrete handle in plastic Base made of concrete, without plastic



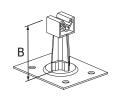
B = 120 mm For wire: Ø8, Ø10 mm



Holder on asphalt pitch, Clamping with bending

# R.8072

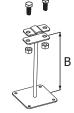
B = 70 mmFor wire: Ø8 mm



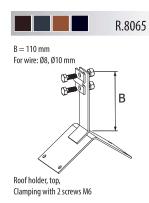
Holder on asphalt pitch



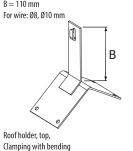
For wire: Ø8, Ø10 mm



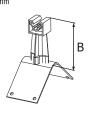
Roof holders, Clamping with 2 screws M6





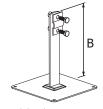












Holder on asphalt pitch, Clamping with 2 screws M6

### **UNIVERSAL HOLDERS**



NORM PN-EN-62561-1



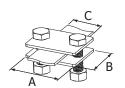
Universal holders are used for leading lightning wire and band iron sizes.

They are made from 2 mm thick, hot-dip galvanized steel plates.

Those elements are being mounted on walls by hammering, or screwing using expansion bolts.



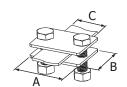
A / B / C = 55 / 35 / 25 mm



Holders for connecting band-iron C-25 mm, Clamping with 2 screws M8

R.8016

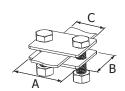
A / B / C = 65 / 35 / 35 mm



Holders for connecting band-iron C-30-35 mm. Clamping with 2 screws M8

R.8017

A / B / C = 80 / 55 / 40 mm



Holders for connecting band-iron C-40 mm







Clamp for band-iron

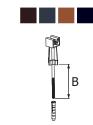




Holder for band-iron with expansion bolt M8, clamping with 2 screws M6

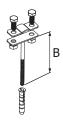
R.8278

B = 100 mmFor wire: Ø8 mm



Holder with expansion bolt M8

For wire: Ø8, Ø10 mm



Holder with expansion bolt M12 Clamping with 2 screws M6

B = 100 mm	R.8109
B = 120 mm	R.8110
B = 160 mm	R.8045
B = 180 mm	R.8046
B = 210 mm	R.8047
B = 250 mm	R.8114

### **RIDGE TILE HOLDERS**



NORM PN-EN-62561-1

A / B = 210 / 240 mm



Ridge tile holders are used to guide lightning wire on the tops of tiled roofs.

They are made of 2mm thick hot-dip galvanized sheet metal.

The lightning wire is attached to the ridge tile holder with the clamp or screws. Rebate holder, universal, thermo-diffusion galvanized,

Ridge tile holder, adjustable universal. Clamping with 2 screws M6



For wire: Ø8, Ø10 mm

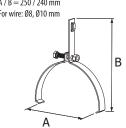
R.8074

В

R.8146



R.8075



Ridge tile holder Clamping with bending



Ridge tile holder Clamping with bending

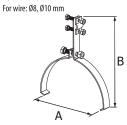
A / B = 230 / 240 mm



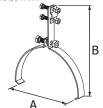




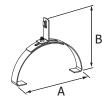
A / B = 210 / 220 mm



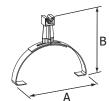
A / B = 250 / 240 mm For wire: Ø8, Ø10 mm



For wire: Ø8, Ø10 mm

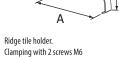


For wire: Ø8 mm

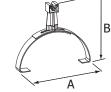


R.8080

Ridge tile holder Clamping with 2 screws M6



Ridge tile holder, adjustable, universal Clamping with bending



R.8081

R.8082

R.8241

A/B = 210/240 mm

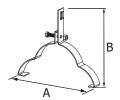
For wire: Ø8, Ø10 mm

R.8242

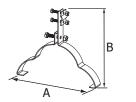
A/B = 210/240 mm

Ridge tile holder, adjustable, universal

A / B = 210 / 240 mm For wire: Ø8, Ø10 mm



A/B = 210/240 mmFor wire: Ø8, Ø10 mm



For wire: Ø8 mm В

Ridge tile holder "Roben" Clamping with bending

Ridge tile holder "Roben" Clamping with 2 screws M6

Ridge tile holder, adjustable max Clamping with bending

Ridge tile holder, adjustable max



## **TENSIONER HOLDERS**



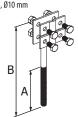
NORM PN-EN-62561-1

Tensioner holders are used for making tensions of lightning wires. They are made from 2 mm thick plates, and cold forged steel.



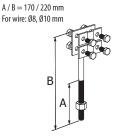


A / B = 170 / 220 mm For wire: Ø8, Ø10 mm



Tensioner holder M12 Clamping with - 4 screws M8

#### R.8095



Tensioner holder with M12 nut Clamping with - 4 screws M8

# R.8096 R.8091 M10 M12 C=225 mm

For wire / for wire: Ø8, Ø10 mm

Tensioner holder with bows Clamping with - 4 screws M8

# A = 300 mm R.8099

A = 300 IIIII	11.0077
A = 350 mm	R.8100
A = 400 mm	R.8101

 $Tensioner\ holder,\ hammered,\ forged,\ smooth$ 

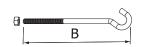
#### R.8098

A=400 mm

l.	Α	-1

Tensioner holder, hammered, forged, smooth, doubled

B = 200  mm	R.8265
Р год ж	R 8766



Tensioner holder with hook Ø10



#### **RABBET HOLDERS**



NORM PN-EN-62561-1

The rabbet holders are used to guide the lightning wire ø 8 or ø 10 along gutters, roof fittings and drains.

Appropriate handles are used depending on the way the lightning wire is routed in relation to attachment point.



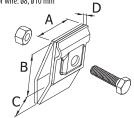


R.8174

R.8175

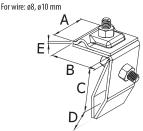
R.8176

A/B/C/D = 42/45/20/2 mmFor wire: ø8, ø10 mm

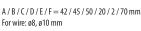


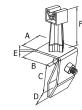
Rabbet holder, straight, thermo-diffusion galvanized, Clamping with 1 screw M10





Rabbet holder, angular, thermo-diffusion galvanized, clamping with 2 screws M10





Rabbet holder, with extension, thermal diffusion, galvanized, clamping with 2 screws M10



Rabbet holder, universal, thermo-diffusion galvanized Clamping with 2 screws M10

### **SHEET HOLDERS**



NORM PN-EN-62561-1

Running ø 8 or ø 10 lightning wire on roofs covered with sheet metal.

The lightning wire is run 130 mm above handle attachment point.

Possibility of attaching handles to fittings and rabbets.

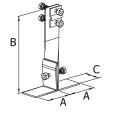








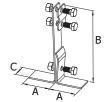
A/B/C=30/130/25 For wire: Ø8, Ø10 mi



Sheet holder, angular, twisted, thermal diffusion galvanization, clamping with 2 screws M6



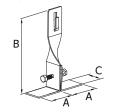
A/B/C = 30/130/25 For wire: Ø8, Ø10 mm



Sheet holder, angular, thermal diffusion galvanization, clamping with 2 screws M6

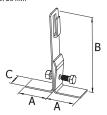


A/B/C=30/130/25 For wire: Ø8, Ø10 mm



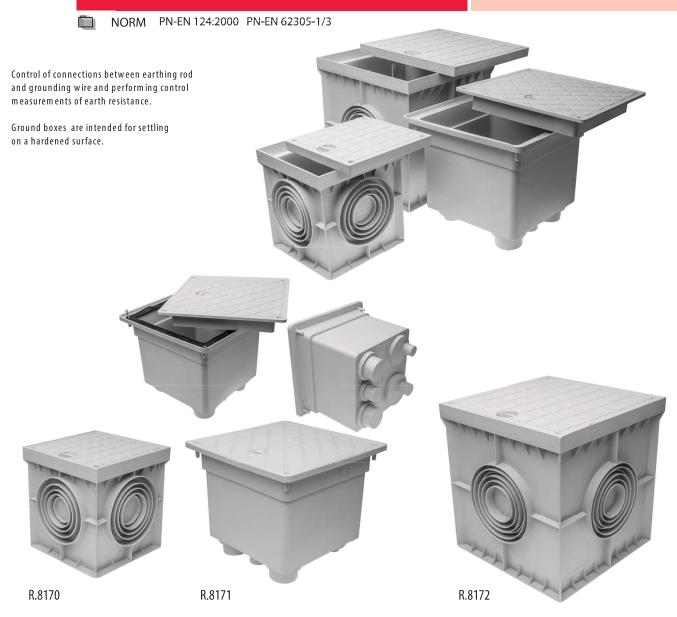
Sheet holder, angular, twisted, thermal diffusion galvanization, clamping with bending





Sheet holder, angular, thermal diffusion galvanization, clamping with bending

# **CONTROL & MEASUREMENT GROUND BOXES**



Catalogue number	IP	Control & measurement ground box, Type	Dimensions [mm]	Material	Permissible pressure on the cover [kN/kg]	Input Ø [mm]	Output Ø[mm]	Cover fixing
R.8170	IP44	Small	195/195/203		2,1 / 210	50 - 60 - 80 100 - 125	50 - 60 - 80 100 - 125	Snap-on
R.8171	IP55	Sealed	283/283/235	reinforced PP (polypropylene)	2,1 / 210	63 - 50 (2x) 40 - 32	75 - 25, 90 - 32	4 screws M6
R.8172	IP44	Big	290/290/297		7,39 / 739	60 - 80 - 90 - 110 125 - 140	60 - 80 - 100 110 - 125 - 140	Snap-on

#### **BAND-IRON AND WIRE**



#### NORM PN-EN 62561-2



Hot-dip galvanized band-iron and lightning wire.
The product is available for sale in collective packaging.

R.8143-25 - Lightning wire, galvanized (op  $\sim$  25kg) fi -8 hot-dip galvanized (1kg  $\sim$  2,597m)

R.8139-25 - Band-iron, galvanized 25x4 mm (op.  $\sim$ 25kg), hot-dip galvanized (1kg  $\sim$ 1,274m)

Delivery time up to 7 business days



R.8143-25

Ø8 mm / 25 kg

R.8139-25

25 x 4 mm / 25 kg

R.8143-20AL Ø8 mm / 20 kg



Steel lightning wire galvanized and aluminum wire



Band-iron, galvanized

#### **GROUNDING BANDS**



NORM PN-EN-62561-1

Main function is making equipotential bonding which guarantees proper work of lightning protection.

R.8181

Material: stainless steel

width x depth: 20 x 0,3 mm



R.8183

R.8182

R.8180

 $A = 601 \, \text{mm}$ 



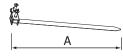
 $A = 426 \, \text{mm}$ 



A = 207 mm



 $A = 135 \,\mathrm{mm}$ 



Grounding band 1/8-6"

Grounding band1/8-4"

Grounding band 1/8-3/2"

Grounding band 1/8-3/8"

#### FREE STANDING LIGHTNING MAST



NORM PN-EN-62561-1

Free standing lightning mast



R.8310

Free standing lightning mast Height of mast: 1 [m] Diameter of spire: 810 Weight of base: 15 [kg] Concrete base: 350x350x50 [mm]

#### R.8311

Free standing lightning mast Height of mast: 1,5 [m] Diameter of spire: Ø12 Weight of base: 15 [kg] Concrete base: 350x350x50 [mm]

#### R.8312

Free standing lightning mast Height of mast: 2 [m] Diameter of spire: Ø12 Weight of base: 15 [kg] Concrete base: 350x350x50 [mm]

#### R.8302

Free standing lightning mast on a tripod Height of mast: 4 [m] Diameter of spire: Ø33,7/ Ø12 Weight of base: 3x40 [kg] Concrete base: 500x500x70 [mm]

#### R.8303

Free standing lightning mast on a tripod Height of mast: 5 [m] Diameter of spire: Ø33,7/ Ø18/ Ø10 Weight of base: 3x40 [kg] Concrete base: 500x500x70 [mm]

#### R.8304

Free standing lightning mast on a tripod Height of mast: 6 [m] Diameter of spire: Ø33,7/Ø18/Ø12 Weight of base: 3x40 [kg] Concrete base: 500x500x70 [mm]

#### R.8305

Free standing lightning mast on a tripod Height of mast: 7 [m] Diameter of spire: Ø33,7/ Ø18/Ø10 Weight of base: 6x40 [kg] Concrete base: 2x500x500x70 [mm]

#### R.8306

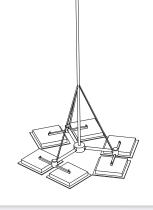
Free standing lightning mast on a tripod Height of mast: 8 [m] Diameter of spire: Ø42,4/Ø33,7/Ø18/Ø12 Weight of base: 6x40 [kg] Concrete base: 2x500x500x70 [mm]

#### Free standing lightning mast on a tripod

Lighting masts with concrete base are used in places where creating a lightning-safe zone is necessary, for expl. Roofs, squares. Depending on the protected object — there can be used masts with a single base or on a tripod.

They are made from hot dip galvanized bars and pipes





Free standing lightning mast



#### R.8313

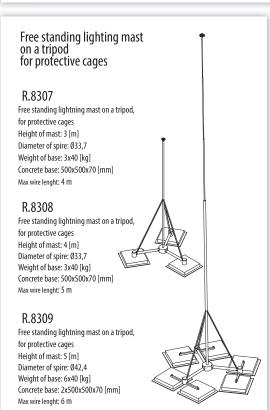
Free standing lightning mast Height of mast: 2 [m] Diameter of spire: Ø16 Weight of base: 40 [kg] Concrete base: 500x500x70 [mm]

#### R.8314

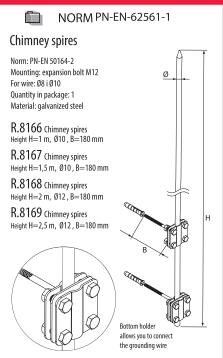
Free standing lightning mast Height of mast: 3 [m] Diameter of spire:Ø18/Ø10 Weight of base: 40 [kg] Concrete base: 500x500x70 [mm]

#### R.8315

Free standing lightning mast Height of mast: 4 [m] Diameter of spire:018/012 Weight of base: 40 [kg] Concrete base: 500x500x70 [mm]



# CHIMNEY SPIRES



#### **EARTHING RODS**



NORM PN-EN 62561-2



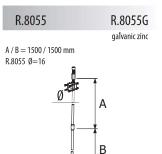
Main part of grounding installation, partially buried into the ground They are made from hot-dip galvanized steel bars. For connections between elements of lightning installation and earthing rods are used cross connector.

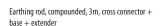


B = 2000 mm	R.8138
B = 1500 mm	R.8137
B = 1000 mm	R.8136

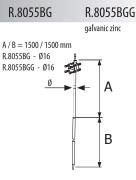


R.8056





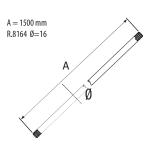
R.8164



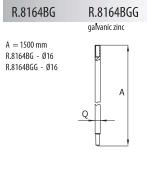
Threadless earthing rod, compounded, 3m, cross connector + 2 x extender + accesories

# A = 1500 mm R.8056 Ø=16

Earthing rod (spire), 1,5 m (base), hot-dip galvanized



Earthing rod (extender), 1,5 m, hot-dip galvanized

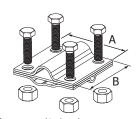


Threadless earthing rod - spire/extension 1,5m hot-dip galvanized



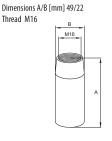
R.8051

A / B = 70 / 70 mm Distance between screws: 42 mm



Cross connector, big, three plates, 4 screws M10, hot-dip galvanized

#### R.8163



Earth electrode - connector for the impactor

#### R.8163G-P

Thread M16



Earth electrode - connector for the impactor hexagonal, galvanized



R.8161G

Ground rod - mallet galvanic zinc plated