



Bird protection equipment is used to protect large birds against electric shocks. Langmatz offers a series of products to protect species of birds, distinguished by the following features:

- High effectiveness
- Safety
- Ease of assembly
- Durability



lines

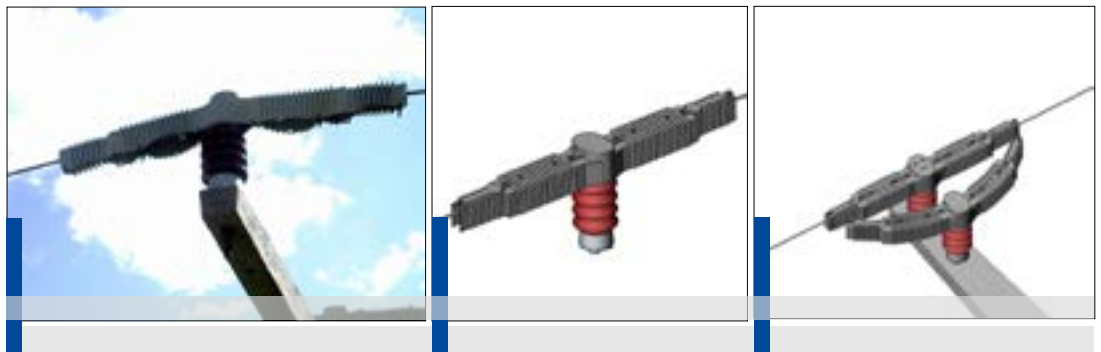
- 3 - 4 **Covering hoods EK 217 | for post insulators**
- 5 - 7 Covering hoods EK 617 | for shackle insulators - single / double -
- 8 - 9 Covering hoods EK 617 | for head fittings
- 10 - 11 Repelling crosses (St. Andrew's crosses) 3D EK 421 | for medium voltage overhead
- 12 - 13 Repelling tuft EK 521 | for medium voltage overhead lines

The VDE Application Guide VDE-AR-N 42010-11 went into effect in August 2011.  
Langmatz offers solutions for the application scenarios listed  
in the Application Guide...

## Covering hood EK 217 for post insulators | straight design

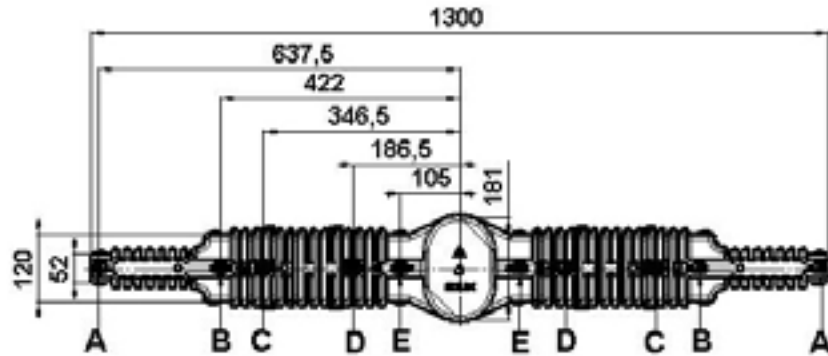
### Technical data

- The hood consists of a voltage-proof, UV- and weather-resistant, flexible thermoplastic (TPU) and permanently guarantees outstanding electric insulation properties.
- Attachment to the transmission line conductor is simple using 6 snap-on terminals made of plastic.
- The side walls are connected in the lower area through UV-stable cable ties.
- A durable, safe assembly is ensured.
- Due to the high flexibility of the material and the shaping using bellows, the hood is well suited among other things for a transmission line conductor bypass.
- Possible line angle: horizontally 130°, vertically 150°.
- The hood geometry allows electric arcs caused by lightning strikes to move on. This way, damage to the transmission line conductor is prevented.
- Each of the flexible hoods is packed individually and thus remains rigid during storage and transport. Upon request, they can also be delivered as a set of 3 in a custom cardboard box. Custom packaging possible.
- The bird protection hood made by Langmatz has proven itself in practical use for more than 20 years.
- The hood was tested by the Forschungsgemeinschaft für Hochspannungs- und Hochstromtechnik e.V. [German Research Council for High Voltage and Peak Current Engineering] (FGH, Mannheim).
- Tested in the wind tunnel up to 250 km/h.



## Covering hood EK 217 for post insulators

### Dimensions



Overall length	▪ 1300 mm
Height in mid area	▪ 130 mm
Width in mid area	▪ 180 mm
Weight	▪ 2.25 kg
Possible line angle, horizontally / vertically	▪ 130° / 150°
Attachment to transmission line conductor	▪ 6 snap-on terminals
Connection to the side walls	▪ UV-stable cable ties
Material	▪ Voltage-proof, UV- and weather-resistant, highly flexible thermoplastic
Delivery unit	▪ 1 piece (packed in cardboard box) ▪ 3 pieces (packed together in cardboard box)



## Covering hood EK 617 for shackle insulators | single or double design

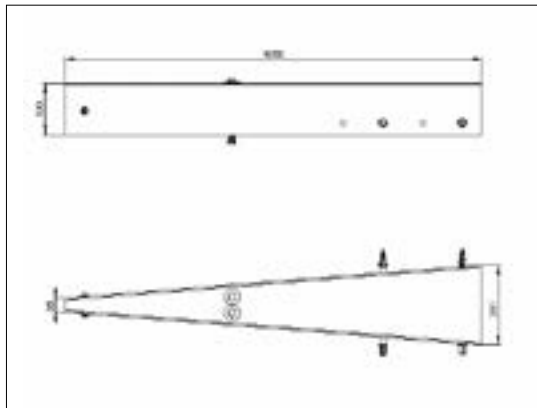
### Technical data

- The hood consists of a voltage-proof, UV- and weather-resistant, flexible thermoplastic (PE) with flame protection and permanently guarantees outstanding electric insulation properties.
- The hoods can be installed on the respective transmission line conductors or spacers using commercially available assembly tools.
- A durable, safe assembly is ensured
- The hood with an opening at the bottom allows electric arcs caused by lightning strikes to move on. This way, damage to the transmission line conductor is prevented
- The hoods are packed and thus remain rigid during storage and transport. Upon request, they can also be delivered as a set of 30 in a custom cardboard box
- The electrical insulation properties of the hoods were successfully tested at the Technical University in Dresden.
- Tested in the wind tunnel up to 250 km/h



## Covering hood EK 617 for shackle insulators | single design

### Abmessungen



Overall length	<ul style="list-style-type: none"> <li>▪ approx. 1050 mm</li> </ul>
Weight	<ul style="list-style-type: none"> <li>▪ approx. 1500 g</li> </ul>
Possible line angle, horizontally / vertically	<ul style="list-style-type: none"> <li>▪ 130° / 150°</li> </ul>
Attachment to transmission line conductor	<ul style="list-style-type: none"> <li>▪ <a href="#">Clip mounting, clamping block</a></li> </ul>
Material	<ul style="list-style-type: none"> <li>▪ Voltage-proof, UV- and weather-resistant, highly flexible <a href="#">thermoplastic (PE) with flame protection</a></li> </ul>
Delivery unit	<ul style="list-style-type: none"> <li>▪ 3 pieces (packed together in cardboard box)</li> <li>▪ 30 pieces (packed together in cardboard box)</li> </ul>

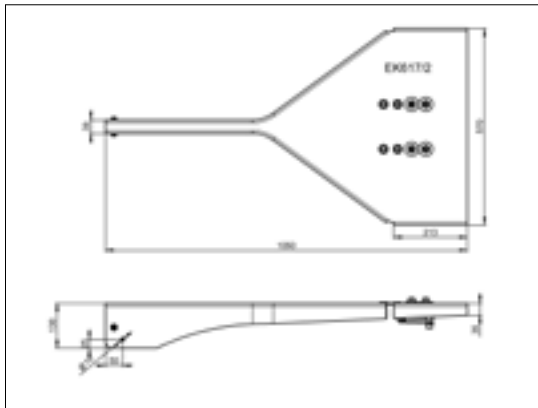


### Practical example

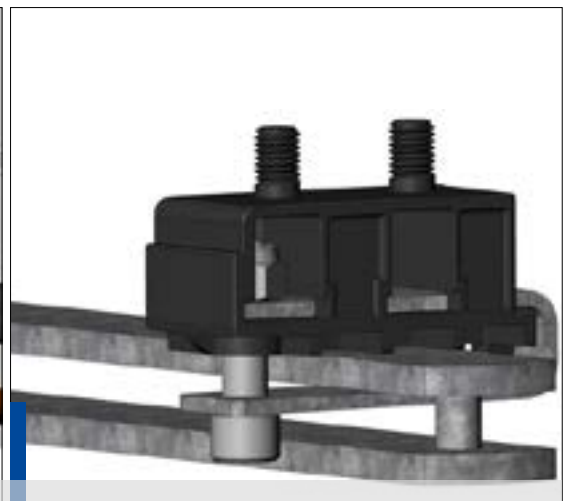
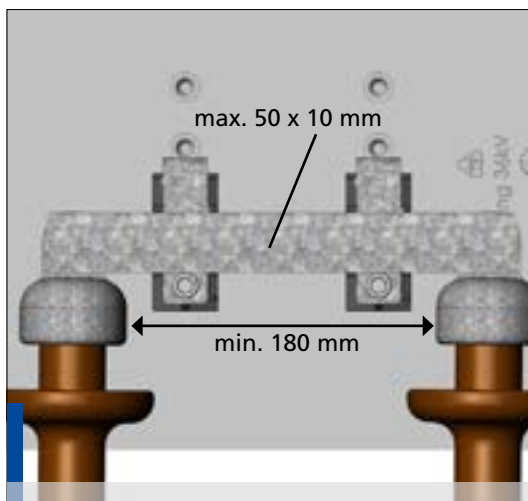
- Figure: Assembly of a covering hood EK 617 for shackle insulators single or double

## Covering hood EK 617 for shackle insulators | double design

### Abmessungen



Overall length	<ul style="list-style-type: none"> <li>▪ approx. 1050 mm</li> </ul>
Weight	<ul style="list-style-type: none"> <li>▪ approx. 1500 g</li> </ul>
Possible line angle, horizontally / vertically	<ul style="list-style-type: none"> <li>▪ 130° / 150°</li> </ul>
Attachment to transmission line conductor	<ul style="list-style-type: none"> <li>▪ <a href="#">Clip mounting, clamping block</a></li> </ul>
Material	<ul style="list-style-type: none"> <li>▪ Voltage-proof, UV- and weather-resistant, highly flexible <a href="#">thermoplastic (PE) with flame protection</a></li> </ul>
Delivery unit	<ul style="list-style-type: none"> <li>▪ 3 pieces (packed together in cardboard box)</li> <li>▪ 30 pieces (packed together in cardboard box)</li> </ul>



# EK 617 / 10 bird protection cover

## for head fittings

Like all Langmatz bird protection products, the Langmatz EK 617 / 10 bird protection cover for head fittings is used to protect large birds against electric shocks. Langmatz offers a series of products distinguished by the following characteristics:

- High effectiveness
- Safety
- Ease of assembly
- Durability

## Advantages | Bird protection cover

- Outstanding electrical insulation properties
- Durable, safe installation with 5 moulded snap-in hooks or with cable ties (not included with delivery)
- Highly flexible material moulded using bellows, for secure cable looping
- Cable alignment angle options of 0°/45°/90°/180°.
- The bird protection cover is certified by the Dresden University of Technology Knowledge and Technology Transfer Company (GWT-TUD GmbH)
- Tested in the wind tunnel at the Institute for Applied Thermo- and Fluid Dynamics (ATF), Mannheim, Germany.

## Technical data

Designation:	EK 617 / 10 bird protection cover for head fittings
Dimensions (L x W x H):	Ø 183 mm, height 260 mm
Weight:	approx. 600 g
Material:	TPU – voltage-proof, UV- and weather-resistant, flame-retardant flexible thermoplastic
Mounting:	5 moulded snap-in hooks Alternative: Size 7.8 mm x 540 mm cable ties
Possible cable angles:	0°/45°/90°/180°
Article number:	02 617 3000



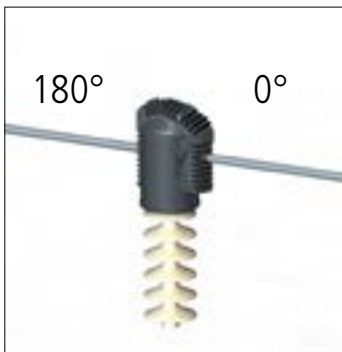
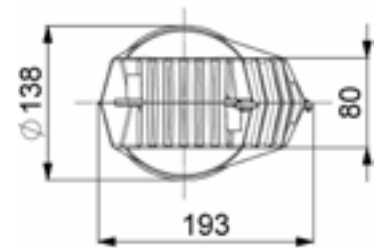
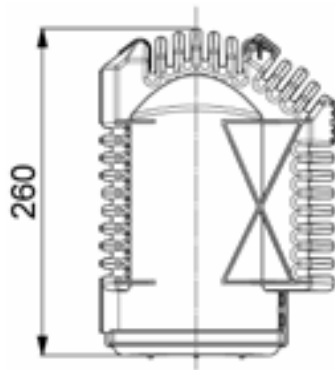
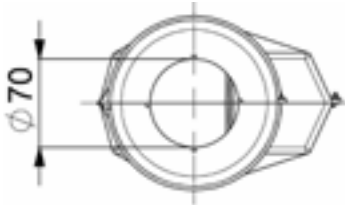
EK 617 / 10 bird protection cover, semi-open



EK 617 / 10 bird protection cover, closed



## Dimensions and application examples



## Adapter ring EK 617 / 11 (optional)



- Outstanding electrical insulation properties
- Durable, safe installation with 5 moulded snap-in hooks or with cable ties (not included with delivery)
- Highly flexible material moulded using bellows, for secure cable looping
- Cable alignment angle options of 0°/45°/90°/180°
- With extra adapter ring for additional mounting on the first shed of the insulator

## Items included in delivery

- 1 set = 3 x (boxed) EK 617 / 10, 6 x EK 617 / 11 + 3 cable ties
- Article number: 02 617 3002

## Repelling crosses (St. Andrew's crosses) 3D EK 421 | for medium voltage overhead lines

### Area of application

- The repelling crosses prevent birds from gathering in danger areas.

### Technical data

- The repelling cross consists of crossed tubes and a metal foot for mounting to concrete pole or lattice pole cross arms
- The crossed tubes consist of thick-walled plastic
- The distance from the foot up to the midpoint of the crossed conduits amounts to 1000 mm. Other heights are available upon request

### Mounting foot for pole cross arms

- Suitable for the following cross arms
  - Dimensions:
  - Width 120 - 220 mm
  - Height up to a max. of 170 mm
  - Mounting plates with slotted holes made of hot-dip galvanised steel
  - Fastening elements made of stainless steel

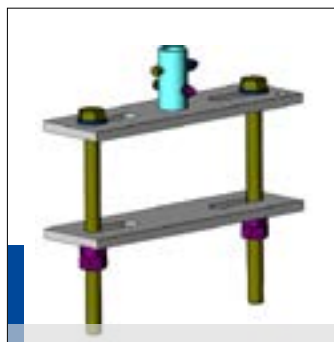
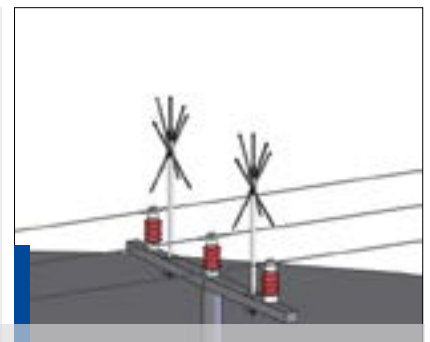


Figure:  
Mounting foot for  
pole cross arm



## Repelling crosses (St. Andrew's crosses) 3D EK 421 | for medium voltage overhead lines

### Dimensions



### Practical example

- Figure: Repelling crosses EK 421 on a pole with voltage deactivation switch gear

## Repelling tuft EK 521 | for assembly with tensioning strap

### Area of application

- Prevents birds from entering into danger areas.

### Technical data

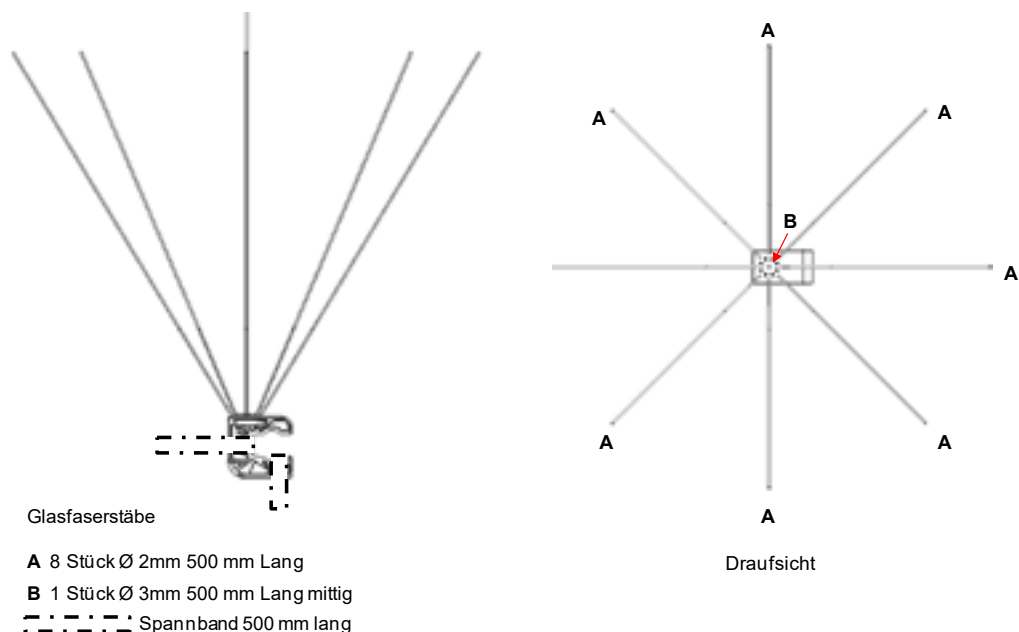
- The repelling tuft consists of:
  - One plastic clamping element
  - One plastic torque screw (optional)
  - Eight  $\varnothing$  2 mm glass fibre rods and one  $\varnothing$  3 mm centre rod

### Assembly with straps

- If assembly with straps is preferred, the medium voltage line must be de-energized.
- Straps are not included in the delivery contents

### Assembly under voltage

- When working under voltage
  - During assembly under voltage, the torque screw is attached to the commercially available assembly rod (which must be approved for working under voltage and feature SW 19) and then bolted to its location. A torque spanner is not required, as the fastening screw features a torque head.



## Repelling tuft EK 521 | fully insulated for working under voltage



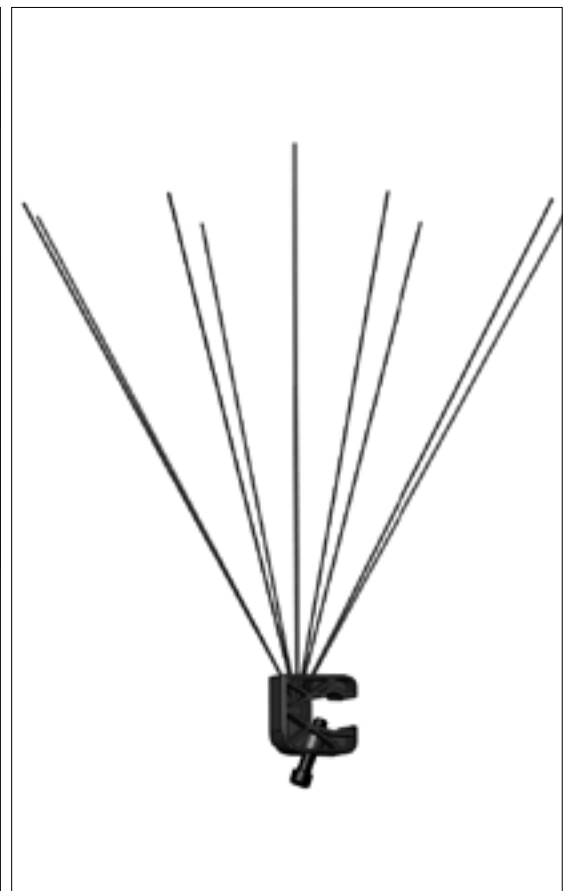
Repelling tuft in the test field



Wind resistance test at Mannheim University of Applied Sciences, with wind speeds of up to 250 km/h



Electrical type approval test of an assembly rod for repelling tuft for a nominal voltage of up to 35 KV at Technical University in Dresden





We are looking forward to your visit, phone call or e-mail.

## Kontakt | Contacts

Langmatz GmbH  
Am Gschwend 10  
D-82467 Garmisch-Partenkirchen | Germany

## Telefon | Phone

Telephone  
Fax +49. 88 21 920-159

## Internet

+49. 88 21 920-0 E-mail [info@langmatz.de](mailto:info@langmatz.de)  
Internet [www.langmatz.de](http://www.langmatz.de)