

CATALOG 2024/25

*Effective and reliable lightning protection!*

**Dear customers!**

We are the oldest and most experienced manufacturer of lightning protection systems in Poland. Our systems meet the highest required quality, aesthetic and technical - confirmed by tests in certified research units.

**The Management System we have implemented**

**ISO 9001:2015**

**ISO 14001:2015**

in its broadest scope includes:

**DESIGN, PRODUCTION, SALE AND INSTALATION OF COMPONENTS OF THE LIGHTNING PROTECTION SYSTEM, EARTHING, MASTS. DESIGN OF PROFESSIONAL LIGHTNING PROTECTION SYSTEMS.**

As the only Polish company, we have our own certified high-voltage cable, which, in accordance with the SEP-BBJ certificate, withstands a current surge of 200kA and can be used in lightning protection class I, as well as masts, fasteners and groundings.

AH Hardt installations protect many prestigious historic, public, commercial, office buildings, etc. We support customers at every stage of cooperation, from installation design, product selection, technical assistance to sales and assembly.

**Safety and quality at the highest level!**

Owners of

**AH Hardt sp.j.**



**SEP - BBJ**

ISO 9001:2015  
BUREAU VERITAS  
Certification



[www.en.ah.com.pl](http://www.en.ah.com.pl)

## Examples of projects implemented using AH Hardt lightning protection systems



### Office buildings

CU Office – Wrocław  
Tischnera Office – Krakow  
Metropolitan in Warsaw  
WARSAW HUB Warsaw  
Mennica Legacy Tower Warsaw  
Unity Tower – Krakow  
Eternum Gdańsk



### Commercial buildings

Galeria Młociny in Warsaw  
IKEA Targówek  
Galeria Serenada in Krakow  
LIDL Kałuszyn  
IKEA in Lublin  
Bielany Wrocławskie  
Leroy Merlin in Bełchatów



### Industrial buildings

Orlen Płock – engine room and boiler room  
Mondi Świecie – tanks  
Azoty Puławy – industrial and warehouse buildings  
Opole Power Plant – blocks 5 and 6  
PGE GIEK S.A. Bełchatów – modernization of warehouse buildings  
NITROERG S.A. – munitions storage in Krupski Młyn  
The sarcophagus of the Chernobyl nuclear power plant



### Public facilities

EXPO facilities in Kazakhstan  
Tauron Arena in Krakow  
Białołęka Hospital – Warsaw  
Prokocim Hospital in Krakow  
Academy buildings  
National Stadium in Warsaw  
AGH University of Science and Technology in Krakow



### Historic buildings

Wawel Royal Castle in Krakow  
Churches:  
Corpus Christi, St. Mary's in Krakow  
The Faustine and Norbertine Monasteries, the Benedictine Abbey in Tyniec  
Wieliczka Salt Mine  
Copper-Roof Palace in Warsaw  
Przegorzały Castle in Krakow



### Residential buildings

Nowy Nikiszowiec in Katowice  
Mangalia Mokotów housing estate in Warsaw  
Wilanów housing estate in Warsaw  
Atal Czyżyny in Krakow

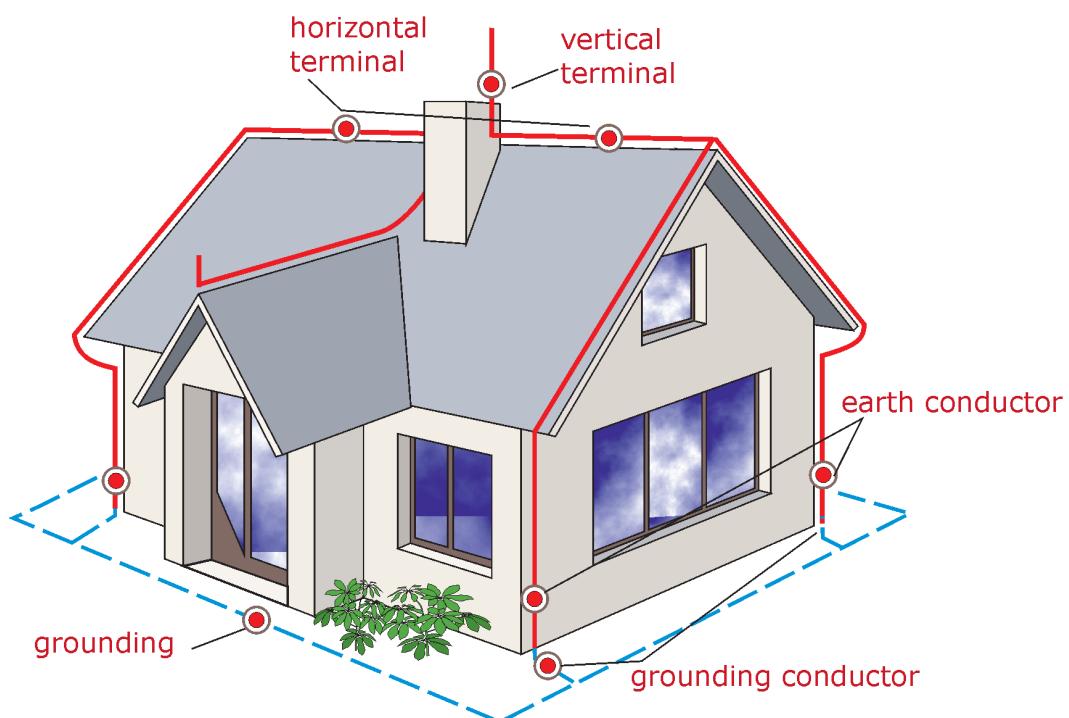
## Lightning protection

An external lightning protection system (LPS) aims to protect the building, including living beings and the equipment therein, against the effects of a direct lightning strike.

The task of LPS is to capture the atmospheric discharge directed at the building using a system of terminals, and then discharge the lightning current securely through the discharge wires and disperse it into the ground using a grounding system.

The building's lightning protection system (LPS) consists of a ground part in the form of:

- **terminals** – intended for absorbing direct lightning discharge
- **discharge wires** – connecting the ground part to the ground wire
- **ground wires** – connecting the discharge wire to ground
- **grounding** – metal parts or their assemblies located in the ground or in the building's foundations and used to disperse the lightning discharge into the ground.



Lightning protection class characteristic

lightning protection class	horizontal terminal grid	clearance between discharge wires	sphere radius R
I	5x5m	every 10m	20m
II	10x10m	every 10m	30m
III	15x15m	every 15m	45m
IV	20x20m	every 20m	60m

The lightning protection class is determined by performing a risk analysis in accordance with PN-EN 62305-2.

## Designing

Our company assists in the design of professional lightning protection systems based on our products.

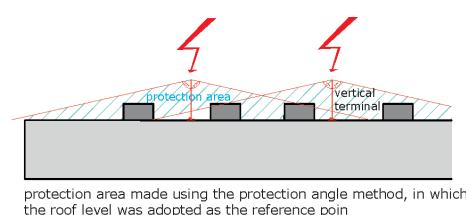
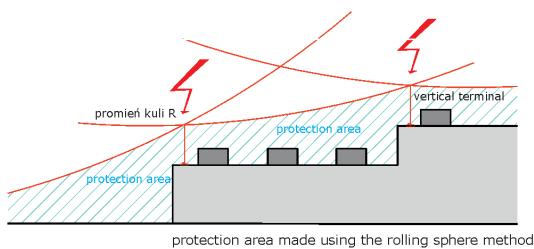
**A request for quote should contain the following information:**

- the building's lightning protection class
- roof projection or sketch of the building's body with basic dimensions
- dimensions of the protected devices and their location on the roof
- information about the material the roof is made of
- company name, address and contact details

If possible, please send plans in dwg files.

### Methods for determining the position of terminals:

- rolling sphere method – suitable in any case
- protection angle method – suitable for buildings with simple shapes
- stray current method – suitable for flat surfaces



**Insulation clearance** – the distance that must be ensured so that there is no spark jump between the earthing and the protected device

$$s = k_i \frac{k_c}{k_m} I$$

where:

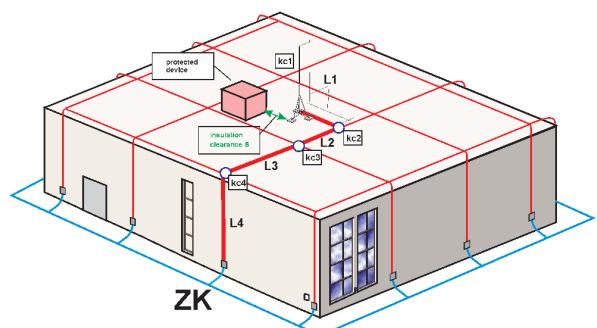
s – separation clearance in m

ki – factor depending on the LPS class

km – factor depending on the electrical insulation material

kc – factor depending on the lightning current distribution

I – length in meters, measured along the LPS conductors from the point where the separation clearance is considered, to the point of the nearest equipotential bonding, or to the earthing



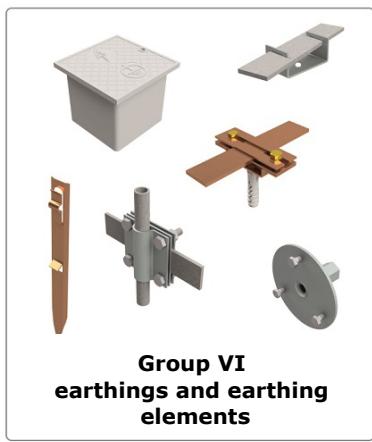
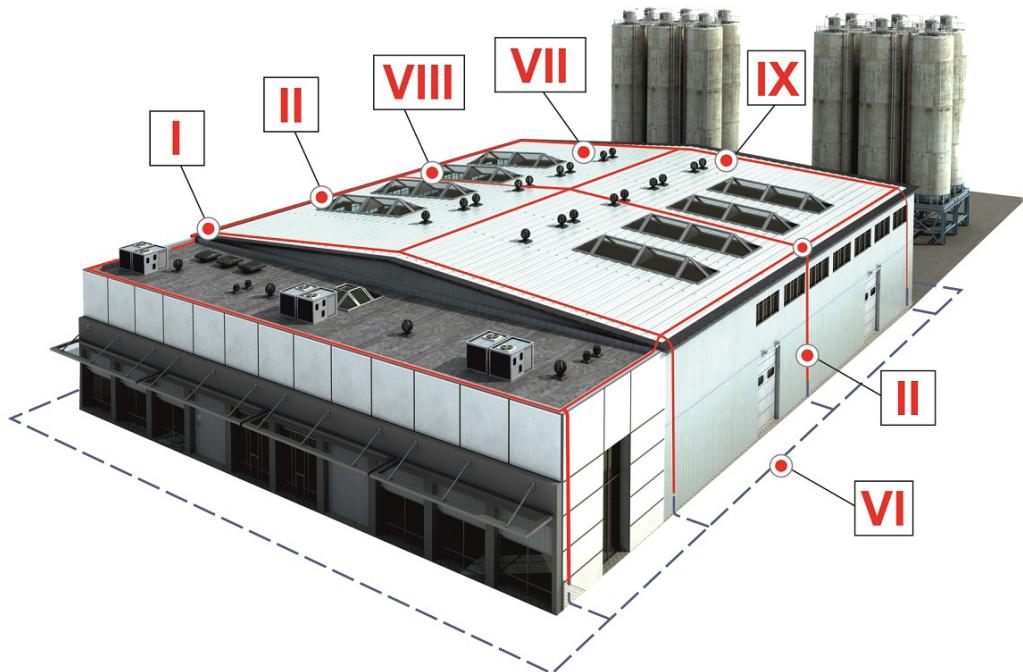
### Material connections

	steel	aluminum	copper	stainless steel
steel	+	+	-	+
aluminum	+	+	-	+
copper	-	-	+	+
stainless steel	+	+	+	+

## RESIDENTIAL BUILDING



## INDUSTRIAL BUILDING



## EFFECTIVE AND RELIABLE LIGHTNING PROTECTION



**Selection of certified products**



**Lightning protection system design**



**Professional advice**



**Free quotes**



**Installation of lightning protection system**

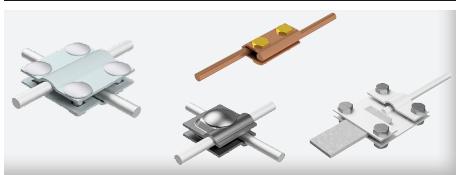
**Together we will take care of your safety!**

**CONTACT**

**biuro@ah.com.pl**



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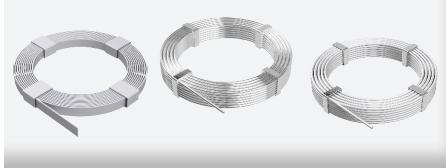
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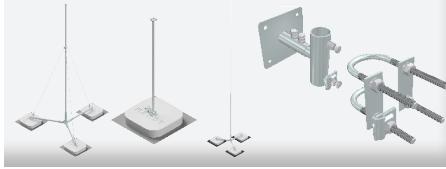
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group II

group III

group IV

group V

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group VIII

group IX

group X



# CONNECTORS

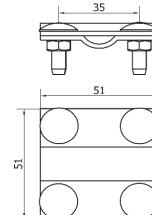
they are used for cross connections  
grounding wire and steel tape in the layout:  
- parallel  
- cross  
- T

## CROSS CONNECTORS

### 4-hole cross connector, 2-plate



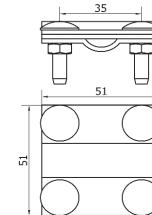
catalog No.	material	cable range	bolts
AH01031	electro galvanized steel		
AH01030G	hot-dip galvanized steel		
AH01032	Cu/Mo		
AH01033	INOX		
AH01034	Al/INOX		



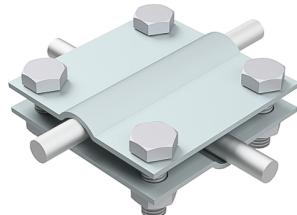
### 4-hole cross connector, 3-plate



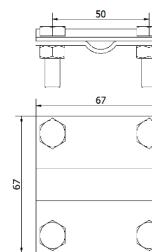
catalog No.	material	cable range	bolts
AH01041	electro galvanized steel		
AH01040G	hot-dip galvanized steel		
AH01042	Cu/Mo		
AH01043	INOX		
AH01044	Al/INOX		



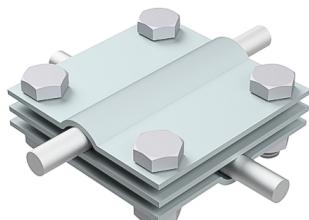
### 4-hole cross connector, 2-plate



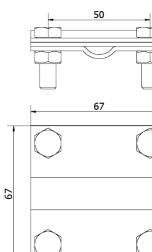
catalog No.	material	cable range	bolts
AH01051	electro galvanized steel		
AH01050G	hot-dip galvanized steel		
AH01052	Cu/Mo		
AH01053	INOX		
AH01054	Al/INOX		



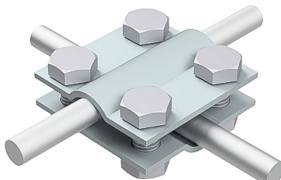
### 4-hole cross connector, 3-plate



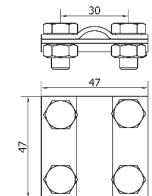
catalog No.	material	cable range	bolts
AH01061	electro galvanized steel		
AH01060G	hot-dip galvanized steel		
AH01062	Cu/Mo		
AH01063	INOX		
AH01064	Al/INOX		



### 4-hole cross connector, 2-plate



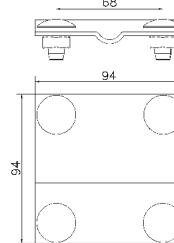
catalog No.	material	cable range	bolts
AH01101	electro galvanized steel		
AH01100G	hot-dip galvanized steel		
AH01102	Cu/Mo		
AH01103	INOX		
AH01104	Al/INOX		



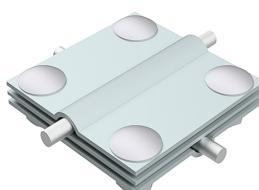
### 4-hole cross connector, 2-plate



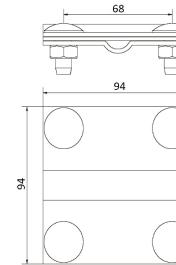
catalog No.	material	cable range	bolts
<b>AH01171</b>	electro galvanized steel	$\varnothing$ 8-10mm tape up to 50 mm	4xM10x25
<b>01170G</b>	hot-dip galvanized steel		
<b>01172</b>	Cu/Mo		
<b>01173</b>	INOX		
<b>01174</b>	Al/INOX		



### 4-hole cross connector, 3-plate



catalog No.	material	cable range	bolts
<b>AH01181</b>	electro galvanized steel	$\varnothing$ 8-10mm tape up to 50 mm	4xM10x30
<b>AH01180G</b>	hot-dip galvanized steel		
<b>AH01182</b>	Cu/Mo		
<b>AH01183</b>	INOX		
<b>AH01184</b>	Al/INOX		

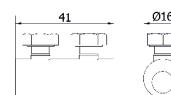


## CONNECTION SLEEVES

### 2-hole through connector



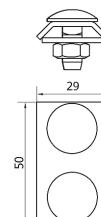
catalog No.	material	cable range	bolts
<b>AH02011</b>	electro galvanized steel		
<b>AH02012</b>	Cu/Mo	$\varnothing$ 8mm	2xM8x10
<b>AH02013</b>	INOX		



### 2-hole through connector, single



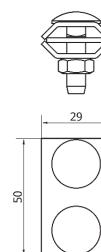
catalog No.	material	cable range	bolts
<b>AH02021</b>	electro galvanized steel	$\varnothing$ 8mm	2xM8x20
<b>AH02020G</b>	hot-dip galvanized steel		
<b>AH02022</b>	Cu/Mo		
<b>AH02023</b>	INOX		
<b>AH02024</b>	Al/INOX		



### 2-hole through connector, double



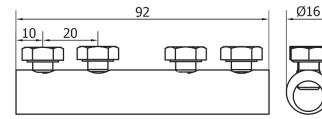
catalog No.	material	cable range	bolts
<b>AH02031</b>	electro galvanized steel	$\varnothing$ 8mm	2xM8x30
<b>AH02030G</b>	hot-dip galvanized steel		
<b>AH02032</b>	Cu/Mo		
<b>AH02033</b>	INOX		
<b>AH02034</b>	Al/INOX		



### 4-hole through connector



catalog No.	material	cable range	bolts
<b>AH02041</b>	electro galvanized steel	$\varnothing$ 8mm	4xM8x10
<b>AH02042</b>	Cu/Mo		
<b>AH02043</b>	INOX		

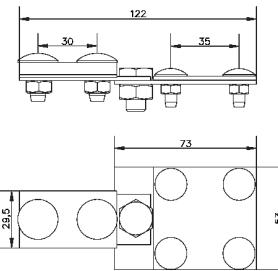


## TEST CONNECTORS

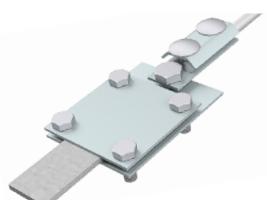
4-hole test connector; wire-tape



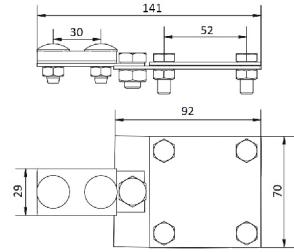
catalog No.	material	cable range	bolts
AH03021	electro galvanized steel		
AH03020G	hot-dip galvanized steel	Ø 8mm tape up to 30mm	4xM6x16 1xM10x16 2xM8x20
AH03022	Cu/Mo		
AH03023	INOX		
AH03024	Al/INOX		



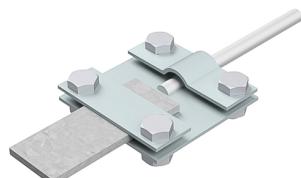
4-hole test connector; wire-tape



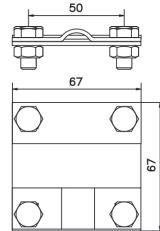
catalog No.	material	cable range	bolts
AH03031	electro galvanized steel		
AH03030G	hot-dip galvanized steel	Ø 8mm tape up to 40mm	4xM8x20 1xM10x16 2xM8x20
AH03032	Cu/Mo		
AH03033	INOX		
AH03034	Al/INOX		



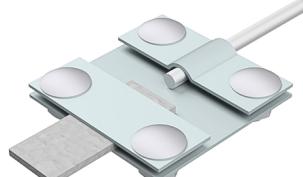
4-hole test connector; wire-tape



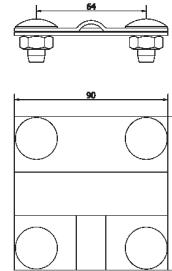
catalog No.	material	cable range	bolts
AH03051	electro galvanized steel		
AH03050G	hot-dip galvanized steel	Ø 8-10mm tape up to 40mm	4xM8x20
AH03052	Cu/Mo		
AH03053	INOX		
AH03054	Al/INOX		



4-hole test connector; wire-tape



catalog No.	material	cable range	bolts
AH03091	electro galvanized steel		
AH03090G	hot-dip galvanized steel	Ø 8-10mm tape up to 50mm	4xM10x20
AH03092	Cu/Mo		
AH03093	INOX		
AH03094	Al/INOX		

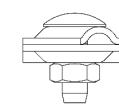


## UNIVERSAL CLAMPS

Universal DIN connector; double



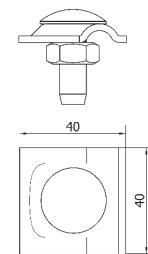
catalog No.	material	cable range	bolts
AH16011	electro galvanized steel		
AH16010G	hot-dip galvanized steel		
AH16012	Cu/Mo	Ø 8-10mm	1xM10x30
AH16013	INOX		
AH16014	Al/INOX		

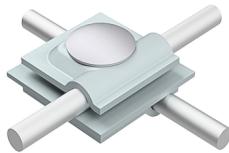


Universal DIN connector; single

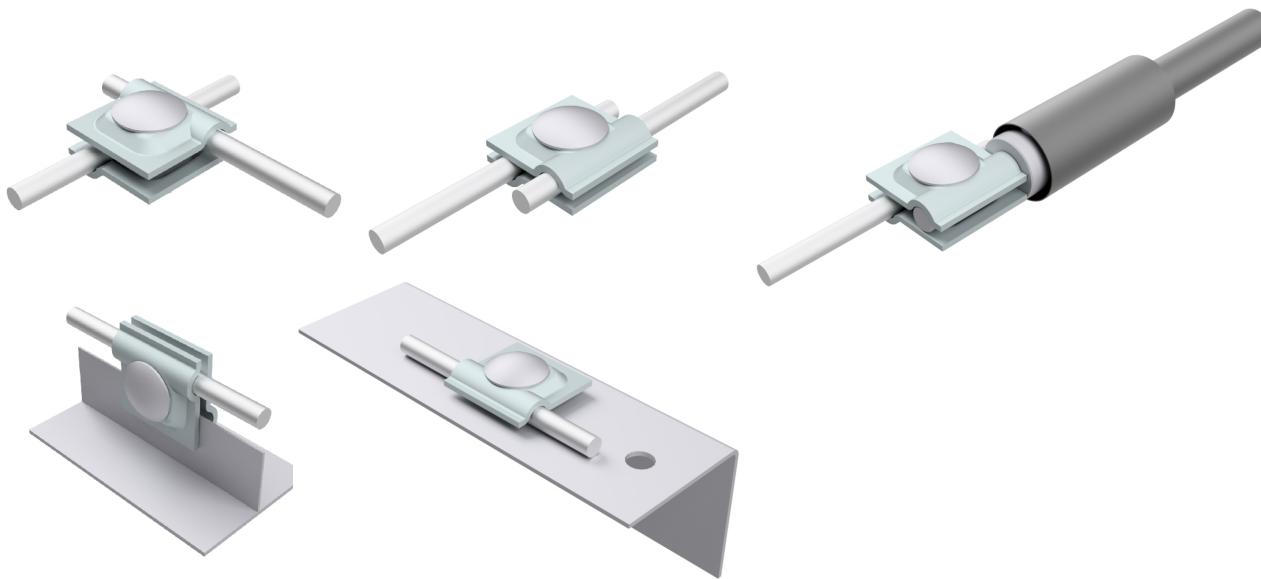
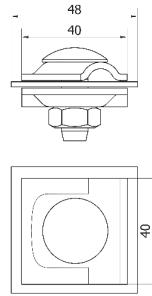


catalog No.	material	cable range	bolts
AH16021	electro galvanized steel		
AH16020G	hot-dip galvanized steel		
AH16022	Cu/Mo	Ø 8-10mm	1xM10x30
AH16023	INOX		
AH16024	Al/INOX		




**Universal DIN connector; 3-plate**


<b>catalog No.</b>	<b>material</b>	<b>cable range</b>	<b>bolts</b>
<b>AH16031</b>	electro galvanized steel		
<b>AH1603OG</b>	hot-dip galvanized steel		
<b>AH16032</b>	Cu/Mo	Ø 8-10mm	1xM10x30
<b>AH16033</b>	INOX		
<b>AH16034</b>	Al		

group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection  
pipesgroup VI  
earthing rods  
and earthingsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

# LIGHTNING HOLDERS

they are used for laying the grounding wire and the tape iron on:

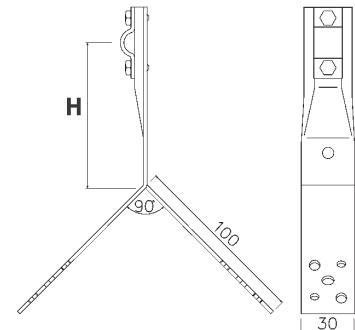
- roofs
- facades
- foundations

## TOP HOLDERS

### Top holder, screwed



catalog No.	H [cm]	material	cable range	bolts
AH21011	8	electro galvanized steel		
AH21021	10			
AH2101OG	8	hot-dip galvanized steel		
AH2102OG	10			
AH21012	8	Cu/Mo	Ø 8-10mm	2xM5x16
AH21022	10			
AH21013	8	INOX		
AH21023	10			
AH21014	8	Al		
AH21024	10			

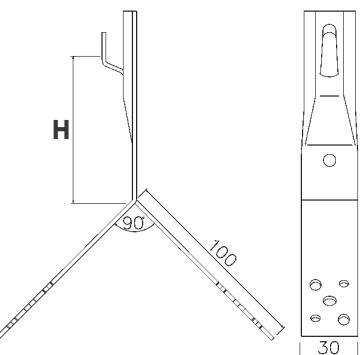


\*At the customer's request we bend at any angle

### Top holder



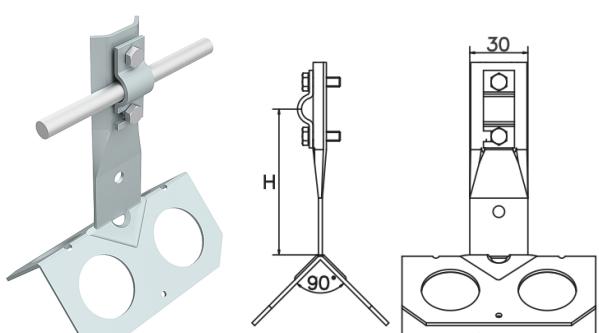
catalog No.	H [cm]	material	cable range
AH21031	8	electro galvanized steel	
AH21041	10		
AH2103OG	8	hot-dip galvanized steel	
AH2104OG	10		
AH21032	8	Cu	Ø 8-10mm
AH21042	10		
AH21033	8	INOX	
AH21043	10		
AH21034	8	Al	
AH21044	10		



\*At the customer's request we bend at any angle

### Top holder, screwed

catalog No.	H [cm]	material	cable range	bolts
AH21071	8	electro galvanized steel		
AH21081	10			
AH2107OG	8	hot-dip galvanized steel		
AH2108OG	10			
AH21072	8	Cu/Mo	Ø 8-10mm	2xM5x16
AH21082	10			
AH21073	8	INOX		
AH21083	10			
AH21074	8	Al		
AH21084	10			



\*At the customer's request we bend at any angle

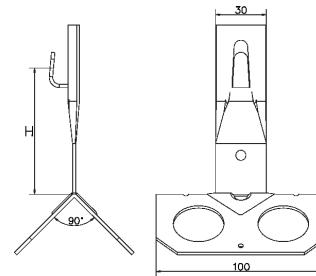


## Top holder



catalog No.	H [cm]	material	cable range
<b>AH21051</b>	8	electro galvanized steel	
<b>AH21061</b>	10		
<b>AH2105OG</b>	8	hot-dip galvanized steel	
<b>AH2106OG</b>	10		
<b>AH21052</b>	8	Cu	
<b>AH21062</b>	10		
<b>AH21053</b>	8	INOX	
<b>AH21063</b>	10		
<b>AH21054</b>	8	Al	
<b>AH21064</b>	10		

\*At the customer's request we bend at any angle



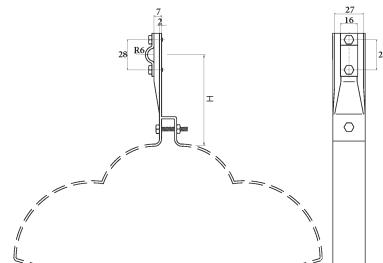
## HOLDERS FOR RIDGE TILES

### Profiled ridge tile holder, screwed



catalog No.	H [cm]	material	cable range	bolts
<b>AH04141</b>	8	electro galvanized steel		
<b>AH04151</b>	10			
<b>AH0414OG</b>	8	hot-dip galvanized steel		
<b>AH0415OG</b>	10			
<b>AH04142</b>	8	Cu/Mo		
<b>AH04152</b>	10			

\*Bend handle (before galvanizing) based on a ridge tile provided by the customer.  
This solution greatly improves the installation's aesthetics and makes assembly easier.

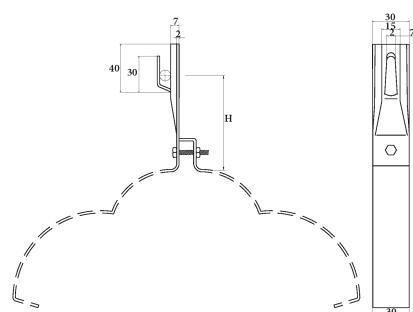


### Profiled ridge tile holder



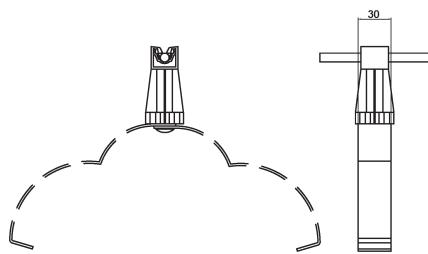
catalog No.	H [cm]	material	cable range	bolts
<b>AH04161</b>	8	electro galvanized steel		
<b>AH04171</b>	10			
<b>AH0416OG</b>	8	hot-dip galvanized steel		
<b>AH0417OG</b>	10			
<b>AH04162</b>	8	Cu/Mo		
<b>AH04172</b>	10			
<b>AH04163</b>	8	INOX		
<b>AH04173</b>	10			
<b>AH04164</b>	8	Al		
<b>AH04174</b>	10			

\*Bend handle (before galvanizing) based on a ridge tile provided by the customer.  
This solution greatly improves the installation's aesthetics and makes assembly easier.



 Profiled ridge tile holder, with post


catalog No.	material	cable range	bolts
AH04401...	electro galvanized steel, plastic		
AH0440OG...	hot-dip galvanized steel plastic		
AH04402...	Cu/Mo plastic	Ø 8mm	1xM6x16
AH04403...	INOX plastic		
AH04404...	Al plastic		



\* to choose the color, add a letter to the last digit of the catalog number:

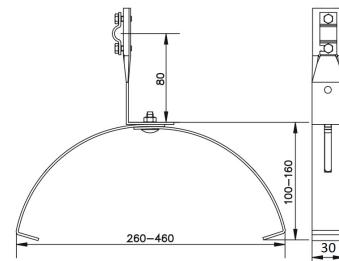
B - brown  
C - brick  
A - black



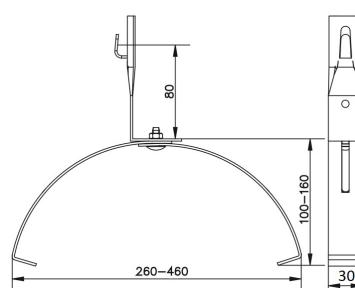
\*Bend handle (before galvanizing) based on a ridge tile provided by the customer.  
This solution greatly improves the installation's aesthetics and makes assembly easier.

 Universal ridge tile holder, screwed


catalog No.	material	cable range	bolts
AH04331	electro galvanized steel		
AH04330G	hot-dip galvanized steel	Ø 8-10mm	2xM5x16 1xM6x16
AH04332	Cu/Mo		

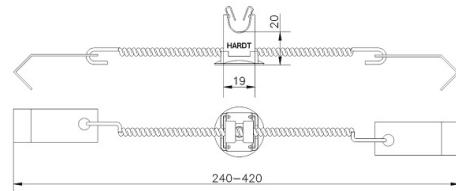

 Universal ridge tile holder


catalog No.	material	cable range	bolts
AH04321	electro galvanized steel		
AH04320G	hot-dip galvanized steel	Ø 8-10mm	1xM6x16
AH04322	Cu/Mo		
AH04323	INOX		
AH04324	Al		



### Universal spring ridge clamp

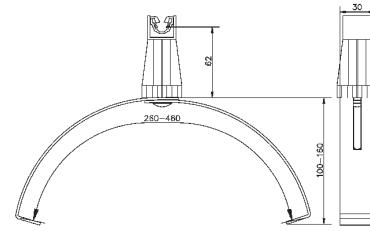
catalog No.	material	cable range
AH020001IN	INOX	Ø 8mm



### Universal ridge tile holder, with post



catalog No.	material	cable range	bolts
AH04201...	electro galvanized steel, plastic		
AH04200G...	hot-dip galvanized steel plastic		
AH04202...	Cu/Mo plastic	Ø 8mm	1xM6x16
AH04203...	INOX plastic		
AH04204...	Al plastic		



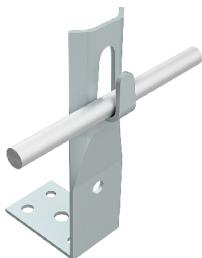
\* to choose the color, add a letter to the last digit of the catalog number:

B - brown  
C - brick  
A - black

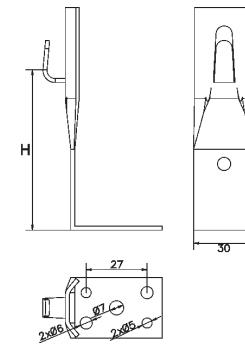


## ANGULAR HOLDERS

### Angular holder



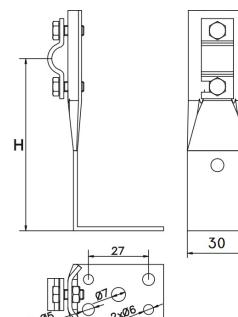
catalog No.	H [cm]	material	cable range
AH05011	6		
AH05031	8	electro galvanized steel	
AH05051	15		
AH05010G	6		
AH05030G	8	hot-dip galvanized steel	
AH05050G	15		
AH05012	6		
AH05032	8	Cu	
AH05052	15		
AH05013	6		
AH05033	8	INOX	
AH05053	15		
AH05014	6		
AH05034	8	Al	



### Angular holder, screwed



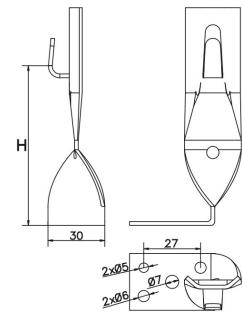
catalog No.	H [cm]	material	cable range	bolts
AH05021	6			
AH05041	8	electro galvanized steel		
AH05061	15			
AH05020G	6			
AH05040G	8	hot-dip galvanized steel		2xM5x16
AH05060G	15			
AH05022	6			
AH05042	8	Cu/Mo		
AH05062	15			



 Angular holder, twisted



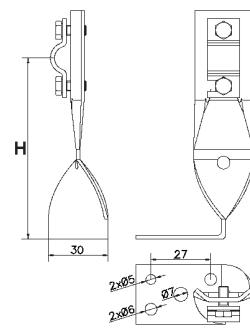
catalog No.	H [cm]	material	cable range
AH05071	7	electro galvanized steel	$\varnothing$ 8-10mm
AH05091	14		
AH0507OG	7	hot-dip galvanized steel	$\varnothing$ 8-10mm
AH0509OG	14		
AH05072	7	Cu	$\varnothing$ 8-10mm
AH05092	14		
AH05073	7	INOX	$\varnothing$ 8-10mm
AH05093	14		
AH05074	7	Al	$\varnothing$ 8-10mm



 Angular holder, screwed, twisted



catalog No.	H [cm]	material	cable range	bolts
AH05081	7	electro galvanized steel	$\varnothing$ 8-10mm	2xM5x16
AH05101	14			
AH0508OG	7	hot-dip galvanized steel	$\varnothing$ 8-10mm	2xM5x16
AH0510OG	14			
AH05082	7	Cu/Mo	$\varnothing$ 8-10mm	2xM5x16
AH05102	14			

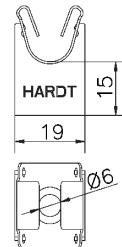


## ROUND CONDUCTOR HOLDERS

 Wire holder



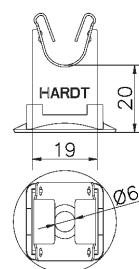
catalog No.	H [mm]	material	cable range
AH020003IN	15	INOX	$\varnothing$ 8mm



 Wire holder with stand

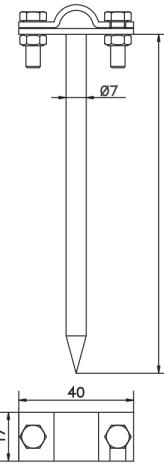


catalog No.	H [mm]	material	cable range
AH020003IN	20	INOX plastic	$\varnothing$ 8mm

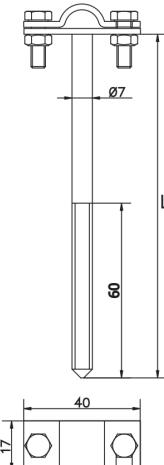


**Wire holder, hammer in**


catalog No.	L [cm]	material	cable range	bolts
<b>AH07061</b>	8	electro galvanized steel		2xM5x16
<b>AH07071</b>	12			
<b>AH07081</b>	18			
<b>AH07091</b>	25			
<b>AH07361</b>	33			
<b>AH07101</b>	50			
<b>AH07060G</b>	8	hot-dip galvanized steel		2xM5x16
<b>AH07070G</b>	12			
<b>AH07080G</b>	18			
<b>AH07090G</b>	25			
<b>AH07360G</b>	33			
<b>AH07100G</b>	50			
<b>AH07062</b>	8	Cu/Mo		2xM5x16
<b>AH07072</b>	12			
<b>AH07082</b>	18			
<b>AH07092</b>	25			
<b>AH07362</b>	33			
<b>AH07102</b>	50			
<b>AH07063</b>	8	INOX		2xM5x16
<b>AH07073</b>	12			
<b>AH07083</b>	18			
<b>AH07093</b>	25			
<b>AH07363</b>	33			
<b>AH07103</b>	50			


**Wire holder, thread**


catalog No.	L [cm]	material	cable range	bolts
<b>AH07111</b>	8	electro galvanized steel		2xM5x16
<b>AH07121</b>	12			
<b>AH07131</b>	18			
<b>AH07141</b>	25			
<b>AH07371</b>	33			
<b>AH07151</b>	50			
<b>AH07110G</b>	8	hot-dip galvanized steel		2xM5x16
<b>AH07120G</b>	12			
<b>AH07130G</b>	18			
<b>AH07140G</b>	25			
<b>AH07370G</b>	33			
<b>AH07150G</b>	50			
<b>AH07112</b>	8	Cu/Mo		2xM5x16
<b>AH07122</b>	12			
<b>AH07132</b>	18			
<b>AH07142</b>	25			
<b>AH07372</b>	33			
<b>AH07152</b>	50			
<b>AH07113</b>	8	INOX		2xM5x16
<b>AH07123</b>	12			
<b>AH07133</b>	18			
<b>AH07143</b>	25			
<b>AH07373</b>	33			
<b>AH07153</b>	50			



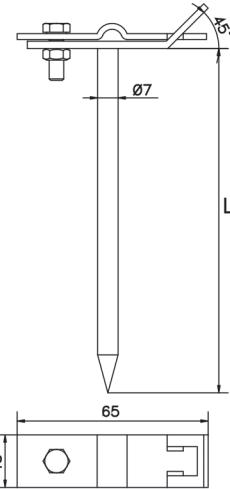
(photo www.antygrom.pl)


**UNIVERSAL HOLDERS**

Universal holder, hammer i



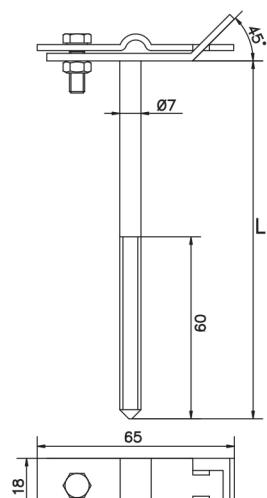
catalog No.	L [cm]	material	cable range	bolts		
AH06011	8	electro galvanized steel	$\varnothing 8-10\text{mm}$ tape up to 30 mm	1xM5x16		
AH06021	12					
AH06031	18					
AH06041	25					
AH06331	33					
AH06051	50					
AH0601OG	8	hot-dip galvanized steel				
AH0602OG	12					
AH0603OG	18					
AH0604OG	25					
AH0633OG	33					
AH0605OG	50					
AH06012	8	Cu/Mo				
AH06022	12					
AH06032	18					
AH06042	25					
AH06332	33					
AH06052	50					
AH06013	8	INOX				
AH06023	12					
AH06033	18					
AH06043	25					
AH06333	33					
AH06053	50					



Universal holder, thread



catalog No.	L [cm]	material	cable range	bolts		
AH06121	8	electro galvanized steel	$\varnothing 8-10\text{mm}$ tape up to 30 mm	1xM5x16		
AH06131	12					
AH06141	18					
AH06151	25					
AH06351	33					
AH06161	50					
AH0612OG	8	hot-dip galvanized steel				
AH0613OG	12					
AH0614OG	18					
AH0615OG	25					
AH0635OG	33					
AH0616OG	50					
AH06122	8	Cu/Mo				
AH06132	12					
AH06142	18					
AH06152	25					
AH06352	33					
AH06162	50					
AH06123	8	INOX				
AH06133	12					
AH06143	18					
AH06153	25					
AH06353	33					
AH06163	50					



group I  
connectors

group II  
lightning  
holders

group III  
lightning  
conductors

group IV  
straighteners

group V  
lightning protection pipes

group VI  
earthing and  
earthing elements

group VII  
lightning protection  
masts

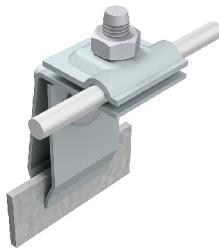
group VIII  
high voltage  
cable

group IX  
insulated rods  
and brackets

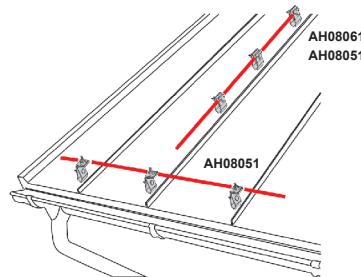
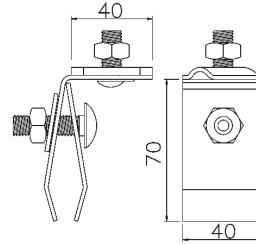
group X  
other products

## HOLDERS FOR METAL ROOF

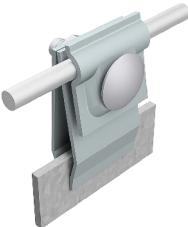
### Universal holder



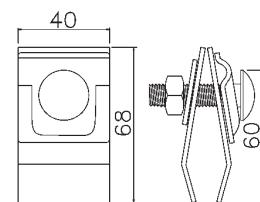
catalog No.	material	cable range	bolts
<b>AH08051</b>	electro galvanized steel		
<b>AH08050G</b>	hot-dip galvanized steel	Ø 8-10mm	1xM10x30 2xM10x20
<b>AH08052</b>	Cu/Mo		
<b>AH08053</b>	INOX		



### Sheet metal holder



catalog No.	material	cable range	bolts
<b>AH08061</b>	electro galvanized steel		
<b>AH08060G</b>	hot-dip galvanized steel	Ø 8-10mm	1xM10x40
<b>AH08062</b>	Cu/Mo		
<b>AH08063</b>	INOX		



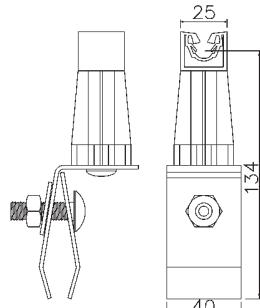
### Holder with post



catalog No.	material	cable range	bolts
<b>AH08071...</b>	electro galvanized steel plastic		
<b>AH08070G...</b>	hot-dip galvanized steel plastic	Ø 8mm	1xM10x30 1xM6x10
<b>AH08072...</b>	Cu/Mo; plastic		
<b>AH08073...</b>	INOX; plastic		

\* to choose the color, add a letter to the last digit of the catalog number:

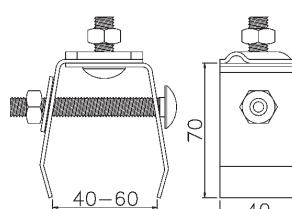
B - brown  
C - brick  
A - black



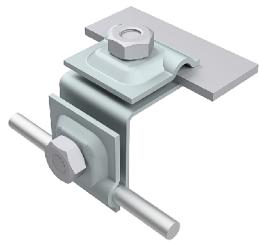
### Universal holder for structures



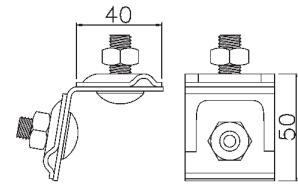
catalog No.	material	cable range	bolts
<b>AH08081</b>	electro galvanized steel		
<b>AH08080G</b>	hot-dip galvanized steel	Ø 8-10mm; tape 40-60mm	1xM10x30 1xM10x70
<b>AH08082</b>	Cu/Mo		
<b>AH08083</b>	INOX		



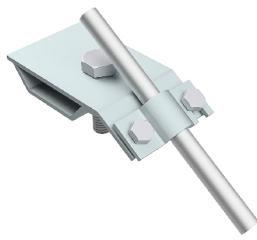
 Universal holder



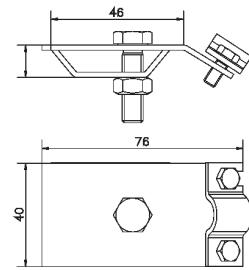
catalog No.	material	cable range	bolts
<b>AH08101</b>	electro galvanized steel		
<b>AH08100G</b>	hot-dip galvanized steel	Ø 8-10mm	2xM10x20
<b>AH08102</b>	Cu/Mo		
<b>AH08103</b>	INOX		



 Gutter clamp



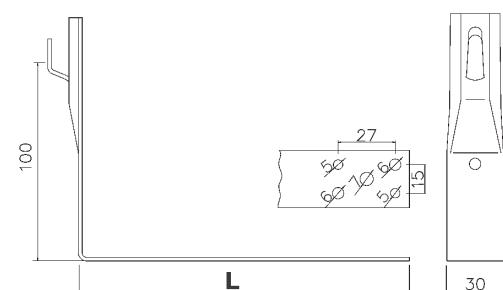
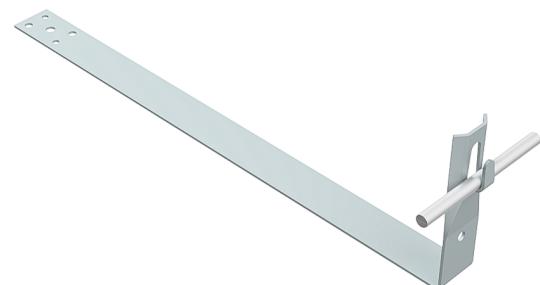
catalog No.	material	cable range	bolts
<b>AH10011</b>	electro galvanized steel		
<b>AH10010G</b>	hot-dip galvanized steel	Ø 8-10mm	2xM5x16
<b>AH10012</b>	Cu/Mo		1xM8x30
<b>AH10013</b>	INOX		
<b>AH10014</b>	Al		



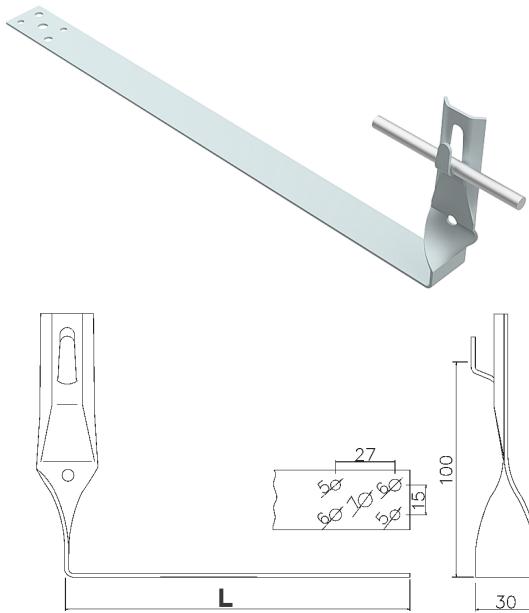
 **TILE HOLDERS**

 Tile holder screwed to the lath

catalog No.	L [cm]	material	cable range
<b>AH09011</b>	38	electro galvanized steel	
<b>AH09161</b>	43	hot-dip galvanized steel	
<b>AH09010G</b>	38	Cu	Ø 8-10mm
<b>AH09160G</b>	43	INOX	
<b>AH09012</b>	38	Al	
<b>AH09162</b>	43		
<b>AH09163</b>	38		
<b>AH09353</b>	43		
<b>AH09014</b>	38		
<b>AH09164</b>	43		

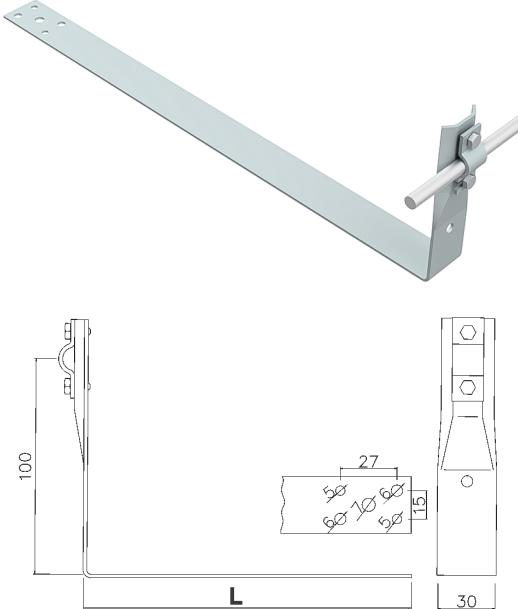


❖ Tile bracket screwed to the lath, twisted



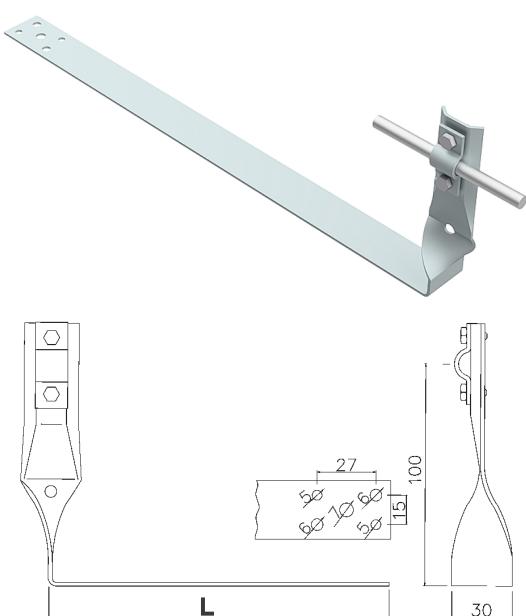
catalog No.	L [cm]	material	cable range
AH09021	38	electro galvanized steel	$\varnothing$ 8-10mm
AH09171	43		
AH0902OG	38		
AH0917OG	43		
AH09022	38		
AH09172	43		
AH09173	38		
AH09363	43		
AH09024	38		
AH09174	43	Al	

❖ Tile holder screwed to the lath



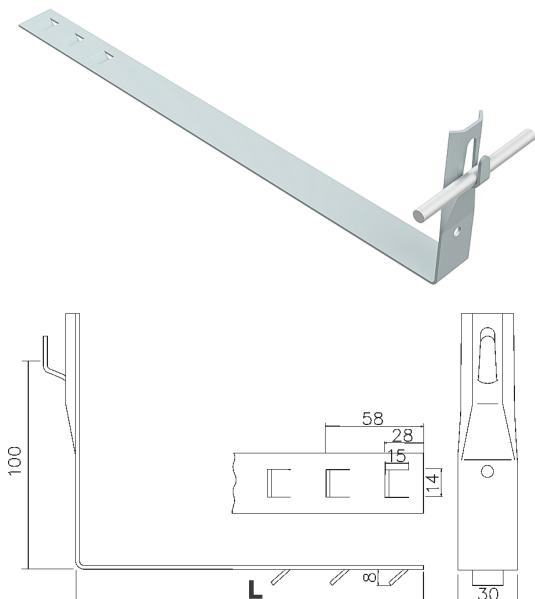
catalog No.	L [cm]	material	cable range	bolts
AH09031	38	electro galvanized steel	$\varnothing$ 8-10mm	2xM5x16
AH09181	43			
AH0903OG	38			
AH0918OG	43			
AH09032	38			
AH09182	43	Cu/Mo		

❖ Tile bracket screwed to the lath, twisted



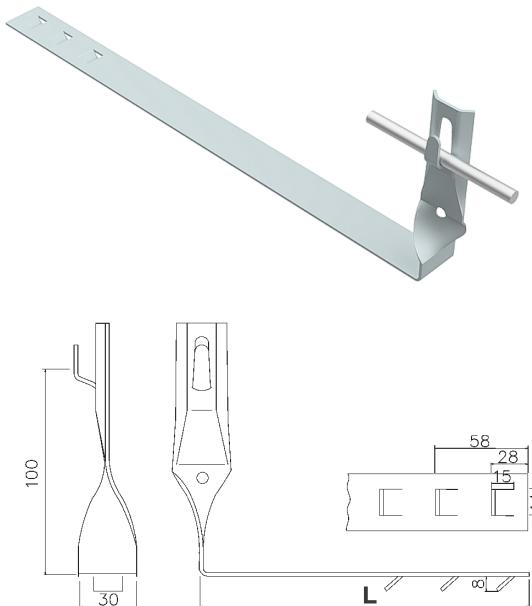
catalog No.	L [cm]	material	cable range	bolts
AH09041	38	electro galvanized steel	$\varnothing$ 8-10mm	2xM5x16
AH09191	43			
AH0904OG	38			
AH0919OG	43			
AH09042	38			
AH09192	43	Cu/Mo		

 Adjustable tile holder



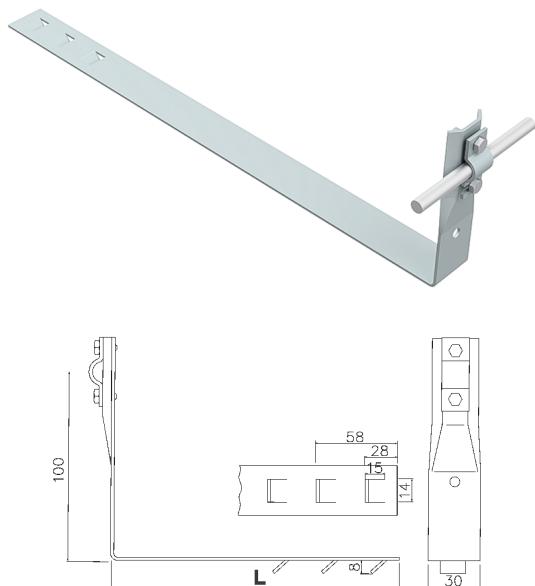
catalog No.	L [cm]	material	cable range
AH09051	38	electro galvanized steel	$\varnothing$ 8-10mm
AH09201	43		
AH0905OG	38		
AH0920OG	43		
AH09052	38		
AH09202	43		
AH09053	38		
AH09203	43		
AH09054	38		
AH09204	43	Al	

 Adjustable tile holder, twisted



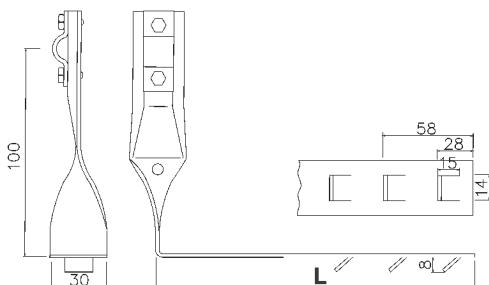
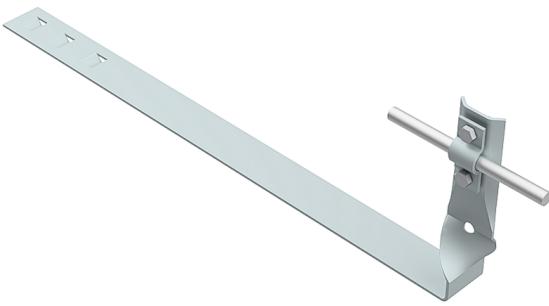
catalog No.	L [cm]	material	cable range
AH09061	38	electro galvanized steel	$\varnothing$ 8-10mm
AH09211	43		
AH0906OG	38		
AH0921OG	43		
AH09062	38		
AH09212	43		
AH09063	38		
AH09213	43		
AH09064	38		
AH09214	43	Al	

 Adjustable tile holder



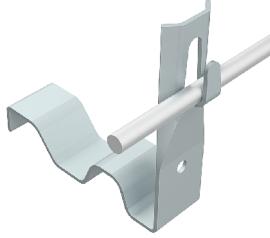
catalog No.	L [cm]	material	cable range	bolts
AH09071	38	electro galvanized steel	$\varnothing$ 8-10mm	2xM5x16
AH09221	43			
AH0907OG	38			
AH0922OG	43			
AH09072	38			
AH09222	43	Cu/Mo		

### Adjustable tile holder, screwed, twisted

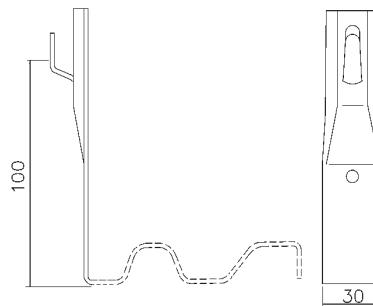


catalog No.	L [cm]	material	cable range	bolts
<b>AH09081</b>	38	electro galvanized steel		
<b>AH09231</b>	43			
<b>AH09080G</b>	38	hot-dip galvanized steel	Ø 8-10mm	2xM5x16
<b>AH09230G</b>	43			
<b>AH09082</b>	38	Cu/Mo		
<b>AH09232</b>	43			

### Profiled tile holder

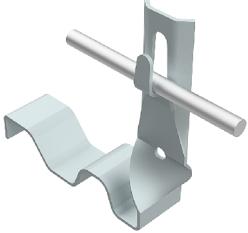


catalog No.	material	cable range
<b>AH09251</b>	electro galvanized steel	
<b>AH09250G</b>	hot-dip galvanized steel	Ø 8-10mm
<b>AH09252</b>	Cu	
<b>AH09253</b>	INOX	
<b>AH09254</b>	Al	

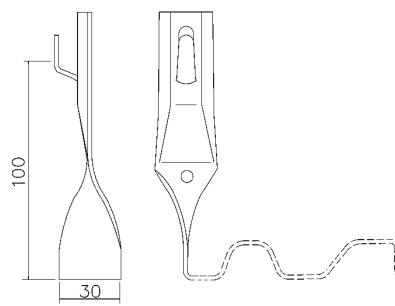


\*Bend handle (before galvanizing) based on a roof tile provided by the customer.  
This solution greatly improves the installation's aesthetics and makes assembly easier.

### Profiled tile holder, twisted



catalog No.	material	cable range
<b>AH09261</b>	electro galvanized steel	
<b>AH09260G</b>	hot-dip galvanized steel	Ø 8-10mm
<b>AH09262</b>	Cu	
<b>AH09263</b>	INOX	
<b>AH09264</b>	Al	

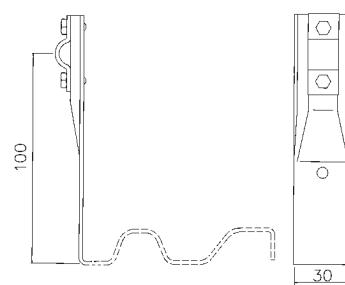


\*Bend handle (before galvanizing) based on a roof tile provided by the customer.  
This solution greatly improves the installation's aesthetics and makes assembly easier.

### Profiled tile holder, screwed



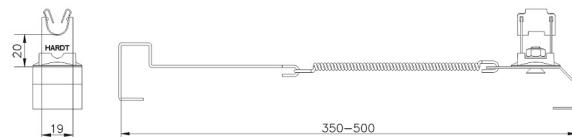
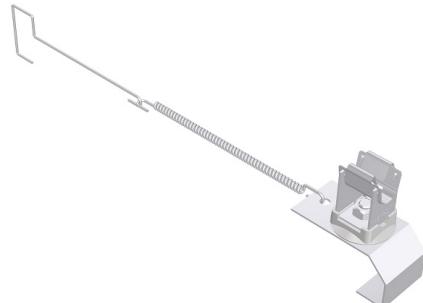
catalog No.	material	cable range	bolts
<b>AH09271</b>	electro galvanized steel		
<b>AH09270G</b>	hot-dip galvanized steel	Ø 8-10mm	2xM5x16
<b>AH09272</b>	Cu/Mo		



\*Bend handle (before galvanizing) based on a roof tile provided by the customer.  
This solution greatly improves the installation's aesthetics and makes assembly easier.

 Universal spring roof bracket

catalog No.	material	cable range
AH020008IN	INOX	Ø 8-10mm

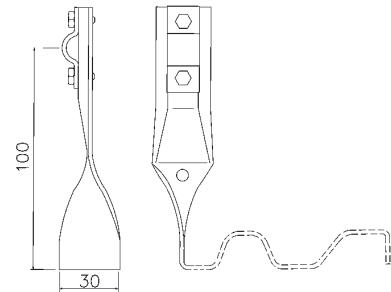


 Profiled tile holder, screwed, twisted

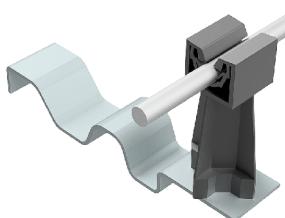


catalog No.	material	cable range	bolts
AH09281	electro galvanized steel	Ø 8-10mm	
AH09280G	hot-dip galvanized steel		2xM5x16
AH09282	Cu/Mo		

\*Bend handle (before galvanizing) based on a roof tile provided by the customer.  
This solution greatly improves the installation's aesthetics and makes assembly easier.



 Profiled tile holder, with post



catalog No.	material	cable range	bolts
AH09341...	electro galvanized steel, plastic		
AH09340G...	hot-dip galvanized steel plastic		
AH09342	Cu/Mo plastic	Ø 8mm	1xM6x10
AH09343...	INOX plastic		
AH09344...	Al plastic		

\* to choose the color, add a letter to the last digit of the catalog number:

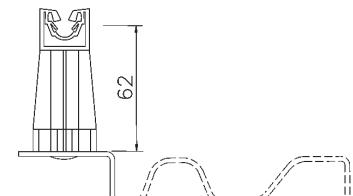
B - brown



C - brick

A - black

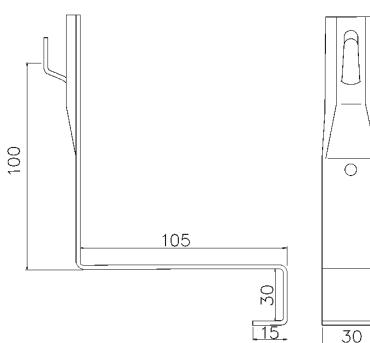
\*Bend handle (before galvanizing) based on a ridge tile provided by the customer.  
This solution greatly improves the installation's aesthetics and makes assembly easier.



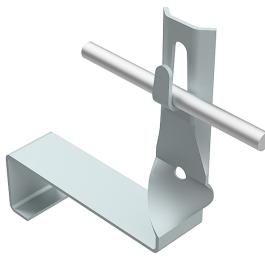
 Universal tile holder



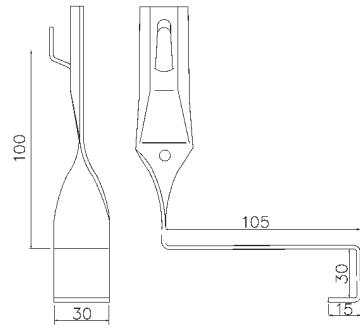
catalog No.	material	cable range
AH09291	electro galvanized steel	Ø 8-10mm
AH09290G	hot-dip galvanized steel	
AH09292	Cu	
AH09293	INOX	
AH09294	Al	



### Universal tile holder, twisted



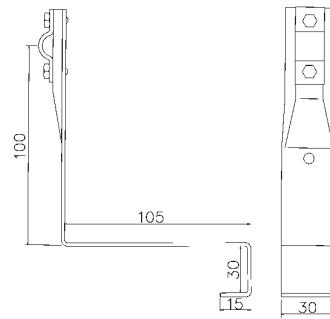
catalog No.	material	cable range
<b>AH09301</b>	electro galvanized steel	
<b>AH0930OG</b>	hot-dip galvanized steel	Ø 8-10mm
<b>AH09302</b>	Cu	
<b>AH09303</b>	INOX	
<b>AH09304</b>	Al	



### Universal tile holder, screwed



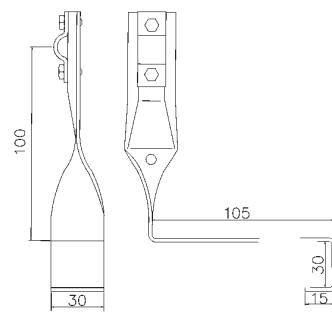
catalog No.	material	cable range	bolts
<b>AH09311</b>	electro galvanized steel		
<b>AH0931OG</b>	hot-dip galvanized steel	Ø 8-10mm	2xM5x16
<b>AH09312</b>	Cu/Mo		



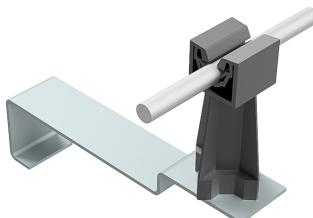
### Universal tile holder, screwed, twisted



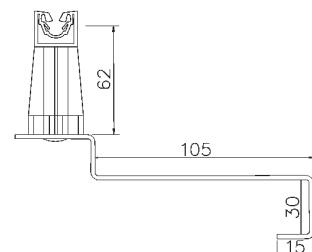
catalog No.	material	cable range	bolts
<b>AH09321</b>	electro galvanized steel		
<b>AH0932OG</b>	hot-dip galvanized steel	Ø 8-10mm	2xM5x16
<b>AH09322</b>	Cu/Mo		



### Universal tile bracket, with post



catalog No.	material	cable range	bolts
<b>AH09331...</b>	electro galvanized steel plastic		
<b>AH0933OG...</b>	hot-dip galvanized steel plastic		
<b>AH09332...</b>	Cu/Mo plastic	Ø 8mm	1xM6x10
<b>AH09333...</b>	INOX plastic		
<b>AH09334...</b>	Al plastic		



\* to choose the color, add a letter to the last digit of the catalog number:

B – brown  
C – brick  
A – black

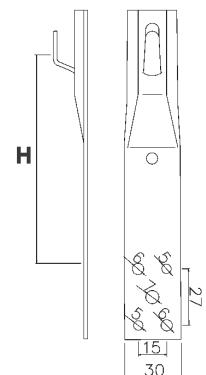


## ◆ STRAIGHT HOLDERS

### ◆ Straight holder



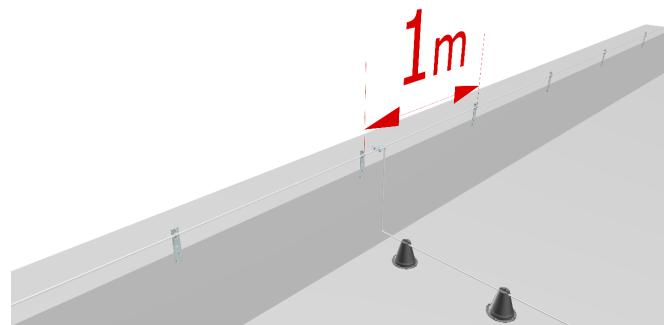
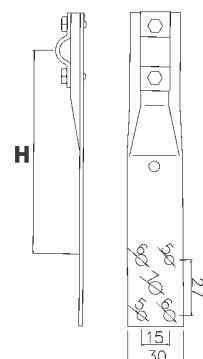
catalog No.	H [cm]	material	cable range
AH11011	6	electro galvanized steel	Ø 8-10mm
AH11031	8		
AH11051	15		
AH1101OG	6		
AH1103OG	8		
AH1105OG	15		
AH11012	6		
AH11032	8		
AH11052	15		
AH11013	6		
AH11033	8		
AH11053	15		
AH11014	6		
AH11034	8		
AH11054	15		



### ◆ Straight holder, screwed



catalog No.	H [cm]	material	cable range	bolts
AH11021	6	electro galvanized steel	Ø 8-10mm	2xM5x16
AH11041	8			
AH11061	15			
AH1102OG	6			
AH1104OG	8			
AH1106OG	15			
AH11022	6			
AH11042	8			
AH11062	15			

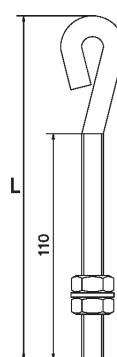


## ◆ TENSION HOLDERS

### ◆ Tension bracket, loop



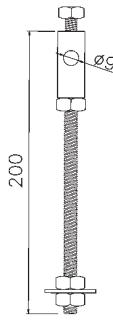
catalog No.	L [cm]	material	cable range	bolts
AH13011	16	electro galvanized steel	Ø 8-10mm	M10x110
AH13021	25			
AH13031	40			
AH13013	16			
AH13023	25			
AH13033	40			



### ◆ Tension holder, with lock



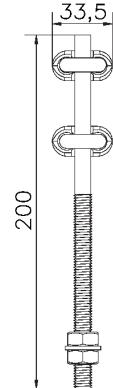
catalog No.	material	cable range	bolts
<b>AH13081</b>	electro galvanized steel	Ø 8mm	
<b>AH13082</b>	Mo electro galvanized steel		M10x110



### ◆ Tension holder, reel

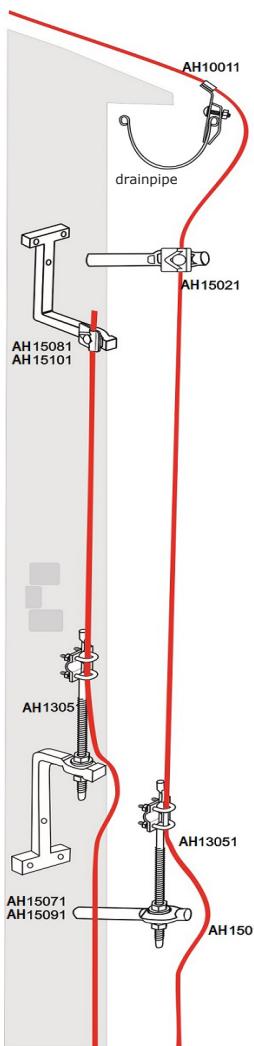


catalog No.	material	cable range	bolts
<b>AH13051</b>	electro galvanized steel	Ø 8-10mm	M10x110

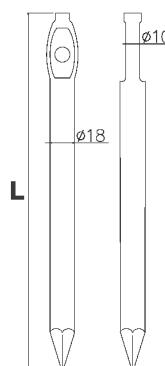


## ◆ ANCHORS

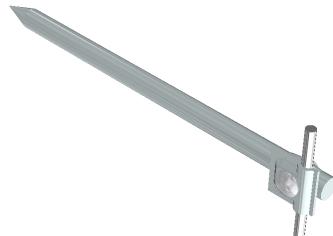
### ◆ Single hammer in anchor



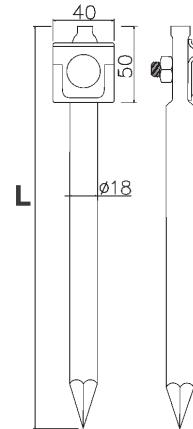
catalog No.	L [cm]	material	cable range	
<b>AH15011</b>	35	electro galvanized steel	Ø 8mm	
<b>AH15041</b>	50			
<b>AH15111</b>	70			
<b>AH15010G</b>	35			
<b>AH15040G</b>	50	hot-dip galvanized steel		
<b>AH15110G</b>	70			
<b>AH15013</b>	35	INOX		
<b>AH15043</b>	50			
<b>AH15113</b>	70			



 Hammer in anchor with lock



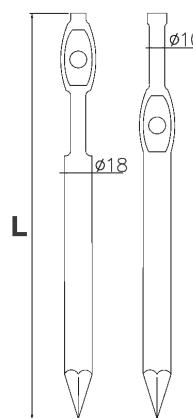
catalog No.	L [cm]	material	cable range
AH15021	35	electro galvanized steel	Ø 8mm
AH15051	50		
AH15121	70		
AH1502OG	35		
AH1505OG	50		
AH1512OG	70		
AH15022	35		
AH15052	50		
AH15122	70		
AH15023	35		
AH15053	50		
AH15123	70		



 Double hammer in anchor



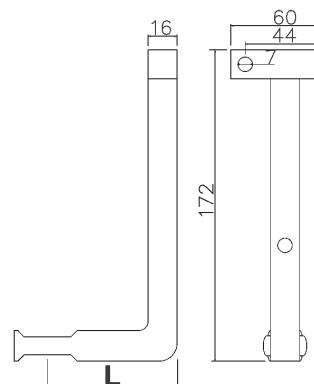
catalog No.	L [cm]	material	cable range
AH15031	35	electro galvanized steel	Ø 8mm
AH15061	50		
AH15131	70		
AH1503OG	35		
AH1506OG	50		
AH1513OG	70		
AH15033	35		
AH15063	50		
AH15133	70		



 Screw anchor



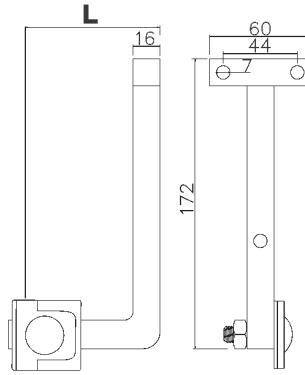
catalog No.	L [cm]	material	cable range
AH15071	7	electro galvanized steel	Ø 8mm
AH15091	15		
AH1507OG	7		
AH1509OG	15		
AH15073	7		
AH15093	15		



## Screw anchor with lock



<b>catalog No.</b>	<b>L [cm]</b>	<b>material</b>	<b>cable range</b>
<b>AH15081</b>	7	electro galvanized steel	Ø 8mm
<b>AH15101</b>	15		
<b>AH15080G</b>	7	hot-dip galvanized steel	Ø 8mm
<b>AH15100G</b>	15		
<b>AH15082</b>	7	Cu/Mo	Ø 8mm
<b>AH15102</b>	15		
<b>AH15083</b>	7	INOX	Ø 8mm
<b>AH15103</b>	15		

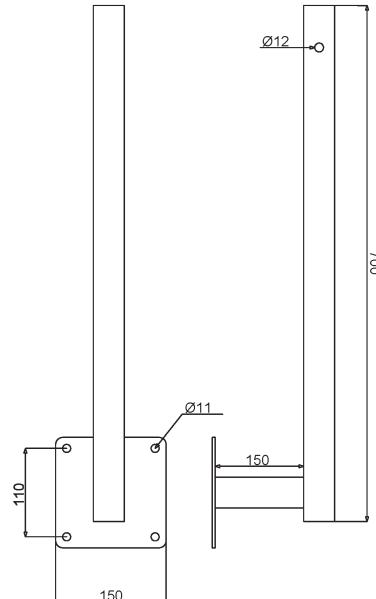


## Tension holder



<b>catalog No.</b>	<b>material</b>	<b>cable range</b>
<b>AH15171</b>	electro galvanized steel	
<b>AH15170G</b>	hot-dip galvanized steel	Ø 8-10mm
<b>AH15173</b>	INOX	

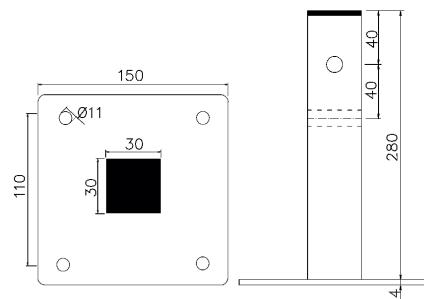
\*NOTE  
the holes in plates are rounds for size M10



## Tension holder (screw anchor)



<b>catalog No.</b>	<b>material</b>	<b>cable range</b>
<b>AH15180G</b>	hot-dip galvanized steel	Ø 8-10mm

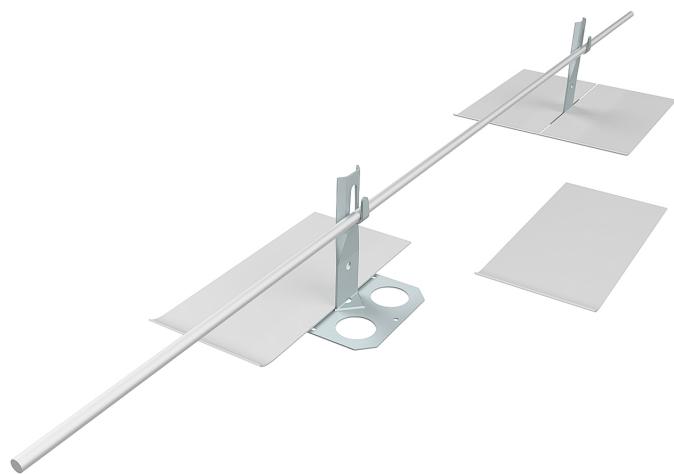
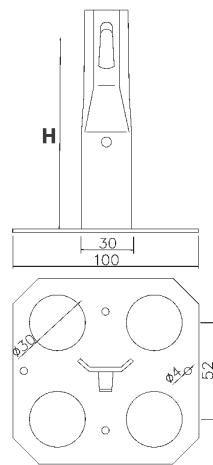



**HOLDERS WITH A METAL BASE**

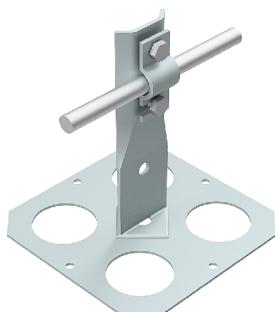
- Glued holder on a metal base with holes, screwed



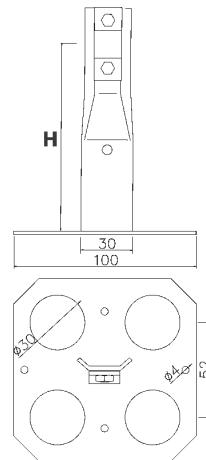
catalog No.	H [cm]	material	cable range
AH12061	9	electro galvanized steel	
AH12101	15		
AH1206OG	9	hot-dip galvanized steel	
AH1210OG	15		
AH12062	9	Cu	
AH12102	15		
AH12063	9	INOX	
AH12103	15		



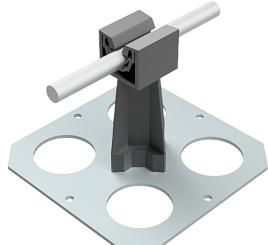
- Glued holder on a metal base with holes



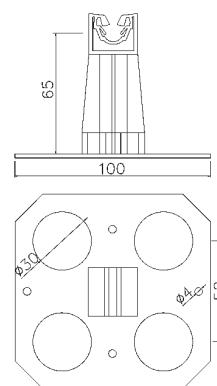
catalog No.	H [cm]	material	cable range	bolts
AH12071	9	electro galvanized steel		
AH12111	15			
AH1207OG	9	hot-dip galvanized steel		
AH1211OG	15			
AH12072	9	Cu/Mo		
AH12112	15			



- Glued holder on a metal base with holes, with post



catalog No.	material	cable range
AH12131...	electro galvanized steel	
AH12130G...	hot-dip galvanized steel	
AH12132...	Cu	
AH12133...	INOX	
AH12134...	Al	



\* to choose the color, add a letter to the last digit of the catalog number:  
 B - brown  
 C - brick  
 A - black

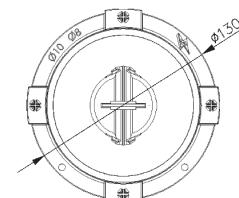
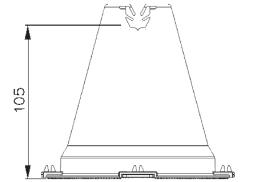


## CONCRETE HOLDERS IN PLASTIC

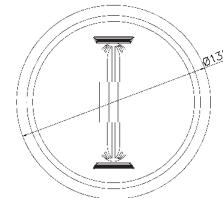
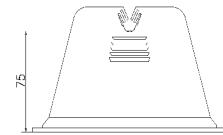
- Concrete holder in plastic – (weight ~1kg)



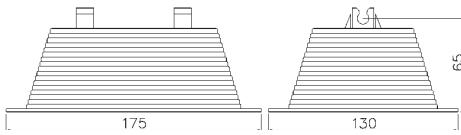
catalog No.	material	cable range
<b>AH12140P</b>	polypropylene	Ø 8-10mm
<b>AH12140P+</b>		



catalog No.	material	cable range
<b>AH12140A</b>	polypropylene	Ø 8mm



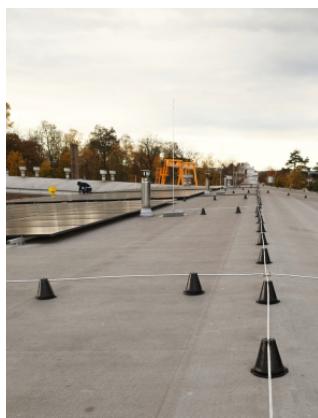
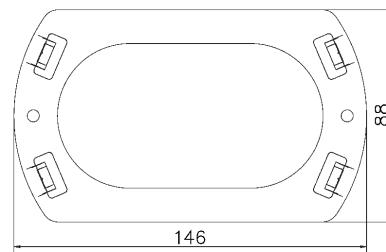
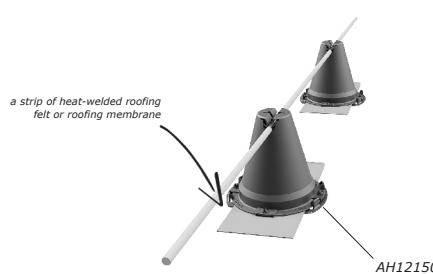
catalog No.	material	cable range
<b>AH12170</b>	polypropylene	Ø 8-10mm



- Plastic base



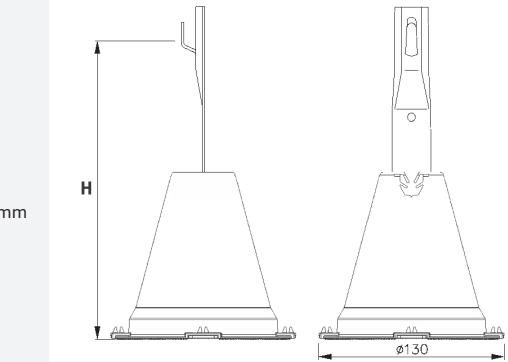
catalog No.	material
<b>AH12150</b>	polypropylene



Concrete holder in plastic



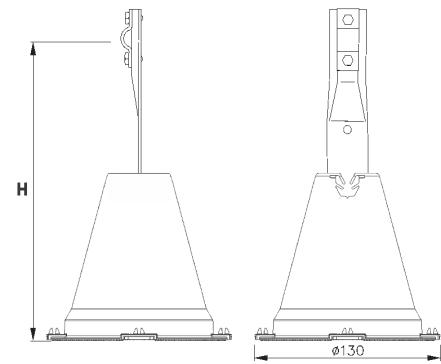
catalog No.	H [cm]	material	cable range
AH12201P	19	electro galvanized steel polypropylene	
AH12221P	21	hot-dip galvanized steel polypropylene	
AH12241P	28	Cu/Mo polypropylene	
AH12200GP	19	INOX polypropylene	
AH12220GP	21	Al polypropylene	
AH12240GP	28		
AH12202P	19		
AH12222P	21		
AH12242P	28		
AH12203P	19		
AH12223P	21		
AH12243P	28		
AH12204P	19		
AH12224P	21		
AH12244P	28		



Concrete holder in plastic, screwed



catalog No.	H [cm]	material	cable range
AH12211P	19	electro galvanized steel polypropylene	
AH12231P	21	hot-dip galvanized steel polypropylene	
AH12251P	28	Cu/Mo polypropylene	
AH12210GP	19	INOX polypropylene	
AH12230GP	21	Al polypropylene	
AH12250GP	28		
AH12212P	19		
AH12232P	21		
AH12252P	28		

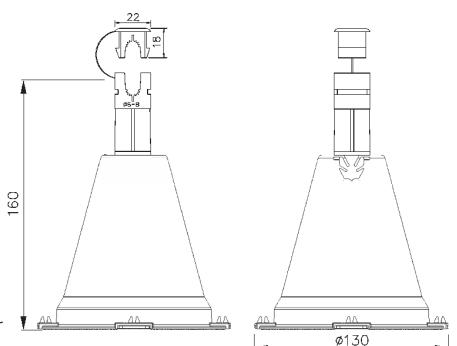


Concrete holder in plastic with post



catalog No.	material	cable range
AH12190P...	polypropylene plastic	Ø 8mm

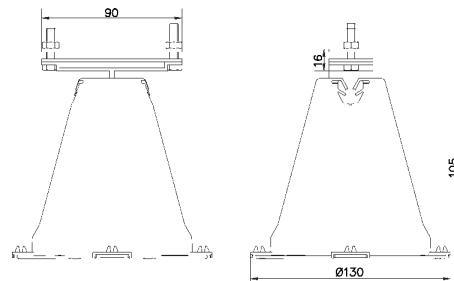
\* to choose the color, add a letter to the last digit of the catalog number  
**B** - brown  
**C** - brick  
**A** - black



❖ Concrete tape holder; horizontally



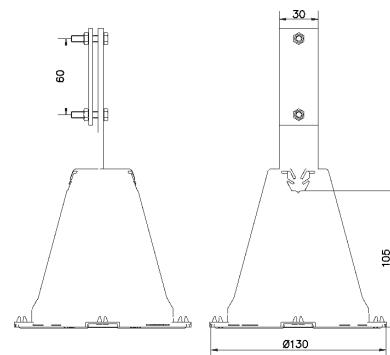
catalog No.	material	cable range
AH12261P	electro galvanized steel polypropylene	tape up to 50 mm
AH12260GP	hot-dip galvanized steel polypropylene	
AH12262P	Cu polypropylene	
AH12263P	INOX polypropylene	
AH12264P	Al polypropylene	



❖ Concrete holder in plastic for the tape; vertically



catalog No.	material	cable range
AH12271P	electro galvanized steel polypropylene	tape up to 50 mm
AH12270GP	hot-dip galvanized steel polypropylene	
AH12272P	Cu polypropylene	

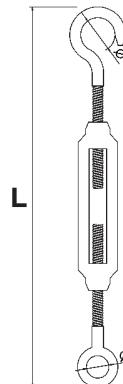


## TURNBuckles SCREWS

❖ Turnbuckle screw, hook-loop



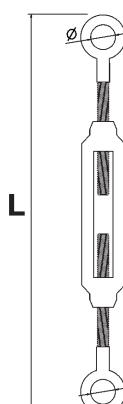
catalog No.	H [mm]	Ø [mm]	material	cable range	bolts
AH18001	205-295	14	electro galvanized steel	Ø 8-10mm	M10x125
AH18051	233-310	16			M12x125



❖ Turnbuckle screw, loop-loop



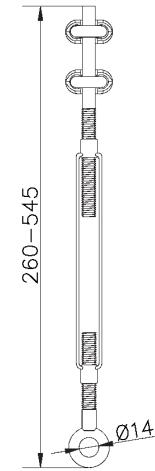
catalog No.	H [mm]	Ø [mm]	material	cable range	bolts
AH18011	205-295	14	electro galvanized steel	Ø 8-10mm	M10x125
AH18021	233-310	16			M12x125



◆ Turnbuckle screw, reel-loop



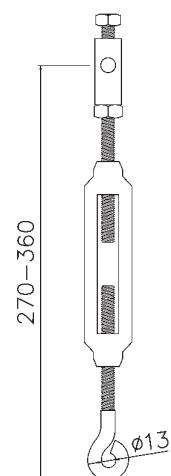
catalog No.	material	cable range	bolts
AH18031	electro galvanized steel	Ø 8-10mm	M10x125



◆ Turnbuckle screw, sleeve-loop



catalog No.	material	cable range	bolts
AH18042	electro galvanized steel Mo	Ø 8mm	M10x35



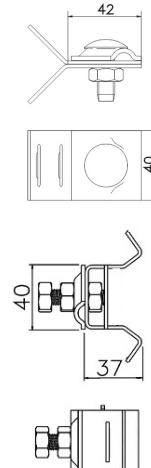
## ◆ UNIVERSAL PIPE HOLDERS

◆ Universal holder

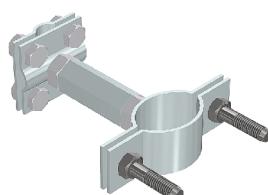


catalog No.	material	cable range	bolts
AH020001OC	electro galvanized steel	Ø 8mm	M10x30
AH19091			

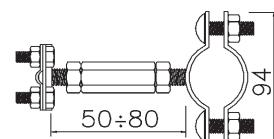
\*No stainless tape included. Dedicated product: stainless steel tape 23x0,3mm nr AH23063.



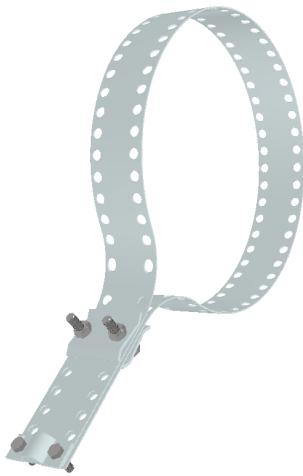
◆ Wire holder for railing/pipe Ø30-45 mm



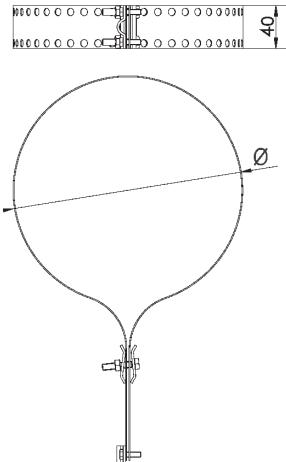
catalog No.	material	cable range	bolts
AH41681	electro galvanized steel	Ø 8-10mm tape up to 20 mm	4xM8x16



## Universal holder- belt



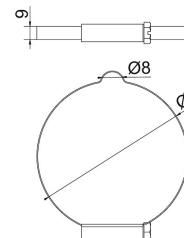
Catalog No.	Ø [mm]	material	cable range	bolts		
<b>AH19012</b>	do 30	Cu/Mo	Ø8-10mm	2xM5x16 2xM6x30		
<b>AH19022</b>	do 92					
<b>AH19032</b>	62-156					
<b>AH19042</b>	124-222					
<b>AH19052</b>	220-570					
<b>AH19013</b>	do 30	INOX				
<b>AH19023</b>	do 92					
<b>AH19033</b>	62-156					
<b>AH19043</b>	124-222					
<b>AH19053</b>	220-570	aluminum				
<b>AH19014</b>	do 30					
<b>AH19024</b>	do 92					
<b>AH19034</b>	62-156					
<b>AH19044</b>	124-222					
<b>AH19054</b>	220-570					



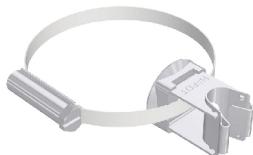
## Pipe clamp



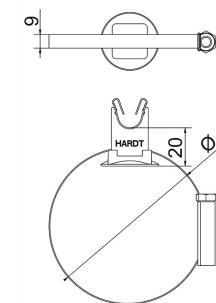
Catalog No.	Ø [mm]	material	cable range
<b>AH020009IN</b>	80-100	acid-resistant stainless steel	Ø8
<b>AH020010IN</b>	100-120	acid-resistant stainless steel	Ø8



## Pipe clamp with connector



Catalog No.	Ø [mm]	material	cable range
<b>AH020011IN</b>	80-100	acid-resistant stainless steel	Ø8
<b>AH020012IN</b>	100-120	acid-resistant stainless steel	Ø8



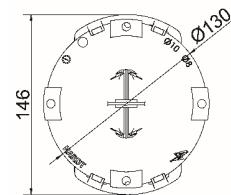
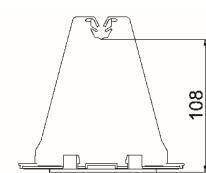
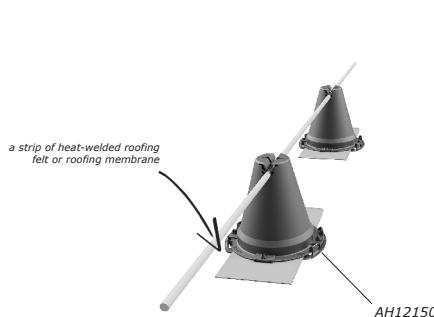
## PLASTIC HOLDERS

### Holder in plastic



Catalog No.	material	cable range	weight
<b>AH020001TW</b>	plastic	Ø 8-10mm	0,1 kg

Fastening to the substrate with a strip of membrane/roof felt by gluing.  
Holder without bottom and without base, with product AH 12150 included.



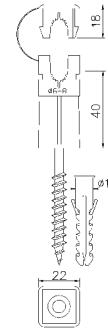
### Post with wall plug



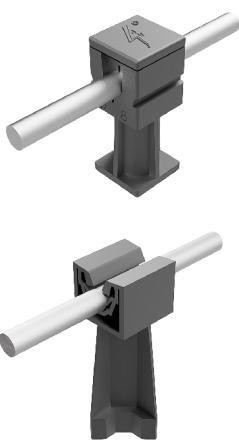
catalog No.	material	cable range	pin
AH29020...	plastic electro galvanized steel	Ø 8mm	Ø 10x50mm

\* to choose the color, add a letter to the last digit of the catalog number:

B - brown  
C - brick  
A - black



### Post

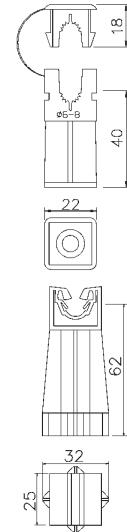


catalog No.	material	cable range
AH29010...	plastic	Ø 8mm

catalog No.	material	cable range	thread
AH29060...	plastic	Ø 8mm	M6

\* to choose the color, add a letter to the last digit of the catalog number:

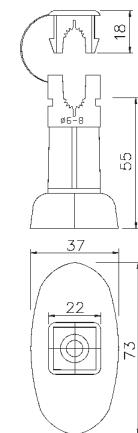
B - brown  
C - brick  
A - black



### Post with a ceramic base



catalog No.	material	cable range	color of the base
AH29040	plastic ceramics	Ø 8mm	brick
AH29070			brown

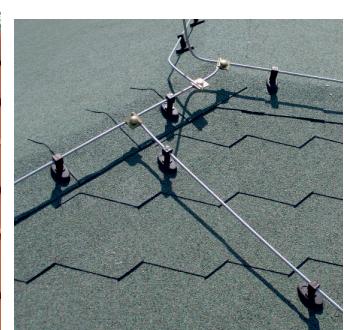
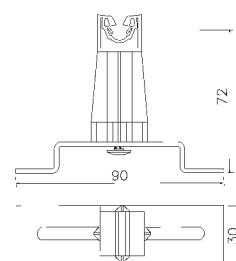


### Post with a steel base



catalog No.	material	cable range	bolts
AH29061...	plastic electro galvanized steel	Ø 8mm	1xM6x10

\* to choose the color, add a letter to the last digit of the catalog number:  
B - brown  
C - brick  
A - black



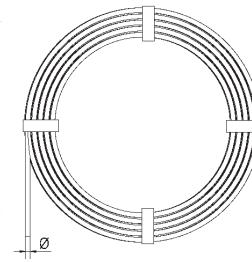
# LIGHTNING CONDUCTORS

## ROUND CONDUCTORS

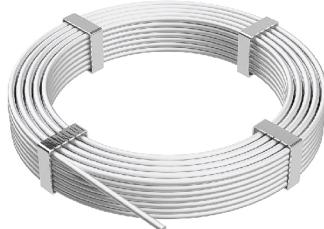
- Lightning protection conductor – wire



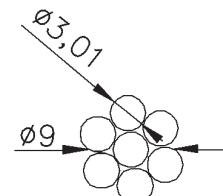
catalog No.	$\varnothing$ [mm]	converter	material	section [mm <sup>2</sup> ]
AH22021	8	0.4 kg/m	hot-dip galvanized steel	50
AH22031	10	0.62 kg/m		78
AH22022	8	0.448 kg/m	Cu	50
AH22032	10	0.7 kg/m		78
AH22023	8	0.4 kg/m	INOX	50
AH22024	8	7.5mb/kg	Al	50
AH22034	10	4.75 mb/kg		78



- Lightning conductor – wire

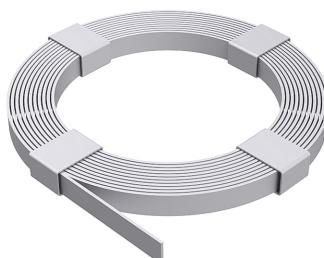


catalog No.	material	section [mm <sup>2</sup> ]
AH22044	Al	50

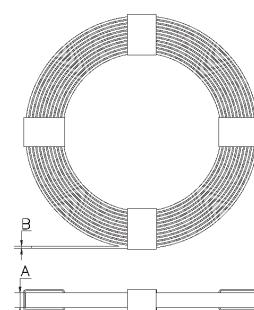


## FLAT CABLES

- Lightning protection conductor – tape



catalog No.	A x B [mm]	converter	material
AH23021	25x4	0.79 kg/m	hot-dip galvanized steel
AH23041	30x4	0.94 kg/m	
AH23061	40x4	1.26 kg/m	Cu
AH23071	50x4	1.573 kg/m	
AH23022	25x4	0.9 kg/m	INOX
AH23042	30x4	1.07 kg/m	
AH23053	30x3.5	0.82 kg/m	

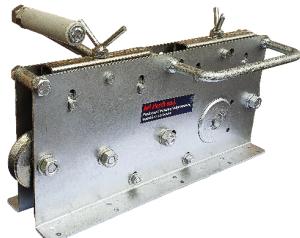


# STRAIGHTENERS

they are used for straightening  
grounding wire  
and the tape iron

## ◆ STRAIGHTENERS WITH MANUAL DRIVE

- ◆ 9-roller straightener with manual drive



catalog No.	cable range	material	weight [kg]
<b>AH24021</b>	Ø 8-10mm tape 20x3 - 30x4	electro galva- nized steel	12

- ◆ 9-roller straightener with manual drive on a three-legged base (folded)



catalog No.	cable range	material	weight [kg]
<b>AH24071</b>	Ø 8-10mm tape 20x3 - 30x4	electro galva- nized steel	23

- ◆ 5-roller straightener with manual drive



catalog No.	cable range	material	weight [kg]
<b>AH24041</b>	Ø 8-10mm tape 20x3 - 30x4	electro galva- nized steel	8.4

## ◆ STRAIGHTENER WITH ELECTRIC DRIVE

- ◆ 9-roller straightener with electric drive



catalog No.	cable range	material	weight [kg]
<b>AH24051</b>	Ø 8-10mm tape 20x3 - 30x4	electro galva- nized steel	25

• 9-roller straightener with electric drive on a three-legged base (folded)

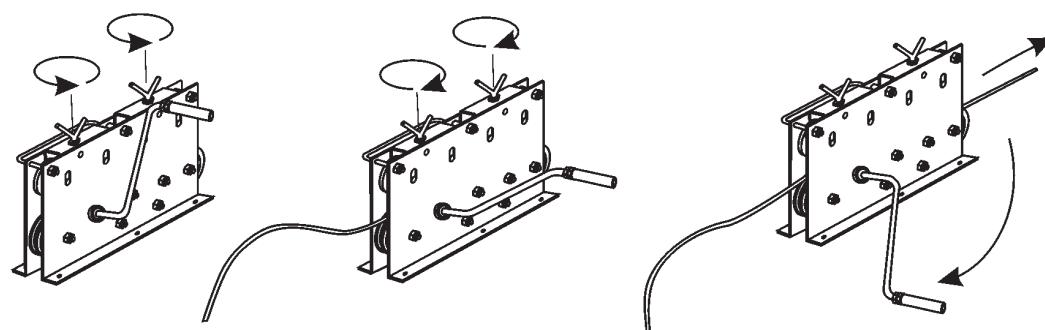


catalog No.	cable range	material	weight [kg]
<b>AH24081</b>	Ø 8-10mm tape 20x3 - 30x4	electro galva- nized steel	36

• Three-legged base with roller (folded)



catalog No.	material	weight [kg]
<b>AH24091</b>	electro galva- nized steel	11

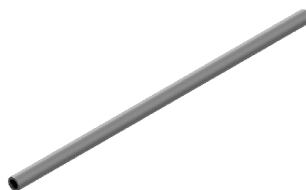


# LIGHTNING PROTECTION PIPES

they are used to protect the lightning conductors

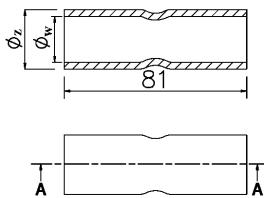
## LIGHTNING PROTECTION PIPES

### Lightning protection pipe



catalog No.	cable range	$\varnothing_z$ [mm]	$\varnothing_w$ [mm]	material
AH36010	$\varnothing$ up to 12 mm	20	14	PCV
AH36020	tape up to 30	40	34	

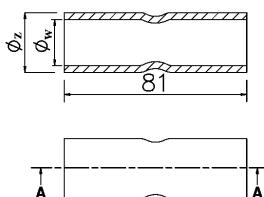
\*Pipes are sold in sections 3 m in length.



### Coupling for connecting lightning protection pipes



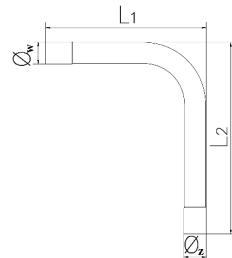
catalog No.	cable range	$\varnothing_z$ [mm]	$\varnothing_w$ [mm]	material
AH36030	$\varnothing$ up to 12 mm	26	20	PCV
AH36040	tape up to 30	46	40	



### Lightning pipe elbow



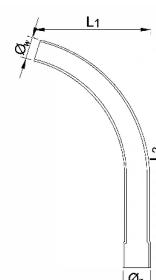
catalog No.	$L_1$ [mm]	$L_2$ [mm]	$\varnothing_z$ [mm]	$\varnothing_w$ [mm]	cable range	material
AH36050	125	200	26	23	$\varnothing$ up to 12 mm	PCV
AH36060	170	255	46	44		



### Lightning pipe elbow 30°



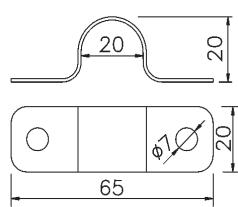
catalog No.	$L_1$ [mm]	$L_2$ [mm]	$\varnothing_z$ [mm]	$\varnothing_w$ [mm]	cable range	material
AH36080	160	360	26	23	$\varnothing$ up to 12 mm	PCV
AH36090	170	420	46	44		



### Lightning pipe clamp Ø20



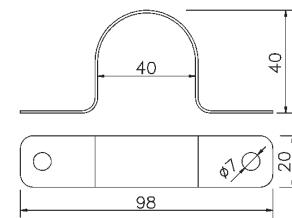
catalog No.	cable range	material
AH36011	$\varnothing$ up to 20 mm	electro galvanized steel



## Lightning pipe clamp Ø40



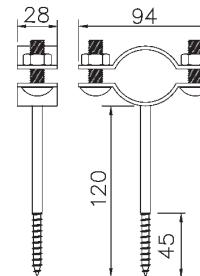
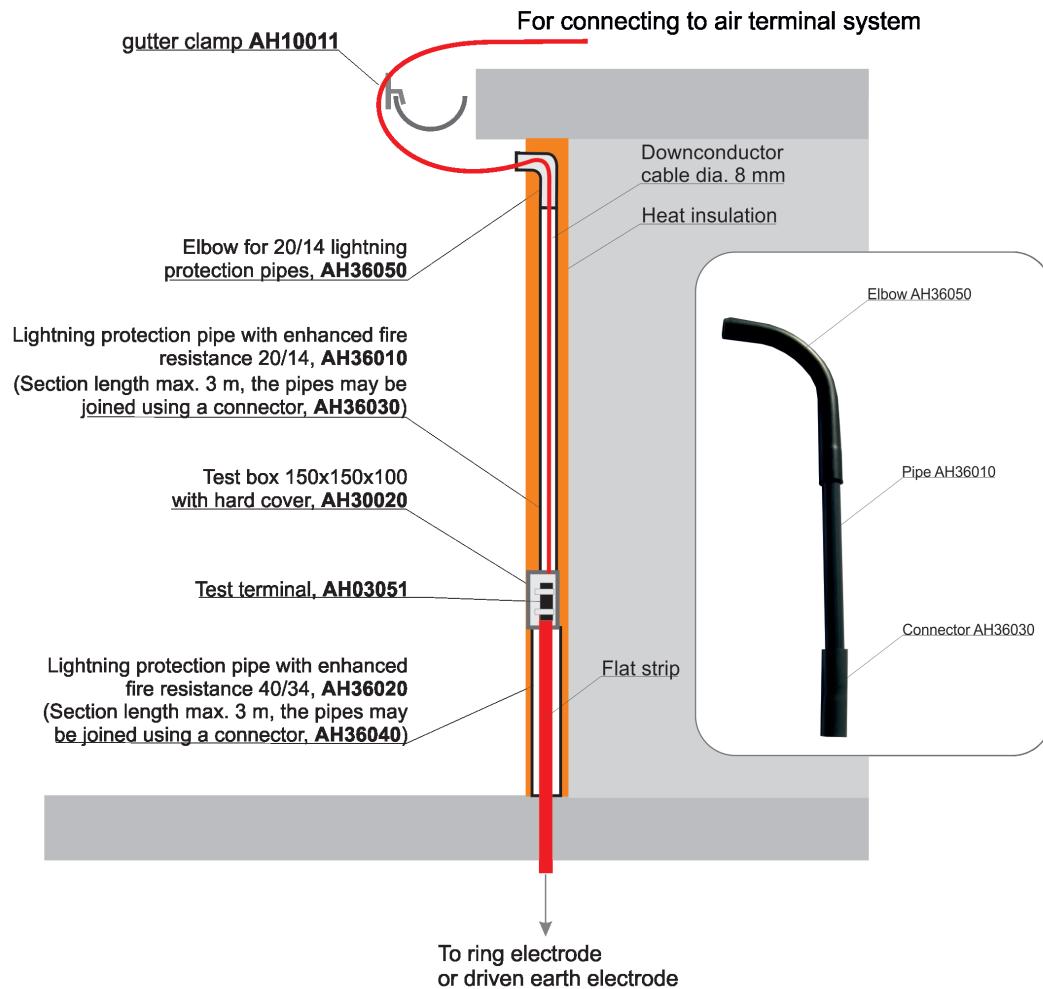
catalog No.	cable range	material
AH36021	Ø up to 40 mm	electro galvanized steel



## Lightning pipe clamp – screwed in



catalog No.	material	cable range	bolts
AH28561	electro galvanized steel	Ø 30-45mm	2xM8x25


**Conductor cable installation diagram in a downconductor pipe in heat insulation layer**


# EARTHINGS AND ELEMENTS TO GROUND

they are used to make vertical earthings, supply and dissipate lightning current in the ground

All hot-dip galvanized earthings (according to PN-EN ISO 1461) have a zinc layer not less than 70 µm. The masts on a concrete foundation are galvanized the same way. Earthing diameter Ø14, Ø16, Ø18 and Ø20 allows using ordinary impact hammers and does not require specialized driving equipment. The same diameter makes it possible to measure the resistance during driving and if necessary, tapping another earthing. Earthing length tolerance +20mm/- 5mm.



Advantages of our folded earthings (machine taper lock):

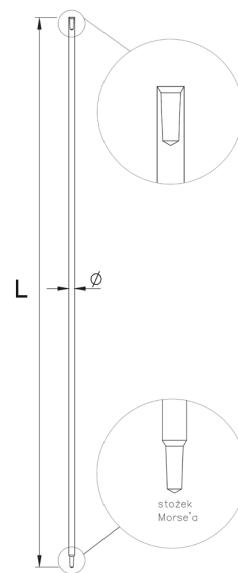
- **connection method** – machine taper, push-in, permanent mechanical and electrical connection clearly superior to threaded connection or one with a foreign filler (lead); lack of connectors reduces the price of the earthing
- **equal diameter** – possibility of measuring resistance during driving (measurement impossible while driving an earthing with connectors)
- **no separate tip** – reduces earthing price, enough for the most common applications; for very hard soils, we recommend using AH14031
- **ease of driving** – small diameters require ordinary impact hammers, no specialist driving equipment is needed

## EARTHINGS

Earthing rod- Morse taper shank



catalog No.	$\varnothing$ [mm]	material	weight [kg]	L [mm]
AH14011	14	hot-dip galvanized steel	1,9	1500
AH14021	16		2,4	1500
AH060001OG	16		1,9	1200
AH14041	18		3	1500
AH14101	20		3,7	1500
AH25023	18	INOX	3	1500
AH25033	16		2,4	1500
AH25043	20		3,7	1500



Steel copper bonded earth rod



catalog No.	Ø [mm]	material	weight [kg]	L [mm]
<b>AH060001STCU</b>	16	steel copper bonded	2,4	1500



Driving device for steel copper bonded rod with SDS tip



catalog No.	material	weight [kg]
<b>AH060001ST</b>	steel	0,5



The driving stud stabilizer to embed forged rods



catalog No.	material	weight [kg]
<b>AH060001TW</b>	teflon	0,12



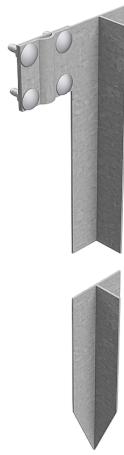
Driving stud for forged rod



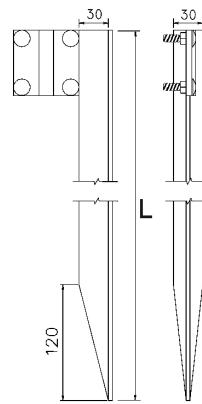
catalog No.	material	weight [kg]
<b>AH060002ST</b>	steel	0,06



◆ Uniform earthing "T"



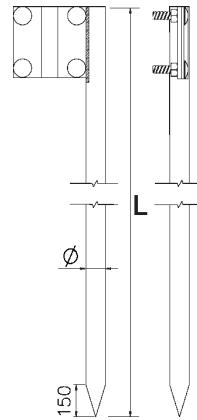
catalog No.	L [mm]	material	cable range	weight [kg]
AH14301	2000	hot-dip galvanized steel	tape up to 30 mm	3.8
AH14311	2700			5.8



◆ Uniform earthing



catalog No.	L [mm]	Ø [mm]	material	cable range	weight [kg]
AH14321	2700	20	hot-dip galvanized steel	tape up to 30 mm	6.7
AH14331	2000	16			3.1
AH14341	2000	18			4
AH14351	2700	18			5.4

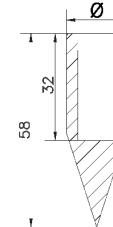


## TIPS, MALLETS, CONNECTIONS

◆ Hard soil tip



catalog No.	earthing AH	material
AH14031	Ø 16-20mm	electro galvanized steel
AH060003OC	Ø 14mm	



◆ Driving device with SDS tip



catalog No.	earthing AH	material
AH14161	Ø 16-20mm	selectro galvanized steel
AH060001OC	Ø 14mm	



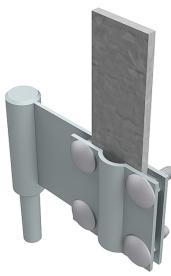
◆ Hand mallet for earthings



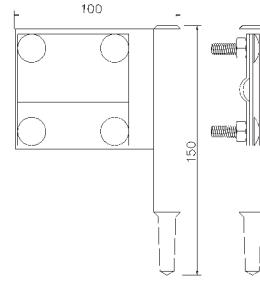
catalog No.	earthing AH	material
AH14071	Ø 16-20mm	electro galvanized steel
AH060002OC	Ø 14mm	



❖ Connection with a cross connector



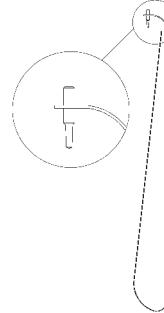
catalog No.	earthing	material	cable range
<b>AH14151</b>	Ø 16-20mm	electro galvanized steel	tape up to 30 mm



❖ Connection with welded tape



catalog No.	earthing	material	cable range
<b>AH14061</b>	Ø 16-20mm	electro galvanized steel	tape up to 30 mm length 3000 mm

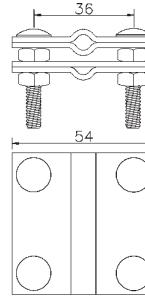


## EARTHING CONNECTORS

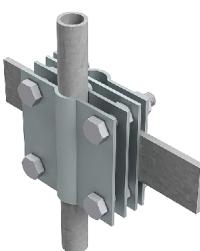
❖ 4-plate earth connector, small



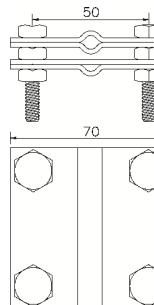
catalog No.	material	cable range	bolts
<b>AH14231</b>	electro galvanized steel		
<b>AH14230G</b>	hot-dip galvanized steel	Ø 8-10mm Ø rod 14-20 mm tape up to 30 min	4xM6x40
<b>AH14234</b>	Al/INOX		



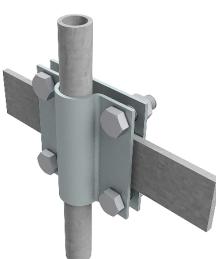
❖ 4-plate earth connector, large



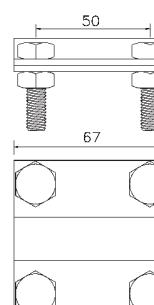
catalog No.	material	cable range	bolts
<b>AH14241</b>	electro galvanized steel		
<b>AH14240G</b>	hot-dip galvanized steel	Ø 8-10mm Ø rod 14-20 mm tape up to 40 min	4xM8x40
<b>AH14243</b>	INOX		
<b>AH14244</b>	Al/INOX		



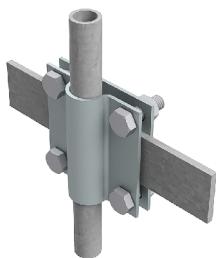
❖ 2-plate earth connector, rod-tape



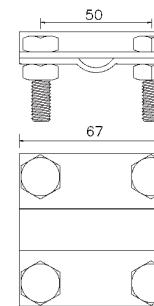
catalog No.	material	cable range	bolts
<b>AH01211</b>	electro galvanized steel		
<b>AH01210G</b>	hot-dip galvanized steel	Ø rod 14-20 mm tape up to 40 min	4xM8x25
<b>AH01212</b>	Cu/Mo		
<b>AH01214</b>	Al/INOX		
<b>AH01213</b>	INOX		



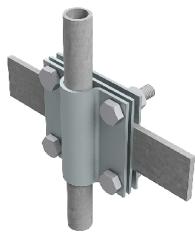
❖ 2-plate earth connector, rod-wire



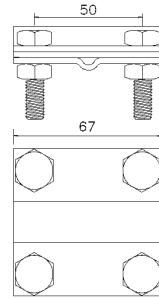
catalog No.	material	cable range	bolts
<b>AH01221</b>	electro galvanized steel		
<b>AH01220G</b>	hot-dip galvanized steel	Ø 8-10mm Ø rod 14-20 mm tape up to 40 min	4xM8x25
<b>AH01222</b>	Cu/Mo		
<b>AH01224</b>	Al/INOX		
<b>AH01223</b>	INOX		



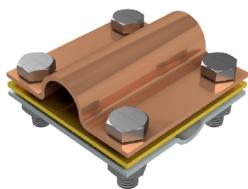
 3-plate earth connector



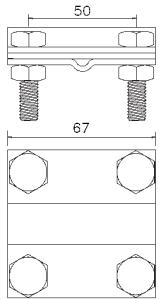
catalog No.	material	cable range	bolts
AH01231	electro galvanized steel		
AH01230G	hot-dip galvanized steel		
AH01234	Al/INOX		
AH01233	INOX		

group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

 3-plate earth connector



catalog No.	material	cable range	bolts
AH01232	copper, brass, electro-galvanized steel, inox-bolts	Ø 8-10mm Ø rod 14- 20 mm tape up to 40 mm	4xM8x30

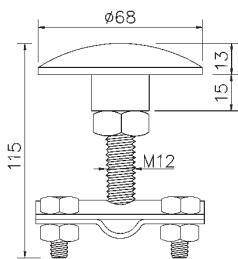
group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

## COMPONENTS MOUNTED IN THE BUILDING'S REINFORCEMENT

 Mushroom



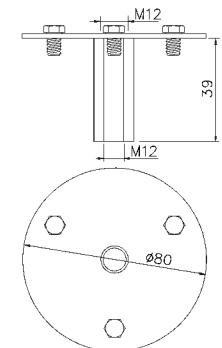
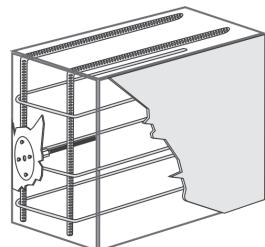
catalog No.	material	cable range	bolts
AH32011	electro galvanized steel		
AH32010G	hot-dip galvanized steel	tape up to 30 mm	4xM8x16
AH32013	INOX		

group IV  
straightenersgroup V  
lightning protection pipes

 Ground connection



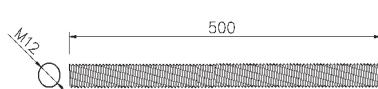
catalog No.	material	bolts
AH32031	electro galvanized steel	
AH32030G	hot-dip galvanized steel	3xM5x16
AH32033	INOX	

group IV  
straightenersgroup V  
lightning protection pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cable

 Threaded rod



catalog No.	material
AH32041	electro galvanized steel
AH32040G	hot-dip galvanized steel

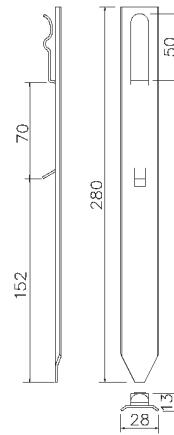
group IX  
insulated rods  
and bracketsgroup X  
other products

## TAPE BRACKETS

### Steel foundation tape bracket



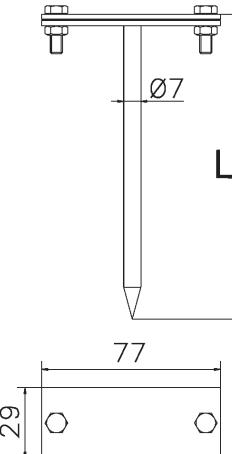
catalog No.	material	cable range
<b>AH17011</b>	electro galvanized steel	
<b>AH17010G</b>	hot-dip galvanized steel	Ø 8-10mm tape up to 30 min
<b>AH17012</b>	Cu	
<b>AH17013</b>	INOX	



### Universal knock in tape bracket



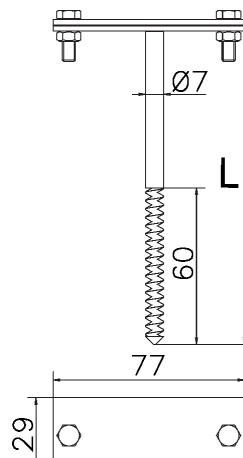
catalog No.	L [cm]	material	cable range	bolts
<b>AH06061</b>	8	electro galvanized steel		
<b>AH06071</b>	12	electro galvanized steel		
<b>AH06081</b>	18	electro galvanized steel		
<b>AH06060G</b>	8	hot-dip galvanized steel	tape up to 50 mm	
<b>AH06070G</b>	12	hot-dip galvanized steel		
<b>AH06080G</b>	18	hot-dip galvanized steel		
<b>AH06062</b>	8	Cu/Mo		
<b>AH06072</b>	12	Cu/Mo		
<b>AH06082</b>	18	Cu/Mo		
<b>AH06063</b>	8	INOX		
<b>AH06073</b>	12	INOX		
<b>AH06083</b>	18	INOX		



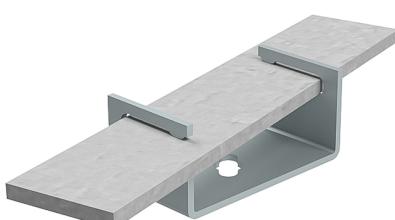
### Universal screwed in tape bracket



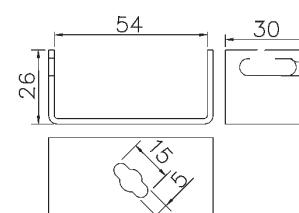
catalog No.	L [cm]	material	cable range	bolts
<b>AH06171</b>	8	electro galvanized steel		
<b>AH06181</b>	12	electro galvanized steel		
<b>AH06391</b>	18	electro galvanized steel		
<b>AH06170G</b>	8	hot-dip galvanized steel	tape up to 50 mm	
<b>AH06180G</b>	12	hot-dip galvanized steel		
<b>AH06390G</b>	18	hot-dip galvanized steel		
<b>AH06172</b>	8	Cu/Mo		
<b>AH06182</b>	12	Cu/Mo		
<b>AH06392</b>	18	Cu/Mo		
<b>AH06173</b>	8	INOX		
<b>AH06183</b>	12	INOX		
<b>AH06393</b>	18	INOX		



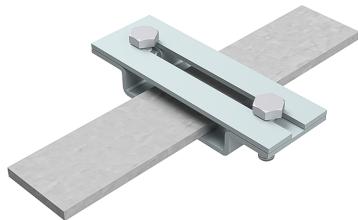
### Steel tape bracket



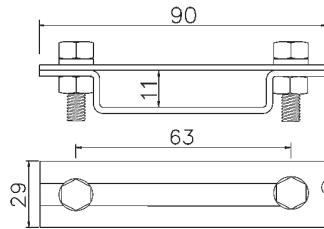
catalog No.	material	cable range
<b>AH26011P</b>	electro galvanized steel	tape up to 50x5mm
<b>AH26011</b>	electro galvanized steel	
<b>AH26010G</b>	hot-dip galvanized steel	tape up to 50x4mm
<b>AH26012</b>	Cu/Mo	
<b>AH26013</b>	INOX	



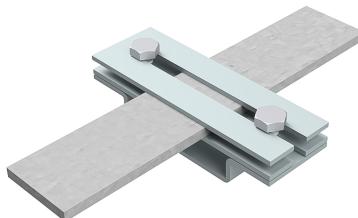
Steel tape holder, 2-plate



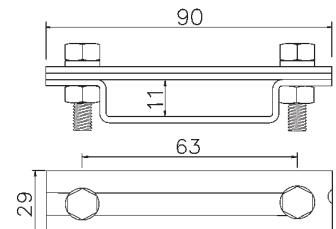
catalog No.	material	cable range	bolts
AH26031	electro galvanized steel		
AH26030G	hot-dip galvanized steel	tape up to 50 mm	2xM6x20
AH26032	Cu/Mo		
AH26033	INOX		

group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

Steel tape holder, 3-plate



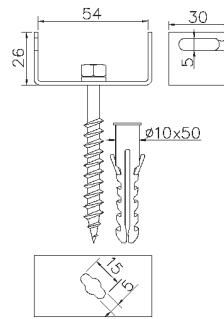
catalog No.	material	cable range	bolts
AH26051	electro galvanized steel		
AH26050G	hot-dip galvanized steel	tape up to 50 mm	2xM6x20
AH26052	Cu/Mo		
AH26053	INOX		

group I  
connectors

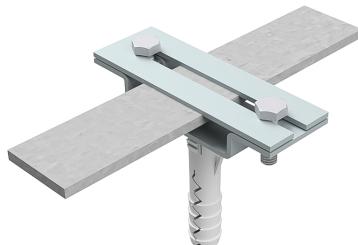
Steel tape holder with wall plug



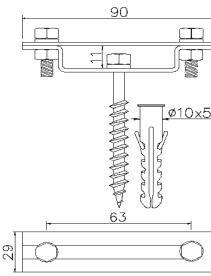
catalog No.	material	cable range
AH26021	electro galvanized steel	
AH26020G	hot-dip galvanized steel	tape up to 50 mm
AH26022	Cu/Mo	
AH26023	INOX	

group IV  
straightenersgroup V  
lightning protection pipes

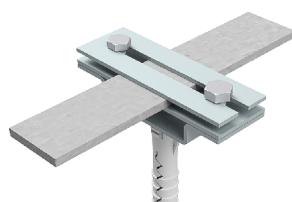
Steel tape holder with wall plug, 2-plate



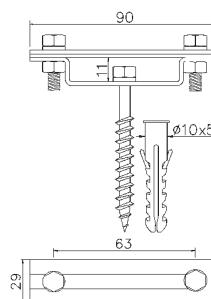
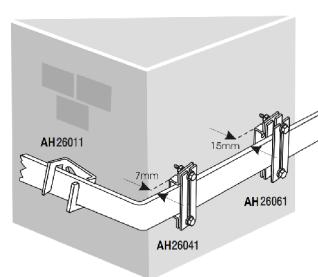
catalog No.	material	cable range
AH26041	electro galvanized steel	
AH26040G	hot-dip galvanized steel	tape up to 50 mm
AH26042	Cu/Mo	
AH26043	INOX	

group VI  
earthing and  
earthing elements

Steel holder bracket with wall plug, 3-plate



catalog No.	material	cable range
AH26061	electro galvanized steel	
AH26060G	hot-dip galvanized steel	tape up to 50 mm
AH26062	Cu/Mo	
AH26063	INOX	

group VII  
lightning protection  
masts

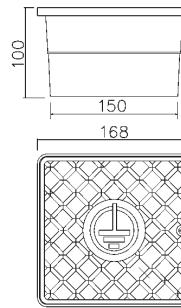
## CONTROL BOXES

### Wall-mounted control boxes



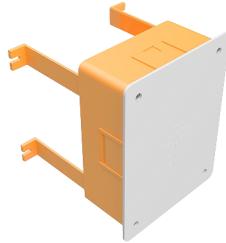
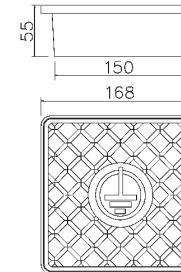
catalog No.	material	color
AH30020...	plastic	grey white

\* to choose the color, add a letter to the last digit of the catalog number:  
 B - white  
 S - grey



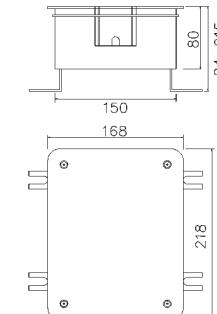
catalog No.	material	color
AH30040...	plastic	grey white

\* to choose the color, add a letter to the last digit of the catalog number:  
 B - white  
 S - grey



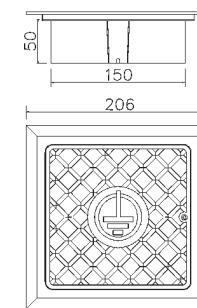
catalog No.	material	color
AH30050	plastic	white/ orange

\* one color available



catalog No.	material	color
AH30080...	plastic	grey white

\* to choose the color, add a letter to the last digit of the catalog number:  
 B - white  
 S - grey

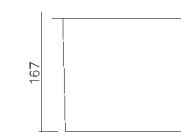


### Ground control boxes



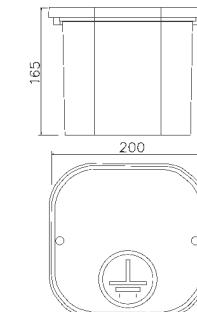
catalog No.	material	color
AH30060	plastic	grey

\* one color available



catalog No.	material	color
AH30070	plastic	grey

\* one color available



## EQUIPOTENTIAL CONNECTIONS

### Grounding bands



catalog No.	$\varnothing$ [mm]	cable range [mm $^2$ ]	material
AHK16_13	13	up to 16	chrome steel
AHK16_7	7		
AHK16_21	21		
AHK16_26	26.5		
AHK16_33	33.5		
AHK16_42	42		
AHK16_48	48		
AHK16_54	54		
AHK16_60	60		
AHK16_76	76		



catalog No.	$\varnothing$ [mm]	cable range [mm $^2$ ]	material
AHK37_17	from 8 to 17.5	from 1x2.5 to 1x6	Mo nickel-coated bronze
AHK37_48	from 17.5 to 48		
AHK37_144	from 17.5 to 114		
AHK37_156	from 17.5 to 156		



catalog No.	$\varnothing$ [mm]	cable range [mm $^2$ ]	material
AHK38_48	from 25 to 28	from 25 to 70	Mo nickel-coated bronze
AHK38_114	from 25 to 114		
AHK38_165	from 25 to 165		



catalog No.	$\varnothing$ [mm]	cable range [mm $^2$ ]	material
AHK39_48	from 25 to 48	from 25 to 70	Mo nickel-coated bronze
AHK39_144	from 25 to 114		
AHK39_165	from 25 to 165		

### Equipotential rails



catalog No.	cables [mm $^2$ ]	cable range	material
AHK1309	1x 2.5-6 6x 2.5-25 1x 50	tape up to 30x4 mm $\varnothing$ 81-10mm	Mo nickel-coated
AHK409	5x 2.5-25 2x 3.5-70 1x 50		



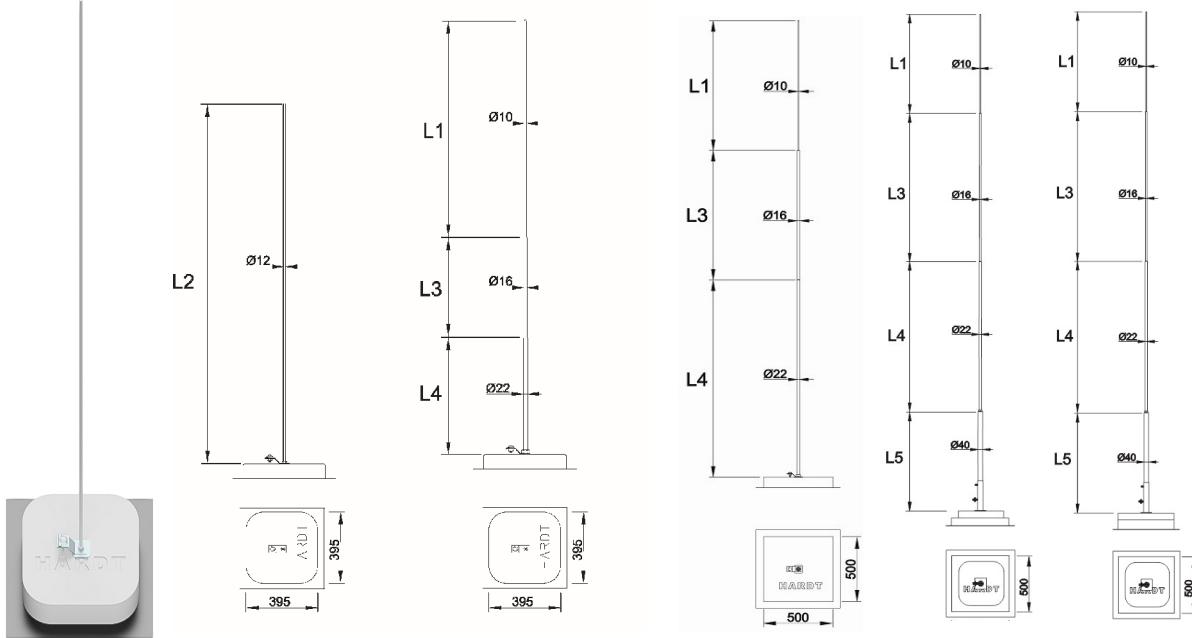
catalog No.	cables [mm $^2$ ]	material
AHSWPG1	10x 4-35 1x 30x4	steel electro galvanized
AHK12	10x 2.5-95 1x 30x4	

# LIGHTNING PROTECTION MASTS

they are used to protect devices and metal roof elements by absorbing direct lightning current and discharging it into the grid of terminals

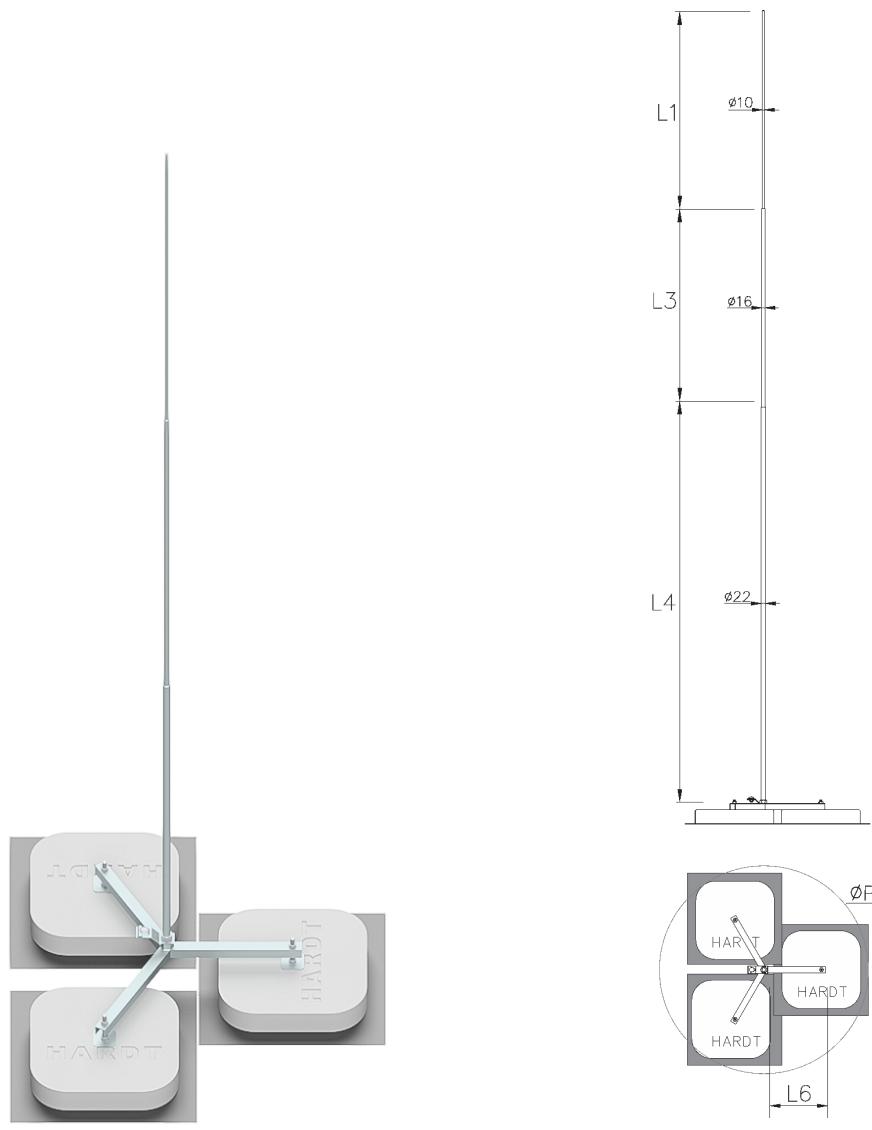
## ◆ FREE-STANDING MASTS

- ◆ Single free-standing mast

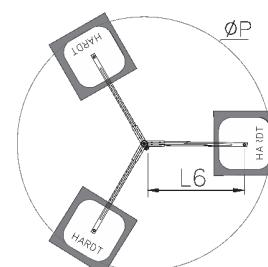
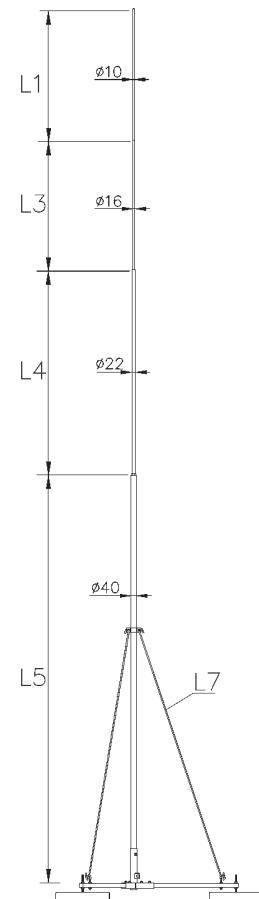
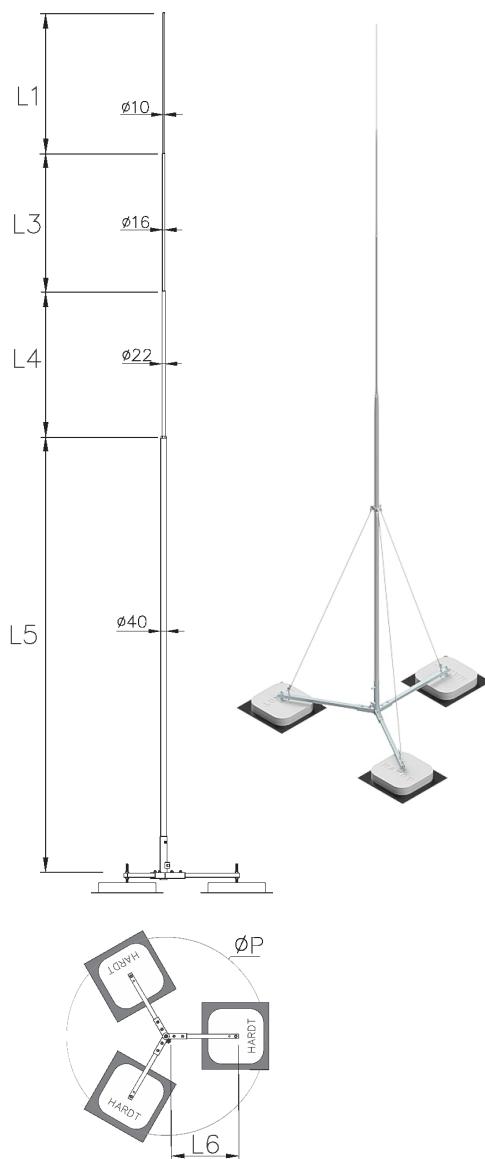


catalog No.	height [mm]	mast components					concrete [pc]	material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L2 (Ø12) [mm]	L3 (Ø16) [mm]	L4 (Ø22) [mm]	L5 (Ø40) [mm]				
<b>AH40001</b>	1000	-	1000	-	-	-			24,4	
<b>AH40011</b>	1500	-	1500	-	-	-			24,6	
<b>AH40021</b>	2000	-	2000	-	-	-			24,8	
<b>AH40031</b>	2500	1000	-	1000	500	-			25,3	
<b>AH40041</b>	3000	1000	-	1000	1000	-			25,8	
<b>AH40271</b>	3500	1000	-	1000	1500	-			44,3	I,II,III
<b>AH40281</b>	4000	1000	-	1000	2000	-			44,8	
<b>AH070001AL</b>	4500	1000	-	1500	1500	500			53	
<b>AH070002AL</b>	5000	1000	-	1500	1500	1000	1x42 1x24		78	
<b>AH070003AL</b>	5500	1000	-	1500	1500	1500	2x42		97	
<b>AH40003</b>	1000	-	1000	-	-	-			24,9	
<b>AH40013</b>	1500	-	1500	-	-	-			25,4	
<b>AH40023</b>	2000	-	2000	-	-	-			25,8	
<b>AH40033</b>	2500	1000	-	1000	500	-			27,7	I,II,III
<b>AH40043</b>	3000	1000	-	1000	1000	-			29,2	
<b>AH40273</b>	3500	1000	-	1000	1500	-			48,7	
<b>AH40283</b>	4000	1000	-	1000	2000	-			50,2	

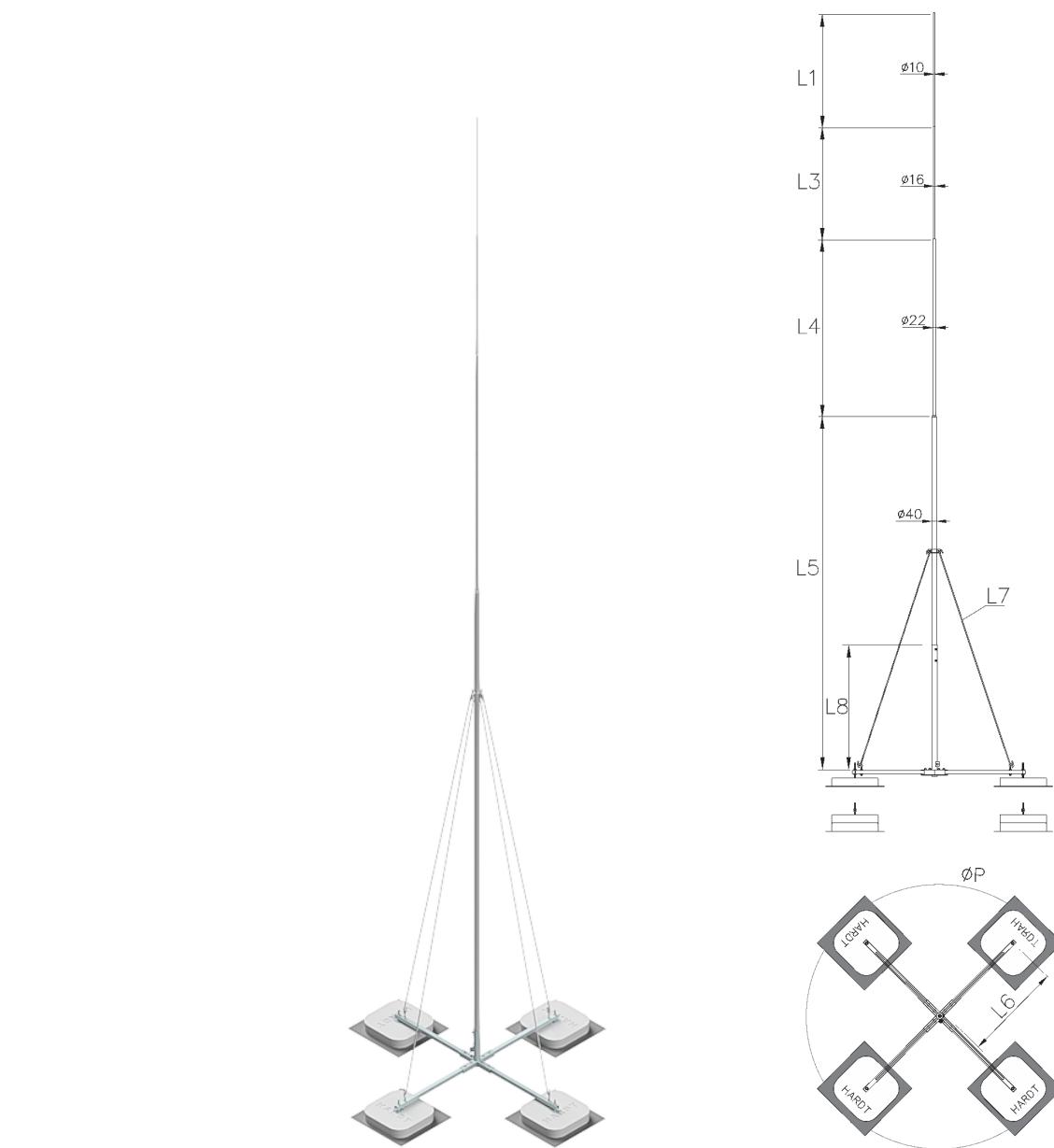
 Free-standing mast on a small tripod



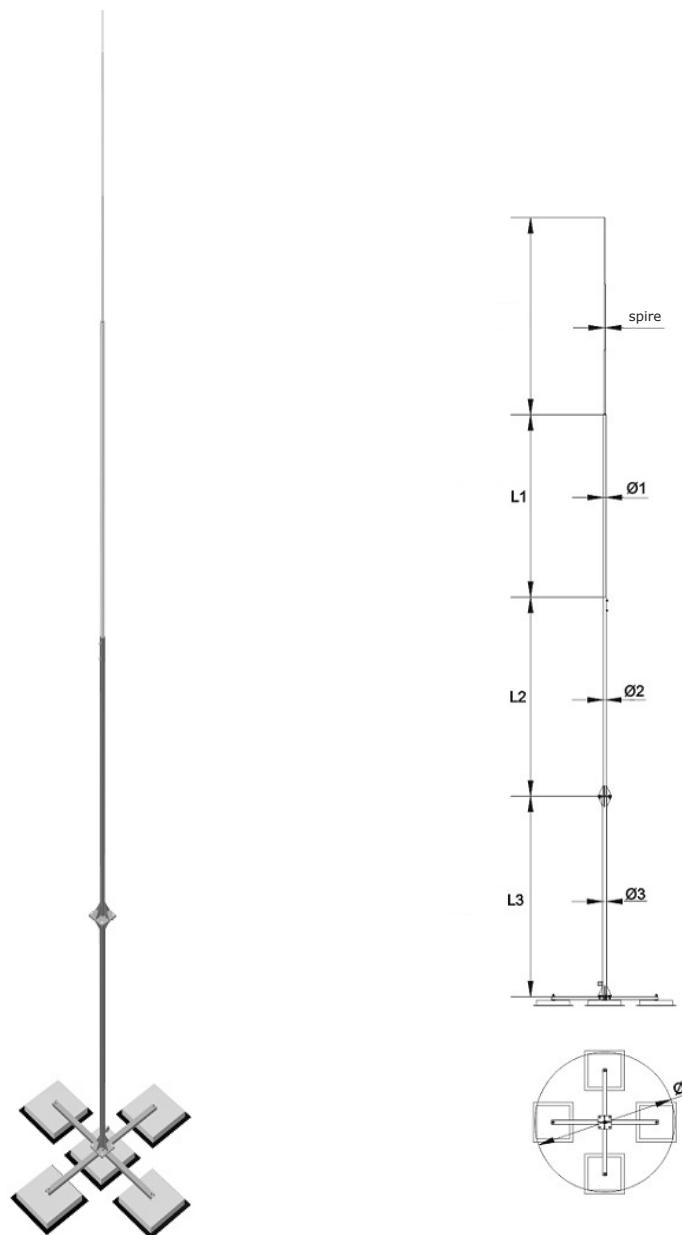
catalog No.	height [mm]	mast components				$\emptyset P$ [mm]	concrete weight [pc]	material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L3 (Ø16) [mm]	L4 (Ø22) [mm]	L6 (leg) [mm]					
<b>AH40741</b>	2500	1000	1000	500	350	1040	3x24	Al (spire)	75,8	I,II,III
<b>AH40751</b>	3000	1000	1000	1000				galvanized steel	76,3	
<b>AH40761</b>	3500	1000	1000	1500				weight concrete	76,8	
<b>AH40771</b>	4000	1000	1000	2000				rug made of rubber	77,3	
<b>AH40743</b>	2500	1000	1000	500	350	1040	3x24	INOX	78,2	I,II,III
<b>AH40753</b>	3000	1000	1000	1000				weight concrete	79,7	
<b>AH40763</b>	3500	1000	1000	1500				rug made of rubber	81,2	
<b>AH40773</b>	4000	1000	1000	2000					82,7	

 Free-standing mast on a tripod
group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection  
pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

catalog No.	height [mm]	mast components						$\varnothing P$ [mm]	concrete weight [pc]	material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L3 (Ø16) [mm]	L4 (Ø22) [mm]	L5 (Ø40) [mm]	L6 (leg) Ø10 [mm]	L7(brace) Ø10 [mm]					
AH40071	4000	1000	1000	1000	1000	500	-	1430	3x24	Al (spire, support tube)	82,8	I,II,III
AH40081	4500	1000	1000	1500	1000	500	-			steel galvanized	83,2	
AH40091	5000	1000	1000	1000	2000	500	-			weight concrete	86,0	
AH40101	5500	1000	1000	1500	2000	500	-			rug made of rubber	86,5	
AH40111	6000	1000	1000	2000	2000	500	-			weight concrete	87	
AH40121	6500	1000	1000	1500	3000	750	2000			rug made of rubber	95,8	
AH40131	7000	1000	1000	2000	3000	750	2000			weight concrete	96,3	
AH40401	8000	1000	1000	2000	4000	1000	3000	2400			103	I

 Free-standing mast with four-legged support


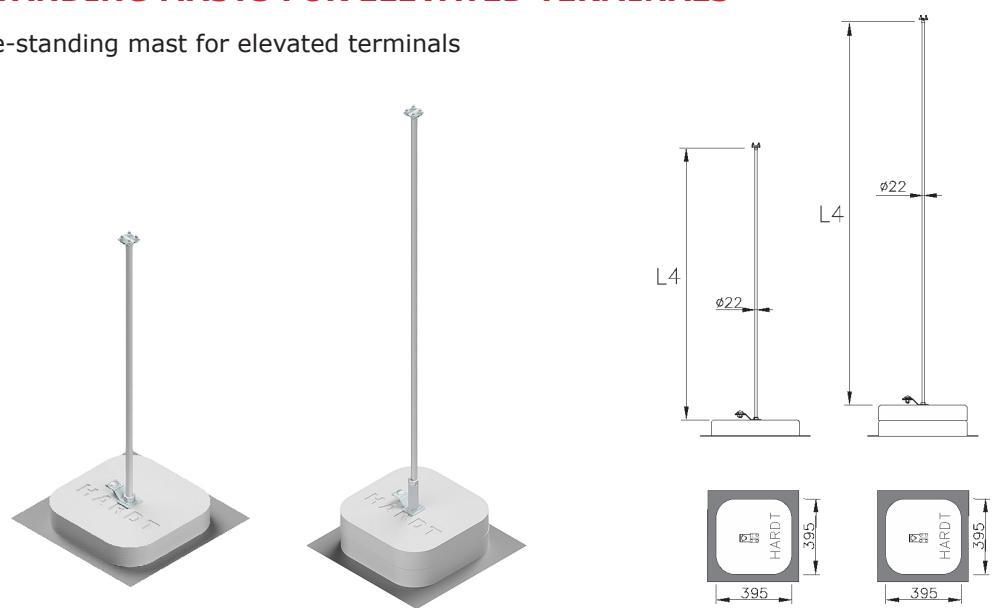
catalog No.	height [mm]	mast components							ØP [mm]	concrete weight [pc]	material	weight [kg]	wind zone
		L1 Ø10 [mm]	L3 Ø16 [mm]	L4 Ø22 [mm]	L5 Ø40 [mm]	L6 (leg) Ø10 [mm]	L7 (brace) Ø10 [mm]	L8 (quadrupod) Ø10 [mm]					
<b>AH40141</b>	8000	1000	1000	2000	4000	750	3000	-	1930	4x24	Al (spire, support tube)  steel galvanized  weight concrete  rug made of rubber	125,5	I,II,III
<b>AH40151</b>	9000	1000	1000	2000	4000	1000	3000	2000				230,7	
<b>AH40161</b>	10000	1000	1000	2000	4000	1000	3000	3000		8x24		236,8	
<b>AH40411</b>	9000	1000	1000	2000	4000	1000	3000	2000				134,7	I
<b>AH40421</b>	10000	1000	1000	2000	4000	1000	3000	3000		4x24		140,8	

 Free-standing mast with four-legged support


mast components										
catalog No.	height [mm]	pipe segment L4 [mm]	pipe segment L3 [mm]	pipe segment L2 [mm]	pipe segment L1 [mm]	spire [mm]	concrete weight [pc]	material	weight [kg]	wind zone
<b>AH070001OGAL</b>	12000	-	3000	3000	3000	3000	5x24	steel galvanized weight concrete rug made of rubber	285	I,II,III

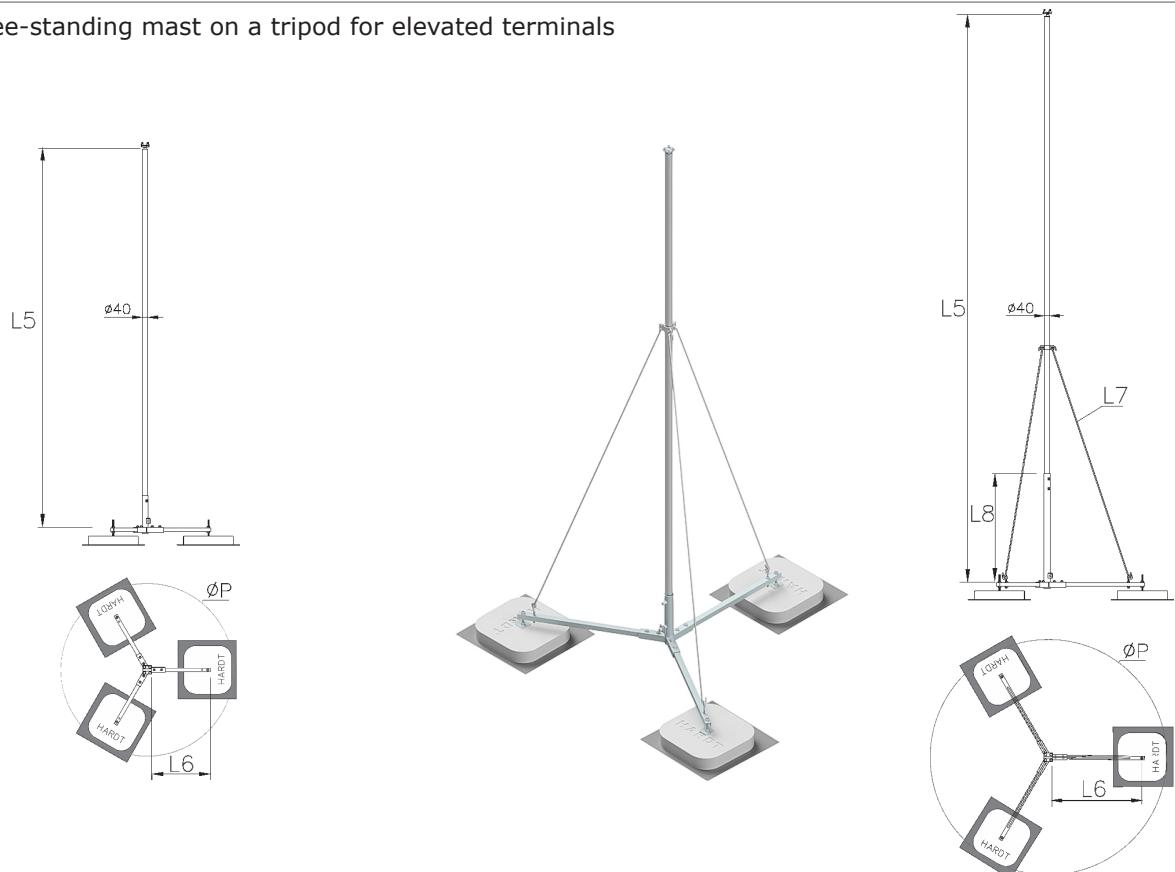
## FREE-STANDING MASTS FOR ELEVATED TERMINALS

- Single free-standing mast for elevated terminals



catalog No.	height [mm]	mast components		concrete weight [pc]	material	weight [kg]	wind zone
		L4 (Ø22) [mm]					
<b>AH40201</b>	1000	1000		1x24	Al (spire) galvanized steel weight concrete rug made of rubber	25	I,II,III
<b>AH40211</b>	1500	1500		2x24		49,5	

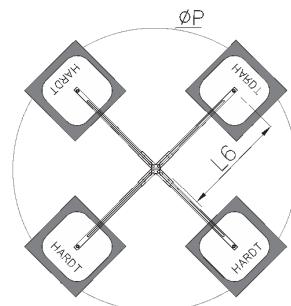
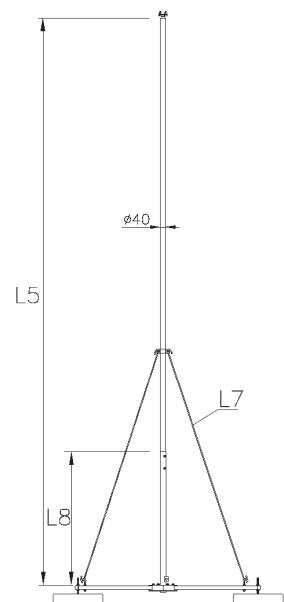
- Free-standing mast on a tripod for elevated terminals



catalog No.	height [mm]	mast components				ØP [mm]	concrete weight [pc]	material	weight [kg]	wind zone		
		L5 (Ø40) [mm]	L6 (leg) [mm]	L7(brace) Ø10 [mm]	L8 (tripod) [mm]							
<b>AH40221</b>	2000	2000	500	-	-	1430	3x24	Al (spire, support tube) galvanized steel weight concrete rug made of rubber	80	I,II,III		
<b>AH40231</b>	3000	3000		2000	-	1930			87,5			
<b>AH40241</b>	4000	4000	750	2000	-				89			
<b>AH40251</b>	5000	4000		3000	2000				99,9			



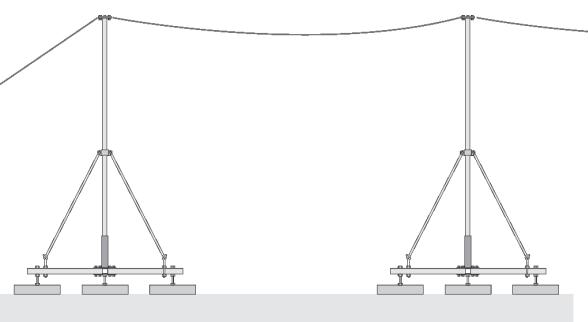
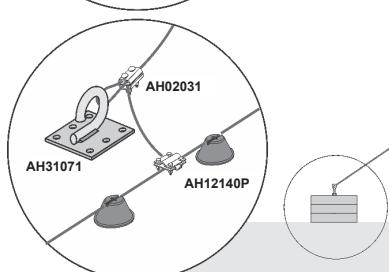
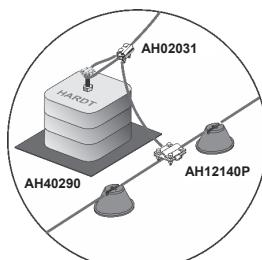
• Free-standing mast for elevated terminals with four-legged support

group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection  
pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

catalog No.	height [mm]	mast components				$\varnothing P$ [mm]	concrete weight [pc]	material	weight [kg]	wind zone
		L5 ( $\varnothing 40$ ) [mm]	L6 (leg) [mm]	L7(brace) $\varnothing 10$ [mm]	L8 (quadruped) [mm]					
<b>AH40261</b>	6000	4000	750	2000	3000	1930			131,8	
<b>AH42271</b>	7000	4000	1000	4000	4000	2400	4x24	Al (spire, support tube) galvanized steel weight concrete rug made of rubber	137,8	I,II,III

\*In order to reduce the load on the masts and stiffen the masts for elevated terminals you can apply:

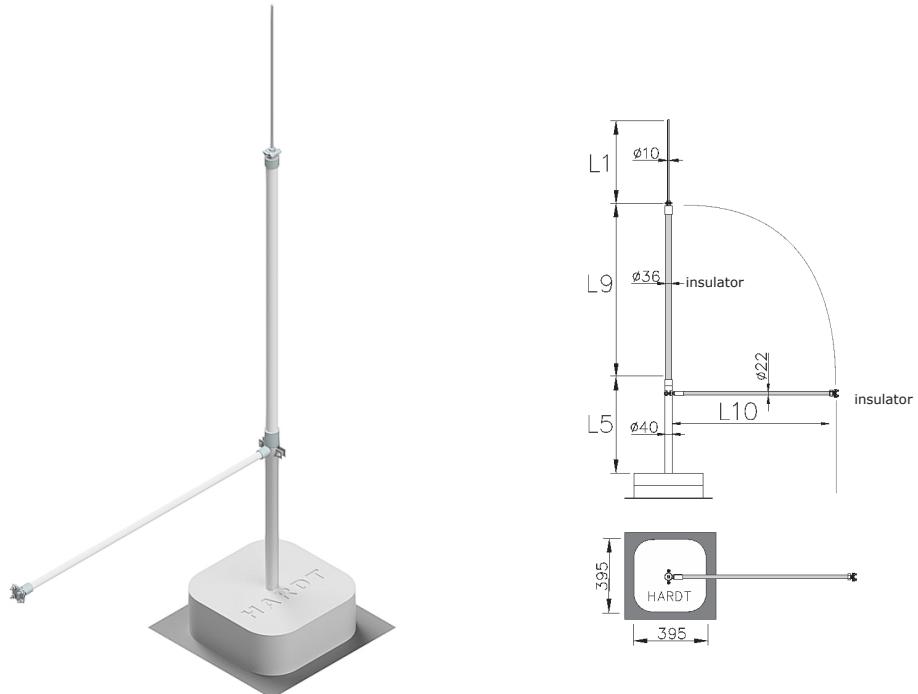
- stay attached to the weight (**AH40290**)
- hook handle (**AH36071**) screwed to the roof, attic or structural elements. The stay should be connected to the nearest terminal system.





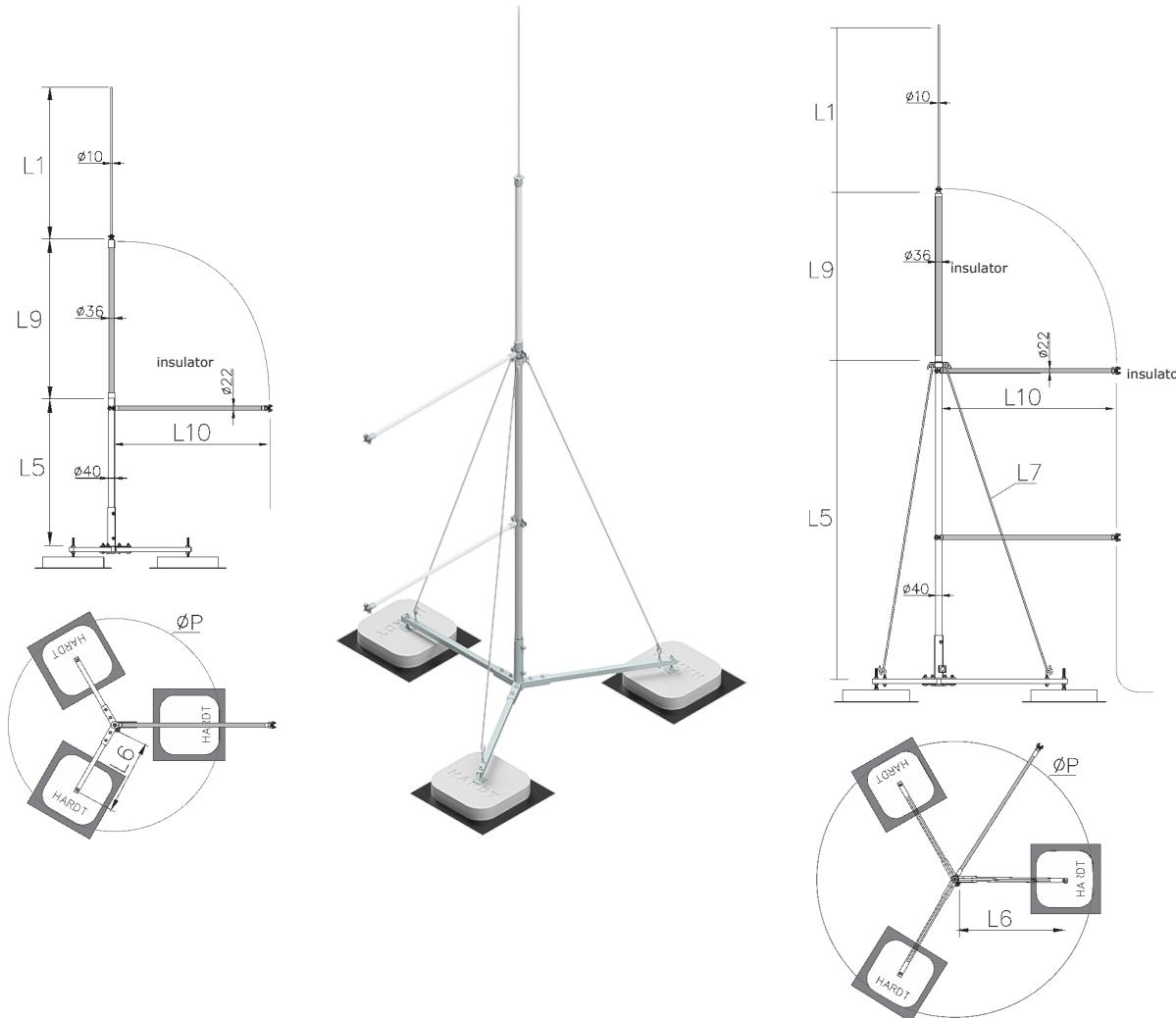
## INSULATED FREE STANDING MASTS FOR ELEVATED AIR TERMINALS

- Single insulated free-standing mast for elevated air terminals



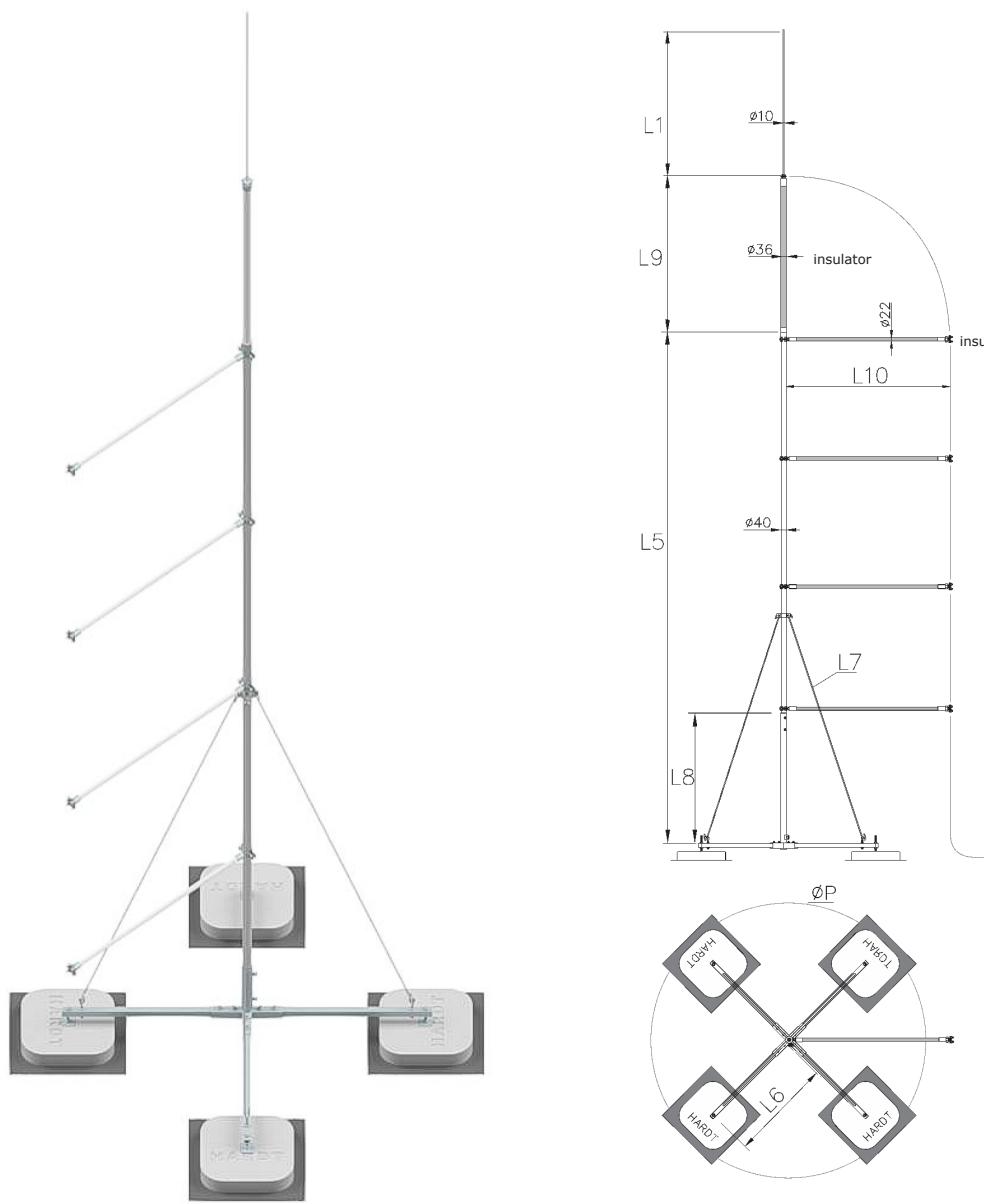
catalog No.	height [mm]	mast components				concrete weight [pc]	material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L5 (Ø40) [mm]	L9 insulator (Ø36) [mm]	L10 insulator (Ø22) [mm]				
<b>AH40431</b>	2000	500	500	1000	1000	2x24	Al (spire, support tube) galvanized steel fiberglass (insulator) concrete weight rubber rug	52,3	I,II,III

• Insulated free-standing mast on a tripod for elevated air terminals

group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection  
pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

catalog No.	height [mm]	mast components						$\varnothing P$ [mm]	concrete weight [pc]	material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L5 (Ø40) [mm]	L6 (leg) [mm]	L7 (brace) Ø10 [mm]	L9 insulator (Ø36) [mm]	L10 insulator (Ø22) [mm]					
AH40441	3000	1000	1000	500	-	1000	1000	1430	3x24	Al (spire, support tube)	82,3	I,II,III
AH40451	4000	1000	2000	750	2000	1000	1000 (2 pcs)	galvanized steel		90,8		
AH40461	5000	1000	3000	750	2000	1000	1000 (3 pcs)	fiberglass (insulator)		93,8		
AH40291	6000	1000	4000	750	2000	1000	1000 (4 pcs)	weight concrete		95,8	I	

❖ Insulated free-standing mast on a quadripod for elevated air terminals

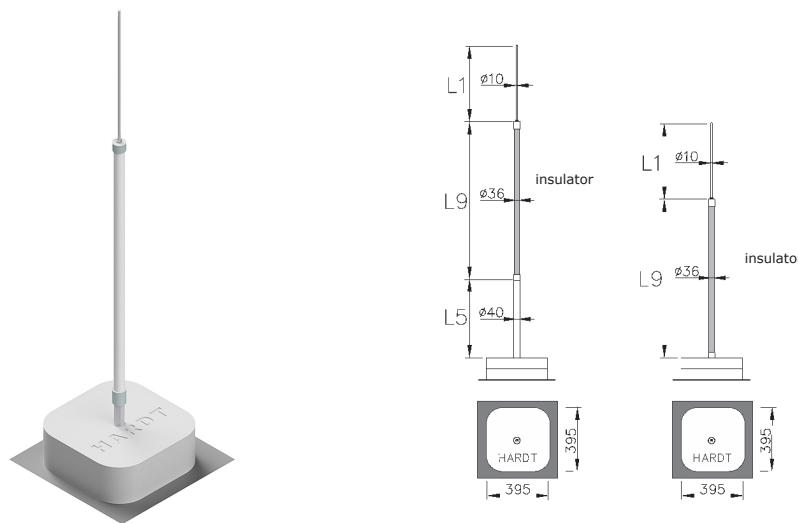


no. catalog	height [mm]	mast components							$\emptyset P$ [mm]	concrete weight [pc]	material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L5 (Ø40) [mm]	L6 (leg) [mm]	L7 (brace)	Ø10 [mm]	L8 (quadri- pod)	L9 insulator Ø36 [mm]					
AH40471	6000	1000	4000	750	2000	-	1000	1000 (4 pcs)			Al (spire, sup- port tube) galvanized steel	120,8	
AH40481	7000	1000	4000	750	2000	2000	1000	1000 (5 pcs)	1930	4x24	fiberglass (insulator)	130,8	I,II,III
AH40491	8000	1000	4000	750	3000	3000	1000	1000 (6 pcs)			weight concrete rug made of rubber	137,8	

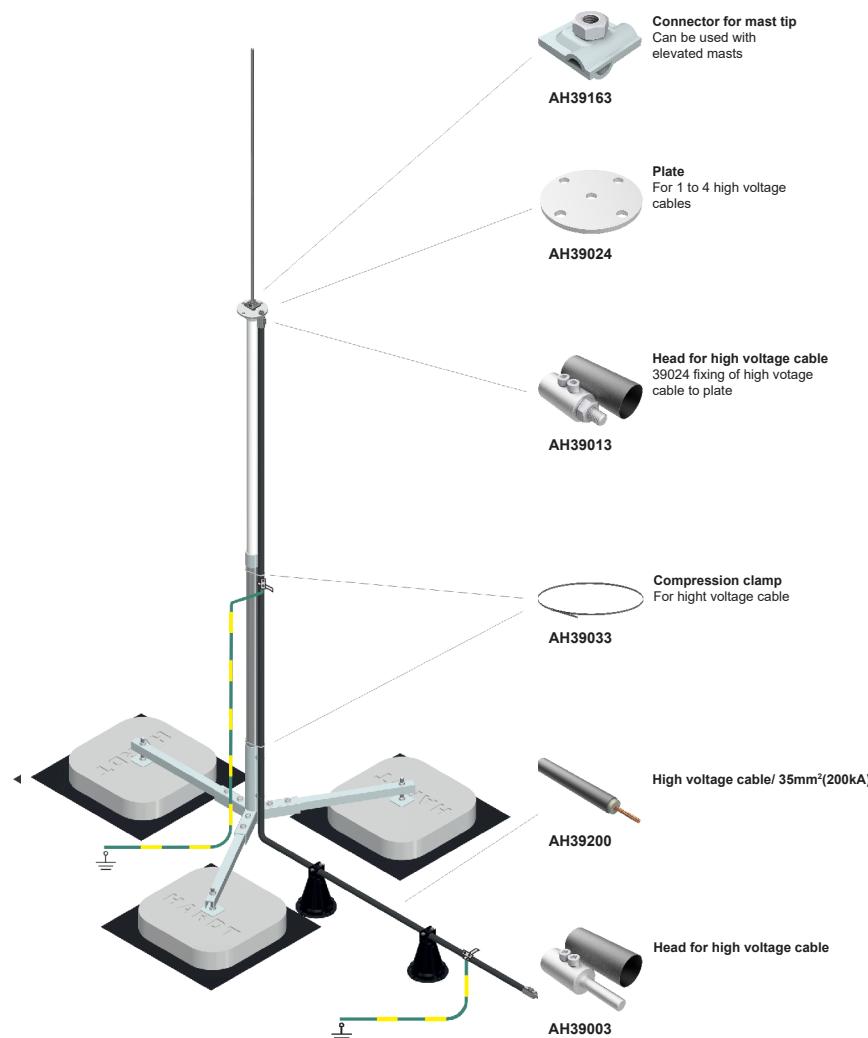
group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

## FREE-STANDING MASTS ISOLATED FOR HIGH-VOLTAGE CABLE

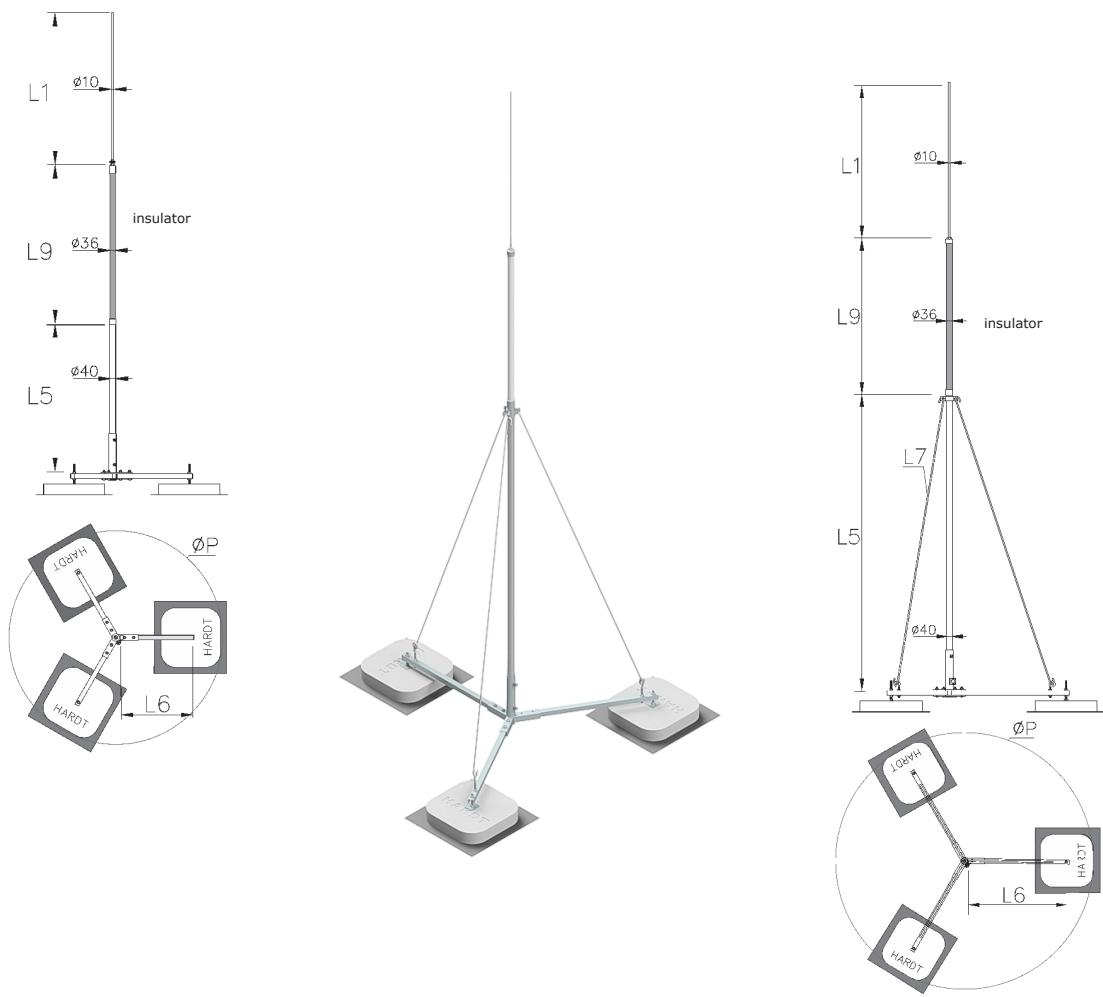
- Single insulated free-standing mast for high-voltage cable



catalog No.	height [mm]	mast components			concrete weight [pc]	material	weight [kg]	wind zone
		L1 (ø10) [mm]	L5 (ø40) [mm]	L9 insulator(ø36) [mm]				
<b>AH40501</b>	1500	500	-	1000	2	Al (spire, support tube) galvanized steel fiberglass (insulator) concrete weight rubber rug	49,5	I,II,III
<b>AH40511</b>	2000	500	500	1000			50,3	



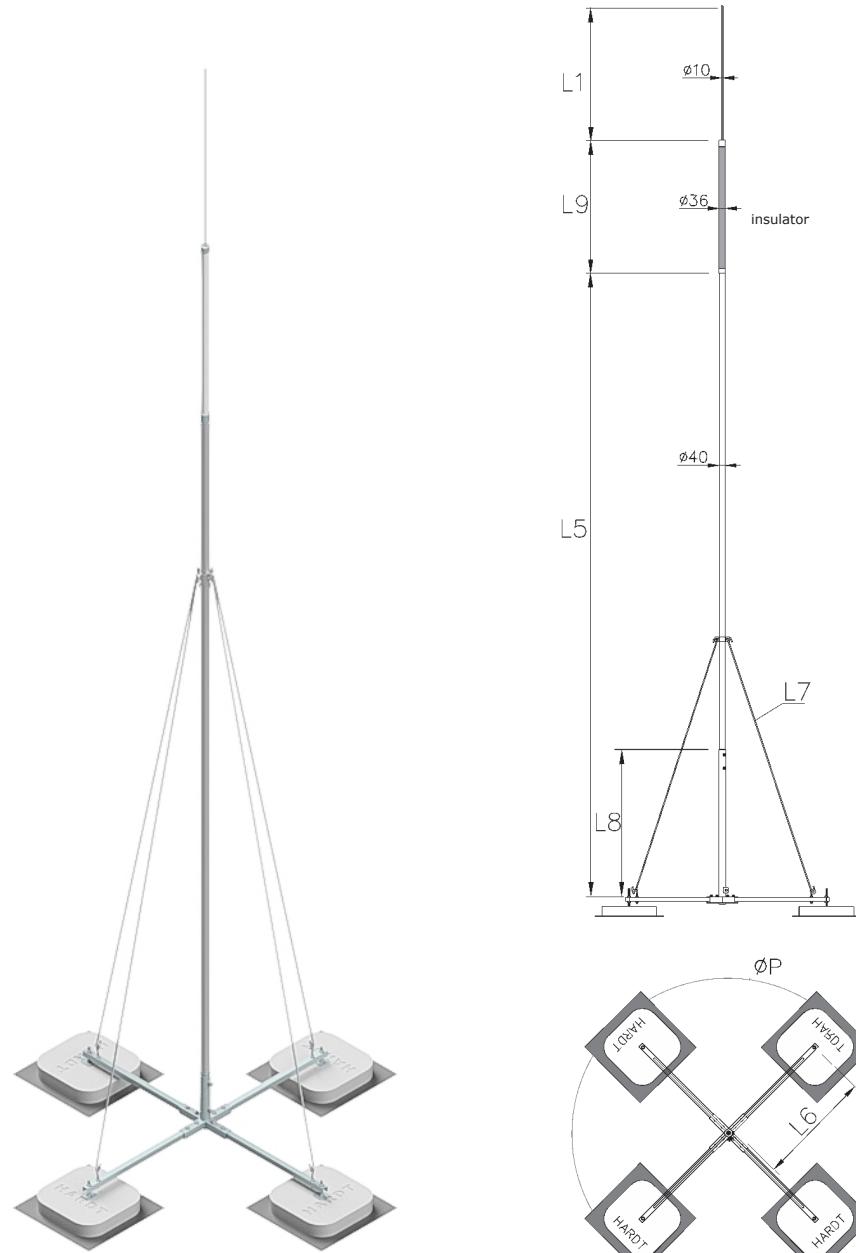
- Free-standing mast insulated for high voltage cable on a tripod



catalog No.	height [mm]	mast components					$\emptyset P$ [mm]	concrete weight [pc]	material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L5 (Ø40) [mm]	L6 (leg) [mm]	L7 (brace) Ø10 [mm]	L9 insulator (Ø36) [mm]					
AH40521	2000	500	500	500	-	1000	1430	3x24	Al (spire, support tube)	78,3	I,II,III
AH40531	3000	1000	1000	500	-	1000			galvanized steel	79,5	
AH40541	4000	1000	2000	750	2000	1000			fiberglass (insulator)	86,7	
AH40551	5000	1000	3000	750	2000	1000			weight concrete	88,2	

group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

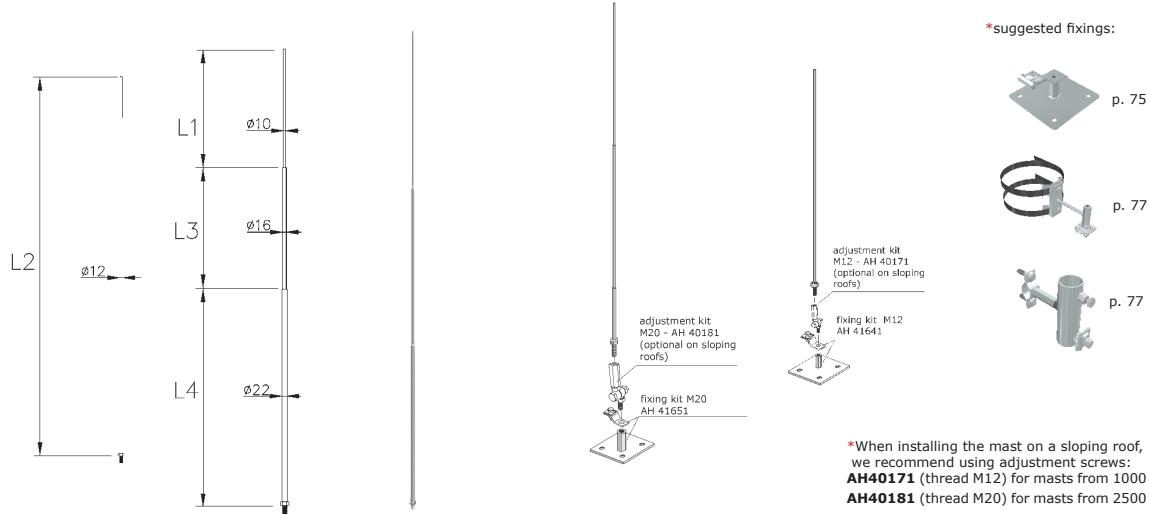
• Insulated free-standing mast with four-legged support for high-voltage cable



catalog No.	height [mm]	mast components						ØP [mm]	concrete weight [pc]	material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L5 (Ø40) [mm]	L6 (leg) [mm]	L7 Ø10 [mm]	L8 (quadrupod) [mm]	L9 insulator(Ø36) [mm]					
<b>AH40561</b>	6000	1000	4000	750	3000	-	1000	1930	4x24	Al (spire, support tube) galvanized steel fiberglass (insulator) weight concrete rug made of rubber	118,2	
<b>AH40571</b>	7000	1000	4000	750	3000	2000	1000				125,2	I,II,III
<b>AH40581</b>	8000	1000	4000	1000	3000	3000	1000	2400			134,7	

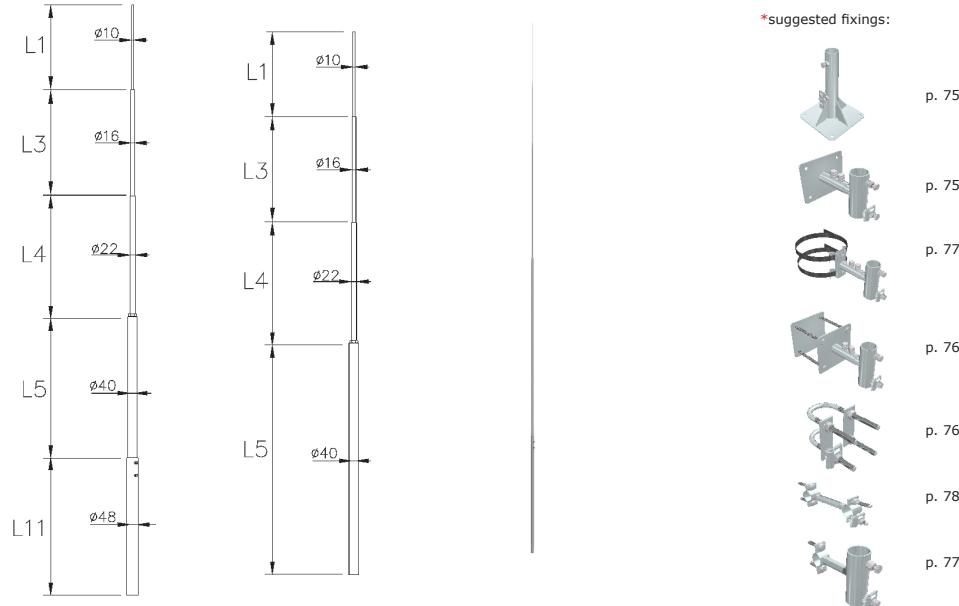
## WALL/STRUCTURE-MOUNTED MASTS

### Wall/structure-mounted spire



\*When installing the mast on a sloping roof, we recommend using adjustment screws:  
**AH40171** (thread M12) for masts from 1000 to 2000mm  
**AH40181** (thread M20) for masts from 2500 to 4000mm

catalog No.	height [mm]	mast components					material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L2 (Ø12) [mm]	L3 (Ø16) [mm]	L4 (Ø22) [mm]	thread			
<b>AH40811</b>	1000	-	1000	-	-			0,3	
<b>AH40821</b>	1500	-	1500	-	-	M12		0,5	
<b>AH40831</b>	2000	-	2000	-	-		AI (spire)	0,7	
<b>AH40841</b>	2500	1000	-	1000	500		steel electro galvanized	1,3	I,II,III
<b>AH40851</b>	3000	1000	-	1000	1000	M20		1,8	
<b>AH40861</b>	3500	1000	-	1000	1500			2,3	
<b>AH40871</b>	4000	1000	-	1000	2000			2,8	



catalog No.	height [mm]	mast components					material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L3 (Ø16) [mm]	L4 (Ø22) [mm]	L5 (Ø40) [mm]	L11 (Ø48) [mm]			
<b>AH40881</b>	4000	1000	1000	1000	1000	-		3,3	
<b>AH40891</b>	4500	1000	1000	1500	1000	-	AI (spire, support tube)	3,8	
<b>AH40901</b>	5000	1000	1000	2000	1000	-	steel electro galvanized	4,3	I,II,III
<b>AH40911</b>	6000	1000	1000	2000	2000	-		5,8	
<b>AH40921</b>	7000	1000	1000	2000	3000	-	hot-dip galvanized steel (support pipe Ø48)	7,3	
<b>AH40931</b>	8000	1000	1000	2000	4000	-		8,8	
<b>AH40941</b>	9000	1000	1000	2000	4000	2000		16,2	I,II

• Wall/structure-mounted mast for elevated terminals

group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection  
pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

\*suggested fixings:



p. 75



p. 75



p. 77



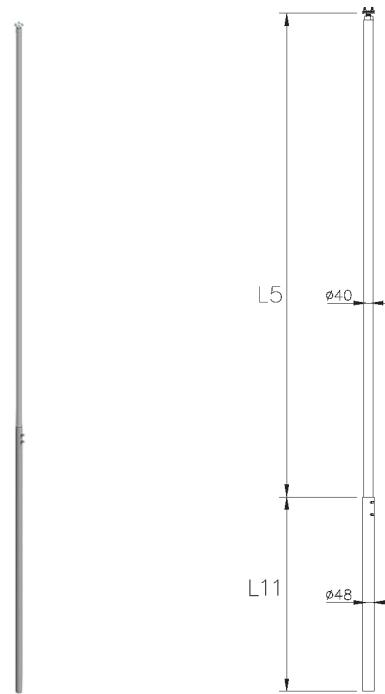
p. 76



p. 76



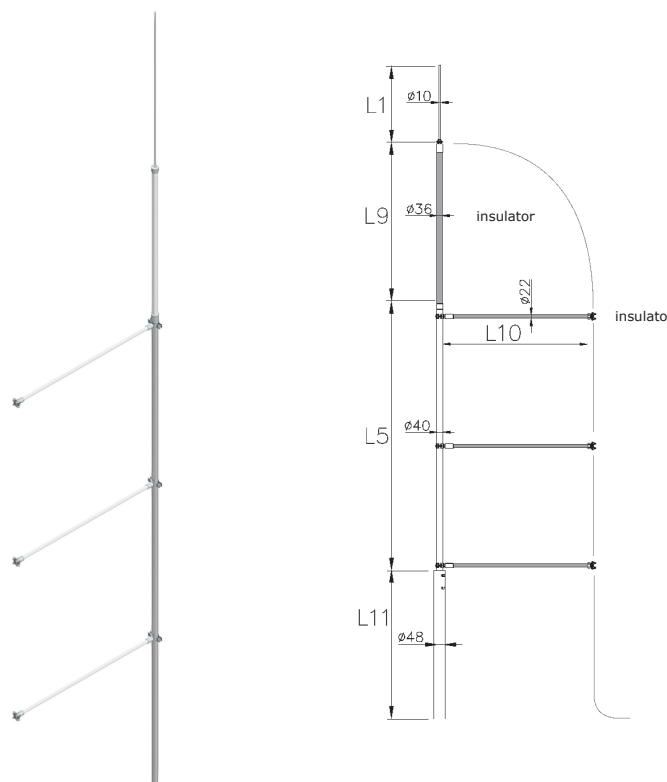
p. 77



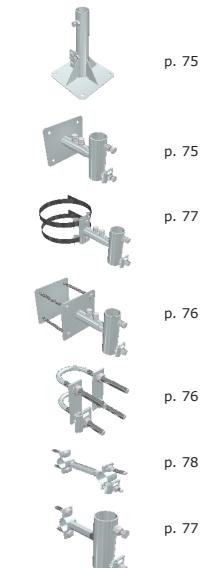
catalog No.	height [mm]	mast components		material	weight [kg]	wind zone
		L5 (Ø40) [mm]	L11 (Ø48) [mm]			
<b>AH41001</b>	500	500	-		1,1	
<b>AH41011</b>	1000	1000	-	Al (spire, support tube)	1,9	
<b>AH41021</b>	2000	2000	-	electro galvanized steel	3,4	
<b>AH41031</b>	3000	3000	-		4,9	I,II,III
<b>AH41041</b>	4000	4000	-	hot-dip galvanized steel (support pipe Ø48)	6,4	
<b>AH41051</b>	5000	4000	2000		13,5	
<b>AH41061</b>	6000	4000	3000		16,5	



◆ Wall/structure-mounted insulated mast for elevated air terminals



\*suggested fixings:



p. 75

p. 75

p. 77

p. 76

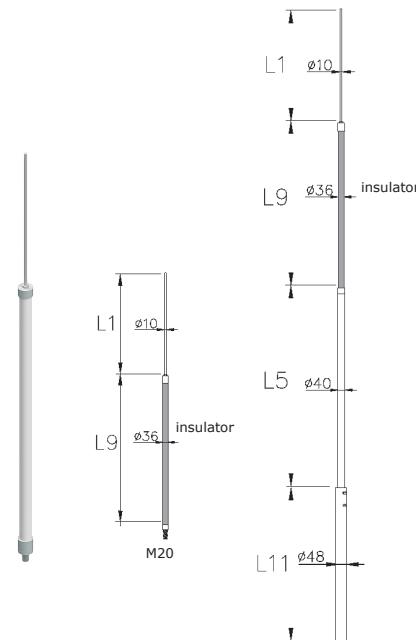
p. 76

p. 77

catalog No.	height [mm]	mast components					material	weight [kg]	wind zone
		L1 (ø10) [mm]	L5 (ø40) [mm]	L9 insulator (ø36) [mm]	L10 insulator (ø22) [mm]	L11 (ø48) [mm]			
AH41101	2000	500	500	1000	1000 (1 pc)	-	Al (spire, support tube) electro galvanized steel hot-dip galvanized steel (support pipe ø48) fiberglass (insulator)	3,95	I,II,III
AH41111	3000	1000	1000	1000	1000 (1 pc)	-		4,8	
AH41121	4000	1000	2000	1000	1000 (2 pcs)	-		7,3	
AH41131	5000	1000	3000	1000	1000 (3 pcs)	-		9,8	
AH41141	6000	1000	4000	1000	1000 (4 pcs)	-		12,3	
AH41151	7000	1000	4000	1000	1000 (5 pcs)	2000		20,4	
AH41161	8000	1000	4000	1000	1000 (6 pcs)	3000		23,5	

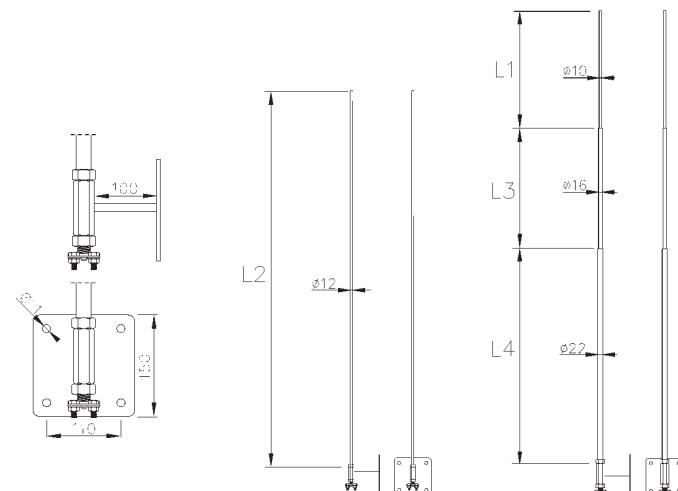
• Wall/structure-mounted insulated mast for high-voltage cable

\*suggested fixings:

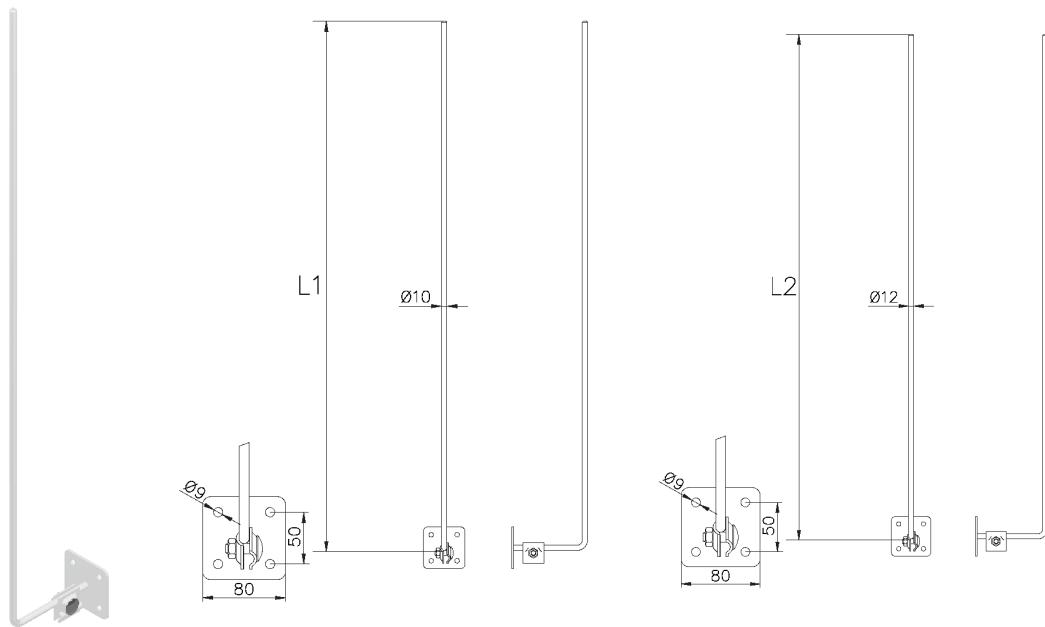


catalog No.	height [mm]	mast components				material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L5 (Ø40) [mm]	L9 insulator(Ø36) [mm]	L11 (Ø48) [mm]			
<b>AH40601</b>	1500	500	-	1000	-		2,1	
<b>AH40611</b>	2000	500	500	1000	-	Al (spire, support tube)	2,8	
<b>AH40621</b>	3000	1000	1000	1000	-		3,7	
<b>AH40631</b>	4000	1000	2000	1000	-	hot-dip galvanized steel (support pipe Ø48)	5,2	I,II,III
<b>AH40641</b>	5000	1000	3000	1000	-		6,7	
<b>AH40651</b>	6000	1000	4000	1000	-		8,2	
<b>AH40661</b>	7000	1000	4000	1000	2000	fiberglass (insulator)	15,4	
<b>AH40671</b>	8000	1000	4000	1000	3000		18,9	

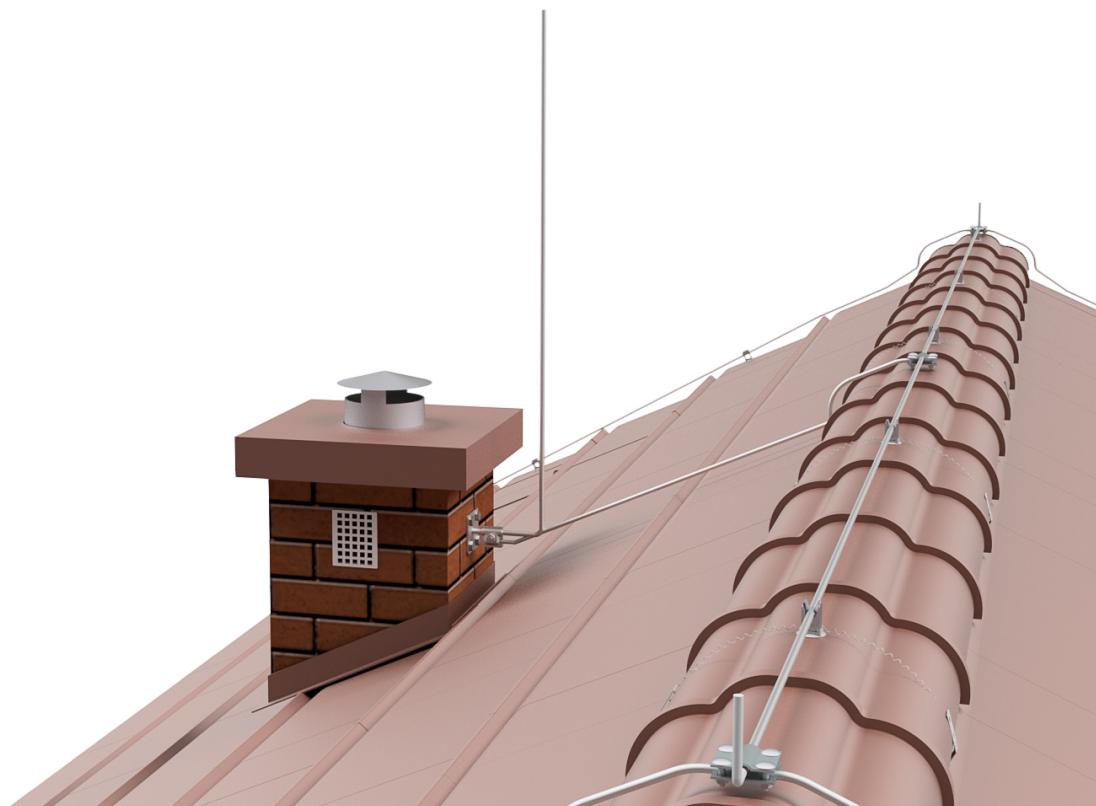
• Chimney spire

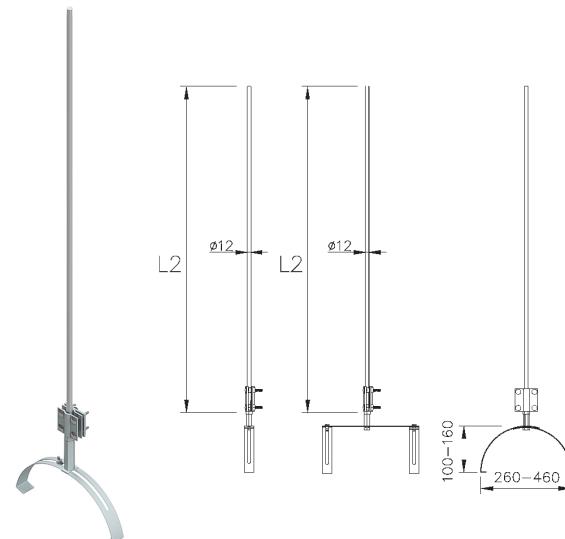
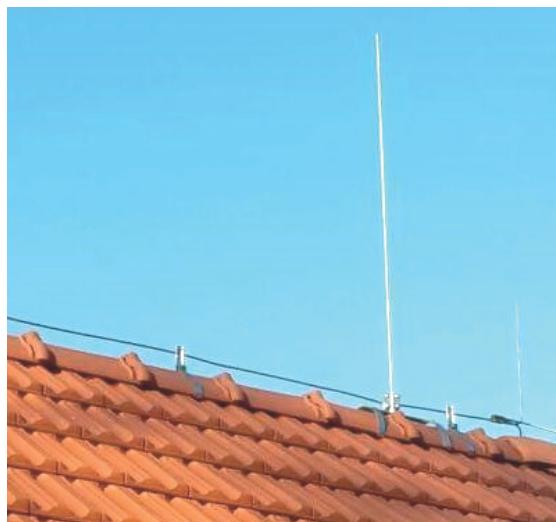


catalog No.	height [mm]	mast components					material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L2 (Ø12) [mm]	L3(Ø16) [mm]	L4 (Ø22) [mm]	sleeve			
<b>AH40301</b>	1000	-	1000	-	-			1.6	
<b>AH40311</b>	1500	-	1500	-	-	M12	Al (spire)	1.8	
<b>AH40321</b>	2000	-	2000	-	-			2.1	I,II,III
<b>AH40331</b>	2500	1000	-	1000	500		electro galvanized steel	2.4	
<b>AH40341</b>	3000	1000	-	1000	1000	M20		2.8	
<b>AH40351</b>	3500	1000	-	1000	1500			3.1	

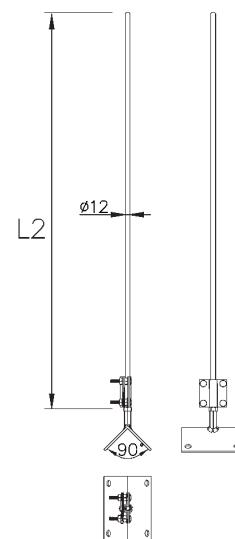
 Chimney spire


catalog No.	height [mm]	mast components		material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L2 (Ø12) [mm]			
<b>AH40304</b>	1000	1000	-		0,3	
<b>AH40314</b>	1500	-	1500	Al	0,6	I,II,III
<b>AH40324</b>	2000	-	2000		1,8	


**WARDT** ©  
LIGHTNING PROTECTION SYSTEMS
group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection pipesgroup VI  
earthing and  
earthing elementsgroup VII  
Lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

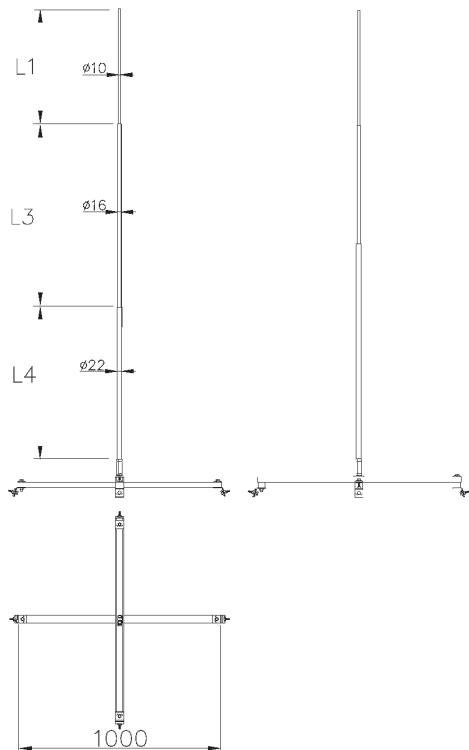
**Ridge tile spire**


catalog No.	height [mm]	mast components		number of ridge tiles	material	weight [kg]	wind zone
		L2 (Ø12) [mm]					
<b>AH41321</b>	1000	1000		1	Al (spire)	0,8	
<b>AH41331</b>	1000	1000		2	steel electro galva-	1,6	I,II,III
<b>AH41341</b>	1500	1500			nized	1,8	

**Top spire**


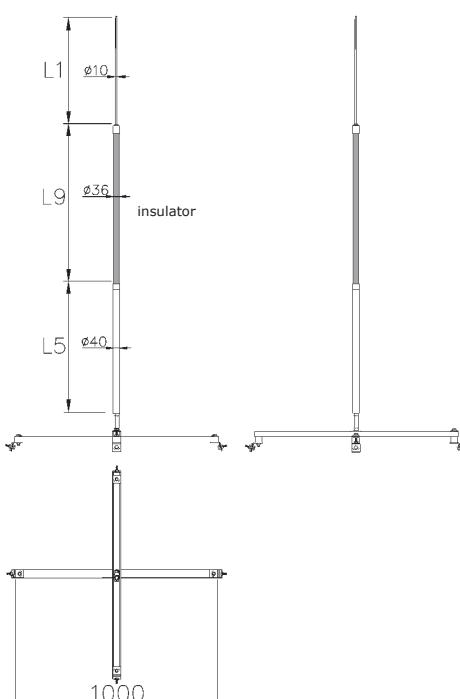
catalog No.	height [mm]	mast components		material	weight [kg]	wind zone
		L2 (Ø12) [mm]				
<b>AH41301</b>	1000	1000		Al (spire)	1,6	
<b>AH41311</b>	1500	1500		electro galvanized steel	1,8	I,II,III

 Mast fixed to the double standing seam



catalog No.	height [mm]	mast components				material	weight [kg]	wind zone
		L1 (ø10) [mm]	L2 (ø12) [mm]	L3 (ø16) [mm]	L4 (ø22) [mm]			
<b>AH41201</b>	1000	-	1000	-	-	Al (spire) electro galva- nized steel	3.7	
<b>AH41211</b>	1500	-	1500	-	-		3.9	
<b>AH41221</b>	2000	-	2000	-	-		4.4	I,II,III
<b>AH41231</b>	2500	1000	-	1000	500		4.7	

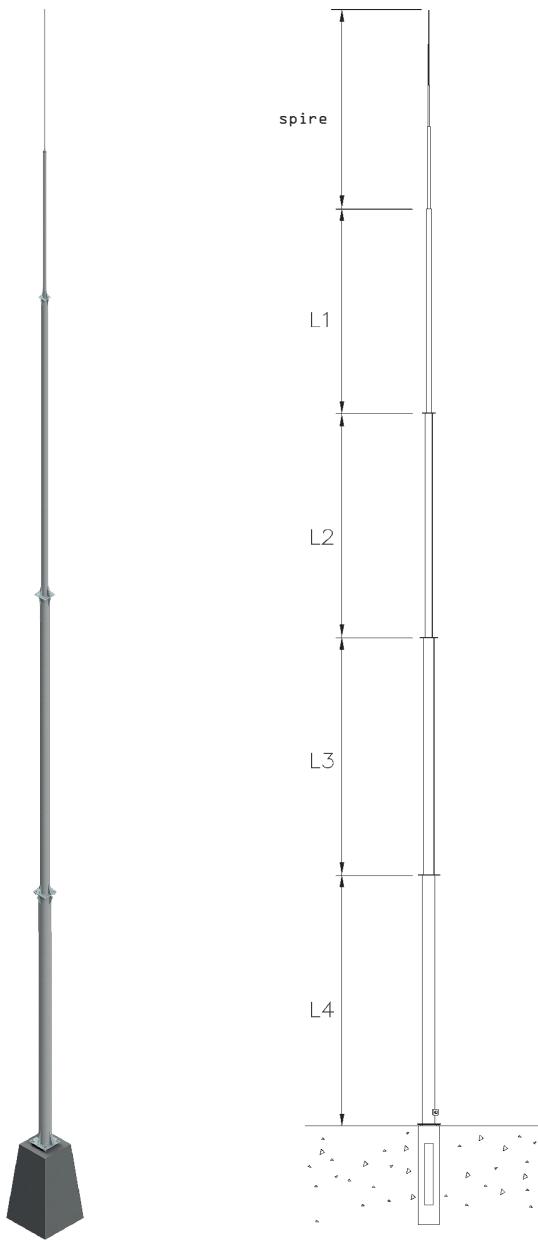
 Insulated high-voltage cable mast fixed to the double standing seam



catalog No.	height [mm]	mast components			material	weight [kg]	wind zone
		L1 (ø10) [mm]	L5 (ø40) [mm]	L9 insulator (ø36) [mm]			
<b>AH41241</b>	1500	500	-	1000	Al (spire, support tube) galvanized steel fiberglass (insulator)	5,2	
<b>AH41251</b>	2000	500	500	1000		5,95	I,II,III

## MASTS ON CONCRETE FOUNDATION

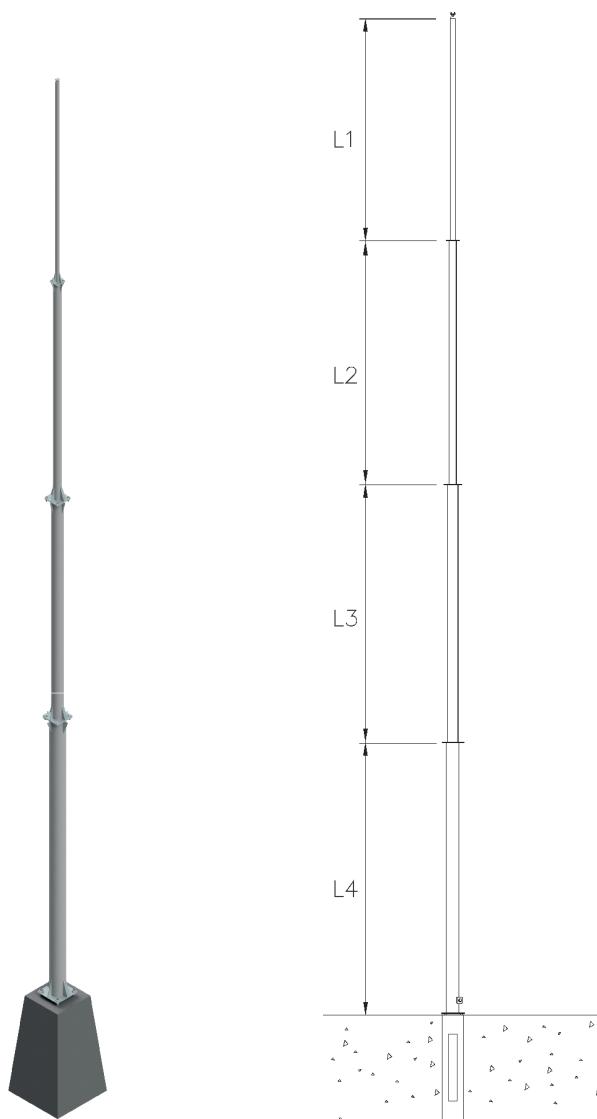
- Free-standing mast on concrete foundation



Mast on foundation H=13500mm AH35061

catalog No.	height [mm]	mast components					foundation	material	weight [kg]	wind zone
		pipe seg- ment L4 [mm]	pipe seg- ment L3 [mm]	pipe seg- ment L2 [mm]	pipe seg- ment L1 [mm]	spire [mm]				
<b>AH35011</b>	6000	-	-	-	3500	2500	250x250x1000 mm, 100 kg	hot-dip galva- nized steel (pipe segments, spire)	118	I,II,III
<b>AH35021</b>	7500	-	-	-	3500	4000			121	
<b>AH35031</b>	9000	-	-	-	3500	5500			126	
<b>AH35041</b>	10500	-	-	-	6000	4500			138	
<b>AH35051</b>	12000	-	-	-	6000	6000			164	
<b>AH35061</b>	13500	-	-	6000	1500	6000			291	
<b>AH35071</b>	15000	-	-	6000	3000	6000	350x350x1200 mm, 220 kg	electro galvanized steel	299	I,II,III
<b>AH35081</b>	16500	-	-	6000	6000	4500			366	
<b>AH35091</b>	18000	-	-	6000	6000	6000			487	
<b>AH35101</b>	19500	-	6000	6000	1500	6000	430x430x1600 mm, 335kg	concrete foundation	580	
<b>AH35111</b>	21000	-	6000	6000	3000	6000			1044	
<b>AH35121</b>	22500	-	6000	4500	6000	6000			1061	
<b>AH35131</b>	24000	-	6000	6000	6000	6000	470x470x2000mm, 780kg		1840	
<b>AH35171</b>	25000	6000	6000	6000	3000	4000			1945	
<b>AH35141</b>	27000	6000	6000	6000	3000	6000	600(900)x600(900) x1500mm, 1500kg		1948	

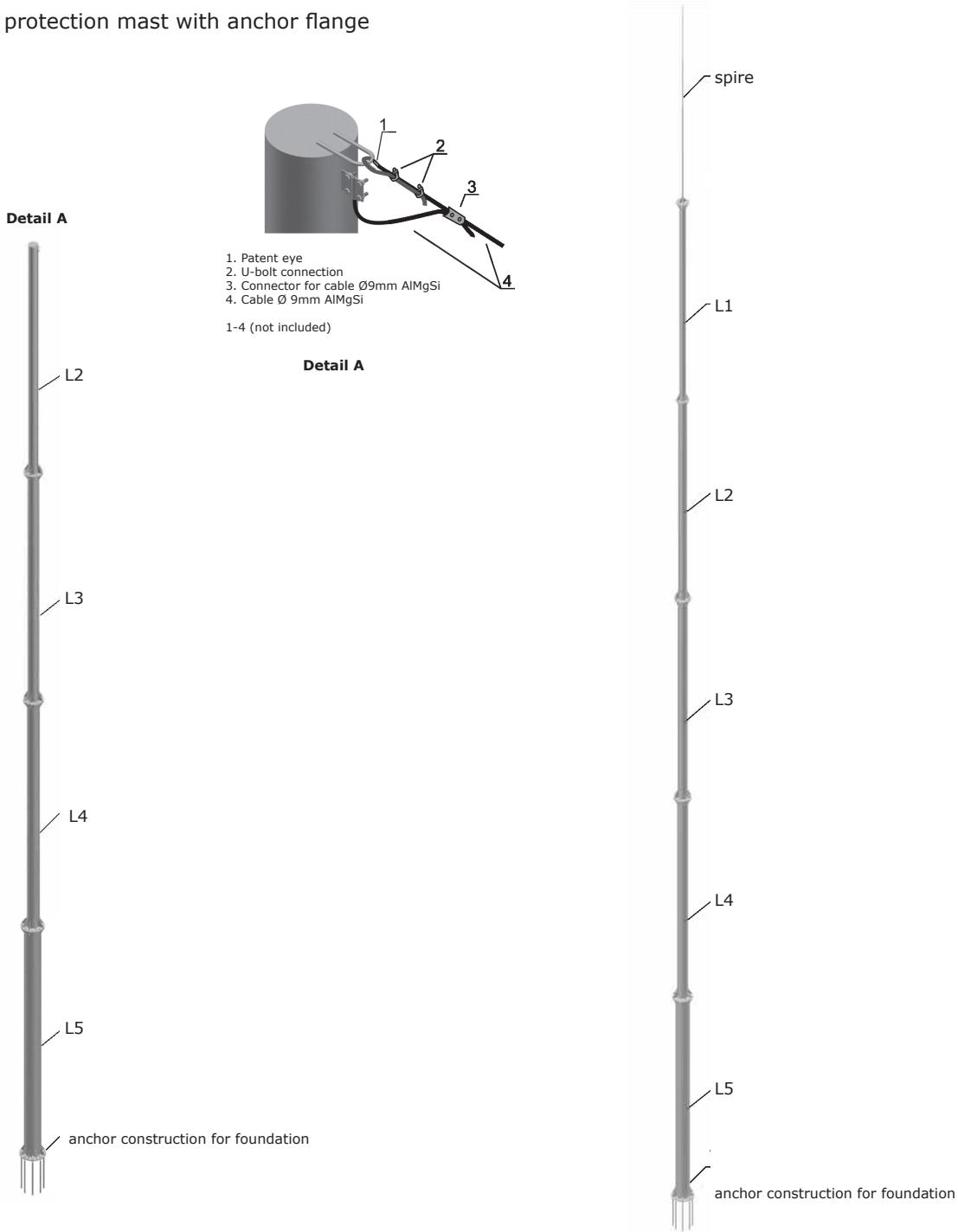
 Free-standing mast on concrete foundations for elevated terminals



catalog No.	height [mm]	mast components					foundation	material	weight [kg]	wind zone
		pipe seg- ment L4 [mm]	pipe seg- ment L3 [mm]	pipe seg- ment L2 [mm]	pipe seg- ment L1 [mm]	connec- tor				
AH35201	3500	-	-	-	3500	wire Ø8-10 mm tape up to 40 mm	250x250x1000 mm, 100 kg	hot-dip galvanized steel (pipe segments)	130	I,II,III
AH35211	6000	-	-	-	6000		350x350x1200 mm, 220 kg		166	
AH35221	7500	-	-	6000	1500		430x430x1600 mm, 335 kg		230	
AH35231	9000	-	-	6000	3000		470x470x2000mm, 780 kg	electro galvanized steel foundation concrete	267	
AH35241	12000	-	-	6000	6000		600(900)x600(900) x1500mm, 1500kg		521	
AH35251	13500	-	6000	6000	1500				528	
AH35261	15000	-	6000	6000	3000				1012	
AH35271	16500	-	6000	4500	6000				1030	
AH35281	18000	-	6000	6000	6000				1904	
AH35291	21000	6000	6000	6000	3000				1921	

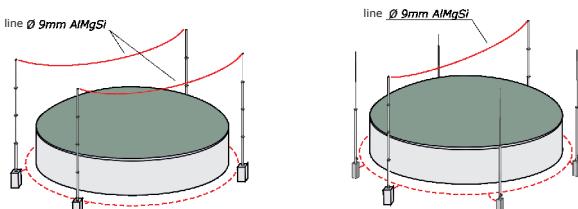
group I  
connectorsgroup II  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

## Lightning protection mast with anchor flange



catalog No.	height [mm]	mast components						material	weight [kg]	wind zone	Others
		pipe segment L5 [mm]	pipe segment L4 [mm]	pipe segment L3 [mm]	pipe segment L2 [mm]	pipe segment L1 [mm]	spire [mm]				
AH070001W	24000	6000	6000	6000	6000	-	-	hot-dip galvanized steel	1130	I,II,III	for elevated terminals with a maximum spacing of 46m
AH070002W	36000	6000	6000	6000	6000	6000	6000		1250		-

The structure has been calculated to mount a single elevated terminal on two masts.  
Example use of lightning protection mast AH070001W.

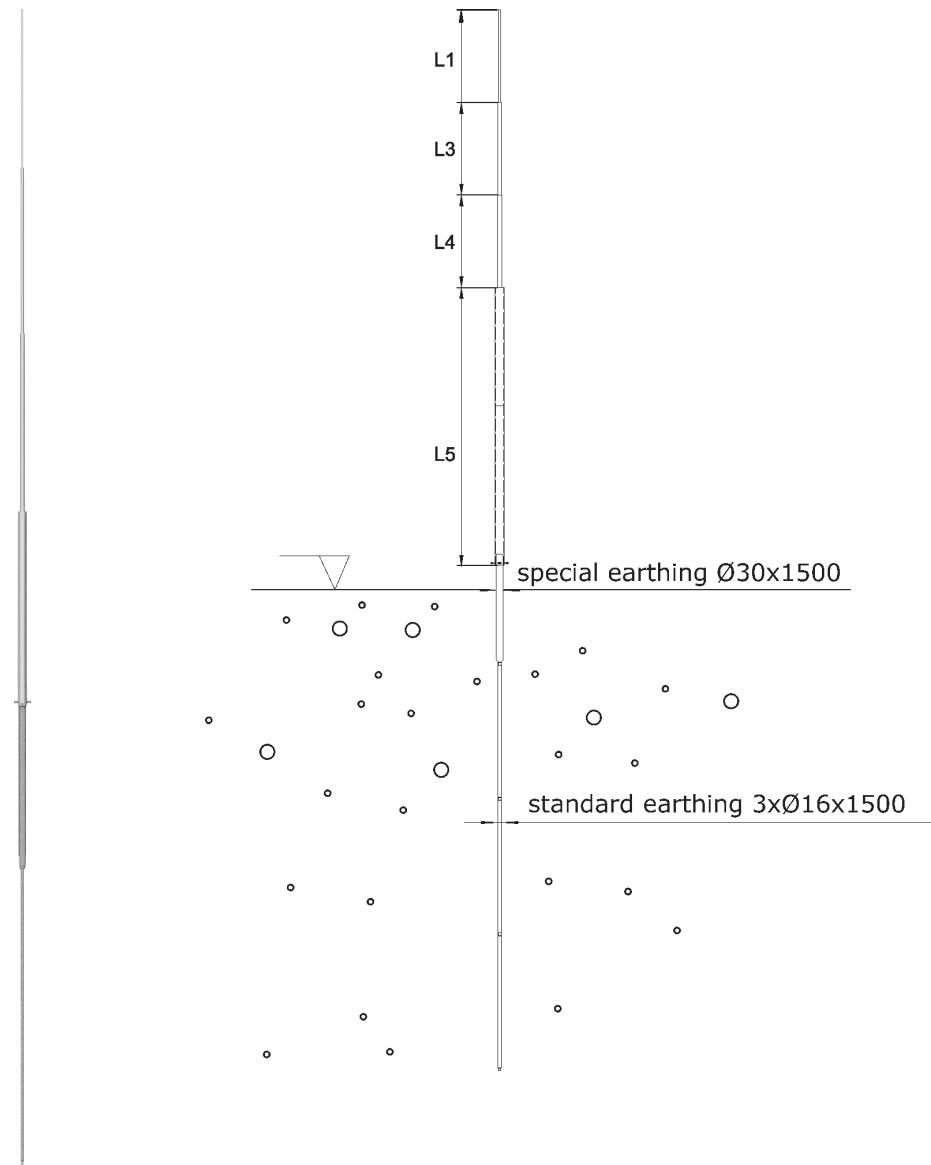


Facility protection using masts AH070001W in a system with free-standing masts.

For masts with anchor construction for foundation, we can provide the base design of the well foundation.  
For technical assistance or product selection, please contact the technical department:  
[www.en.ah.com.pl/technical department](http://www.en.ah.com.pl/technical department)

## MASTS DEDICATED TO THE PROTECTION OF PHOTOVOLTAIC PANELS

- Lightning protection mast put on individual (single) earthing rod



catalog No.	height [mm]	mast components				material	weight [kg]	wind zone
		L1 (Ø10) [mm]	L3 (Ø16) [mm]	L4 (Ø22) [mm]	L5 (Ø40) [mm]			
AH35361	5000	1000	500	500	3000	Al (spire, support tube)	3,8	
AH35331	6000	1000	1000	5000	3000	galvanized steel (earthing)	4,1	I,II,III

**WARDT** ©  
LIGHTNING PROTECTION SYSTEMS

group I  
connectors

group II  
lightning  
holders

group III  
lightning  
conductors

group IV  
straighteners

group V  
lightning protection  
pipes

group VI  
earthing and  
earthing elements

group VII  
lightning protection  
masts

group VIII  
high voltage  
cable

group IX  
insulated rods  
and brackets

group X  
other products

If the catalog doesn't include the mast you are looking for, please contact our technical department.  
We make masts to special order.



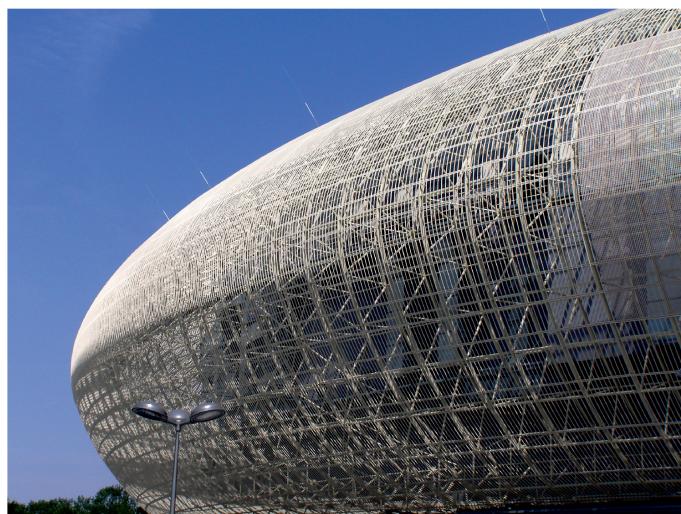
**Insulated mast for elevated air terminals with high voltage cables**

A system of elevated downconductors ensures taking over and of load distribution at the safe distance from the protected devices.

The insulator on top of a mast prevents the load from flowing down the mast to devices and structures. The lightning current is conducted to grounding using a high voltage conductor to protect both the devices located on the roof and the structures which otherwise could act as conductors through which the currents would be able to enter the building.



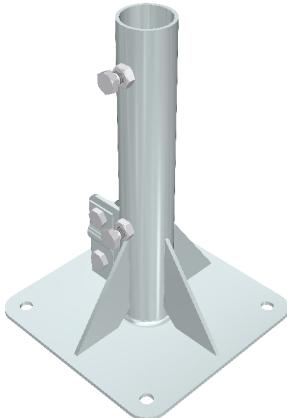
Bent masts to increase the protection angle of tank explosion zone..



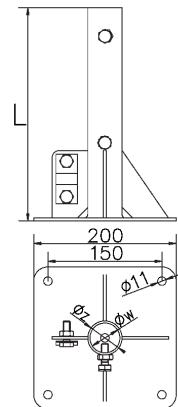
Insulated masts fixed to the structure of a sports hall to protect a LED screen.

## FIXINGS FOR LIGHTNING PROTECTION MASTS AND ACCESSORIES

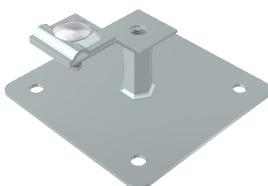
### Vertical mast installation – pipe



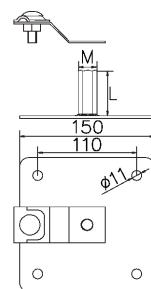
catalog No.	L [mm]	Øw [mm]	Øz [mm]	cable range	material	weight [kg]
AH41621	300	42	48	Ø 8-10mm	hot-dip galvanized steel	2.7
AH51111		52	60			3
AH51121	1000	42	48			5.3
AH51131		52	60			6.2



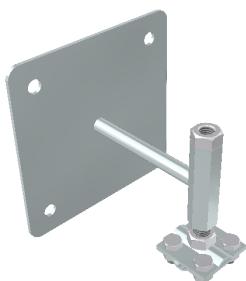
### Vertical mast installation – sleeve



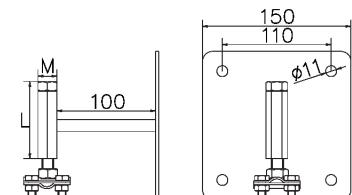
catalog No.	L [mm]	M	cable range	material	weight [kg]
AH41641	50	12	Ø 8-10mm	electro galvanized steel	0.8
AH41651		20			0.9



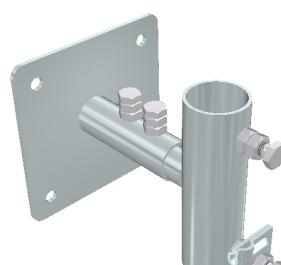
### Side mounting bracket



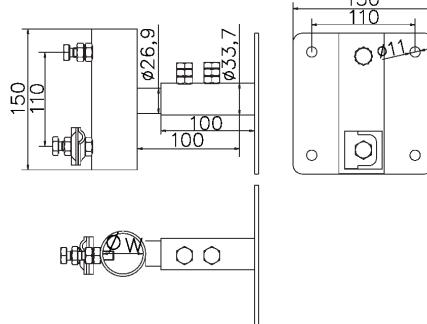
catalog No.	M	L [mm]	cable range	material
AH50191	M12	50	Ø 8-10mm	electro galvanized steel
AH41691		60		



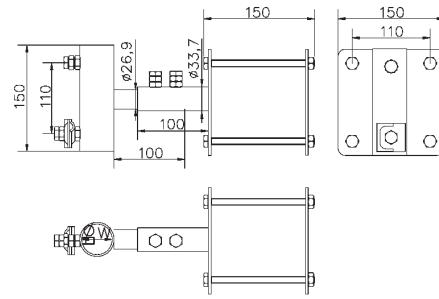
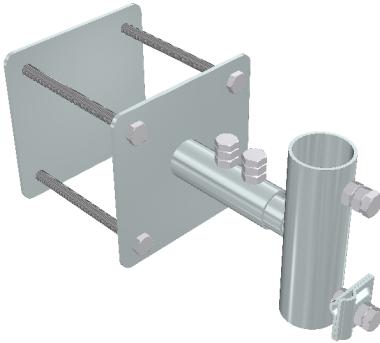
### Side mast installation – pipe



catalog No.	Øw [mm]	Øz [mm]	cable range	material	weight [kg]
AH41601	42	48	Ø 8-10mm	electro galvanized steel	1.5
AH51141	52	60			1.8

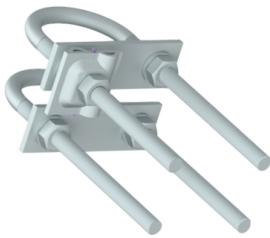


### Side mast installation with double plate – pipe

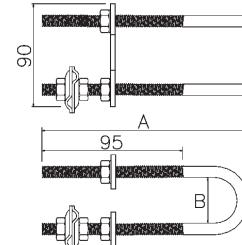


catalog No.	Øw [mm]	Øz [mm]	cable range	material	weight [kg]
<b>AH41711</b>	42	48	Ø 8-10mm	electro galvanized steel	2.9
<b>AH51151</b>	52	60			3.2

### U-bolt fixing



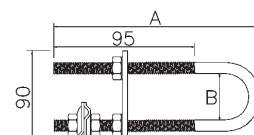
catalog No.	A [mm]	B [mm]	cable range	material	weight [kg]
<b>AH41631</b>	140	40	Ø 8-10mm	electro galvanized steel	0.6
<b>AH51161</b>	160	50			0.8



### Single u-bolt



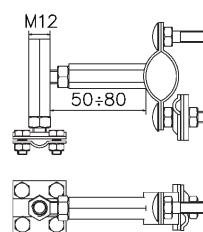
catalog No.	A [mm]	B [mm]	cable range	material	weight [kg]
<b>AH51171</b>	140	40	Ø 8-10mm	electro galvanized steel	0.3
<b>AH51181</b>	160	50			0.4



### Mast attachment to railing/pipe Ø30-45 mm – sleeve

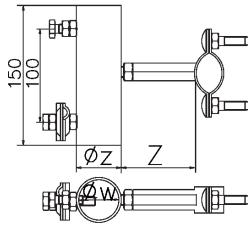


catalog No.	cable range	material	weight [kg]
<b>AH41661</b>	Ø 8-10mm B up to 20 mm	electro galvanized steel	0.7



❖ Mast attachment to railing/pipe Ø30-45 mm – pipe

catalog No.	Øw [mm]	Øz [mm]	Z [mm]	cable range	material	weight [kg]
AH41611	29	34				1,2
AH51191	42	48	60÷90	Ø 8-10mm	electro galvanized steel	1,4
AH51211	52	60				1,6



❖ Installing mast with a band – pipe

catalog No.	ØA [mm]	Øw [mm]	Øz [mm]	cable range	material	weight [kg]
AH41431	without tape	42	48	Ø8-10mm	electro galvanized steel	1,5
AH51251		52	60			1,8
AH070001OC		42	48			1
AH070002OC		52	60			1

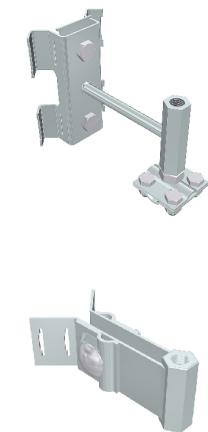
\*Handle without tape. Dedicated product: 23x0,3mm stainless steel tape (cat.no. AH23063)



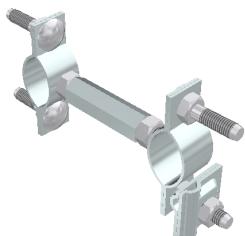
❖ Installing mast with a band – sleeve

catalog No.	ØA [mm]	M [mm]	L [mm]	cable range	material	weight [kg]
AH41531	without tape	M12	50	Ø8-10mm	electro galvanized steel	0,8
AH41571		M20	60			0,9
AH070003OC		M12	50			0,3
AH070004OC		M20	60			0,4

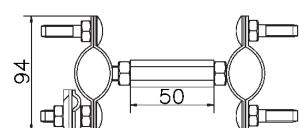
\*Handle without tape. Dedicated product: 23x0,3mm stainless steel tape (cat.no. AH23063)



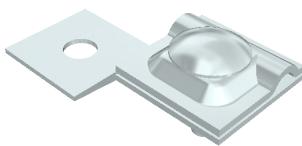
❖ Mast attachment to railing/pipe Ø30-45 mm



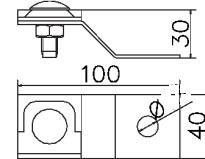
catalog No.	material	cable range	weight [kg]
AH41891	electro galvanized steel	Ø 8-10mm	0,6



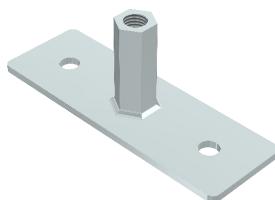
## Wire cross connector



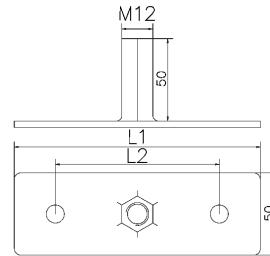
catalog No.	Ø [mm]	material	cable range	bolts
<b>AH51291</b>	13	stal ocynkowana elektrolitycznie	Ø 8-10mm	M10x30
<b>AH070005OC</b>	21			



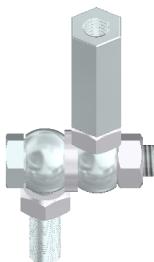
## Fixing plate M12



catalog No.	L1 [mm]	L2 [mm]	material	cable range
<b>AH51261</b>	80	50	electro galvanized steel	Ø 8-10mm
<b>AH51271</b>	150	100		
<b>AH51281</b>	240	190		

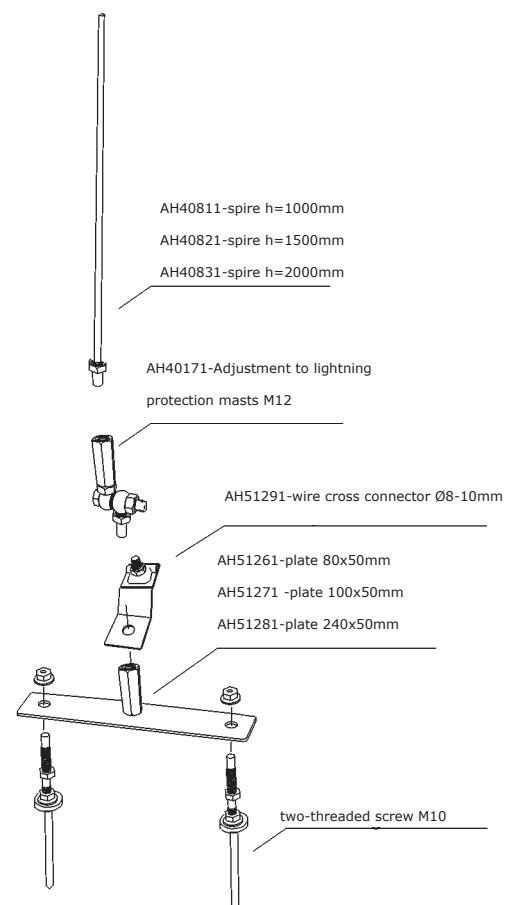
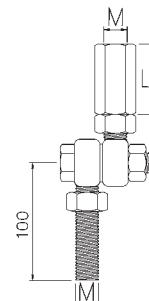


## Adjustment to lightning protection masts

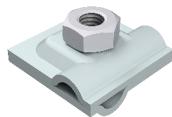


catalog No.	M [mm]	L [mm]	material	weight [kg]
<b>AH40171</b>	12	50	electro galvanized steel	0.3
<b>AH40181</b>	20	60	electro galvanized steel	1.0

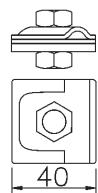
\*Following assembly, the set should be secured with acid-free technical vaseline.



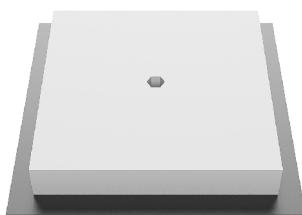
 Mast connector for elevated terminals



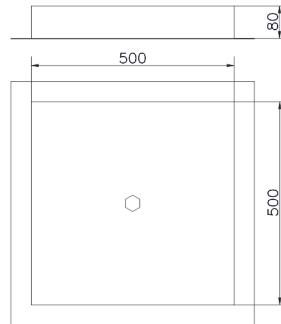
catalog No.	thread	cable range	material
AH39163	M10	Ø 8-10mm	INOX



 Concrete weight large



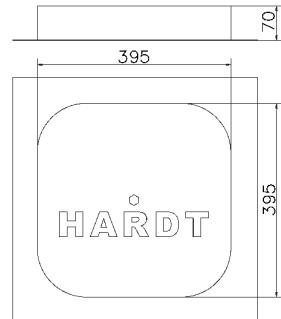
catalog No.	material	weight [kg]
AH100001B	concrete weight rubber rug	42



 Concrete weight



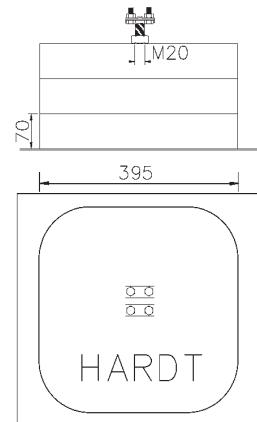
catalog No.	material	weight [kg]
AH40270	concrete weight rubber rug	24



 Weight for stay in elevated terminals



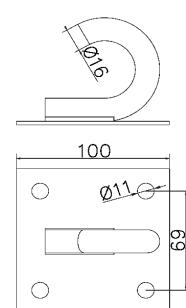
catalog No.	material	cable range	weight [kg]
AH40290	electro galvanized steel concrete weight rubber rug	Ø 8-10mm	72



 Hook handle



catalog No.	material	weight [kg]
AH31071	electro galvanized steel	0.5



connectors

group I  
lightning  
holdersgroup III  
lightning  
conductorsgroup IV  
straightenersgroup V  
lightning protection  
pipesgroup VI  
earthing and  
earthing elementsgroup VII  
lightning protection  
mastsgroup VIII  
high voltage  
cablegroup IX  
insulated rods  
and bracketsgroup X  
other products

# HIGH VOLTAGE CABLE AND ACCESSORIES

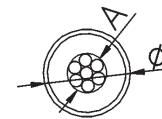
used to discharge lightning current in places where it is not possible to keep an insulation clearance

## HIGH VOLTAGE CABLE

### High-voltage cable (HVC)



catalog No.	Ø [mm]	insulation clearance	section A [mm²]	material
<b>AH39000</b>	20.5	75	50	cross-linked polyethylene Al
<b>AH39100</b>	18.5	75	35	cross-linked polyethylene Cu
<b>AH39200</b>	18.5	75	35	

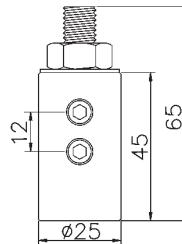


## HVC EQUIPMENT

### Mast head with heat shrink band



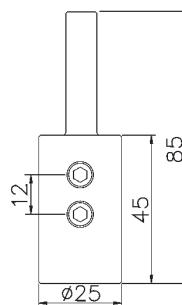
catalog No.	Allen screws	band	material
<b>AH39014</b>			polyethylene Al
<b>AH39012</b>	2xM8x6	28x100 mm	polyethylene Mo
<b>AH39013</b>			polyethylene INOX



### HVC head with heat shrink band



catalog No.	Allen screws	band	material
<b>AH39004</b>			polyethylene Al
<b>AH39002</b>	2xM8x6	28x100 mm	polyethylene Mo
<b>AH39003</b>			polyethylene INOX



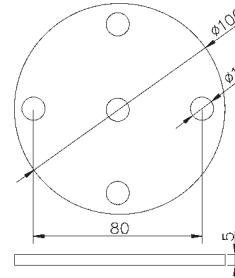
Types of high voltage cables and dedicated heads:

catalog No.	material	catalog No. head/material	catalog No. head/material	others
<b>AH39000</b>	aluminium 50 mm <sup>2</sup>	<b>AH39014/Al</b>	<b>AH39004/Al</b>	
<b>AH39100</b>	copper 35 mm <sup>2</sup>	<b>AH39012/Mo</b>	<b>AH39002/Mo</b>	150kA
<b>AH39200</b>	copper 35 mm <sup>2</sup>	<b>AH39013/INOX</b>	<b>AH39003/INOX</b>	200kA

❖ HVC mounting plate



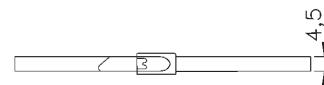
catalog No.	material
AH39024	Al



❖ HVC cable band



catalog No.	size [mm]	material
AH39033	360x4.5x0.3	INOX

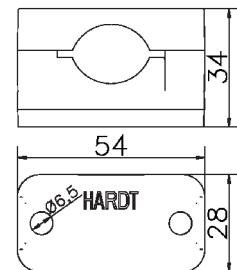


## HVC HANDLES

❖ Plastic bracket for HVC



catalog No.	material	cable range
AH39080	plastic	Ø 17-23mm

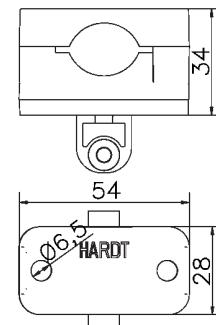


❖ Plastic bracket for HVC with connector



catalog No.	material	cable range
AH39090	plastic	Ø 17-23mm

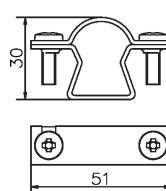
\* the bracket is dedicated to AH 12140P and AH 12140P+



❖ Screw-in bracket for mounting HCV



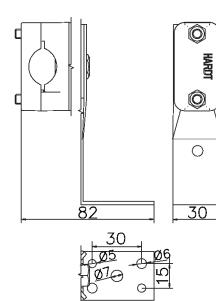
catalog No.	material	cable range	bolts
AH39071	electro galvanized steel	Ø 19-23mm	2xM5x16



❖ Straight angle bracket for HVC



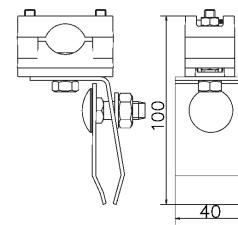
catalog No.	material	cable range	bolts
AH39091	electro galvanized steel	Ø 17-23mm	1xM8x16 2xM6x30



### Universal sheet metal bracket for HVC



catalog No.	material	cable range	bolts
<b>AH39051</b>	electro galvanized steel	Ø 17-23mm	1xM18x16 2xM6x30 1xM10x30

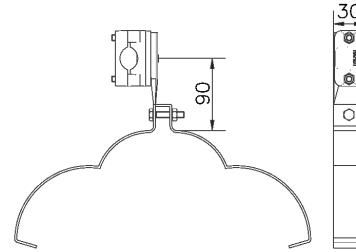


### Profiled ridge tile bracket for HVC

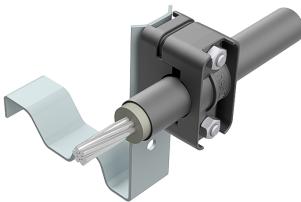


catalog No.	material	cable range	bolts
<b>AH39061</b>	electro galvanized steel	Ø 17-23mm	1xM8x16 3xM6x30

\*Bend handle (before galvanizing) based on a ridge tile provided by the customer.  
This solution greatly improves the installation's aesthetics and makes assembly easier.

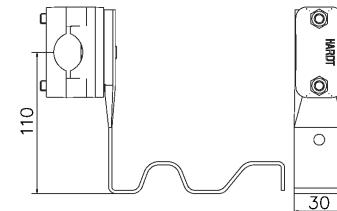


### Profiled tile bracket for HVC



catalog No.	material	cable range	bolts
<b>AH39031</b>	electro galvanized steel	Ø 17-23mm	1xM8x16 2xM6x30

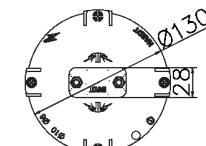
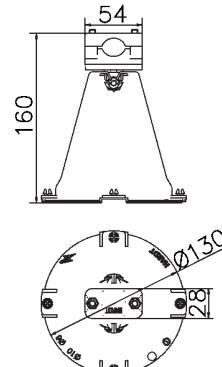
\*Bend handle (before galvanizing) based on a roof tile provided by the customer.  
This solution greatly improves the installation's aesthetics and makes assembly easier.



### Concrete holder in plastic for the HVC



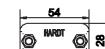
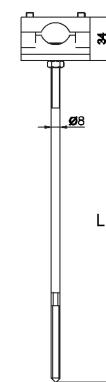
catalog No.	material	cable range	bolts
<b>AH39060P</b>	plastic electro galvanized steel	Ø 17-23mm	2xM6x30



### Screw-in bracket for mounting HCV



catalog No.	L [mm]	material	cable range	bolts
<b>AH39081</b>	305			
<b>AH39111</b>	265	plastic electro galvanized steel	Ø 17-23mm	2xM6x30
<b>AH39121</b>	105			

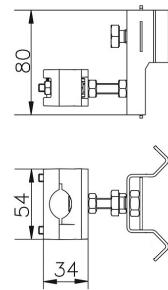


 **HVC pipe bracket**



catalog No.	Ø [mm]	material	cable range	bolts
<b>AH39441</b>	without tape	electro galvanized steel plastic	Ø17-23mm	2xM8x16 4xM6x30 1xM10x30

\*Handle without tape. Dedicated product: 23x0,3mm stainless steel tape (cat.no. AH23063)



group I  
connectors

group II  
lightning  
holders

group III  
lightning  
conductors

group IV  
straighteners

group V  
lightning protection pipes

group VI  
earthing and  
earthing elements

group VII  
lightning protection  
masts

group VIII  
high voltage  
cable

group IX  
insulated rods  
and brackets

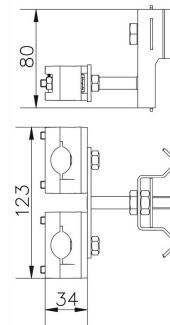
group X  
other products

 **Double HVC pipe bracket**



catalog No.	Ø [mm]	material	cable range	bolts
<b>AH39541</b>	without tape	electro galvanized steel plastic	Ø17-23mm	2xM8x16 4xM6x30 1xM10x30

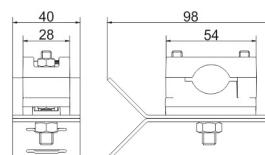
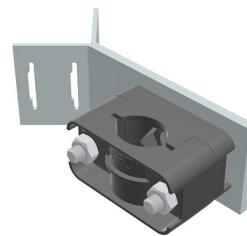
\*Handle without tape. Dedicated product: 23x0,3mm stainless steel tape (cat.no. AH23063)



 **HVC pipe bracket**

catalog No.	Ø [mm]	material	cable range	bolts
<b>AH080001TWOC</b>	without tape	electro galvanized steel plastic	Ø17-23mm	2xM6x30

\*Handle without tape. Dedicated product: 23x0,3mm stainless steel tape (cat.no. AH23063)

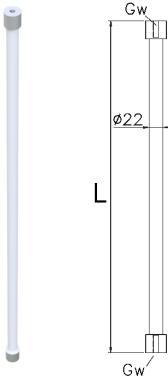


# INSULATED RODS AND BRACKETS

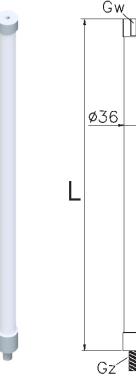
they are used to isolate and provide the required isolation distance from the protected device

## INSULATED BARS

### Insulated bars



catalog No.	L [mm]	Ø [mm]	G <sub>w</sub>	G <sub>z</sub>	material
AH41741	500	22	M12x2	-	
AH41801	1000				fiberglass
AH41751	1000	36	M10	M20	Al
AH41761	1500				

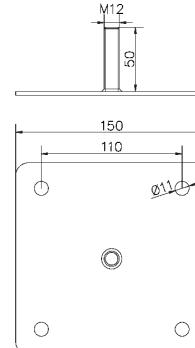


## BRACKETS AND CONNECTORS

### Vertical mounting bracket - thread



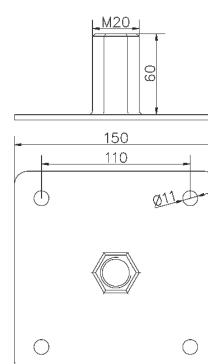
catalog No.	material
AH41781	electro galvanized steel



### Vertical mounting bracket - sleeve



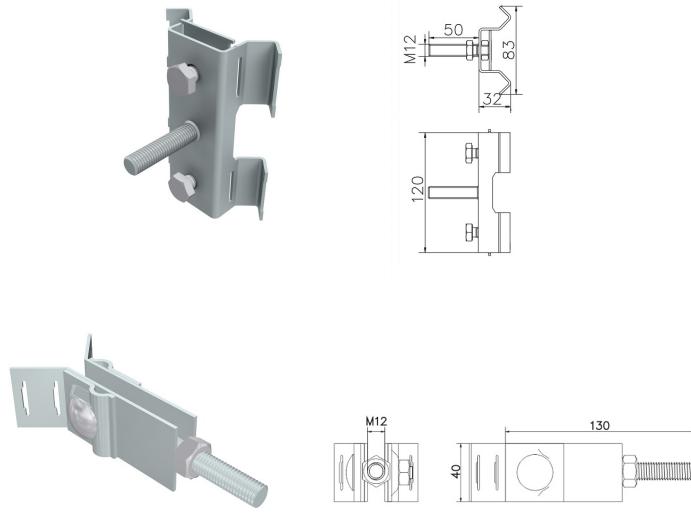
catalog No.	material
AH41771	electro galvanized steel



◆ Pipe mounting bracket – thread

catalog No.	∅ [mm]	bolts	material
AH50141	without tape	2xM10x30	electro galvanized steel
AH090001OC		M10x40	

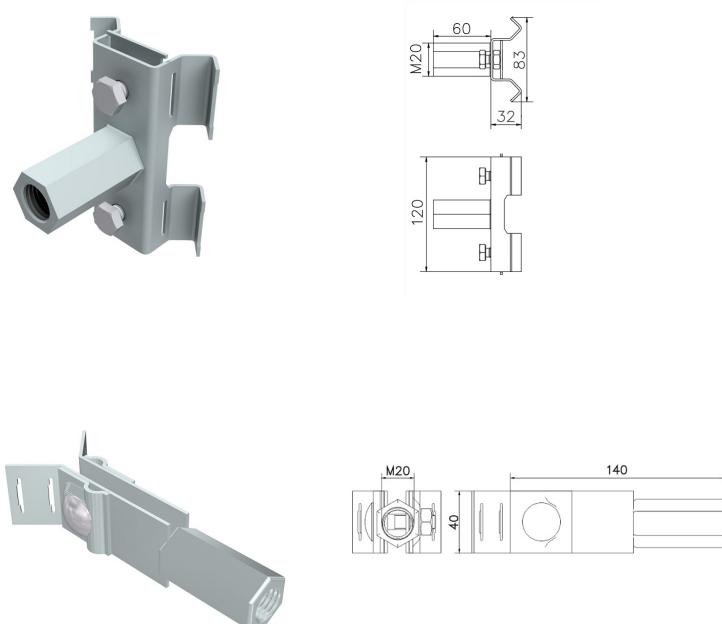
\*Handle without tape. Dedicated product: 23x0,3mm stainless steel tape (cat.no. AH23063)



◆ Pipe mounting bracket – sleeve

catalog No.	∅ [mm]	bolts	material
AH50181	without tape	2xM10x30	electro galvanized steel
AH090002OC		M10x40	

\*Handle without tape. Dedicated product: 23x0,3mm stainless steel tape (cat.no. AH23063)

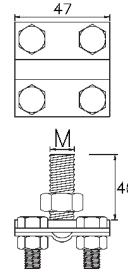


### 4-hole threaded connector



catalog No.	material	cable range	bolts
AH38271...	electro galvanized steel	Ø 8mm	4xM8x20

\* to choose thread diameter, add a symbol to the last digit of the catalog number:  
**M10** – thread M10  
**M12** – thread M12  
**M20** – thread M20

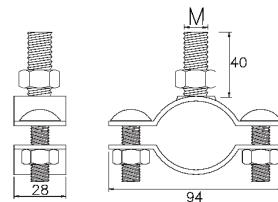


### 2-hole threaded connector



catalog No.	material	cable range	bolts
AH28401...	electro galvanized steel	Ø 30-45mm	2xM8x25

\* to choose thread diameter, add a symbol to the last digit of the catalog number:  
**M10** – thread M10  
**M12** – thread M12  
**M20** – thread M20

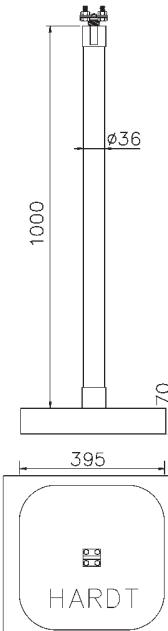


## INSULATED BRACKET

### Insulated bracket with weight



catalog No.	material	cable range	bolts
AH41791	electro galvanized steel fiberglass Al concrete weight rubber rug	Ø 8mm	4xM8x20



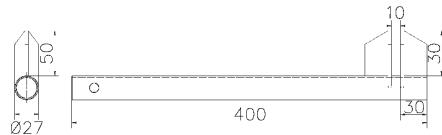
# OTHER PRODUCTS

## ❖ WIRE BENDING DEVICE

- ❖ Wire bending device

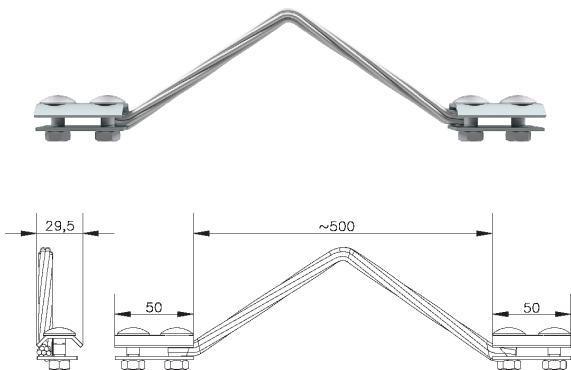


catalog No.	material
AH34011	electro galvanized steel



## ❖ COMPENSATION JOINTS

- ❖ Wire/wire compensation joint



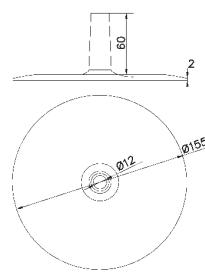
catalog No.	material	cable range	bolts
AH33031	electro galvanized steel Al cord		
AH33030G	hot-dip galvanized steel Al cord	Ø 8mm	4xM8x20
AH33032	Mo Al cord		
AH33033	INOX Al cord		

## ❖ LIGHTNING PROTECTION PENETRATIONS

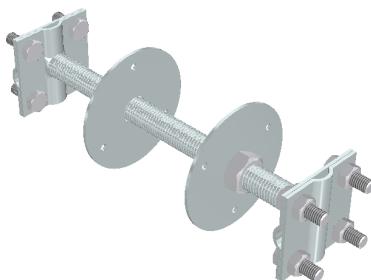
- ❖ Plastic lightning penetration



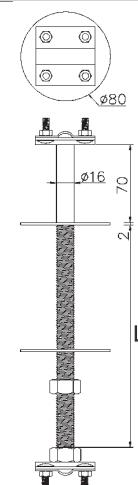
catalog No.	material
AH38500	plastic



- ❖ Steel lightning penetration



catalog No.	L [mm]	material	cable range	bolts
AH38511	200			
AH38521	300	electro galvanized steel	Ø 8mm tape up to 40 mm	4xM8x20
AH38531	400			

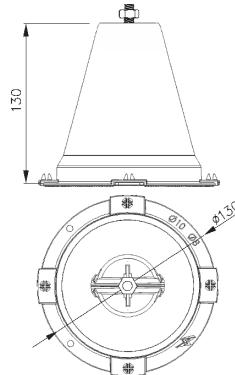


## SUPPORTS AND CABLE TRAY BRACKETS

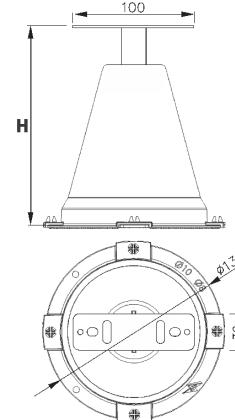
### Cable tray bracket



catalog No.	material	weight [kg]
<b>AH38541P</b>	electro galvanized steel polypropylene	0,95-1,05



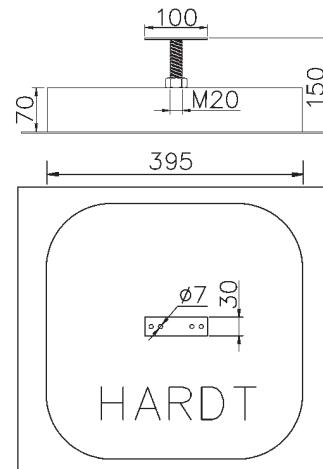
catalog No.	H [cm]	material	hole in the plate	weight [kg]
<b>AH38551P</b>	15	electro galvanized steel polypropylene		1-1,1
<b>AH38561P</b>	20	electro galvanized steel polypropylene	M6	1,05-1,15



### Cable tray support



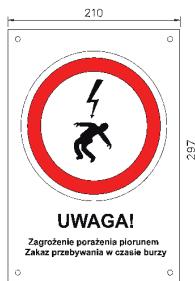
catalog No.	material	weight [kg]
<b>AH38571</b>	electro galvanized steel concrete weight rubber rug	24



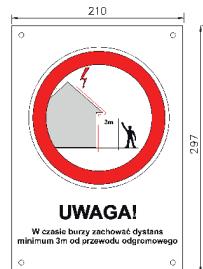
## ❖ ACCESSORIES

### ❖ Warning plates

catalog No.	material
AH12310	plastic



catalog No.	material
AH12320	plastic



### ❖ Mounting adhesive for ceramic brackets

catalog No.	volume [ml]
AH29090	310



### ❖ Acid-free technical vaseline

catalog No.	consumption	weight [kg]
AH12300	up to 100 brackets	0.9



### ❖ Anti-corrosion tape

catalog No.	width [mm]	length [m]	thickness [mm]	weight [kg]
AH14250	30	10	2.5	0.44
AH14260	50	10		1.14



### ❖ Membrane adhesive paste

catalog No.	consumption	weight [kg]
AH12330	up to 500 brackets	10



group I  
connectors

group II  
lightning  
holders

group III  
lightning  
conductors  
straighteners

group V  
lightning protection pipes

group VI  
earthing and  
earthing elements

group VII  
lightning protection  
masts

group VIII  
high voltage  
cable

group IX  
insulated rods  
and brackets

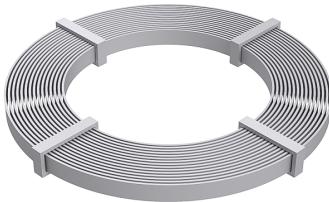
group X  
other products

**Adhesive for plastics, PVC, PV, PC**

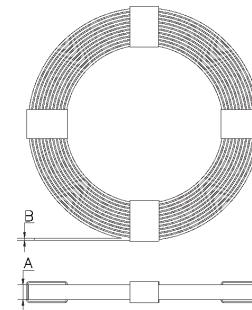
catalog No.	consumption	volume [l]
AH12340	up to 200 brackets	5


**Sleeve Ø12x60 mm**

catalog No.	material
AH29050	plastic


**23x0.3 mm stainless steel tape**


catalog No.	A x B [mm]	material
AH23063	23x0,3	INOX
AH030001IN	12,7x0,7	INOX



# NOTES







**AH Hardt sp.j**  
Cholerzyn 215  
32-060 Liszki  
[biuro@ah.com.pl](mailto:biuro@ah.com.pl)  
Poland



[en.ah.com.pl](http://en.ah.com.pl)