



Roofing membranes
Stand 06/2026



Rhenofol®

Rhenofol CV/CVL/CG/CGv
Installation

Contents	Page
Introduction	4
Covering the roof area with Rhenofol	8
Laying out the roofing membranes	9
Sealing the seams by hot-air welding	10
Sealing the seams by solvent welding	13
Application techniques for Rhenofol	15
Rhenofol CV, CVL, CGv mechanically fastened	16
Rhenofol CG, CGv loosely laid with ballast	22
Rhenofol CGv adhered	23
Connections and terminations with Rhenofol	25
Fixings for Rhenofol roofing membranes	26
Fixings with angle profiles on vertical surfaces	30
Fixing with Z-profile made of Rhenofol® coated metal sheet	33
connecting sheet on horizontal surfaces	34
General information on flashings and trims	36
Wall flashing	37
Roof finish with Rhenofol® flashing	40
Eaves gutter flashing	41
Inside corners	43
Outside corners	43
Flashing of skylights	45

FDT system parts for Rhenofol roofing membranes	50
FDT VarioGully®	51
FDT rainwater outlet (RWE), FDT water spout and	
FDT emergency overflow drain	55
FDT vent pipe DN 125/DN 100	57
FDT cold roof vent DN 125	58
FDT lightning conductor flashing	59
Forming of collars	60
Rhenofol standing seam profile	64
Rhenofol paving tile	66
FDT – Legal notice	68

These installation guidelines contain the basic rules for working with Rhenofol roofing membranes. Our specialists develop detailed, project-specific solutions.

Requirements for safe installation

- The design of the supporting roof deck must meet the technical requirements, in particular with regard to load-bearing capacity, deflection, anchoring and water flow.
- Roof surfaces must be clean, smooth and dry.
- Substrates must be smooth, free from concrete nibs and sharp edges (e.g., chippings).
- Joints which, due to their width or movement, may impair the functional reliability of the waterproofing, must be designed and constructed in accordance with the specific requirements.
- Materials containing bitumen, tar or solvents must not come in contact with Rhenofol roofing membranes.

- Labour standards and safety regulations must be followed, if necessary, consult our safety data sheets available on: www.fdt.de

Standards and technical rules

- The requirements of EN 1991-1-4 must be taken into account for all fastenings.

Manufacturer's application instructions as of January 2026.

Technical changes reserved.

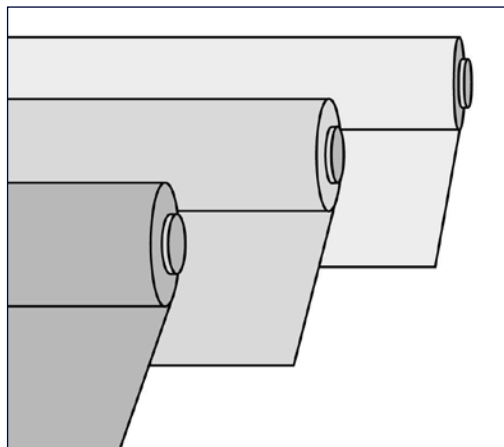
These products are based on plasticized polyvinyl chloride (PVC-P).

Standard membrane widths:

Rhenofol CV: 0.68 m, 1.03 m and 1.50 m

Rhenofol CVL: 1.50 m, 2.05m

Rhenofol CG and CGv: 2.05 m



■ **Rhenofol CV, CVL**, the reinforced with polyester fabric roofing membrane according to EN 13956 as waterproofing in mechanically fastened system without ballast.

■ **Rhenofol CG**, the roofing membrane with glass fleece reinforcement according to EN 13956/EN 13967 for roof waterproofing in loosely laid layered construction with ballast (gravel/slabs/green roof) and for building waterproofing.

■ **Rhenofol CGv**, the roofing membrane with glass fleece reinforcement, underside lamination of synthetic fleece and a single-sided and one-sided welding edge according to EN 13956/EN 13967, to roof waterproofing in mechanically fastened, bonded or loosely laid layered construction under ballast, with the exception of green roofs, for any roof pitch.

■ **Rhenofol C**, then non-reinforced waterproofing membrane according to EN 13967 and for flashings and forming of details with Rhenofol roofing membranes and for special application requirements.

Material properties

- Weather-resistant, even without additional surface protection.
- Resistant to flying sparks and radiant heat confirmed by official test certificates.
- Fire behavior Class E according to EN 13501-1.
- Resistant to standard industrial and heating exhaust gases.
- Outstanding resistance to natural ageing.
- Environmental Product Declaration (EPD) for Rhenofol CV and Rhenofol CG..
- Rhenofol CG is root and rhizome resistant according to the FLL standard.

Not resistant to

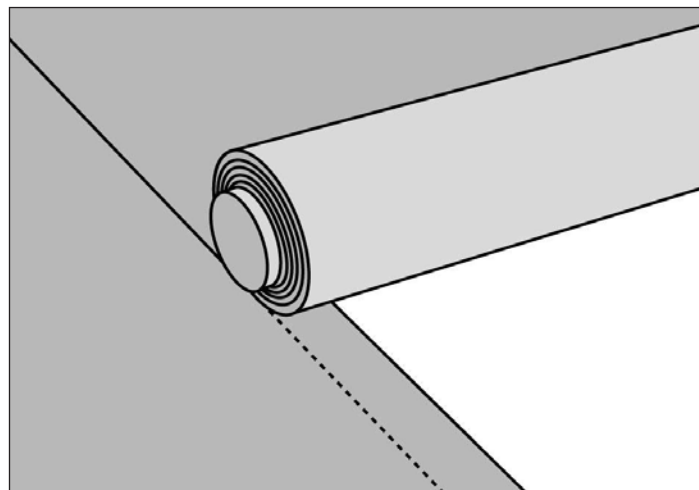
bitumen and tar-containing materials; organic solvents, such as benzene, toluene, chlorinated hydrocarbons, fats and oils, e.g. oily cements and forming oils.

Storage

- Rolls should be stored horizontally.
- Store the material in its original packing until used and protect from moisture.
- Reseal opened packaging units carefully when storing outdoors.
- Single rolls, Rhenofol coated metal sheets and accessories should be covered with a tarpaulin.

Covering the roof area with Rhenofol®

- Unroll the Rhenofol CV/CVL/CG/CGv roofing membrane.
- The edge markings facilitate installation with a 5 cm seam overlap for loose laid installation and a 10 cm seam overlap for mechanically fastened installation.
- Avoid opposing seams if possible.
- Cross joints must be staggered and also overlap by 5 cm.
- For heat-sensitive substrates, we recommend increasing the overlap (at least 8 cm).
- During work breaks, the installed roof layers must be secured against wind uplift.

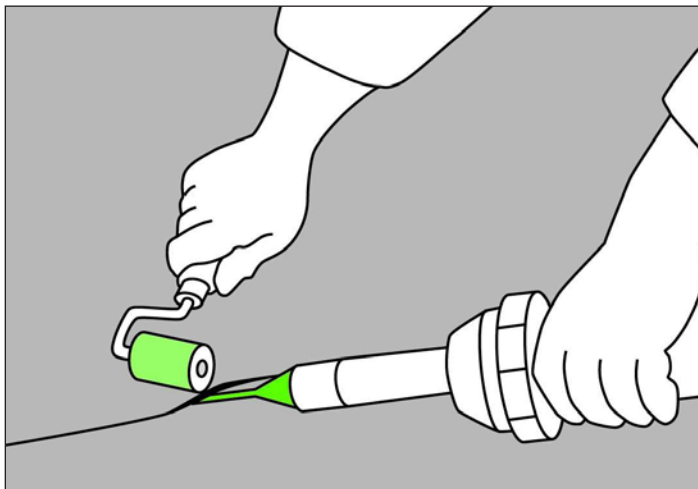


The welding of Rhenofol roofing membranes can be done with a hand welding device and a silicone pressure roller, or with the automatic welding machine.

Using the variable hot-air hand-welding tool with 4 cm nozzle width, welding temperature approx. 450 °C to 520 °C, (industrial grade), the seam areas are heated evenly and sealed immediately using the silicone pressure roller.

Please ensure the following for a secure seam weld:

- Seam areas must be clean and dry.
- Select the correct welding temperature and speed. This should be checked by making test welds at the start of the day, after every work brake, after power outage, and significant weather conditions change.
- Guide the welding tool under the seam so that the nozzle edge protrudes approximately 3 mm beyond the seam edge.



- When hot air welding, the seam connection must have a minimum weld width of 2 cm.
- T-joints should be secured by slightly melting and chamfering the centre membrane edge. This prevents the formation of capillaries.
- Cross seams of Rhenofol CGv must be covered with a Rhenofol CG strip at least 15 cm wide.
- If slag has formed, clean the metal nozzle with a wire brush.

All welds must be checked for proper execution using a suitable weld tester (e.g. FDT weld tester) after complete cooling.

If Rhenofol roofing membranes are to be flashed to rigid PVC components by hot air welding, the reliability of such connections must be checked by a test weld. The surfaces to be welded must be cleaned with Rhenofol solvent welding agent/Rhenofol thinner D.

The automatic welding machine is preferably used to close the seams of large-area roof waterproofing membranes.

The same criteria applies for a secure seam closure as for hand welding.

The welding parameters (e.g., welding temperature 460°C to 580°C at a welding speed of 2.0 to 3.5 m/min) must be adjusted depending on the weather and conditions. Information refers to Leister Varimat V2. Device-specific settings may vary.

The correct welding settings should be checked regularly at start of the day, after every brake, after power outage and significant weather change.

Additionally, please note:

- A functional test of the machine must be carried out before commissioning. Welder should be in good technical condition and well maintained.
- The welding process must be constantly monitored. Do not inhale the fumes produced during the welding process. Ensure adequate ventilation.
- On uneven surfaces, the automatic welding machine must be guided on rigid leveling strips (e.g. made of aluminum sheets) which are laid alternately along the seam. This prevents the formation of perpendicular bulges and results in a smooth, bead-free welding process.

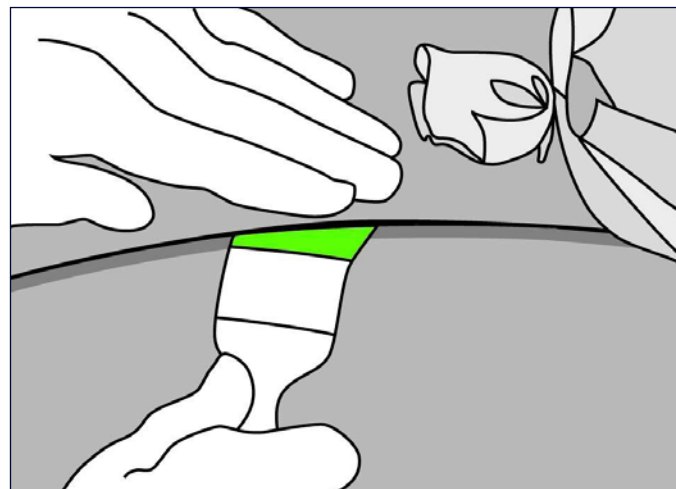
- Minimum weld width 2 cm.
- When connecting to Rhenofol roofing membranes or repairing old Rhenofol roofs using hot air welding, the welding surfaces of which have been exposed to the elements for a longer period of time (more than 2 days) must be cleaned beforehand.
- Cleaning is carried out, for example, with FDT cleaning wipes, which must be moistened with Rhenofol solvent welding agent. Allow the solvent welding agent to flash off (at least 1/2 hour) before hot air welding.
- All welded seams must be checked for correct execution after complete cooling using a suitable seam tester (e.g. FDT seam tester).

Seam welding with solvent welding agent is carried out using a welding brush, Rhenofol solvent welding agent (THF) and a PE sandbag.

The Rhenofol solvent welding agent (THF) can be used to bond Rhenofol roofing membranes to each other and to Rhenofol connecting sheets and to details made of rigid PVC.

Use a solvent-resistant flat brush, 30-40 mm of the seam area are simultaneously coated on both sides with Rhenofol solvent welding agent (THF) and pressed down by hand. After this, pressure is immediately applied to the seam with the PE sandbag.

The minimum joint width for solvent welding is 30 mm.



Please ensure the following for a secure seam welding:

- Seam areas must be clean and dry.
- Prevent damage to EPS rigid foam through increased seam overlap and correct dosage of the solvent welding agent.
- Secure T-joints by slightly melting and chamfering the centre membrane edge with a hot air welder. This prevents the formation of capillaries.
- Hot air welding is recommended at temperatures below 5°C combined with high humidity.
- On green roofs, seams must be welded exclusively with hot air.

Avoid contact of the solvent with skin and eyes.

Protect you skin through the use of suitable skin protection products before and after work. You must not use **solvent welding agents to clean** your skin.

No smoking, no open fire, avoid sparks.

Use solvent welding agents only in properly ventilated areas. Do not inhale fumes.

- Avoid excessive application.
- Repair defects with a hot-air welder.
- Check all seam edges.

Note regulations for handling solvents and flammable liquids.

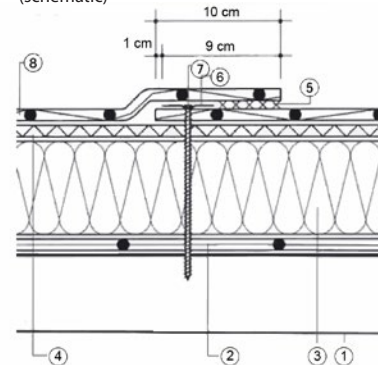
Application techniques for Rhenofol®

- Lay Rhenofol CV, CVL and CGv loosely perpendicular to direction of corrugated steel deck and timber formwork.
- Mechanical fastenings can be used as fastening in the seam overlap, with at least 10 cm, as field fastenings through the roofing membrane or with the welding paste system underneath the roofing membrane. The welding paste system must be applied below the roofing membrane. (Field fixing and welding paste system is not possible with Rhenofol CGv due to the lamination).
- For seam fastening, the distance between the edge of the membrane and the retaining plate is at least 1 cm.
- Plates must lay flat and press the roofing membrane onto the substrate, but they must not be sunk into the insulation material.
- The fastener spacing and membrane widths are determined by the wind load calculation (service provided by FDT – please ask our Technical department).
- The editable data collection sheet for wind load calculations can be found on our homepage (customer service, calculation tools).
- Oval plates should be aligned parallel to the membrane edge.
- For larger plates, the seam overlap must be increased accordingly.

- Secure insulation boards or sections that are not sufficiently held by linear fastening with additional fasteners to ensure they remain in position before installing the waterproofing membrane. The insulation manufacturer's specifications must be observed.

When using Rhenofol CV, CVL or CGv, any existing separating layer must also be secured with these additional fasteners.

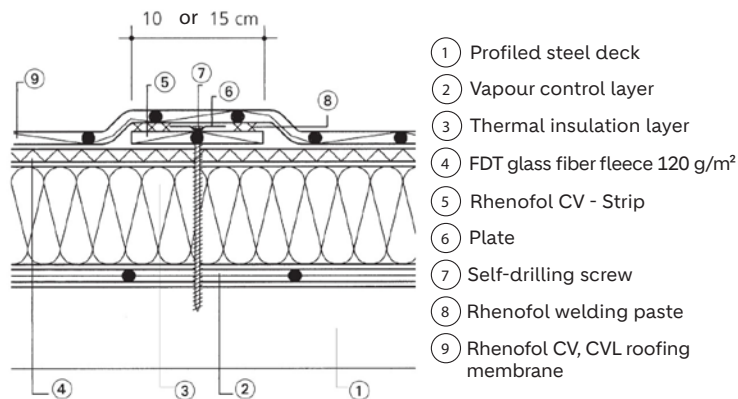
Example seam fastening
(schematic)



- ① Profiled steel decking
- ② Vapour Control layer
- ③ Thermal insulation layer
- ④ FDT glass fiber fleece 120 g/m²
- ⑤ Welded seam
- ⑥ Plate
- ⑦ Self-drilling screw
- ⑧ Rhenofol CV, CVL roofing membrane

Measuring and fastening for the Rhenofol welding paste system

- The spacing of the strips is measured according to wind uplift calculations.
- The strips run perpendicular to the corrugations of the profiled steel decking. For board formwork perpendicular to the boards.



Conditions for the safe installation of the Rhenofol welding paste system

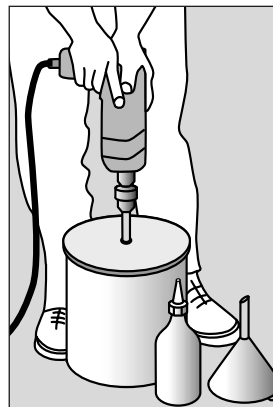
- The roofing membrane and the strips must be dry. Observe occupational safety and accident prevention regulations.
- Before use, the Rhenofol welding paste SB must be stirred with a power drill with an appropriate mixer attachment.

- The stirring time depends on the outside temperature: at low temperatures (< 20 °C) approx. 10–15 min., at higher temperatures (> 20 °C) approx. 5–10 min.

Do not stir the welding paste in closed rooms.

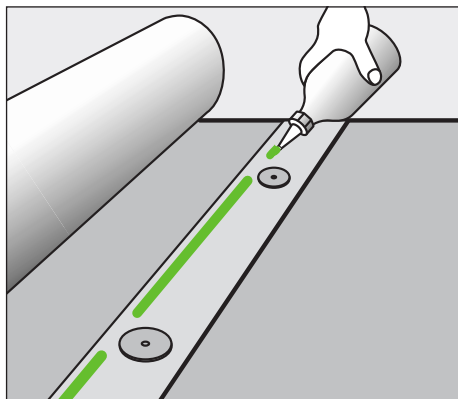
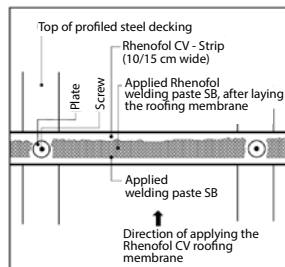
The safety instructions on the container must be followed. After stirring, the welding paste is decanted into 1-liter PE bottles using a funnel.

- Installation using a welding paste system is only possible in dry and windless weather conditions.



Applying the Rhenofol welding paste SB

- After installing the strips, the Rhenofol welding paste SB is applied onto the strips between the washers in straight lines. This corresponds to a quantity of approximately 50 g/m.

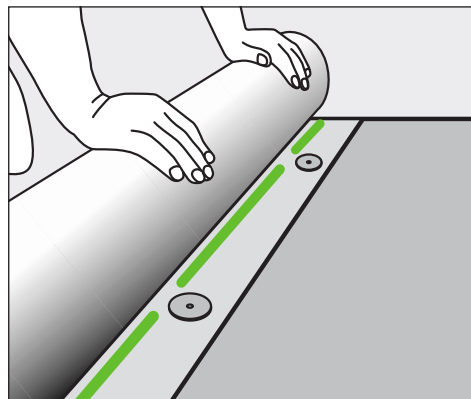


Laying the roofing membrane using the welding paste system

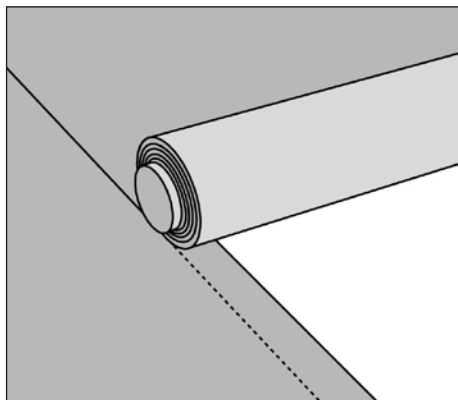
- The rolling of the Rhenofol CV or CVL roofing membranes onto the strips takes place immediately after the application of the welding paste. The seam overlap must be 5 cm.
- The roofing membrane must be rolled out within the open time of Rhenofol welding paste SB.

■ **The roofing membrane must not be repositioned after being rolled onto the Rhenofol welding paste SB.**

■ **Do not install the welding paste system during strong winds** (the freshly rolled-up roofing membrane must not lift off due to wind until the welding paste has sufficiently set).



- Loosely lay the Rhenofol CG/CGv membrane and secure it against wind uplift with ballast.
- Ballast in the form of gravel fill at least 5 cm thick, made of natural, unbroken pebbles of grain group 16/32 or slab covering in fine gravel bed or on pedestals.
- Rhenofol CG and Rhenofol CGv roofing membranes can also be mechanically fastened with individual clips for wind uplift protection until the ballast is applied.
- Install protective/separation layers as required.



Bonding of the thermal insulation

- Approved polyurethane adhesives can be used to bond the thermal insulation (e.g. FDT flat roof foam adhesive).
- The adhesive is usually applied in strips. The manufacturer's instructions regarding the required amount of adhesive must be followed.
- Care must be taken to ensure that the insulation is bonded firmly to the substrate.
- For insulation thicknesses greater than 150 mm, boards must be installed in multiple layers and bonded together.
- Insulation layers bonded with FDT flat roof foam adhesive may only be walked on approximately 1 hour after bonding (depending on external conditions).

Application of FDT adhesive to the Rhenofol CGv roofing membrane

- Roll the membrane out, position it and fold over half on both sides.
- Apply FDT adhesive in strips or over the entire surface, then fold back the Rhenofol CGv membrane and press it down, e.g. with a fine broom.
- Close seams using hot-air or solvent welding.
- Alternatively, the rolling-in method can be used.

Application of FDT adhesive to the roofing membrane

- The FDT foam adhesive can also be used for bonding fleece-laminated plastic membranes, e.g. Rhenofol CGv, to thermal insulation boards, concrete, intact bitumen membranes and wood materials in the flat roof area.
- The application process is analogous to the FDT adhesive, however, the adhesive is applied exclusively in strips.
- We recommend using the rolling method for FDT foam adhesive. The roofing membranes should then be pressed down, e.g. with a fine broom.

In dry, hot weather, we recommend lightly spraying both the foam adhesive and the roofing membrane adhesive to accelerate the curing time.

Further information on both adhesives and their application and processing can be found in the corresponding Technical Data Sheet on our website.

The adhesive consumption and distribution, as well as the measures required to secure the adhesive's position, must be determined on a project-specific basis.

The suitability of the substrate must be ensured before works begin. The instructions on the adhesive containers and the information on the Technical Data Sheets must be noted. If you have any further questions, please contact our Technical department.

Notes:

Due to EU restrictions, from 08/24/2023 onwards, users in the industrial or commercial sector must be certified in the application of PU adhesives and PU sealants (diisocyanates).

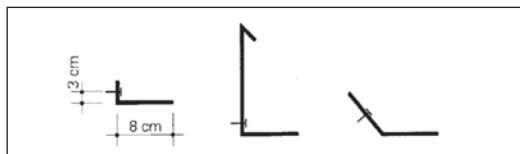
Connections and terminations with Rhenofol®

Perimeter fixing of Rhenofol CV, CVL

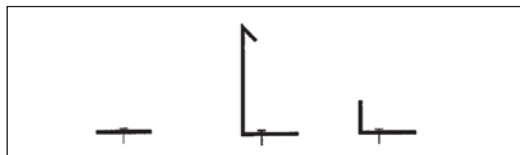
- For wind uplift reasons, Rhenofol CV/CVL roofing membranes must be fixed by welding to Rhenofol flashing at all roof edges, penetrations and valleys that deviate from the horizontal by more than 3°.
- The fixing is carried out with angles profiles or strips made of Rhenofol coated metal sheet which are firmly fastened to the

substrate and against which the roofing membrane Rhenofol CV, CVL is connected at roof level by welding.

- The width of the coated metal sheets should be at least 8 cm.
- If thermal insulation layers do not allow direct fastening to the substrate, the support for the coated metal sheet must be sufficiently pressure-resistant.



Throat angle when attaching to vertical or inclined surfaces.

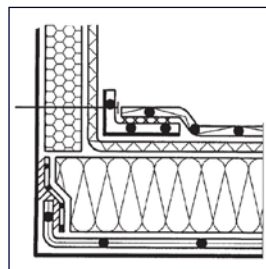
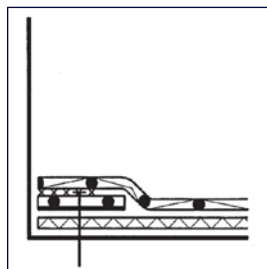
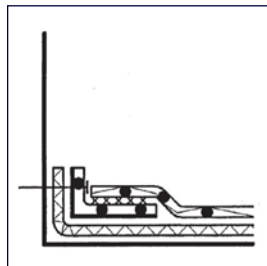


Strips or corners when attaching to horizontal surfaces.

Suitable supports are:

- Load-bearing substrates such as wood, concrete, metal.
- Thermal insulation materials such as polystyrene, PUR of compressive strength class dm (EPS/PUR min. 100 kPa) for unused and dh (EPS min. 150 kPa and PUR min. 100 kPa) for used roof areas.
- Thermal insulation materials made of mineral wool with a compressive strength of at least 60 kPa at 10% compression for unused roof areas and 70 kPa at 10% compression for used roof areas.
- You can also use single fasteners instead of Rhenofol coated metal sheets for perimeter fixing. Design must be coordinated with FDT for building heights exceeding 20 m and layer thicknesses above the load-bearing ceiling of more than 20 cm.
- The required number of fasteners per meter is equal to the number of fasteners in the first row of fasteners along the connection, but it is at least 4 pcs/m.
- Linear fastening is done exclusively in the respective substrate.

Examples of perimeter fixing with Rhenofol coated metal sheets



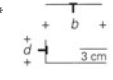
-  Rhenofol-coated metal sheet
-  mechanical fastening
-  Rhenofol CV, CVL roofing membranes
-  Vapour Barrier
-  Separation/ Protective layer
-  Thermal insulation layer
-  Thermal insulation layer – pressure-resistant

Perimeter fixing with Rhenofol CG/CGv

- Perimeter fixing is generally required at all flashings and trims, built-in details, etc. (at least 4 individual fasteners

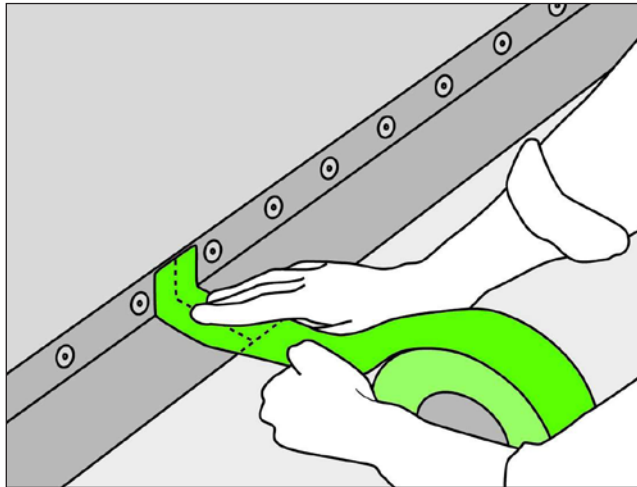
per m or fixing with the FDT fastening profile or with the Rhenofol coated metal sheet, in the case of version with Rhenofol CG analogous to Rhenofol CV, CVL).

Fastening elements and spacing for fixings

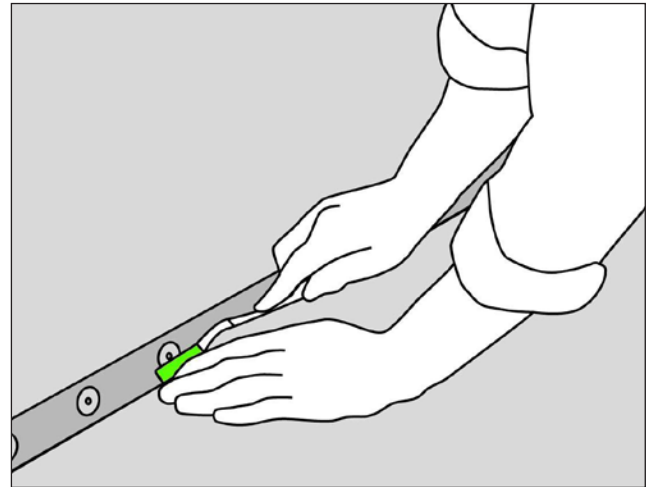
Item to be fastened		
Supporting construction	 Wooden plank* $d \geq 3 \text{ cm}$ $b \geq 8 \text{ cm}$ $\geq 1,5 d$	 Rhenofol coated metal sheet $d \geq 4,5 \text{ cm}$ $b \geq 8 \text{ cm}$
Reinforced concrete	Screw Ø 8 mm, with plug Ø 10 mm, spacing 30 cm	Body-bound rivet 4,8/26 mm spacing 20 cm
Lightweight concrete	Nail anchor Ø 8 mm, spacing 30 cm	Nail anchor Ø 5 mm, spacing 20 cm
Timber profiles, timber boarding	Wood screw Ø 8 mm spacing 30 cm	Wood screw 4,8/25 spacing 20 cm
Profil sheet decking	Self-tapping screw Ø 4,8 mm, spacing 20 cm	Steel blind rivet Ø 5 mm, spacing 20 cm

* Counter-sink fastening elements in timber profiles.
If necessary, pre-drill and use 10 mm diameter washers.
The manufacturer's application instructions for the fastening elements must be observed.

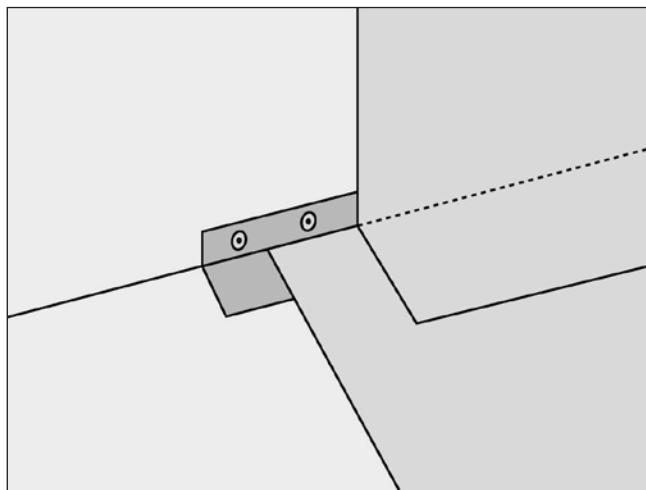
- Lay Rhenofol coated metal sheets (deburred cut edges) with a 4 mm gap between them and mechanically fasten them in a straight line to the upstands.
- Cover joints with FDT adhesive tape (at least 5 cm wide).



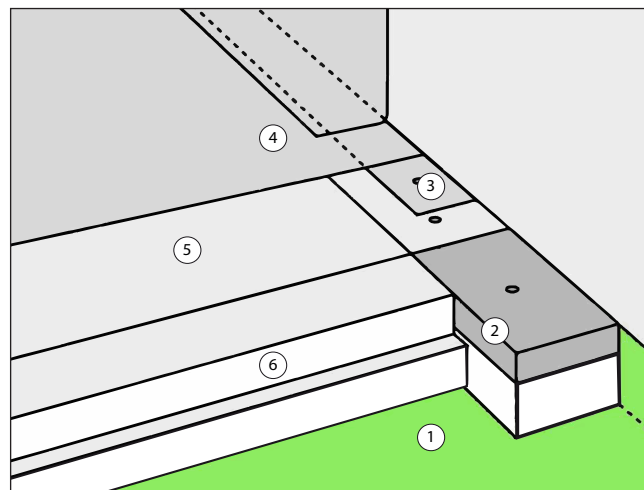
- Rhenofol roofing membranes can be welded using solvent welding or hot-air welding.



- Must be made with Rhenofol roofing membrane material, as shown on the following pages.
- Rhenofol CGv uses edge fixation exclusively with individual holders or the FDT fastening profile.



- ① PE vapour barrier, laid out to the top edge of the thermal insulation layer and flashed with connection tape.
- ② Timber profile, mechanically fastened, with pressure-resistant base.
- ③ Strips of Rhenofol coated metal sheet, fastened onto the timber profile.
- ④ Rhenofol CV/CVL/CG roofing membrane welded to the coated metal sheet.
- ⑤ FDT glass fiber fleece 120 g/m².
- ⑥ EPS thermal insulation layer.



The quality of the flat roof depends to a large degree on the functional reliability of flashings and trims.

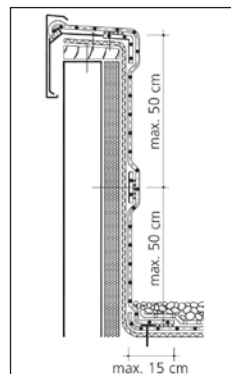
Special attention has to be paid to the following points:

- Rhenofol roofing membranes should always be fixed at all roof perimeters, flashings, roof penetrations and valleys (see page 26 onwards).
- Sealing of flashings and trims should be secured against wind intrusion by bonding, clamping or full-size fixings.
- The flashing strips must be sufficiently secured. If the flashing membrane is bonded, full-surface bonding is required for connection heights exceeding 20 cm. To allow for movement, valleys (crease areas) must remain unbonded for 20 cm.

■ In case of mechanical fastening of the flashing membrane (using Rhenofol coated metal sheets or by clamping it to the mounting rail of the roof edge trim), the maximum distance between the line of fixings is 50 cm (over the entire unfolded length). Rhenofol coated metal sheets for intermediate fixing should be at least 5 cm wide.

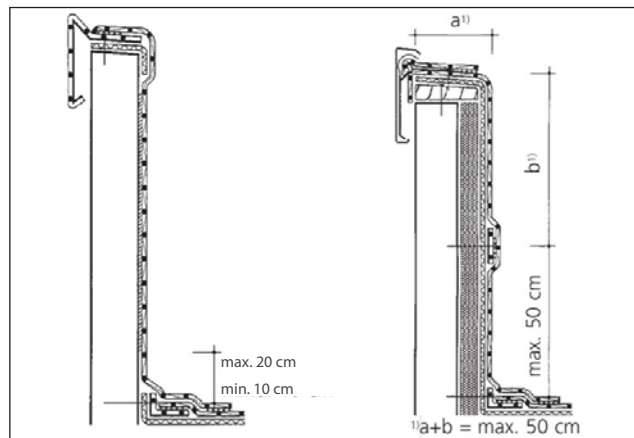
■ Protective layers in the flashing area can be left out if the substrate is smooth and even, and if special protection is provided at the edges (e.g. with angles profiles made of Rhenofol coated metal sheets or with 300 g/m² synthetic fleece).

■ **Suitable separating layers are always required when dealing with incompatible materials.**



Upstand with mechanical fixation with coated metal sheets.

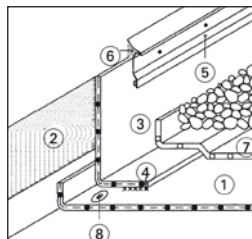
- Rhenofol coated metal sheet
- Rhenofol CG roofing membrane
- Mechanical fastening
- Rhenofol CV, CVL roofing membrane
- Separation layer
- Thermal insulation layer, pressure-resistant
- Treated timber profile



Adhered upstand

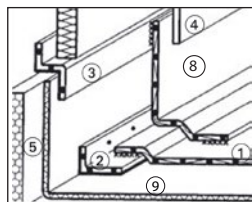
The roofing membrane is installed under the roof edge profile

- ① Rhenofol CG, CGv roofing membrane
- ② Rhenofol contact adhesive 20
- ③ Rhenofol flashing strip
- ④ Welded seam
- ⑤ FDT aluminum wall connection profile
- ⑥ FDT adhesive and sealing compound
- ⑦ PE layer 0,25 mm thick (e.g. FDT vapour barrier PE)
- ⑧ Perimeter fixing with single fastener

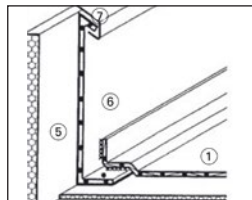


Flashing using Rhenofol connection strips and FDT aluminum wall connection profile.

- ① Rhenofol CV, CVL roofing membrane
- ② Fixing with angle profile made of Rhenofol coated metal sheet
- ③ Fixing with Z-profile made of Rhenofol coated metal sheet
- ④ Facade cladding
- ⑤ High compressive strength thermal insulation
- ⑥ Fixing with angle profile made of Rhenofol coated metal sheet, at the same time wall flashing
- ⑦ Counterflashing
- ⑧ Rhenofol flashing strips
- ⑨ Separation layer



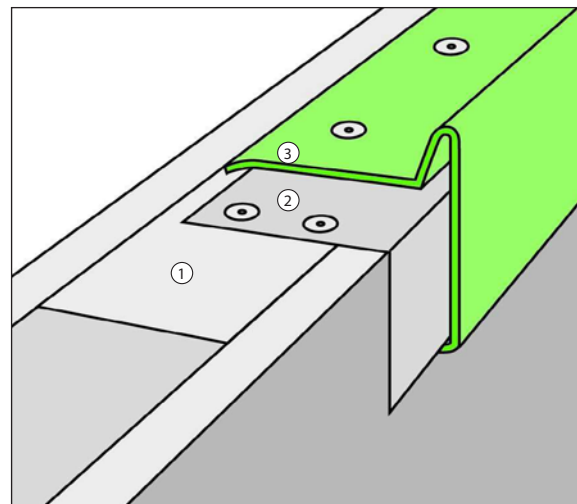
Flashing with a curtain wall facade.



Flashing with overhang strip.

- ① Synthetic fleece 300 g/m² (e.g. FDT synthetic fleece 300 g/m²)
- ② Galvanized steel stiffeners, 1.2 mm thick, in the joint area of the sheets, applied with a 4 mm clearance (see page 38).
- ③ Fasten the bent and deburred Rhenofol coated metal sheets using, for example, 4.8/26 mm body-bound rivets spaced 15 cm apart.

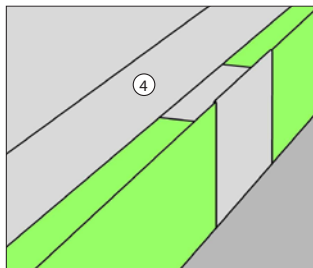
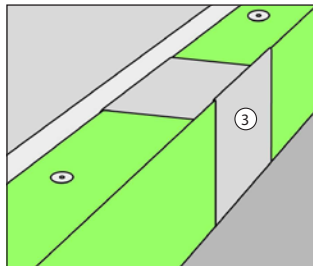
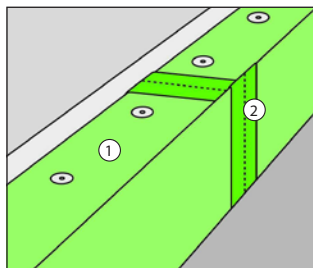
For increased wind uplift of stiffness reasons, attach additional fasteners or continuous fastener profiles.



- Rhenofol coated metal plates (de-burred cut edges) are laid with a 4 mm gap between them (profile length max. 2.00 m). For profile lengths over 2 m, the spacing should be 10 mm.

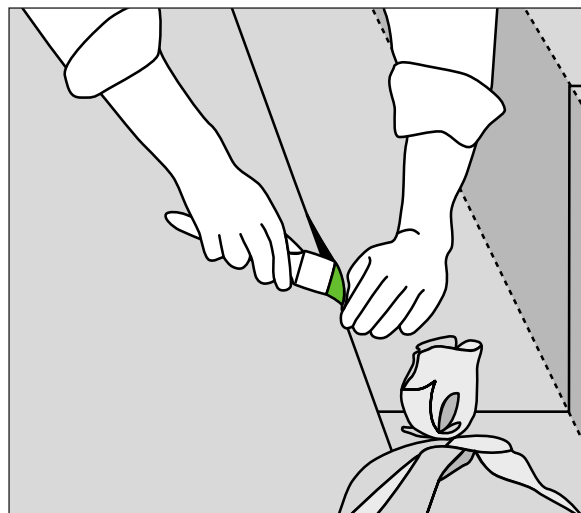
- Tape over the joint area with FDT adhesive tape (at least 5 cm wide).

- Weld a 15 cm wide Rhenofol C strip over the joint, welding both sides to the coated metal profiles.



- ① Rhenofol coated metal profile
- ② FDT adhesive tape
- ③ Rhenofol C strips for joint forming
- ④ Rhenofol connecting strip

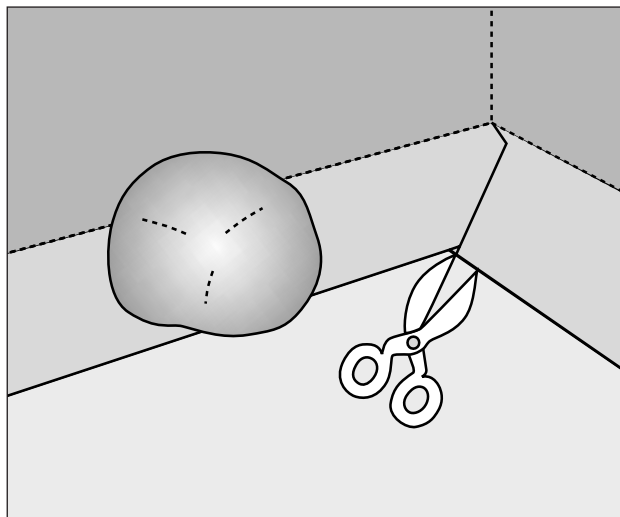
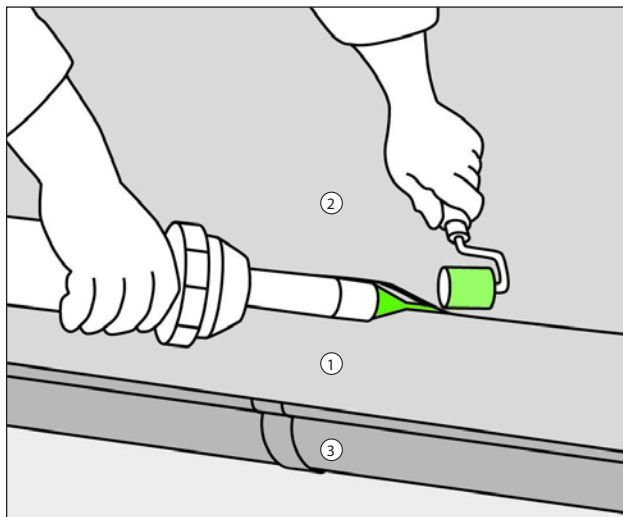
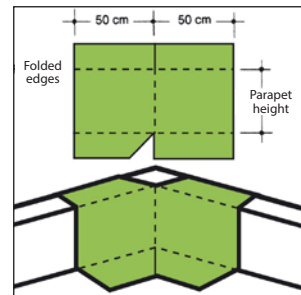
- The welding of the Rhenofol start/end strip to the roofing membrane is carried out by means of solvent welding or hot air welding.



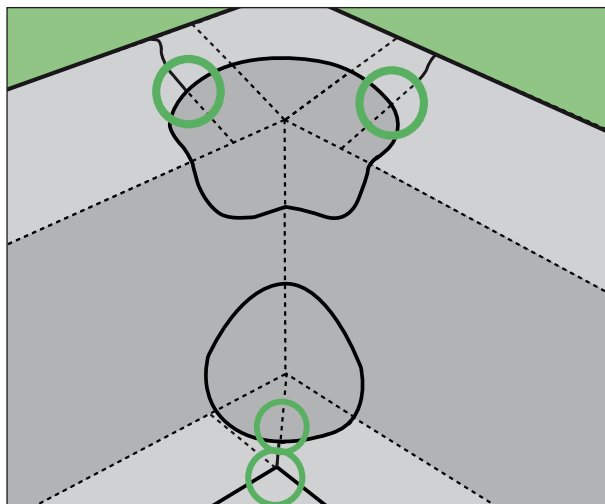
- ① Rhenofol eaves gutter flashing
- ② Rhenofol CV, CVL, CG, CGv roofing membrane
- ③ re-hung gutter

■ Eaves flashing joint as per page 38.

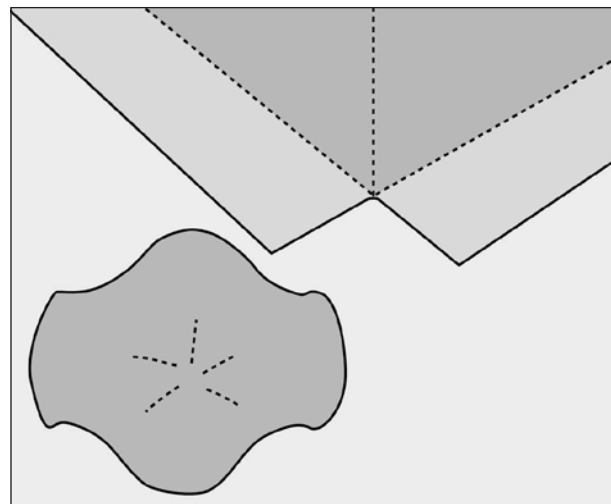
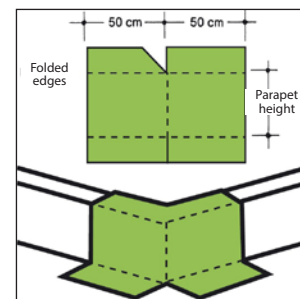
- Cut the Rhenofol CV/CVL/CG connection strip at a right angle and cut off the overlap towards the corner.
- Weld the seams.
- Weld in the inside corners.



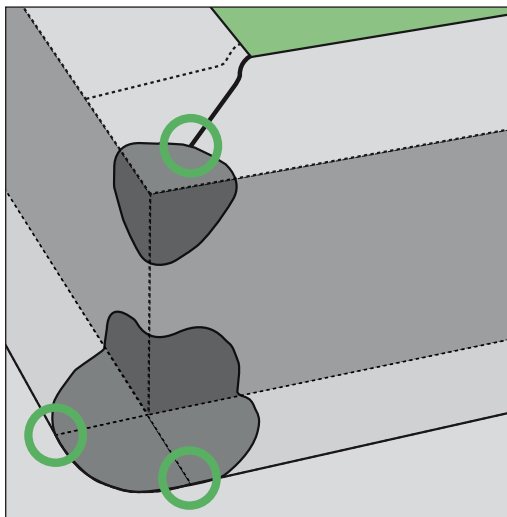
- Top edge of the parapet with prefabricated Rhenofol inside corner.
- Check all seam edges and chamfer T-joints (green circles see sketch) (see page 10 onwards).



- Cut out the Rhenofol CV/CVL/CG connection strip.
- Round off the corners.
- Weld all seams.
- Weld in the external corner.



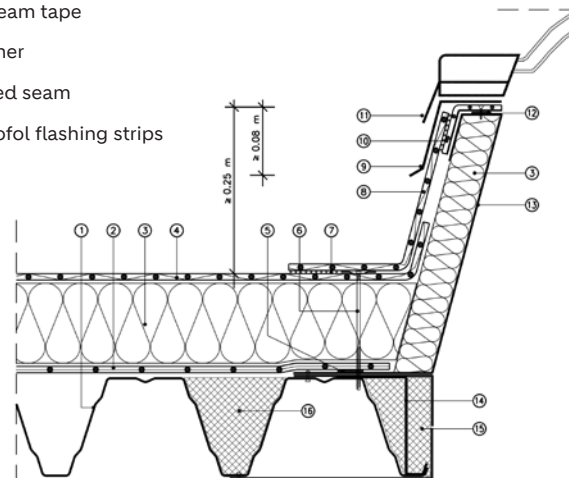
- Top edge of the parapet completed with prefabricated Rhenofol inside corner.
- Check all seam edges and chamfer T-joints (green circles on sketch (see page 11 onwards).



- Mechanically fix the Rhenofol roofing membrane at roof level in the substructure in the edge of the rising component using fasteners and plates, FDT fastening profile or Rhenofol coated metal sheet (see page 26 onwards).

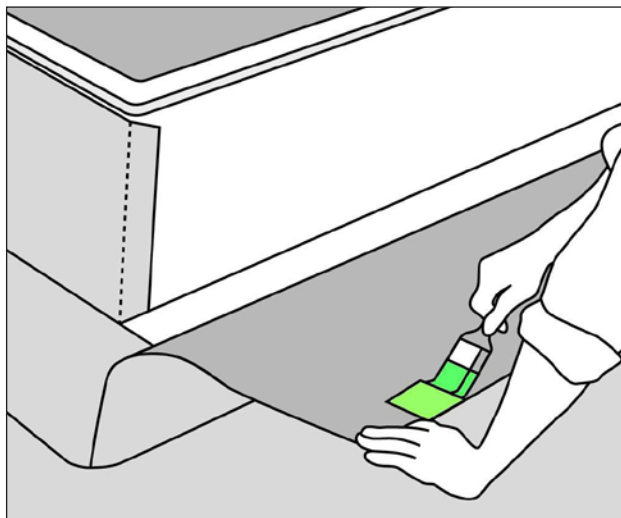
- ① Profiled steel deck
- ② FDT vapour barrier PE 0,25 mm
- ③ Mineral wool (MW) insulation layer
- ④ Rhenofol CV, CVL, CGv roofing membrane
- ⑤ FDT seam tape
- ⑥ Fastener
- ⑦ Welded seam
- ⑧ Rhenofol flashing strips

- ⑨ Counter flashing
- ⑩ Rhenofol connecting plate
- ⑪ Edging frame
- ⑫ Sealing tape
- ⑬ Mounting ring with inner wall made of sheet steel
- ⑭ Trimmer
- ⑮ Firestop or fitting made of non-combustible building materials
- ⑯ Sealing off the next profile cavity as an alternative to item 15

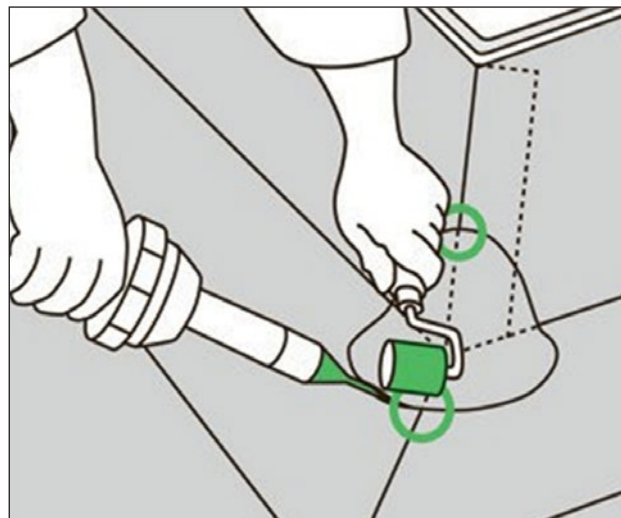


Detail according to the german Standard DIN 18234

- Bond the Rhenofol flashing strips CV/CVL/CG to the skylight upstand using Rhenofol bonding adhesive 20.
- Leave 20 cm of the valley areas unglued to compensate for movement.

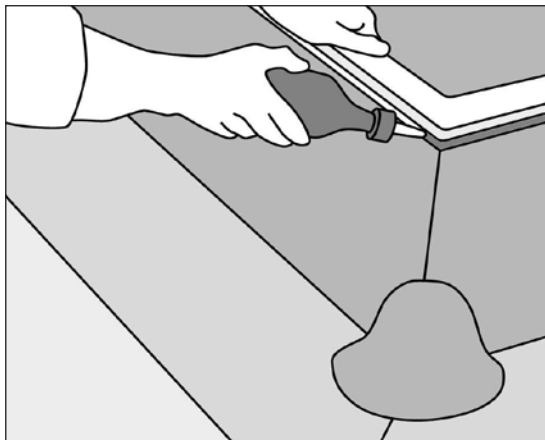


- Weld the overlapping seams of the flashing strips and weld on the outer corner.
- Weld the Rhenofol flashing strips to the roofing membrane.



- Seal the upper edge of the flashing with permanently elastic sealant; for PVC-U upstands, use Rhenofol paste. Alternatively, the roofing membrane can be secured against slipping at the upper edge using a clamping profile. The upper edge must also be sealed with a permanently elastic sealant.

It is advantage to use upstand that are already equipped by the skylight manufacturer with flashing options with PVC roofing membranes, e.g.: upstands made of rigid PVC:

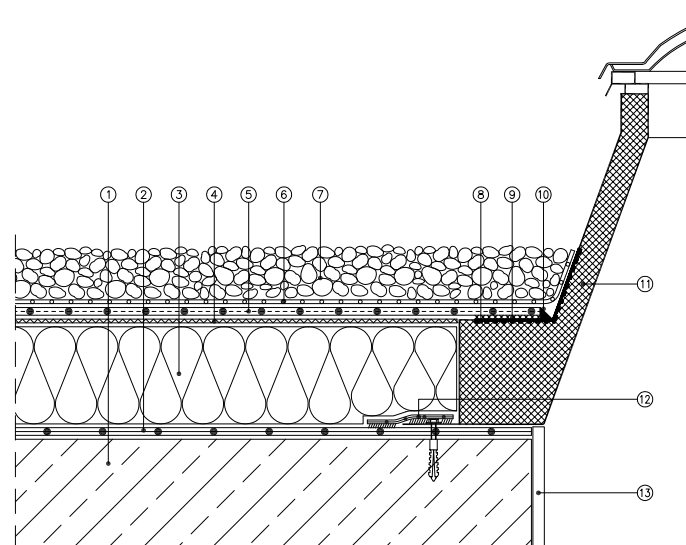


- Or those with laminated rigid PVC strips, to which Rhenofol roofing membranes are flashed at roof level by welding (not with Rhenofol CGv).

For hot-air welding, clean with Rhenofol solvent welding agent before welding.

Notice:

Upstands must be approved by the skylight manufacturer for direct flashing (as edge fixing), otherwise a separate edge fixing is required.



- | | |
|---|---|
| ① Reinforced concrete | ⑨ Welded seam |
| ② FDT vapour barrier PE | ⑩ Rhenofol paste |
| ③ Expanded polystyrene (EPS) insulation layer | ⑪ Skylight with insulating ring |
| ④ Separation layer FDT glass fiber fleece 120 g/m² | ⑫ FDT connection tape for FDT vapour barrier PE |
| ⑤ Rhenofol CG roofing membrane | ⑬ Interior cladding |
| ⑥ Separation layer FDT vapour barrier PE, 0.25 mm thick | |
| ⑦ At least 5 cm gravel fill, rounded grain size 16/32 | |
| ⑧ Laminated strip made of rigid PVC | |

FDT system accessories for Rhenofol roofing membranes

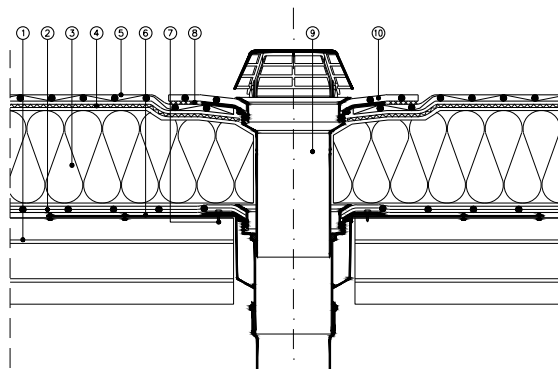
Secure the built-in components to the substrate using at least 4 fasteners.

For other built-in components, mechanical fixing of the membrane is also required. This can be achieved using individual fasteners.



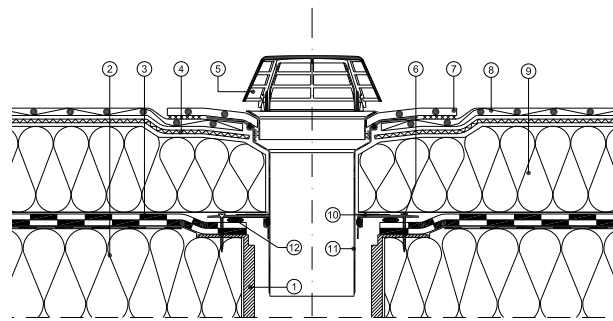
- The Rhenofol roofing membrane is rolled out over the gully recess and cut out in a circular shape for the insertion of the FDT VarioGully or the warm roof attachment. The FDT VarioGully body or the FDT VarioGully warm roof attachment is then installed. To prevent water from accumulation around the drain, the FDT VarioGully or the FDT VarioGully warm roof attachment must be embedded in the substrate (e.g., in the case of thermal insulation).
- Properly fasten the FDT VarioGully.
- The sleeve (Rhepanol C) is then fitted onto the screw ring and this is screwed into the FDT VarioGully and tightened (re-tighten the screw ring several times). Before tightening the screw ring, apply Rhenofol paste between it and the Rhenofol cuff. Then tighten the screw ring firmly using the FDT screw aid. It is important to ensure that the oval FDT sealing ring is correctly inserted beforehand.
- The connection to the roofing membrane is made via the respective connection sleeve using hot air welding.
- Roof opening:
 - vertical
FDT VarioGully: Ø 20 cm
 - angled
FDT VarioGully: 20 × 28 cm
 - angled
FDT VarioGully extremely flat:
20 × 25 cm.

FDT VarioGully for Rhenofol CV, CVL roofing membranes (non ventilated roofs)



- | | |
|--|---------------------------|
| ① Profiled steel deck | ⑥ Reinforcing plate |
| ② FDT vapour barrier PE | ⑦ Gully fastening |
| ③ Expanded polystyrene (EPS) insulation layer | ⑧ Welded seam |
| ④ Separation layer FDT glass fiber fleece 120 g/m ² | ⑨ FDT warm roof extension |
| ⑤ Rhenofol CV, CVL roofing membrane | ⑩ Rhenofol sleeve |

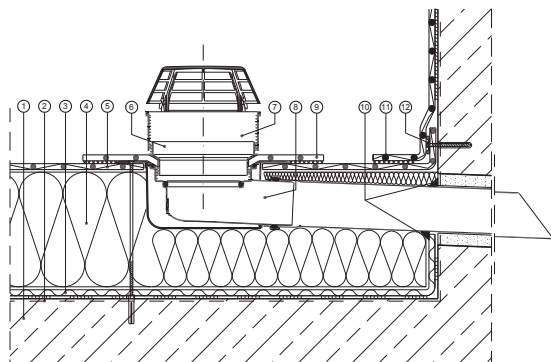
FDT VarioGully renovation flange for Rhenofol CV, CVL roofing membrane (non-ventilated roof)



- | | |
|--|---|
| ① Existing old roof drain (Diameter of outlet: minimum 37 mm and maximum 210 mm) | ⑦ Rhenofol universal collar |
| ② Existing thermal insulation | ⑧ Rhenofol CV, CVL roofing membrane |
| ③ Old roof with bitumen waterproofing | ⑨ New EPS thermal insulation (minimum thickness 50 mm for accommodating the warm roof attachment) |
| ④ Separation layer FDT glass fiber fleece 120 g/m ² | ⑩ FDT VarioGully renovation flange |
| ⑤ FDT gravel/leaf guard | ⑪ FDT warm roof extension |
| ⑥ Fasteners (6 pieces) for FDT renovation flange | ⑫ FDT sealing cord |

FDT VarioGully angled, DN 70, with emergency overflow drain for Rhenofol CV, CVL roofing membrane

non-ventilated roof



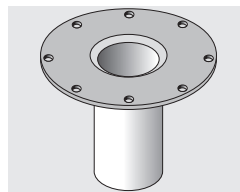
- | | |
|---|-------------------------------|
| ① Reinforced concrete | ⑨ Rhenofol sleeve |
| ② Cold bitumen coating as required | ⑩ Sealant |
| ③ Vapour control layer | ⑪ Rhenofol CV flashing strips |
| ④ Thermal insulation layer, e. g. Mineral wool | ⑫ FDT fastening profile |
| ⑤ Rhenofol CV, CVL roofing membrane | |
| ⑥ FDT emergency overflow drain lower part | |
| ⑦ FDT emergency overflow drain upper part | |
| ⑧ FDT VarioGully angled, DN 70, mechanically fastened | |

Important notice:

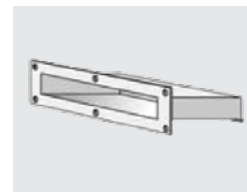
In case of permanent water accumulation at the emergency overflow drain, the flashing parts must be fitted with a suitable sealant.

Rhenofol roofing membranes are used on all FDT installation components such as RWE, water spouts, emergency overflow drains, etc. (exception FDT VarioGullys) are fixed to the rigid PVC flanges by welding, in accordance with the material specifications. The flanges must be cleaned before weld with Rhenofol thinner D. For Rhenofol CGv roofing membranes, the

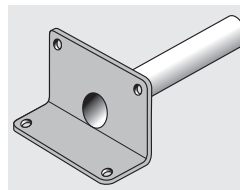
connection to the installation components is made with a sleeve made of Rhenofol C. For components from other manufacturers that are not approved for direct fixing of Rhenofol by welding or clamping, the seal in front of the components must be mechanically fixed, e.g. with the Rhenofol coted metal sheets.



FDT rainwater outlet (RWE)

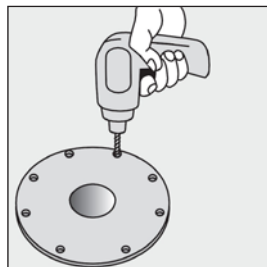


FDT emergency overflow drain



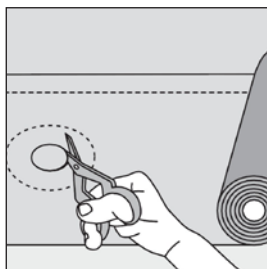
FDT water spout

- RWE mounting and fastening. Clean the flange with thinner D. If possible, embed the RWE flange into the substrate prevent water from pooling around the drain.

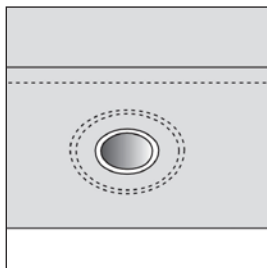


- Unroll the roofing membrane, mark the center hole and cut it out.

With Rhenofol CGv, the roofing membrane must first be unrolled and then the component installed. The flashing to the roof membrane is made via a collar made of Rhenofol C.



- Weld the roofing membrane to the flange. Cut the leaf guard for RWE to the inner diameter at the centering cross and insert it.



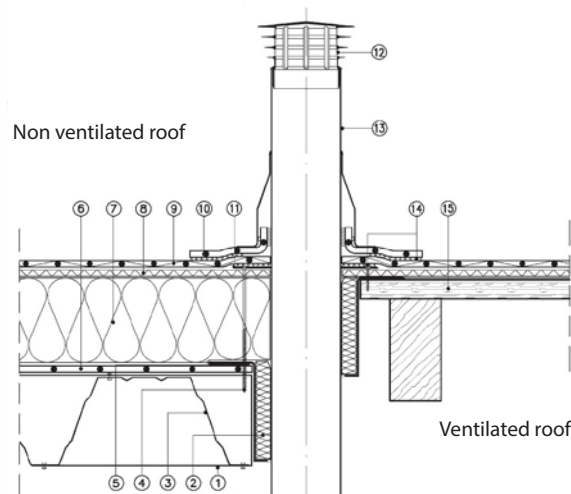
Follow the same procedure for FDT water spouts and FDT emergency overflow drains.

FDT flat roofing vent pipe DN 125/DN 100

Roof opening: Ø 19 cm

- Edge profile
- Through-hole with insulating sleeve
- Profiled steel deck
- Mechanical fastening
- Sealing tape
- PE layer 0,25 mm thick (e.g. FDT vapour barrier PE)
- EPS thermal insulation

- Separation layer
FDT glass fiber fleece 120 g/m²
- Rhenofol CV, CVL roofing membrane
- Rhenofol C sleeve
- Support ring
- Removable exhaust duct hood
- FDT vent pipe
DN 125/DN 100
- Welded seam
- Wooden deck



FDT cold roof vent DN 125

Secure to the roof deck using 4 fasteners.

Roof opening: Ø 12.5 cm.

Ventilation cross-section: 114 cm².

① Woden deck

② FDT synthetic fleece
300 g/m²

③ Rhenofol CV, CVL, CGv
mechanically fastened

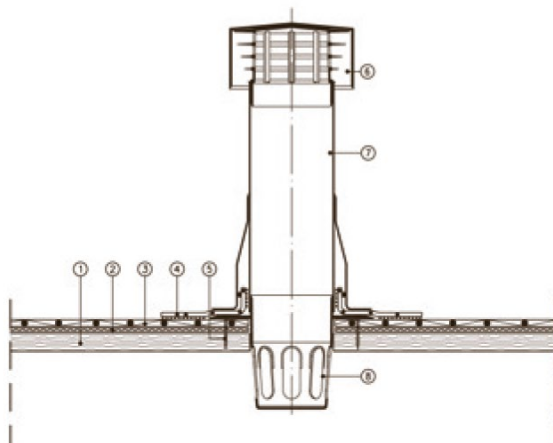
④ Rhenofol collar

⑤ Fastening

⑥ Weather cap DN 125

⑦ FDT cold roof vent DN 125

⑧ Condensation collection tray

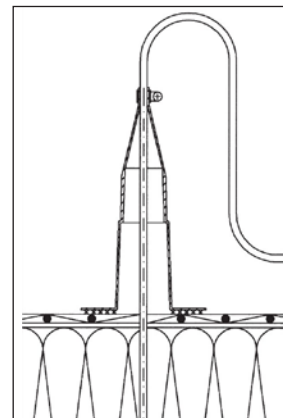


Flashing to the roofing membrane

The FDT lightning conductor drain is flashed directly to the Rhenofol roofing membrane with the collar.

Flashing to lightning protection wire, cable, pipes with 8 mm diameter.

Secure the penetration with the enclosed pipe clamp by squeezing the crimp point together using a pair of pincers.



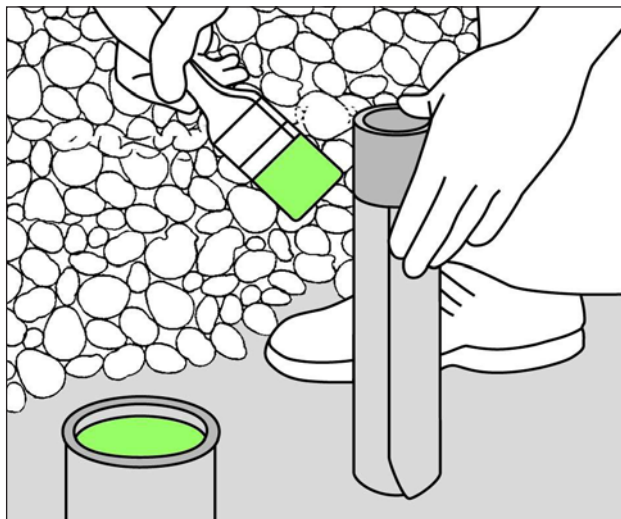
Flashing with wider penetrations up to max. 53 mm diameter

For larger diameters, simply cut off the FDT lightning conductor flashing. The inner diameter at the cut point should be at least 2 mm narrower than the component to be passed through.

This area is stretched when it is attached. Attach the connection to the resulting cylindrical shaft using a suitable stainless steel clamp.

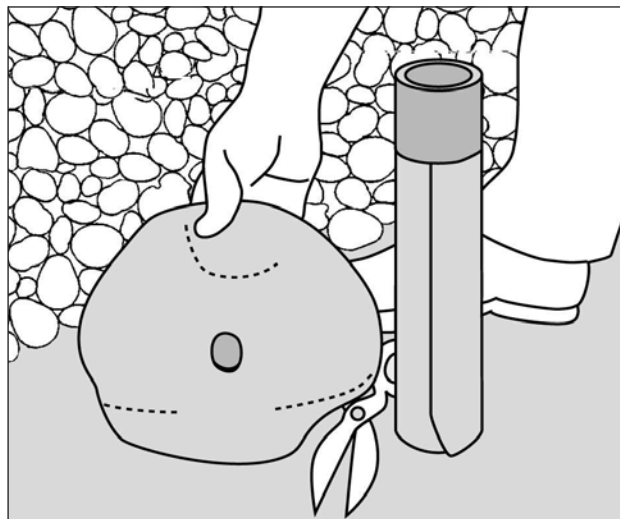
Attention: check the flashing height.

- Bond the Rhenofol C strips to the metal pipe using Rhenofol bonding adhesive 20 and weld the seam overlap. (Minimum welding width 20 mm).



Flashing against pipe drains

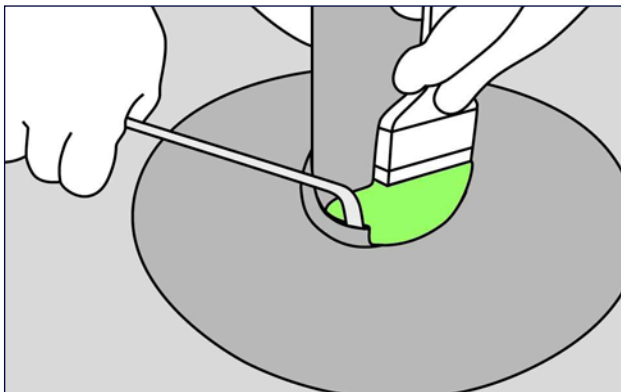
- Cut Rhenofol C collars to size. The cut-out hole is approximately 1/2 of the diameter of the pipe.

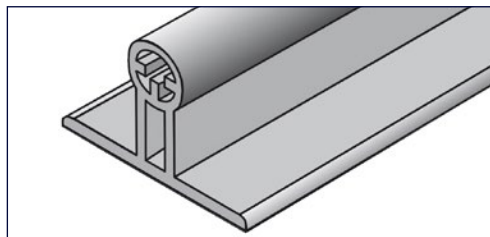


- Melt or chamfer the seam edge at the T-joint to prevent capillaries.
- Apply Rhenofol C collars and weld them to the sheathed pipe and the roofing membrane.
- Top flashing is made using a jubilee clip and Rhenofol paste, or alternatively with the FDT heat shrink tubing.

Note:

Alternatively, the pipe fitting can be pre-welded onto an auxiliary pipe, expanded in the lower area, and then welded horizontally onto the round collar, similar to Rhepanol hg.





- Only weld Rhenofol standing seam profiles onto dry and clean Rhenofol roofing membranes.
- Thoroughly clean dirty surfaces.
- Carefully check all seams before applying the Rhenofol standing seam profiles.
- Place additional anchor markers as required.
- Do not place Rhenofol standing seam profiles in the rainwater run-off area or near rainwater outlets.
- For safety reasons, standing seam profiles should not be installed on roof areas that are regularly walked on.
- Standing seam profiles cannot be used as snow guard brackets.

Important notice:

It is recommended to weld the Rhenofol standing seam profile lengthwise to the roofing membrane. It is thus possible to use the seam as a positioning aid.

Weld the profile on the seam, but not directly over the seam edge!

Application with hot-air welding

- Weld the beginning of the Rhenofol standing seam profile approximately 10 cm long using a handheld welder. Then, using the special pressure roller, weld the profile to the roofing membrane along the marking or seam edge.

The standing seam profile is welded to the roofing membrane on both sides.

■ Tipp:

The seam can be carried out on both sides in one operation. with a nozzle at least 60 mm wide (e.g. LEISTER).

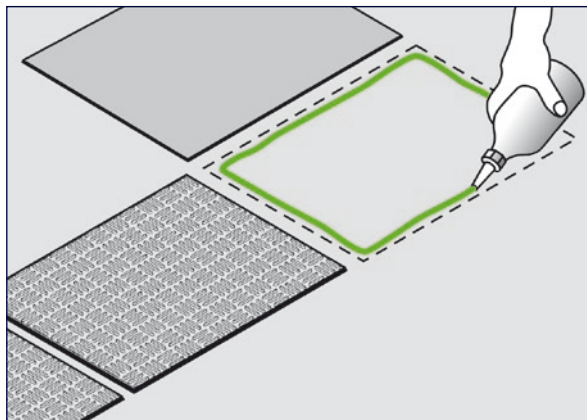
- The connection from profile to profile is made with the appropriate dowel and Rhenofol solvent welding agent (THF) or Rhenofol paste.



Rhenofol paving tiles for marking maintenance routes on Rhenofol roofs.

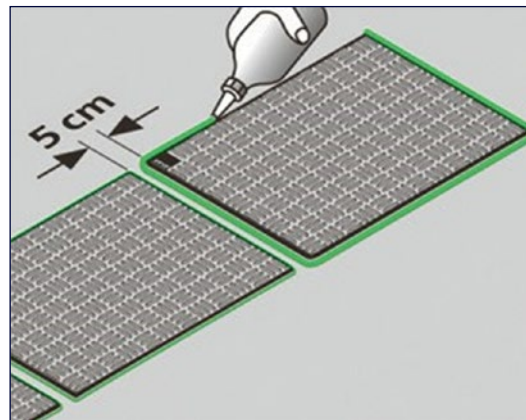
Fixing on clean, dry roof surfaces with hot air or with Rhenofol paste (consumption approx. 120 g/tile) or with FDT adhesive and sealant (approx. 100 g/m).

- Apply Rhenofol paste approximately 2 cm wide and insert the plate.
- Secure all around with Rhenofol paste. (Not required for hot air welding).



Alternatively: installation with FDT adhesive and sealant

- Apply a 1 cm thick bead of FDT adhesive and sealant the adhesive area must first be pre-treated with the FDT activator. The adhesive should be sprayed with water to ensure it hardens completely.
- A minimum distance of 5 cm must be maintained when laying Rhenofol paving tiles.



FDT - Legal notice

We expressly point out that all the above information, especially the application and utilization recommendations for the roofing membranes and system accessories, are based on our knowledge and experience under normal conditions.

Proper storage and usage of the products is also a prerequisite. Due to different materials, substrates and varying working conditions, no guarantee of a work result or liability can be derived from these instructions or from an oral statement, regardless of any legal relationship.

In the event of an allegation that FDT acted intentionally or with gross negligence, the

user must provide proof that they have provided FDT with all information and details necessary for a proper and relevant assessment in writing, in a timely, complete and actual manner.

The user is responsible for ensuring that the products are suitable for the given application. FDT reserves the right to make changes to the product specifications.

Property rights of third parties are to be considered. Furthermore, the most recently published or available version of a Technical Information Sheet is binding; this can be requested directly from FDT or downloaded from our website **www.fdt.de**.

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