



# INSTALLATION INSTRUCTIONS FOR PROTEKTOR ROUND-SHAPED GUTTERS

PROTEKTOR has been manufacturing gutters made of plastic since 1964. They are plasticiser-free and cannot become brittle. The high-quality raw material ensures the best possible impact strength, UV resistance and dimensional stability.

According to DIN EN 12056-3 and DIN 1986-100, a calculation of the rainwater run-off should be made for the respective property in order to determine the exact gutter size. The following table refers to the relevant standards and can be used to select the correct PROTEKTOR gutter.

Proper installation always begins with the selection of the correct gutter. The specified m<sup>2</sup> value of the roof surface area provides a guide for finding the correct gutter size.

| PROTEKTOR GUTTERS HALF-ROUND |                    |                   |
|------------------------------|--------------------|-------------------|
| Roof area to be drained      | Rainwater downpipe | Gutter half round |
| up to 50 m <sup>2</sup>      | DN 75              | 8-pcs. (NW 100)   |
| up to 80 m <sup>2</sup>      | DN 85              | 7-pcs. (NW 125)   |
| up to 150 m <sup>2</sup>     | DN 100             | 6-pcs. (NW 150)   |
| up to 220 m <sup>2</sup>     | DN 125             | 5-piece (NW 180)  |

The installation of PROTEKTOR gutters is carried out in simple steps. The specifications of the installation instructions must be observed to ensure permanent functionality.



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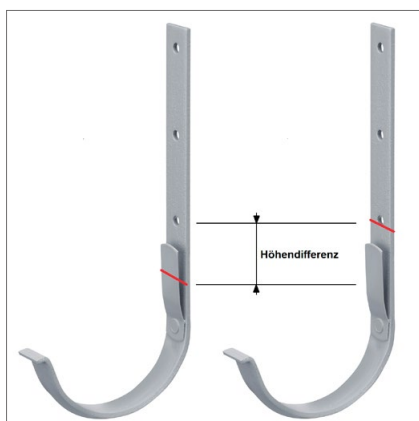
## Marking the highest and deepest gutter bracket

Measure the distance between the highest and lowest gutter bracket at the eaves and determine the height difference at a gradient of 1-3 mm/m.

The highest gutter bracket is marked at the upper edge of the fold.

The lowest gutter bracket is marked offset by the height difference.

In case of renovation, the old gutter irons can also be reused. PROTEKTOR gutters fit into almost all common metal gutter brackets.

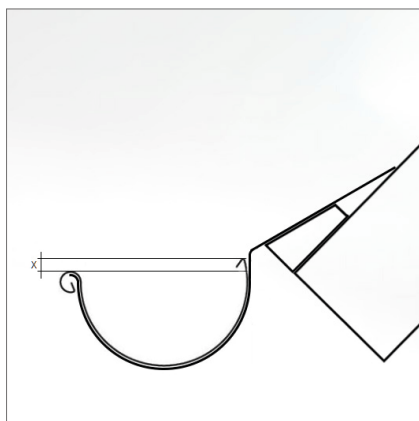


## Bending the highest and lowest gutter bracket

The highest and lowest gutter bracket is bevelled at the marking with the gutter iron bending pliers.

The slope of the bend must be adjusted so that the bead of the half-round gutter is about 10 mm lower than the fold.

The fastening leg must rest against the eaves board and the rafter to ensure secure fastening. Galvanised comb nails must be used for fastening the gutter irons.



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### Laying the straightening cord and marking the remaining gutter brackets

The straightening cord is to be stretched between the highest and the lowest gutter bracket.

Fasten the straightedge at the lowest point of the gutter brackets and at the outermost point of the bead side. The gutter brackets in between are held in the sectional framework, marked on the adjacent edge of the eaves board and bended and fixed in alignment as described in point 2.



### Use of headboard gutter brackets

As an alternative to gutter brackets, headboard gutter brackets can also be used.

Headboard gutter brackets are screwed to the headboard and can be adjusted to the inclination of the headboard via an adjustment bracket if required.



### Shortening the gutter

Always use the maximum technically applicable gutter length. The gutter length must be adjusted so that the gutter connector sits centrally between the gutter brackets and a distance of at least 10 cm to the next gutter bracket is maintained. The cut edge of the gutter must be cleaned of sawing residues.



### Clip-in the gutter end pieces

The gutter end piece is first hooked onto the fold and then clipped into the bead via the bulge on the end piece. A distance of at least 10 cm must be maintained between the gutter bracket and the gutter end piece.

The gutter end piece must not be clipped on!



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### Position of the drain socket

The drain socket must be positioned in that way, that there is a gutter bracket on the left and right.

A distance of at least 10 cm must be maintained between the gutter bracket and the drain socket.

The drain socket must not be used as a connecting piece.



### Marking the hole

The drain hole should be placed in the centre of the gutter.

The diameter of the hole should be at least equal to the inner downpipe diameter.



### Cutting out the drain hole

The hole can be made using a pair of plate shears or a hole saw.



### Hanging the gutter

The gutter must first be hooked into the gutter bracket on the bead side and can then be screwed into the gutter bracket. When using headboard gutter brackets, the gutter is first hooked into the rebate and then clipped into the bead.



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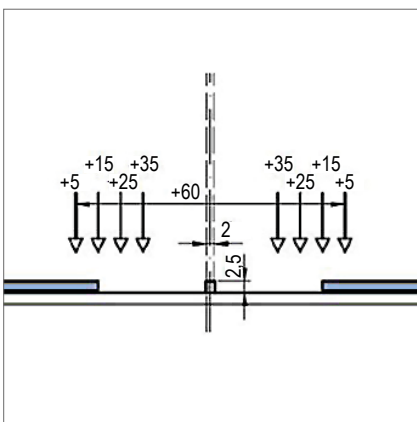
### Fixing the gutter in the gutter brackets

The springs that hold the gutter in the gutter bracket are to be pressed on only lightly. The gutter must be able to expand and contract with temperature fluctuations.



### Clip-in the gutter connector

The gutter connector is first hooked onto the fold and then clipped onto the bead. The distance between the two gutters in the gutter connector is determined by the processing temperature and the specifications on the scale of the gutter connector.



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### Forming a fixation point

A fixing point is to be formed in the middle of each gutter section. To create a fixing point, cut the fold to the right and left of the gutter bracket spring and press the spring on with increased pressure.



### Installation of the downpipe

The downpipe is fixed plumb every 2 m, but at least on each downpipe section, with a clamp. Clamps must be placed at least 20 cm from the edge of the building. Bends and branches may only be plugged in.

#### PROTEKTORWERK

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