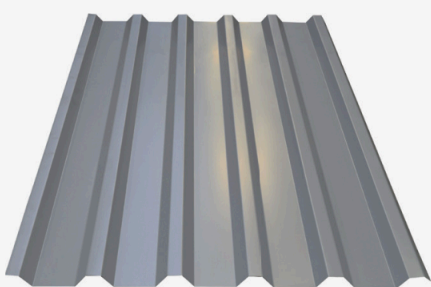




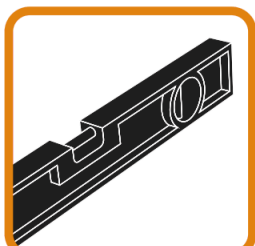
Trapezoidal sheet



TR 35

INSTALLATION INSTRUCTIONS

RECOMMENDED TOOLS, EQUIPMENT AND AUXILIARY MATERIALS



Spirit level



Folding rule



Pencil



Riveting pliers



Seaming pliers



Tin snips



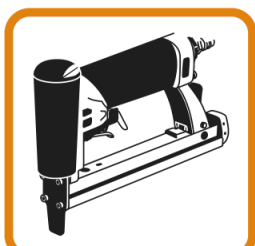
Hacksaw



Circular saw



Electric sheet-metal shears



Staple gun



Cordless screwdriver



Hammer



USING AN ANGLE GRINDER TO CUT SHEET METAL IS PROHIBITED!!!

Using an angle grinder overheats the sheet and causes irreversible damage at the cut edge. Flying metal particles also damage the surface coating.

AUXILIARY MATERIALS:

- Roofing underlay membrane (type as specified in the design) meeting the requirements of CSN 73 1901 and suitable for the intended use
- Counter-battens, roof battens or other supporting members, such as thin-walled steel purlins or full timber boarding
- Fastening and anchoring materials
- Polyurethane or silicone sealant

INSTALLATION

Trapezoidal sheet used as roofing



BEFORE INSTALLATION:

1. Type of structure:

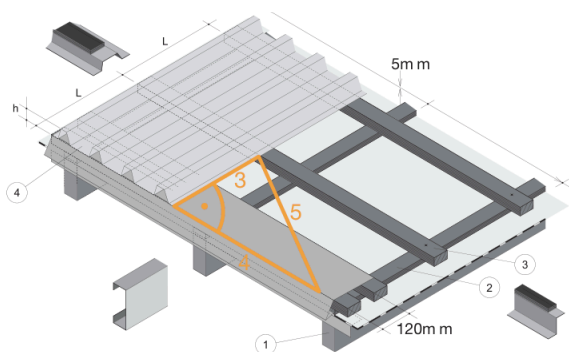
Timber support system: a traditional roof frame or roof trusses supplemented with counter-battens and battens, or with counter-battens and full boarding.

- Counter-battens – minimum height 40 mm
- Battens – usually 30 x 50, 40 x 50 or 40 x 60 mm
- Alternatively, full-surface boarding

The timber must be thoroughly treated with a suitable preservative, which must be completely dry. Fasten the battens to the rafters through the counter-battens using nails of the appropriate length.

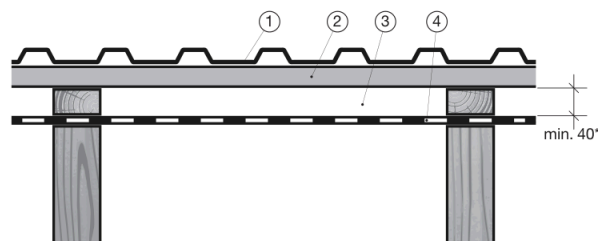
The spacing of supports beneath the trapezoidal sheet (battens or purlins) must be specified by the design. Observe the applicable CSN standards when sizing and positioning the supports.

2. Careful roof measurement is essential for high-quality, economical laying of trapezoidal sheet. For profiles with a corrugation height up to 35 mm, the minimum roof pitch is 20°. The recommended limiting pitch is 14°. Ensure that the individual sheets overlap correctly. The sheets are produced to the required length. Check the roof for deviations from square and flatness, and correct any unevenness.



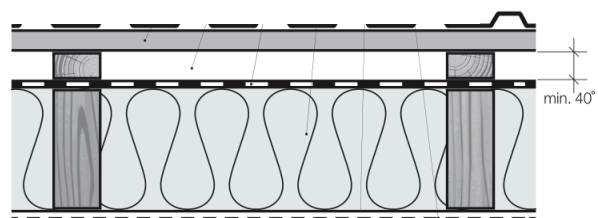
- L – support spacing specified by the design*
h – trapezoidal-sheet height specified by the design
1 – supporting system (rafters, trusses)
2 – counter-batten (forms the ventilation layer)
3 – supports (battens, purlins, boards)
4 – trapezoidal profile

UNINSULATED ROOF (Fig. 1)



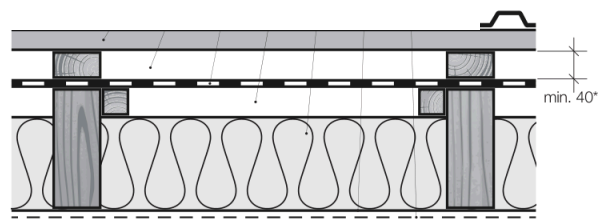
1. Trapezoidal profile
2. Battens
3. Ventilation layer
4. Underlay membrane

VENTILATED DOUBLE-SKIN ROOF (Fig. 2)



1. Trapezoidal profile
2. Battens
3. Ventilation layer
4. Underlay membrane
5. Thermal insulation
7. Vapour barrier
8. Interior lining

VENTILATED THREE-SKIN ROOF (Fig. 3)



1. Trapezoidal profile
2. Battens
3. Ventilation layer
4. Underlay membrane
5. Ventilation layer
6. Thermal insulation
7. Vapour barrier
8. Interior lining

INSTALLING THE SUPPORTS (battens, purlins):

3. The span of battens or purlins varies according to the roof design, roof pitch, local snow load and rafter or truss span. The maximum support spacing can be determined using structural tables. For profiles up to 20 mm corrugation height and 0.5 mm sheet thickness, a maximum support spacing of 500 mm is recommended. The exact support layout and profile are defined by the design or must be agreed with the structural engineer. After laying the first strip of underlay and installing the counter-battens, begin fitting the roof battens. Fasten the first batten at the eaves edge of the rafters and the second as specified in the design.

When using eaves flashing, the distance between the lower edges of the first and second battens is approximately 120 mm. Install all battens flat. Position the last batten beneath the ridge as close to the ridge as possible. Where snow guards, safety equipment or other products such as solar panels are installed, use reinforced battens. Ensure their spacing matches the products to be fitted.

4. The completed structure also allows movement on the roof. Continue in this sequence—underlay membrane, counter-battens, battens—up to the ridge. Use galvanised nails of sufficient length so that the battens are anchored into the rafters.

5. Repeat this procedure on the remaining roof slopes.

6. Install the supporting battens at hips, valleys and verge flashings, and adapt the battens around the chimney. For roof windows, always follow the window manufacturer's installation instructions.

7. Every roof build-up must provide effective ventilation beneath the roofing. Size the ventilation in accordance with CSN 73 1901.

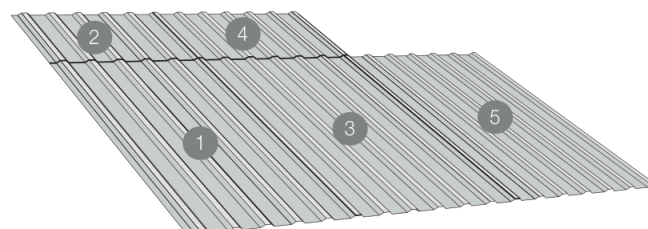
INSTALLING AUXILIARY STRUCTURES:

8. Before laying the roofing, install the gutter hooks, valley flashing, eaves flashing, wall flashing and lower verge flashing, if used. Also install the upper chimney flashing and roof-window flashing in accordance with the window manufacturer's instructions. For non-standard flashing, fabricate the component from sheet or made-to-measure coil. Snow guards are fitted after the roofing has been laid. Always ensure that the supporting structures into which these items are anchored are correctly positioned.

INSTALLING THE ROOFING

If the roof must be walked on, wear footwear with a soft rubber sole. Never walk on unsecured trapezoidal-sheet runs. Step only where the roofing is supported by battens or purlins.

LAYING PLAN

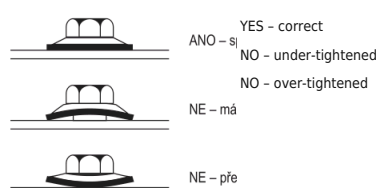


1. Trapezoidal sheet can be laid from either the right or left. Before fastening, align the first sheet perpendicular to the eaves. Always orient the wider corrugation downwards to ensure correct drainage. On sheets with a safety drain channel, position the channel beneath the next sheet. Align each sheet so it nests correctly with the preceding one, and check that it is parallel to the eaves. The roofing is then ready for fastening.

2. Fasten roofing to timber with 4.8 x 35 mm self-drilling screws. For steel, use steel screws with drilling capacity selected for the substrate thickness. Choose screws matching the roofing colour. Join sheets to each other with 4.8 x 20 mm self-drilling screws.

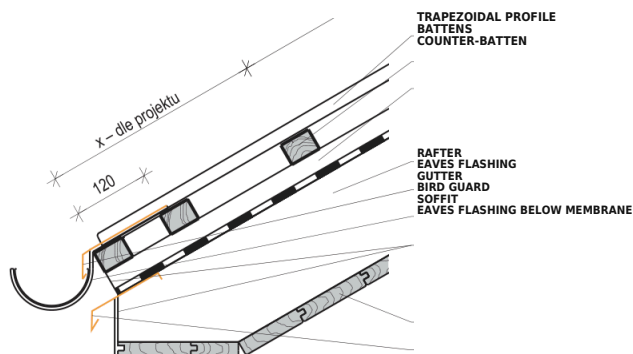
3. Place screws in the lower corrugation where the sheet bears firmly on the substrate, perpendicular to the roof surface, using 6–8 screws per m². Align the roofing carefully before fastening. Use a drill or driver with adjustable speed and torque. Do not over-compress the washer. When tightened, the seal should extend about 1 mm beyond the metal washer. Remove all protective-film remnants beneath the washer. The screw must be perpendicular where the sheet fully bears on the substrate. At eaves, ridge, verge and valley, use one screw in every corrugation.

CORRECT SCREW TIGHTENING

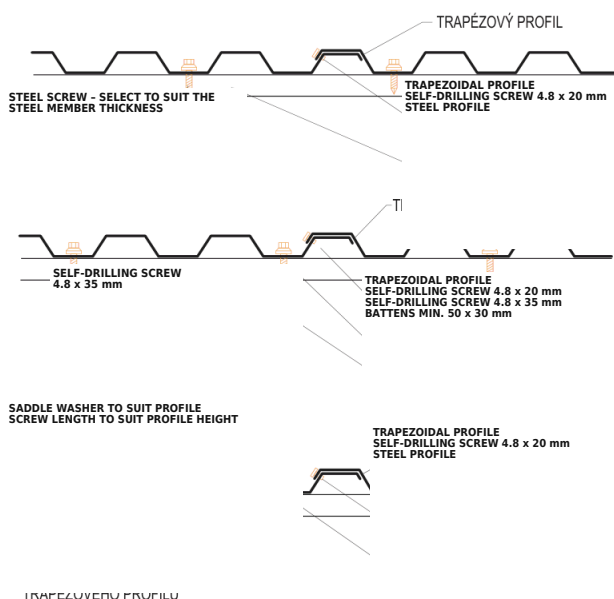


4. Make longitudinal joints between trapezoidal sheets with 4.8 x 20 mm self-drilling screws, using 3-5 screws per metre of joint, always in the upper corrugation. If sheets must be joined end to end, position the joint above a support and fasten every corrugation to the substrate.

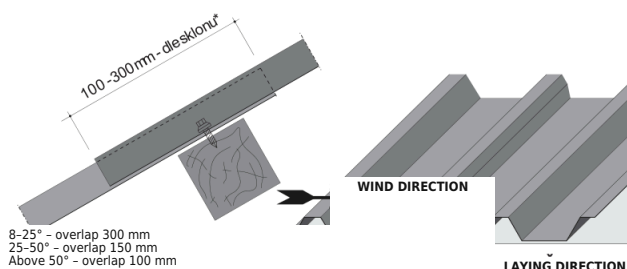
EAVES DETAIL WITH EAVES FLASHING



POSSIBLE METHODS OF FASTENING THE TRAPEZOIDAL PROFILE



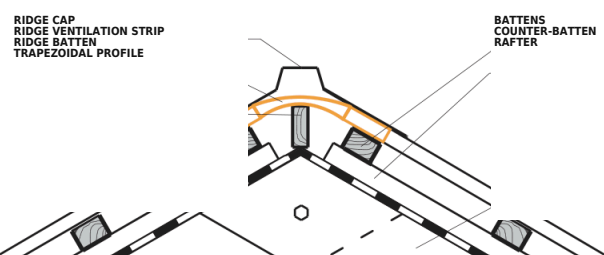
LONGITUDINAL SHEET JOINT



5. When installing flashing and accessories, follow standard sheet-metal-work principles and rules. Use original accessories.

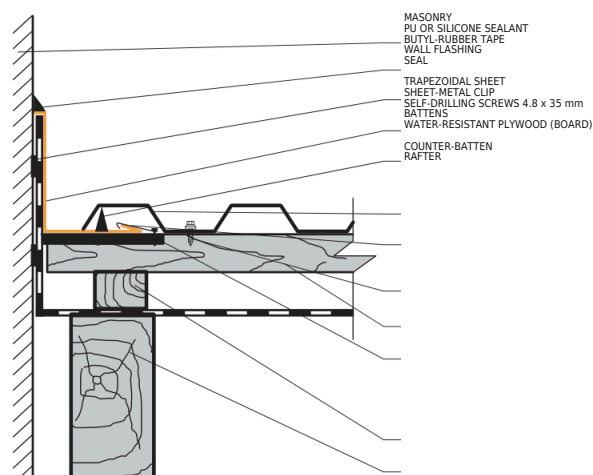
6. After laying the roofing, install the ridge caps. Beforehand, fit the ridge ventilation strip. Work against the prevailing wind direction. Lay the sections with a 100 mm overlap, align them and fasten them to the roofing with self-drilling screws in the roofing colour. Close the ridge at the beginning and end with a special piece cut from flat sheet or by extending the verge flashing. The material permits standard sheet-metal-work methods.

RIDGE DETAIL WITH ROOF VENTILATION USING A RIDGE VENTILATION STRIP



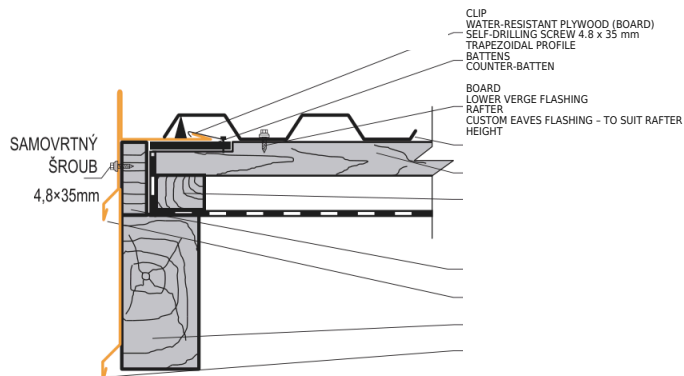
7. At a gable or side wall, proceed as follows: before laying the roofing, install the wall-flashing component. Follow standard sheet-metal-work rules. Begin at the eaves and work towards the ridge, maintaining the specified overlaps. Align the flashing and fasten it to the battens with clips so that it lies against the wall, ideally in a chase. Lay the roofing. If cutting is required, cut immediately behind a corrugation and coat the cut edge with touch-up paint. Seal the space beneath the roofing. Seal the wall-side portion of the flashing with silicone or polyurethane sealant, then screw down the roofing.

ROOF-TO-WALL DETAIL

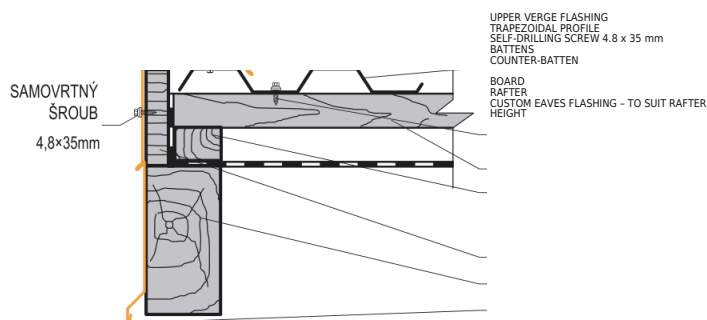


10. At a projecting roof edge, use either lower or upper verge flashing. Install the lower verge flashing before the roofing and the upper verge flashing after the roofing. Work from eaves to ridge with an overlap of approximately 100 mm so the outer and upper faces lie against the batten, then screw from the outside. If the roofing must be cut, follow the procedure in the previous section.

ROOF EDGE WITH LOWER VERGE FLASHING

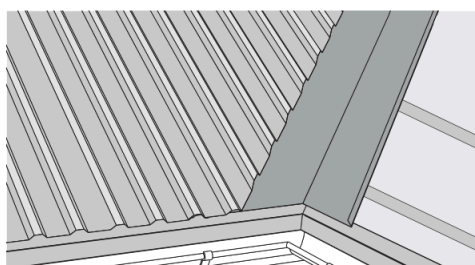


ROOF EDGE WITH UPPER VERGE FLASHING



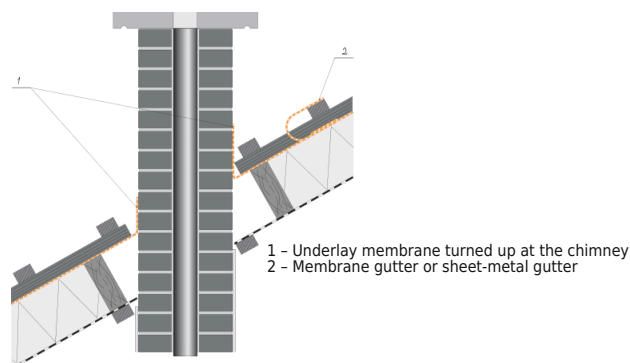
11. Hips are usually formed from ridge caps and fastened in the same way. Fit a ridge ventilation strip to prevent rain and snow entering. Where the hip meets the ridge, trim and join or screw the ridge caps together, and seal the joint with neutral silicone or polyurethane sealant. Close the end of the hip with an end piece cut from sheet metal.

12. Valleys can be formed in several ways; the final solution depends on the roof shape and pitch. We recommend full boarding beneath the valley, possibly using water-resistant plywood, recessed by 20 mm. Fasten valley sheets to the substrate with sheet-metal clips and provide sufficient overlap between adjacent sheets.

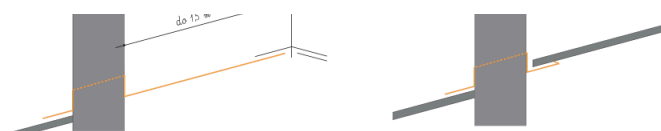
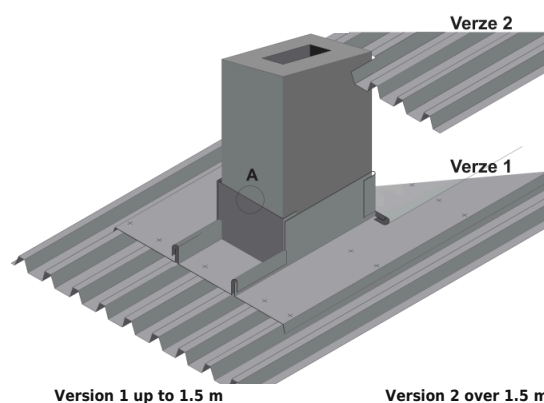


13. Flash chimneys in accordance with recognised sheet-metal-work practice and ČSN 73 3610. Each chimney flashing arrangement requires an individual solution.

ROOF SECTION WITH CHIMNEY AND CORRECTLY INSTALLED UNDERLAY



EXAMPLE OF CHIMNEY FLASHING

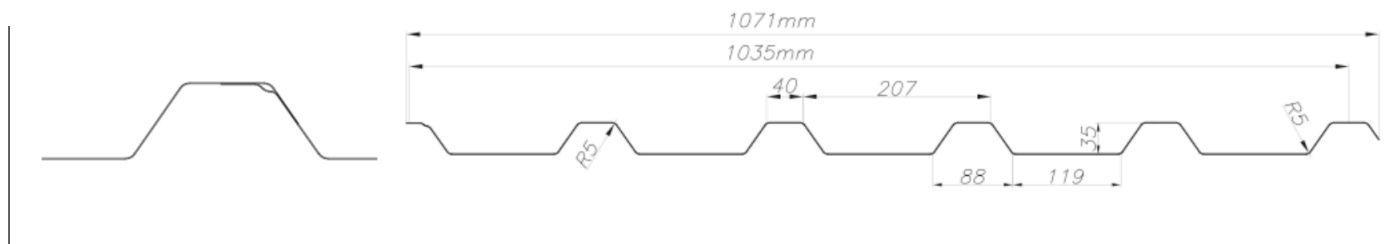


All cut parts of the roofing exposed to the weather, and any damage to the surface coating caused during installation, must be treated with touch-up paint. This does not apply to original factory cuts. Apply the paint with a fine brush and follow the instructions on its label.

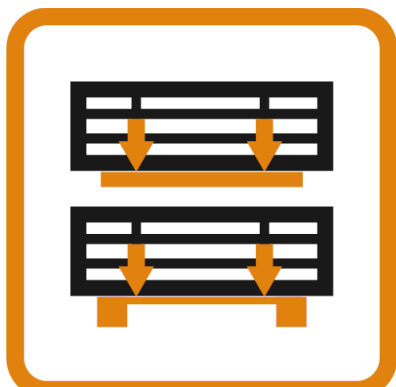
WARNING

All roof structures must comply with applicable standards, regulations and the manufacturer's installation recommendations.

TECHNICAL PARAMETERS



HANDLING AND TRANSPORT CONDITIONS



Handle only within the designated area



Use a forklift for handling



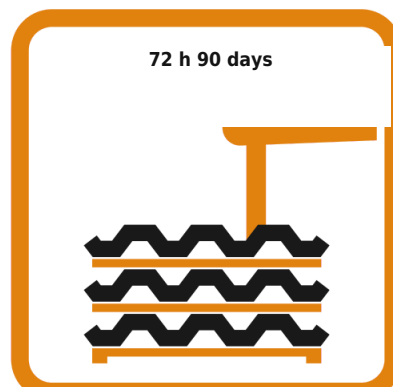
Do not transport with an overhang



Ensure secure attachment during handling



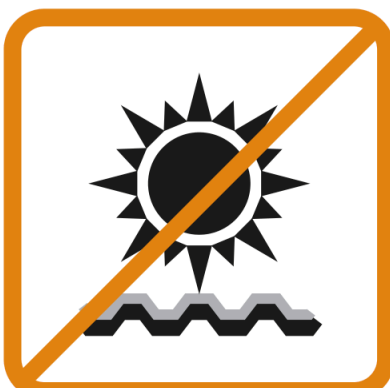
Unload pallets one at a time



Outdoor storage: up to 72 hours. Store in a dry, ventilated area for up to 90 days. Then separate the sheets with spacers and incline them.



Provide a slope so moisture can drain away



Do not store in direct sunlight



Do not use an angle grinder