

SYSTEM STAL² GALECO

Installation instructions

1. Notes before installation



Fig. 1



Fig. 2



Fig. 3

- 1.1 The Galeco STAL² System should not be installed when ambient temperature is lower than 5 °C.
- 1.2 Galeco STAL² System components should be stored in their original collective packaging until the time of installation.
- 1.3 Components should not be stored in damp places. The plastic protective sheet should be removed from the gutters and pipes no later than 3 months from the date of purchase.
- 1.4 There are three types of brackets used in the Galeco STAL² System:
 - fascia brackets (**Fig. 1**) with so-called bottom lock used to attach the soffit ceiling cover. The soffit ceiling cover is a long component used to cover the gutter line.
 - flat fascia brackets and rafter brackets (**Fig. 2, 3**), which do not have fasteners for the soffit ceiling cover, and thus constitute an optional aesthetic solution for mounting the Galeco STAL² System if the soffit ceiling cover is not to be installed.
- 1.5 If the soffit ceiling cover is to be installed, the system gutter should be mounted horizontally (without slope), as any deviation from the horizontal line may prevent proper locking of the cover in the bottom locks of the fascia brackets. In addition, rafters must be cut evenly and the straightness of the fascia board must be ensured. If you are not planning to install a soffit ceiling cover, the system gutters can be installed with a slope towards the outlet of 3 mm per 1 running meter.

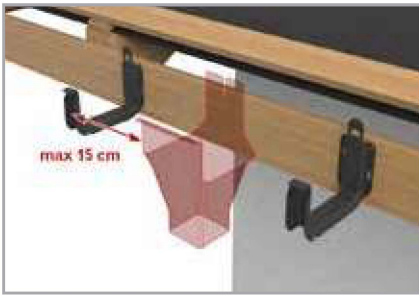


Fig. 4



Fig. 5



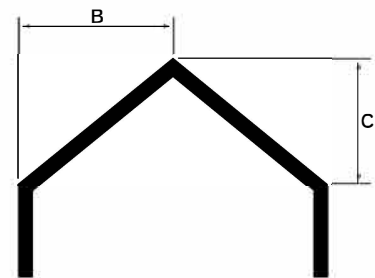
Fig. 6

- 1.6 The long components of the system should be cut with a hacksaw or metal shears. When cutting steel elements, do not use grinding tools because the high temperature generated during cutting and the filings produced can damage the protective coating of the sheet and its core.
- 1.7 The recommended spacing between the brackets is maximum 60 cm.
- 1.8 Brackets adjacent to the outlet, connector and corners should be mounted at a distance of maximum 15 cm from the given component (Fig. 4).

- 1.9 In the Galeco STAL² System, the expansion joint is rigidly mounted to the fascia board and is only used to make connections between gutters (Fig. 5, 6).
- 1.10 Galeco STAL² System gutters should be installed before completion of roofing work.
- 1.11 To protect the system against damage caused by snow and ice, snow fences should be installed.

2. System design

After comparing the table data with the surface to be drained, choose a suitable number of downpipes for a given building. The data in the table specify the maximum roof surface from which a single downpipe of the system can drain water, with the downpipe situated on the corner or on the wall.



Roof area in m² =
 $(C/2 + B) \times \text{roof length}$.

Capacity table

Downpipe positioning	System efficiency*
	90 m ²
	180 m ²

*The above calculations are made on the assumption that precipitation intensity is 75 mm/h and the maximum roof pitch is 50 degrees. For roofs having a pitch lower than 10 degrees

or flat roofs, the maximum Effective Roof Area equals the roof area.

3. Gutter installation

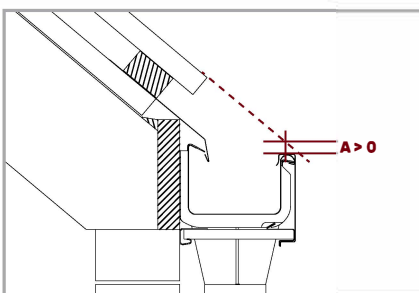


Fig. 7



Fig. 8

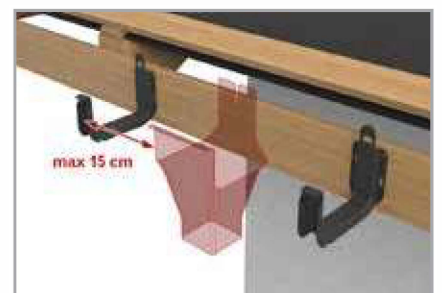


Fig. 9

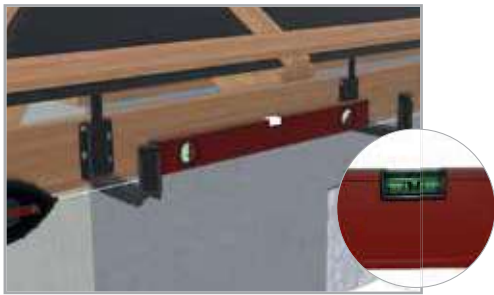


Fig. 10

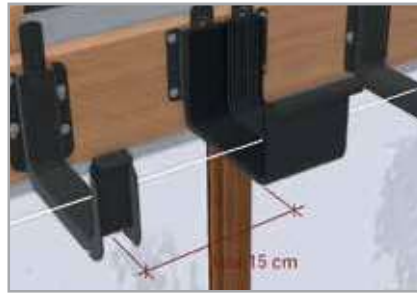


Fig. 11



Fig. 12

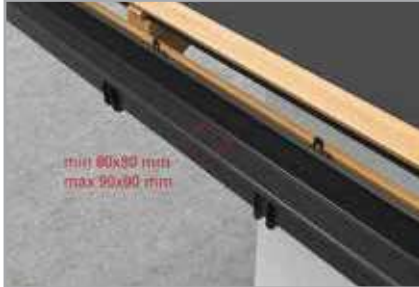


Fig. 13



Fig. 14



Fig. 15



Fig. 16

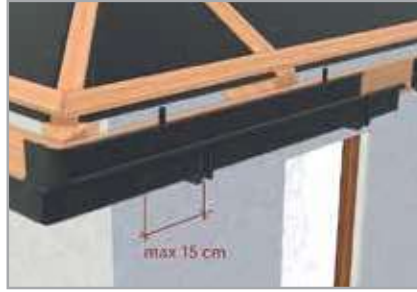


Fig. 17

- 3.1 The gutter should be positioned in relation to the roof end so that the theoretical line drawn as its extension passes over the outer edge of the gutter (see the example application in **(Fig. 7)** and that rainwater falls into the gutter. If due to the construction of the roof, the line passes below the outer edge of the gutter, snow fences should be installed on the roof to protect the gutter from damage caused by sliding snow.
- 3.2 Determine the position of the outlet **(Fig. 8, 9)**, and then mount one outermost bracket on each side of the outlet.
- 3.3 Stretch strings between the outermost outlets **(Fig. 10)**.
- 3.4 Following the string line, determine the position and install the remaining brackets with a maximum spacing of 60 cm between. When designing the arrangement of brackets, all connections of gutters must be arranged so that the brackets do not overlap the joining components: gutter with gutter, gutter with outlet, gutter with connector, gutter with corner.
- 3.5 If an expansion joint bracket is to be used to connect gutters, the bracket should be installed a maximum of 15 cm from the adjacent brackets **(Fig. 11)**.
- 3.6 The expansion joint for Galeco STAL² is designed so that if the system is fixed to the fascia board, the gutter connector can be rigidly fixed to the base. Suspension of the connector is only allowed when the system is installed using flat rafter brackets.
- 3.7 Set the connector to vertical in such a way that the upper edge of the horizontal seal in the connector is 1-2 mm above the bottom of the bracket. This method of installing will ensure proper pressure of the gutter bottom to the bottom connector seal.
- 3.8 Then installing the gutter, first install the end cap which will be installed on the brackets first. In order to do so, apply the Galeco sealant for steel surfaces on the inner surface of the end cap and install the cap on the end of the first gutter. Drill and screw the rear edge of the end cap with a screw to connect it with the rear flange of the gutter. Apply glue from the inside, in the place where the edge of the gutter is in contact with the end cap.
- 3.9 In place where the outlet is to be installed, cut a square hole in the bottom of the gutter of minimum dimensions 80x80 mm and maximum 90x90 mm **(Fig. 12, 13, 14)**. Bend the edges of the hole according to the water flow direction and protect it with Galeco touch-up paint **(Fig. 15)**.
- 3.10 Insert gutters in brackets starting from the beginning of the gutter route **(Fig. 16)**. Connect the subsequent gutters using expansion joint connectors, maintaining the expansion joint between the connected components of a minimum 5 mm and maximum 10 mm. An alternative way is to connect gutters with 7 cm overlaps using the steel glue offered by Galeco. The length of one glued section of the gutter should not be longer than 12 m. If a longer section needs to be installed, use an expansion joint.
- 3.11 Corners in the Galeco STAL² System should be mounted directly with the gutter using steel glue. Apply two strips of glue on the inner surface of the corner. Then, press the glued area and bend the mounting plate. Finally, make a tight joint with glue on the edge of the gutter installed inside the corner **(Fig. 17)**.
- 3.12 Bend the mounting plates of the fascia brackets.

4. Connection of the outlet with the downpipe



Fig. 18



Fig. 19

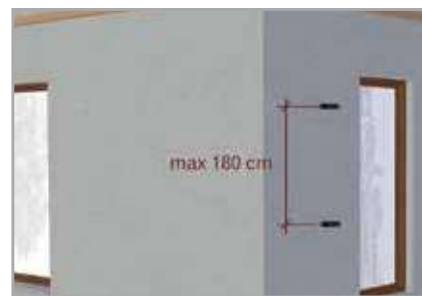


Fig. 20



Fig. 21

- 4.1 Install the suspended outlet in the previously cut hole in the gutter and bend the assembly plates (**Fig. 18, 19**).
- 4.2 If the roof is equipped with eaves, connect the outlet to the downpipe using two elbows and a section of the downpipe previously cut to the required length. 4.2 If the roof is not equipped with eaves, connect the drain to the downpipe using a sleeve.
- 4.3 Fix the wall plugs in the façade. Use plugs of a length adapted to the building's insulation thickness, maintaining a maximum distance of 1.8 m between the plugs. Screw the clamps on the plugs (**Fig. 20**).
- 4.4 Insert the downpipes in the clamps and connect them with a sleeve (**Fig. 21**).
- 4.5 Tighten the clamps on the downpipe but not too tight.

5. Drainage to the sewage system



Fig. 22



Fig. 23

- 5.1 Install a standard sedimentation tank in the ground under the downpipe. Join its bottom outlet with a flexible elbow connected to the underground sewer pipes of diameter 110 mm.
- 5.2 Cut a 110 mm hole in the standard sediment tank flap (the hole diameter is marked on the tank flap), and then put the flap on the hole prepared for the square pipe (**Fig. 22, 23**).
- 5.3 Put a sleeve on the end of the downpipe, and enter the downpipe into the flap hole prepared for the square pipe.
- 5.4 When draining rainwater to the ground, attach an elbow to the end of the downpipe. The minimum distance between the elbow and the ground is 20 cm.