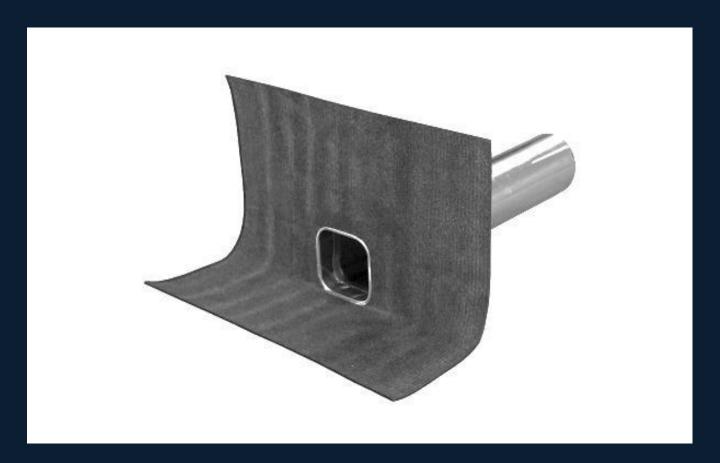


JUAL HORIZONTAL OUTLET

FOR FLAT ROOF WITH 2 LAYERS OF BITUMEN MEMBRANE



INSTALLATION INSTRUCTION

INSTALLATION INSTRUCTION JUAL HORIZONTAL ROOF OUTLET



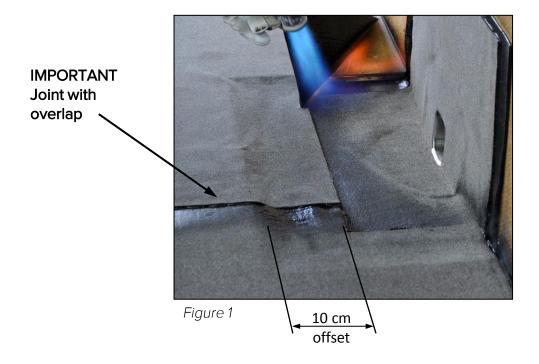
- FOR FLAT ROOF WITH 2 LAYER OF BITUMEN MEMBRANE
- 1. Check that the horizontal roof outlet is intact upon receipt.
- 2. Mark up on the cleaned roof surface, where the horizontal outlet should be placed.
- 3. Make a cutout in the roof surface or the insulation for the outlet.

 Cutout width: 60 cm. Distance from the vertical surface 30 cm. Depth: minimum 1 cm.

 N.B. The outlet must be installed with a slant of minimum 1 to avoid water backflow.
- 4. Place a 60 cm x 60 cm bitumen sheet in the cutout and on the vertical surface. Fix the sheet by torching.
- 5. Cut a hole for the outlet pipe.
- 6. Make an unbroken mastic seal around the hole for flame stop.
- 7. The horizontal outlet is now inserted in the cutout and in the horizontal hole.

 N.B. The roof outlet's flange must be fully supported by even surfaces both horizontally and vertically.
- 8. Fasten the horizontal roof outlet through the holes in the corners of the steel flange.
- 9. Torch the roof outlet's bitumen membrane to the bitumen sheet which was placed in the cutout (see section 4).
- 10. Torch the roof's underlay lengths onto the outlet with an offset of 10 cm from the edge of the cutout leaving approx. 20 cm x 40 cm without additional membrane. See figure 1.

The bitumen membrane lengths must be joined with overlaps. See figure 1.



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- FOR FLAT ROOF WITH 2 LAYER OF BITUMEN MEMBRANE

- 11. Torch a sheet of 60cm x 60cm top layer membrane onto the installed roof outlet (30 cm horizontally and 30 cm vertically).
- 12. The roof's top layer membrane lengths are now torched horizontally and vertically around the outlet. Overlap the submersion by 10 cm.
- 13. Torch the roof's top layer membrane lengths onto the outlet with an offset of 10 cm from the edge of the cutout leaving approx. 40 cm x 20 cm without additional membrane. See figure 2.
- 14. Cut out the hole in the outlet if blocket, so water can pass through to the drain.
- 15. Install JUAL horizontal leaf grate.
- 16. JUAL horizontal outlet is now installed.

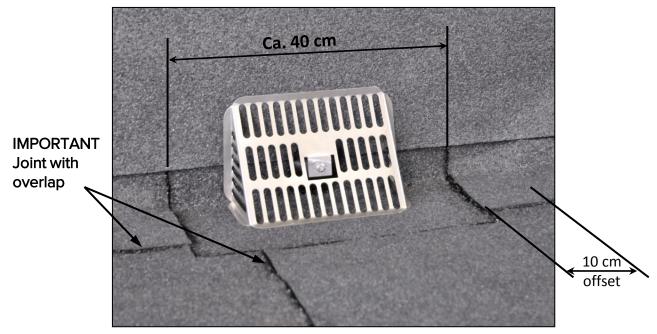


Figure 2 – Horizontal roof outlet fully installed with overlapping bitumen membrane lengths and leaf grate.

IMPORTANT

By installation of a roof outlet you should never weld with a burner head larger than \emptyset 45 in order to limit the heat and to avoid that the roof outlet's membrane detaches from the steel flange in or around the 90° bend.

A precondition for safe installation of roof outlets is that the bitumen membrane on the roof around the roof outlet has been installed and fastened correctly according to the industry and/ or manufacturer recommendations.

To ensure the functionality of the roof outlet after installation, the outlet and the leaf grate must be clean and water must have free passage to the drain.



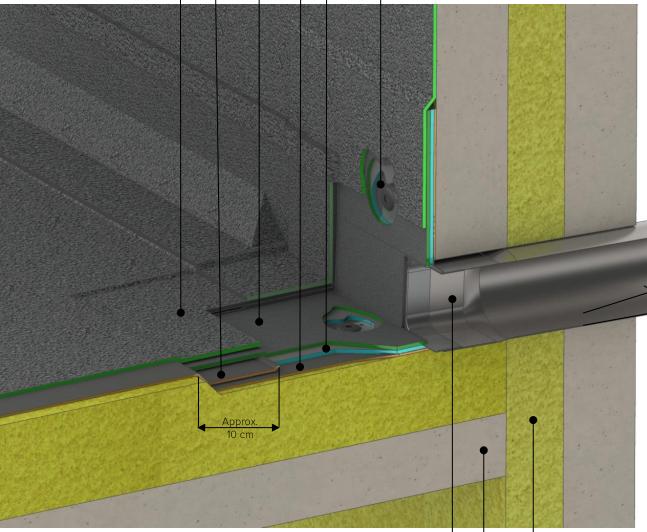
Underlay membrane (60 cm x 60 cm piece)

Top layer membrane (60 cm x 60 cm piece)

Roof's underay membrane

Roof outlet's membrane

Roof's top layer membrane Fastening of roof outlet



JUAL Horizontal roof outlet installed with 2 layers of bitumen membrane.

JUAL Horizontal outlet

Insulation

Roof deck

> 1°drop