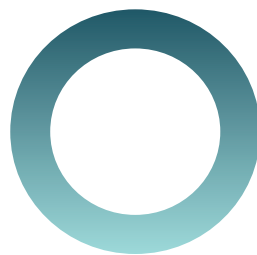




GUTTER SYSTEM INSTALLATION MANUAL



struga[®]
GUTTER SYSTEMS

We recommend that You familiarize yourself with the current version of the gutter system installation manual available at www.bratex.pl

Introduction

Thank you for purchasing Struga gutter system and for the confidence You have placed in us. Struga system means peace and security for many years to come and the carefully crafted components ensure tightness and durability. By using the Swedish Prelaq RWS sheet metal, Struga system retains its aesthetic and functional values for a long time. Before You begin installation, prepare all the necessary tools (Fig. 1): hacksaw, screwdriver, chalk line, marker, traversing rule and make sure that You have all the necessary components of the Struga system.

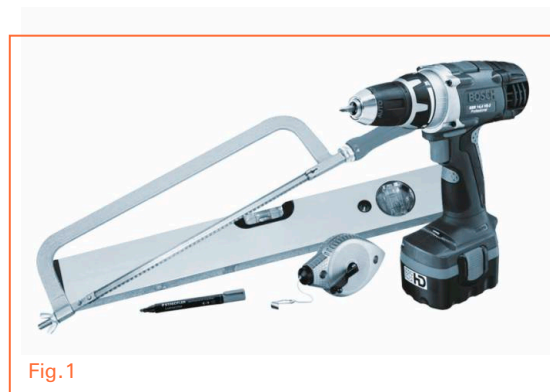


Fig.1

Basic principles of installation

- We strongly recommend the installation of snow guards on the roof and gutter reinforcements. This will increase safety and reduce the risk of damage to the gutter by sliding snow and ice.
- Remember that the gutter should be mounted in such a way that they neither constitute support for sliding snow. The hood should not project more than half the diameter of the gutter and the gutter should be located below the surface of the roof extension (Fig. 2).
- If the gutter can not be mounted with the above principles, be sure to use snow guards.
- Remember to keep a minimal drop towards the downspout of 3-5 mm / m.
- Remember to clean the system from debris filings after completed work.
- Metal filings rust and tarnish the coating.
- **For cutting the gutters and pipes Do not use abrasive devices (e.g. disc cutter). It may damage the protective coating and lead to losing the warranty!**

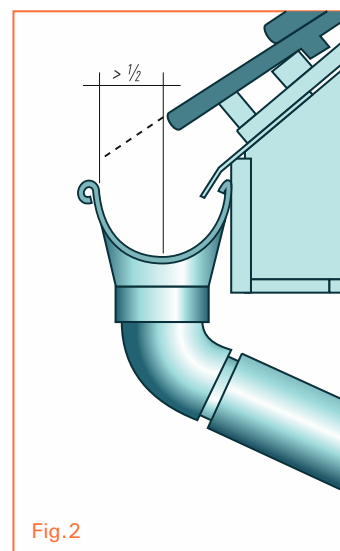


Fig.2

Installation steps

1. Choosing the amount of downspouts

After having calculated the roof area, select the appropriate way of mounting gutters and determine the amount of required system components.

a. Roof slope up to 100 m² (Fig. 3) - mount a single drain taking into account the drop of 5mm / m (the length of the gutter with a single drain can not exceed 10 m).

b. Roof slope of 100 - 150 m² (Fig. 4) - install two drains. The drop must start at an equal distance between the two drains and proceed towards them (the distance between successive drains can not be greater than 20 m).

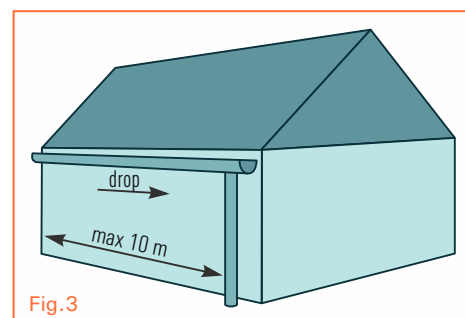


Fig.3

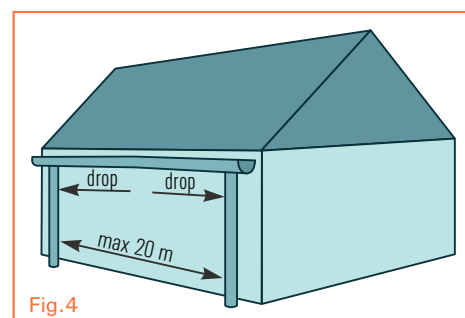


Fig.4

Efficiency of the Struga system		
Size system	Roof area	
	1 downspout	2 downspouts
125 / 90	50 - 100 m ²	100 - 150 m ²
150 / 100	100 - 150 m ²	150 - 200 m ²

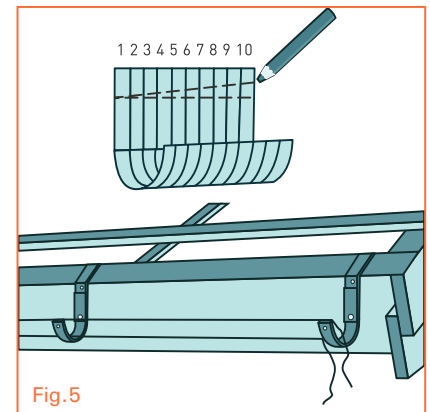
2. Installation of hooks

a. Select suitable type hooks:

I. Hooks for the fascia board - to mount the gutters on the front board. Assemble the hooks every 50 - 60 cm. Hooks can be attached to the existing roof slope.

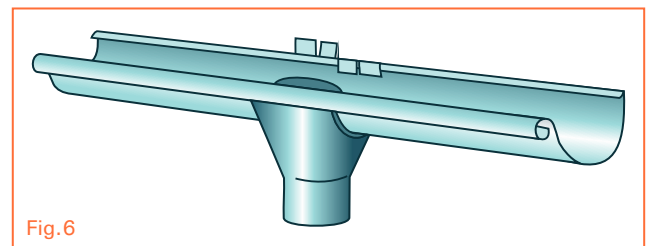
II. Rafter hooks - to mount the gutter directly on the rafters or existing substructure. Assemble the hooks by appropriately bending them along the designated assembly line. The hooks must be affixed before roofing..

b. When mounting the hooks, remember about the minimal drop of the gutter 5 mm/m. First, install the extreme hooks maintaining a distance of 10 cm from the end of the gutter. Then drag between the two the chalk lines, marking out the assembly line for the other hooks (Fig. 5 - determining the dividing line).



3. Installing the drop outlet

Select a place on the gutter where the drop outlet will be attached and then, using a hacksaw, cut a hole in it (under no circumstances use abrasive equipment such as angle grinder!). The hole in the gutter must be slightly smaller than the surface of the drop outlet, which adheres to it, because the size of the hole determines the rate of drainage from the gutter. Bend the edges of the cutout towards the outside of the gutter. Mount the drop outlet by inserting the bent part of the drop outlet into exterior eversion of the gutter. Then press it into the gutter and fold four leaf handles to the inside of the gutter (Fig. 6 - Installation of the drop outlet).



4. Mounting the gutters

a. Mount the gutters and corners starting from the gutter with the drop outlet, reconnecting the inner side of the gutter in the bracket on the hook, and then pressing the outer edge of the latch. Be sure to include 2 - 3 mm space between the gutters and corners for negligible compensation for changes in length resulting from temperature differences.

b. It is strongly recommended that you use gutter stabilizer available in the system. This element is used to stabilize the connection between the gutters and between a gutter and a corner. The use of stabilizer ensures that during winter, when ice and snow slide down, connections between gutters and corners are not damaged.

c. Using the gutter connector, join all connections between gutters and corners. Attach the bent portion of the connector to the inner edge of the gutter, making sure that the seal is in the middle of the connection and then push it into the gutter using the lock.

d. Fasten the lid on the gutter by bending the snap from the fascia board side. Do not use sealant for mounting the lid, as in the case of waterlogging at the end of the gutter it will prevent the outflow.

5. Mounting the pipes

- a. Determine a vertical line on the wall, along which the downspout is going to be installed.
- b. In the case of hoods protruding beyond the wall face, use elbows and sections of the downspout to connect the drop outlet with the vertical drain.
- c. Mount the downspout using one of the two types of pipe clips. Brackets are fastened to the wall with screws or bolts of suitable length. The distance between the handles can not exceed 1,5m.
- d. After fixing the pipes, close handles with latches.
- e. Mount the faucet at the end of the downspout

Remember that each gutter system requires basic maintenance. Every year, preferably in the spring, clean the gutters of leaves and other debris to ensure free drainage of water from the roof and gutters. Any damage to the paintwork should also be cleaned and protected with the special paint touch-up. For detailed information on maintenance see "Technical recommendation for using the roof system" available at www.struga-rynny.pl or at place of purchase.



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