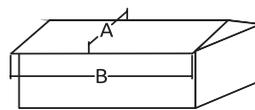
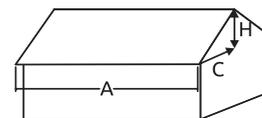


1. Before purchasing a gutter system, choose the appropriate size of gutters and drain pipes and their quantity depending on the size of the roof surface (E_p), using the formula provided:



from 10° $E_p = A \times B$



from 10° $E_p = (C + H/2) \times A$

2. After determining the size of the gutter system, due to the surface of the (single) roof surface, in order to ensure proper and efficient rainwater drainage, we select the number of drain pipes. When selecting the number of drain pipes, it is necessary to take into account their arrangement (drawing).

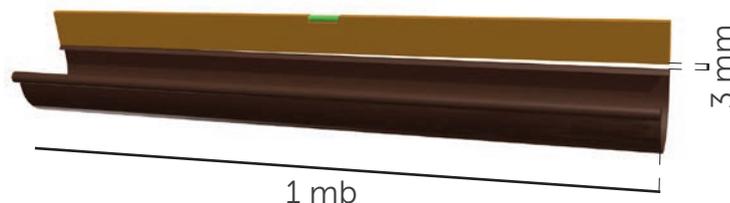


125/90 to 100 m²
125/110 to 140 m²
150/110 to 220 m²



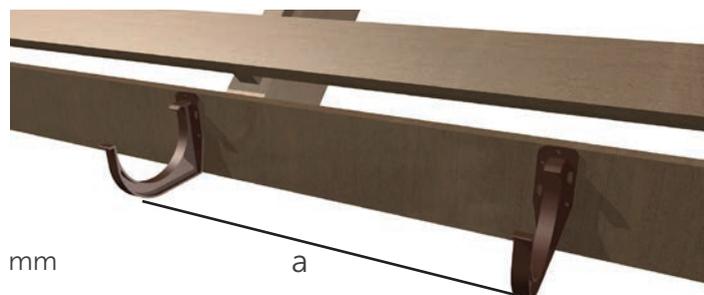
125/90 to 200 m²
125/110 to 300 m²
150/110 to 350 m²

3. Once we have properly selected the gutter system, we proceed to the assembly of the brackets. When determining (scribing) the mounting positions of the gutter brackets (metal or PVC), it is important to keep the appropriate slopes in mind. The slope shall be a minimum of 0,3 % (3 mm per 1 m). Always slope in the direction of the drop outlet. Correct slope of the gutter under the influence of water will ensure self-cleaning of the installation.



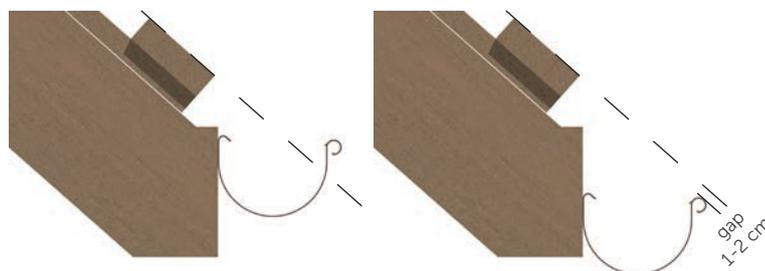
4. Depending on the selected gutter brackets (Rafter or fascia), the distance between the brackets must be determined accordingly.

Fascia gutter bracket max spacing $a = 600$ mm
Gutter steel bracket for rafter max spacing $a = 1000$ mm



5. Remember to align the gutter with the roof surface (fig.). A gutter must never be used as a snow barrier.

The gutter system must be protected against sliding snow and ice on the roof using commercially available snow barriers.



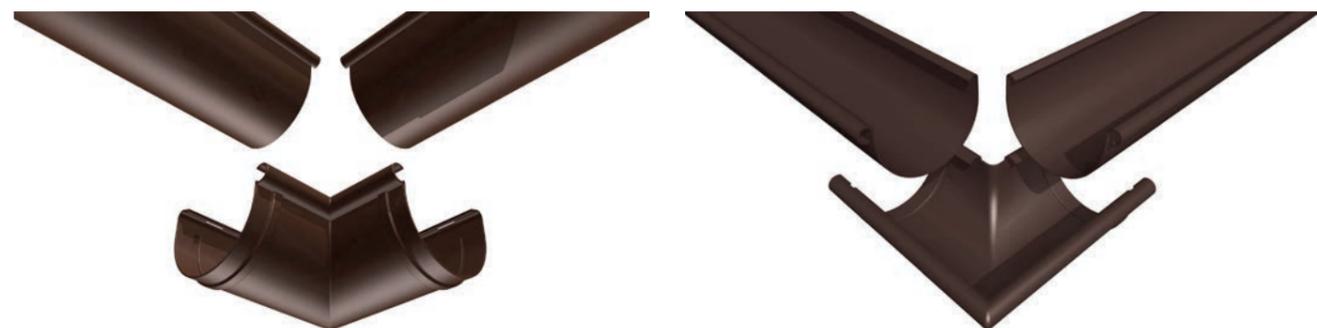
without snow barriers

6. After installing the gutter in the brackets, we proceed to install the system fittings (Drop outlet, corners, etc.).

7. In addition to their basic function of supporting the entire gutter, the gutter brackets also serve to linearly guide (insert) the gutter into the fitting. Not further than 15 cm from the fitting, a gutter bracket is mounted on both sides. This will allow us to avoid system deformations and thus possible loss of tightness in case of damage to the gasket.



8. The drop outlet of the ProAqua system can be installed in two ways: as a pass-through or as a connector. In the first case, the appropriate hole diameter must be cut in the gutter, while in the second case, two sections of the gutter must be connected, following the recommendations of point 7.



9. Once the drop outlet, corners and connectors have been installed, the bottoms are assembled. In the ProAqua system we have two types of bottoms: with gasket and glued (right, left).



Gasket bottom

Glued bottom

10. Then we start to assemble the drain pipes (verticals). We distinguish 3 cases:

- If the roof does not have an eave (does not extended beyond the wall) you must connect the drain pipe directly to the drop outlet using a single or a double-elbow pope connector.
- when the eave is very small, in most cases it is necessary to use single- and double-elbows by connecting them directly to each other or to improve the aesthetics of the system we can use two double-elbows by cutting a pipe section (corresponding to the length of the elbow collar),
- If the hood is larger, cut a suitable length of drain pipe and fit double-elbows on both ends of the pipe. Connect one end directly under the drop outlet (securing with a screw), the other end putting on the drain pipe, which will form the vertical of the whole installation (fig.).



11. Drain pipes in the ProAqua system are mounted to the wall using clamps with a suitable length of expansion pin, taking into account the material from which the wall or facade of the building was made (foamed polystyrene, sandwich panel).



- 12.** If it is necessary to extend the drain pipe, we connect the two sections by means of a pipe coupling. In the ProAqua gutter system there are two types of connectors: single- and double-elbow (muff).



- 13.** Depending on the method of water drainage, we use a down-pipe (single elbow) or a settling tank for the drain pipe.

The down-pipe should be mounted at a distance of at least 20 cm from the ground.

