FDT
FLACHDACH · TECHNOLOGIE

Rhepanol® hfk
Rhepanol® hfk-sk

Roofing membranes
Edition 05/2016

Rhepanol® hfk

Application manual

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This application manual contains the basic rules for working with the roofing membranes **Rhepanol hfk and Rhepanol hfk-sk.** The Guidelines for the Design and Application of water-proofing – Flat Roof Guidelines – of the International Federation for the Roofing Trade (IFD) are considered. Project-related, detailed solutions are provided by our specialists.

Requirements for correct application:

- The supporting deck structure has to meet the technical requirements, especially for load-bearing capacity, deflection, anchorage and drainage.
- Solid, clean, dry and even roof surfaces.
- Substrates must be smooth, free from open cracks, concrete nibs and sharp projections (e. g. chippings).
- Joints have to be formed according to requirements, as their width or movement may impede the performance of the roof seal.
- Labour standards and safety regulations must be adhered to, if necessary, ask for our safety data sheets.
- National standards and regulations must be observed.

Standards and technical rules

Instructions of EN 1991-1-4 must be observed for all fasteners. Additionally, the Technical Rules for Roofs with Coverings – Instructions for Flat Roofs – and the Technical Rules for Metal Works must be observed.

Manufacturer's installation instructions as of May 2016
Technical changes reserved.

Permanently stable and durable

- The optimal safety membrane for waterproofing flat roofs.
- For easy, quick and reliable application.
- Long-term proven on more than 100 million m² of applied PIB roofing membranes.
- Is a product based on the proven raw material polyisobutylene (PIB).
- **Roofing membrane Rhepanol hfk** with an integrated highly tear-resistant synthetic fleece* and welding edge.
- **Roofing membrane Rhepanol hfk-sk self-adhesive** with an integrated **adhesive-coated** highly tear-resistant polyester/glass fleece backing* and welding edge.

* The synthetic fleece at Rhepanol hfk and the polyester/glass fleece at Rhepanol hfk-sk provides for additional protection against stresses originating from the substrate.

Range of application

- As a roofing membrane
  – in mechanically fastened layer build-ups
  – in loose-laid layer build-ups with ballast, except for green roofs
  – in bonded layer build-ups
  – with self-adhesive Rhepanol hfk-sk in bonded layer build-ups
- Rhepanol h (without synthetic fleece backing) is used for individually formed details, e. g. for round roof penetrations.
- Rhepanol hsg (without synthetic fleece backing) with glass fleece reinforcement is used as a flashing membrane and covering strip on the roof area.

Material properties

- Roofing membrane Rhepanol hfk[1)] made of polyisobutylene (PIB) according to DIN EN 13956.
- Roofing membrane Rhepanol hfk-sk[2)] made of polyisobutylene (PIB) according to DIN EN 13956.
- Compatible to bitumen.
- Free of halogen-containing fireproofing agents.
- Weather-resistant, even without additional surface protection.
- Resistant to atmospheric influence such as UV radiation or exhaust gas from industrial and heating plants.
- Remains extremely flexible, even at temperatures as low as –40 °C.
- Outstanding resistance to natural ageing.
- Free of plasticizers, resistant to rotting, non-porous.
- Resistant to flying sparks and radiant heat according to DIN CEN/TS 1187, confirmed by official test certificates, class E.
- Not resistant to: organic solvents such as benzene, toluene, paraffin, trichlorethylene; solvent-containing materials such as lacquers, paints; fats, oils, such as oily cements, forming oils.

[1)] Rhepanol hfk: according to DIN V 20000-201 DE/E1 PIB-BV-K-PV-1.5

[2)] Rhepanol hfk-sk: according to the General Building Construction Supervision Test Certificate AbP.-No. P-K14-1192.1.

Rhepanol hfk and **Rhepanol hfk-sk** are products made of the proven raw material polyisobutylene (PIB). In case of Rhepanol hfk, the homogeneous waterproofing layer has a lower synthetic fleece backing.

In case of Rhepanol hfk-sk, the homogeneous waterproofing layer has a lower polyester/glass fleece backing and a **self-adhesive coating**.

With both membrane types, after laying the fleece backing reduces stress and strain (vapour decompression, movement compensation etc.).

- The **self-adhesive coating** of **Rhepanol hfk-sk** consists of a synthetic adhesive compound which at the factory is covered with a protective foil.
  These modern self-adhesive membranes provide for cost-efficient and long-term reliable waterproofing of proven FDT quality.
- Both roofing membrane types are equipped with a welding edge on one side for professional membrane connection using hot air, resulting in a permanently waterproof joint.

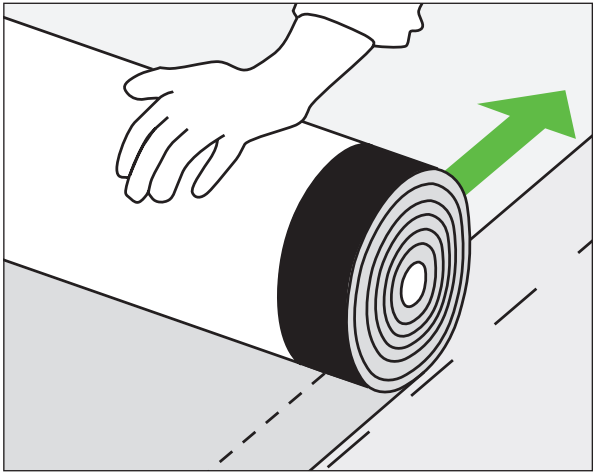
These roofing and waterproofing membranes are tested according to the European standard DIN EN 13956 and are CE marked.

Storage

- Rolls should be stored horizontally!
- Until used, the roofing membranes must be stored in a dark and dry place or covered with tarpaulin, i. a. to preserve the high adhesiveness of the self-adhesive layer (at Rhepanol hfk-sk).
- Unsealed packing units must be carefully closed, if stored in the open for a longer period.
- Single rolls, bent Rhepanol coated metal sheets and accessories should be covered with tarpaulin.

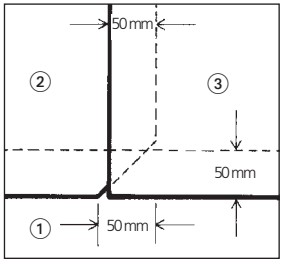
Sealing the roof area with Rhepanol® hfk

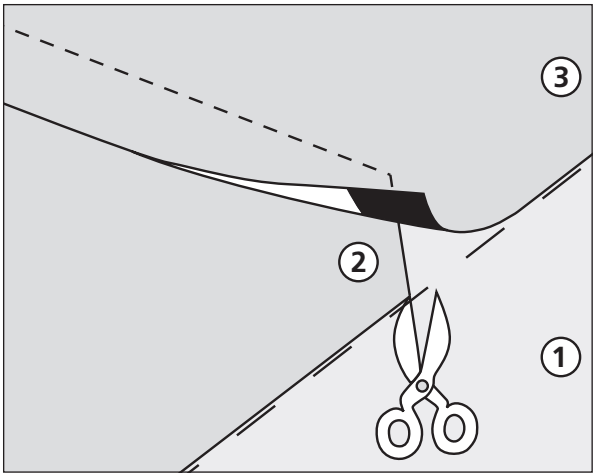
- Unroll the roofing membranes.
- Longitudinal seams and cross joints should overlap by 50 mm.
- Edge markings (lettering) simplify alignment with a seam overlap of 50 mm.
- If possible, avoid seams against the water flow.



- Cut off the corner of the lower membrane (before pulling out the release paper).

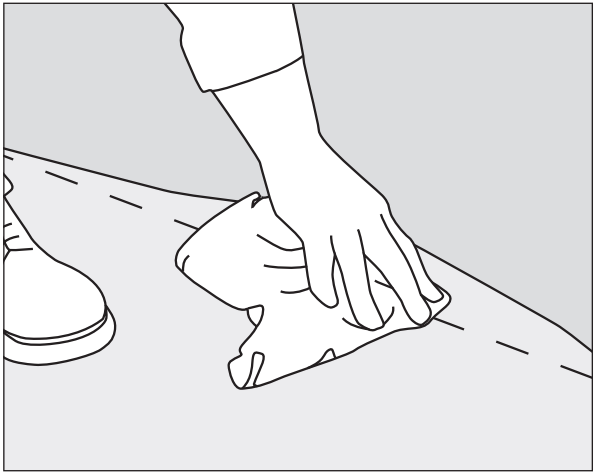
① – ③ Application order of the membranes
② Lower membrane with cut-off corner





- Before welding always clean the seams on both sides with cleansing tissues and Rhepanol h seam cleaner.
  This is also necessary when flashing against Rhepanol coated metal sheets and prefabricated accessories.

Note:
When handling cleaning agents, thinners etc. we recommend wearing the enclosed protective gloves.



General information
When setting the welding temperature make sure not to overheat the material.
At excessive temperatures the material will not be welded.

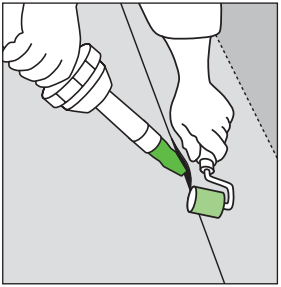
Overheated areas can be identified by their „shiny" surface. When joining the seams, the lower black foil will bulge out when being pressed on, leaving black spots on the pressure roller and the roofing membrane.

These areas cannot be welded anymore and need to be covered with another piece of material.

Therefore, pay attention to the basic welding temperature setting:
With the handheld welder and the pressure roller:
The basic welding temperature is approx. 400 °C.

Compared to the welding machine, the welding temperature of the handheld welder is slightly lower in order to work more precisely at details like corners. The welder must be held under the seam so that the edge of the nozzle projects approx. 3 mm from the edge of the seam.

Hot air welding with the handheld welder and the pressure roller
With the continuously adjustable, handheld hot-air welder with a 40 mm nozzle (industrial hot-air welder), the seam areas are evenly heated and immediately closed with the **FDT Teflon pressure roller.**



Before welding, always clean the seams on both sides with cleansing tissues and Rhepanol h seam cleaner.

- The seam must be formed with a welding width of min. 20 mm.
- In general, particularly when using welding equipment without permanent temperature indication, the seam quality must be controlled by test welds.

Sealing the seams with the welding machine

- **The basic welding temperature is 480 °C and the welding speed is 3.5 m/min.**

- The correct settings should be checked by performing test welds before starting to work. Since the nozzle in the rear area of the seam is slightly pressed to the lower membrane when hot air welding with the welding machine, the welding results will always be sufficient in that area, which must not necessarily be true for the front area.

- Therefore the weld sample must be taken parallel to the seam and must be checked also at the front area of the seam.

- The hot-air welding machines, which are manually operated in the welding direction, are mainly used for sealing membrane seams of larger roof sealing areas.

- As for reliable sealing of the seams with the welding machine, the same requirements as for manual welding apply, tacking, however, is not necessary (see page 13).

Note:
When starting the machine, a function test must be carried out.

Permanently monitor the welding process!

In case of uneven substrates, the machine must be guided on rigid compensation strips (e.g. aluminium sheets), which are alternately placed along the seam.
Thus perpendicular bulges are avoided and a smooth weld without beads is ensured.

If flashings are carried out against Rhepanol hfk roofing membranes or coated metal sheets, these welding areas must also be cleaned prior to further processing!

- Clean them with a cleansing tissue that has been moistened with Rhepanol seam cleaner.
- Allow the cleaner to flash off before hot-air welding.
- Check all seam edges.

Note:
In case of Rhepanol hfk, solvent welding is **not** possible. **T-joints** should be secured by slightly melting and chamfering the centre membrane edge, thus preventing capillary action. Avoid overheating of any surfaces. In case of ash build-up, the metal nozzle should be cleaned with a wire brush.

- To produce a secure weld, please note: Seam areas must be dry and clean.

Note:
If Rhepanol hfk roofing membranes are to be flashed against built-in details made of PP by hot-air welding, the reliability of such a connection has to be verified by test welding. The areas to be welded must also be cleaned with Rhepanol h seam cleaner.

- For cross seams, a 150 mm wide Rhepanol hsg flashing strip needs to be cut to size to overlap all seams by 50 mm.
- Round off the corners.
- Slightly melt and chamfer the seam edges in the area of the Rhepanol hsg flashing strip, thus preventing capillary action.
- Place the Rhepanol hsg flashing strip over the centre of the seam without tension.
- Clean the seam area, see page 11.
- Join the seam by hot-air welding.

- Wipe off loose dirt (drilling dust, bitumen residues etc.), depending on the type of dirt clean first with water then detergent, if required, and allow the surface to dry.

- Thoroughly clean the soiled/weathered area from one side with Rhepanol h intensive cleaner 50 and a fresh cleansing tissue. Frequently change clean sing tissue.
  Dry the area and allow approx. **1 hour for airing**.

- Then clean the seam with Rhepanol h seam cleaner and weld it.

Note:
– When handling cleaning agents, thinners etc. we recommend wearing the enclosed protective gloves.
– Cleaning agents/solvents will corrode polystyrene insulation materials, so avoid any contact.
– Always use separate cleansing tissues for Rhepanol h intensive cleaner 50.

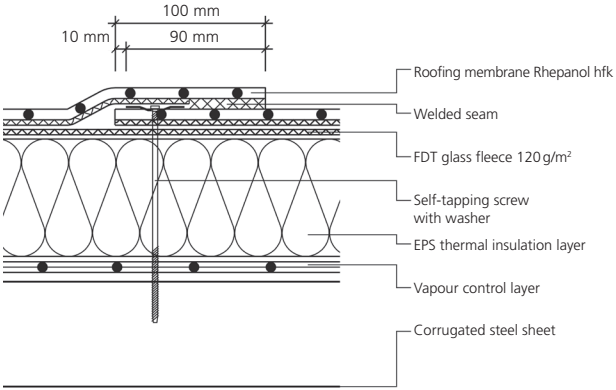
Application techniques for roofing membrane Rhepanol® hfk

- In case of profiled steel decking or timber boarding, Rhepanol hfk is loose laid perpendicularly to the corrugations or the boards.
- Mechanical fastening can be carried out in the form of seam fastening in the membrane edge overlap, with a seam overlap of at least 100 mm.
- In case of seam fastening, the distance between the membrane edge and the washer must be at least 10 mm.
- The washers must lay flat and press the roof sealing onto the substrate, however, they must not sink into any insulating material.
- The parameters for fastener spacing and membrane width are predefined by the wind uplift calculation – a service provided by FDT, please ask our specialists.
- Oval washers need to be aligned parallel to the membrane edge.

Fastening example

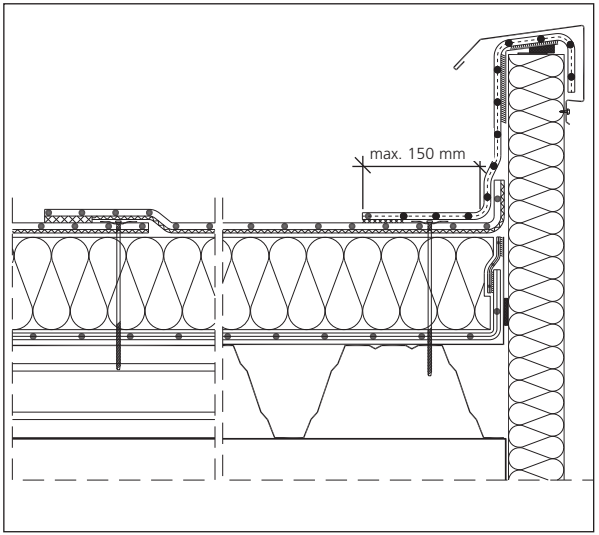
- Place rectangular thermal insulation boards with their long side perpendicular to the roofing membranes.
- Insulation boards or sections of boards, which are not sufficiently secured to the substrate by linear fastening, should be fixed with additional fasteners (min. 2 fasteners/m²) prior to laying the roof sealing.

Seam fastening



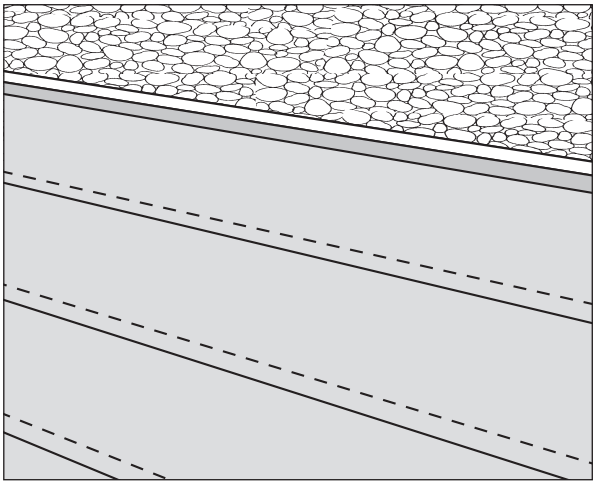
- At all flashings and trims, rooflights etc. the layer build-up must be specially secured by circumferential rows of fasteners through the roofing membrane.

Alternatively, perimeter fixing can be done with the FDT fastening profile.



- Loosely lay Rhepanol hfk and secure against wind uplift by gravel ballast.
- Protection layer may be necessary, e.g. FDT protection layer or FDT synthetic fleece 300 g/m².
- At all flashings and trims, rooflights etc. the layer build-up must be secured by circumferential rows of fasteners through the roofing membrane.

  Alternatively you can use the FDT fastening profile for the perimeter fixing. The required number of fasteners is 4 per m.



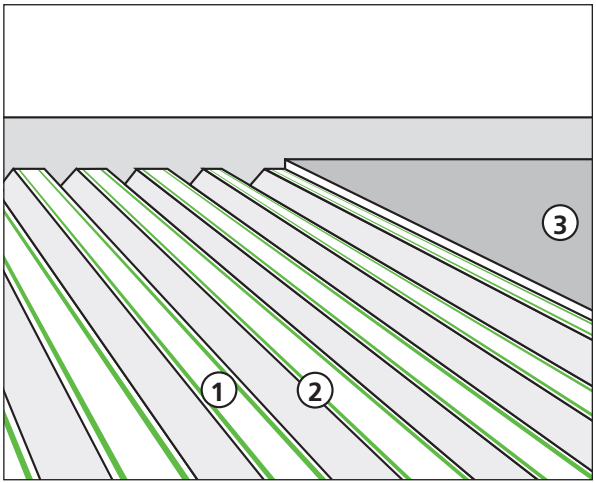
FDT adhesive U:
for bonding the thermal insulation

① Supporting deck or vapour control layer
② Apply FDT adhesive U in stripes (in case of profiled steel decking, at the corrugation edges)
③ Thermal insulation layer, e. g. folding EPS insulation boards, with bituminous felt facing (without PE foil facing)

Application on even substrates with FDT application trolley Universal and FDT adapter or FDT bonding trolley 1 m.

Application instructions for FDT adhesive U see page 88 and note the recommendations on the adhesive containers.

Vapour control layers as bonding substrates must not have a PE facing or talcum coating.

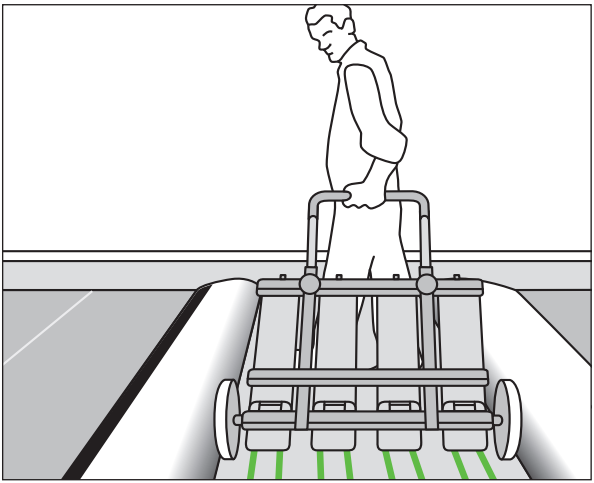


FDT roofing membrane adhesive* for bonding the roofing membrane

- Unroll the Rhepanol hfk, align it and fold back each membrane in half along its length.
- Apply the adhesive and fold back the Rhepanol hfk.
- Seal the seams (see pages 11 to 17).
- Alternatively, you can use the roll-on technique.

Application instructions for FDT roofing membrane adhesive see page 86 and note the recommendations on the adhesive containers.

*** In general, the use of Rhepanol adhesive 90 is to be agreed with our FDT Technical Department.**



Application techniques for roofing membrane Rhepanol® hfk-sk (self-adhesive)

In case of Rhepanol hfk-sk, the homogeneous waterproofing layer has a lower polyester/glass fleece backing and a **self-adhesive coating** (factory-equipped with protective foil).

After laying, the fleece backing reduces stress and strain (vapour decompression, movement compensation etc.).

The roofing membrane is equipped with a welding edge on one side for professional membrane connection using hot air, resulting in a permanently waterproof joint.

Material properties

- Roofing membrane made of polyisobutylene with self-adhesive coating pursuant to the General Building Construction Supervision Test Certificate AbP.-No. P-K14-1192.1.
- Compatible with bitumen.
- Weather-resistant, even without additional surface protection.
- Resistant to atmospheric influences such as UV radiation or exhaust gas from industrial and heating plants.
- Remains flexible, even at temperatures as low as –40 °C.
- Outstanding resistance to natural ageing.
- Free of plasticisers, chlorine, halogens, bitumen and PVC, resistant to rotting, non-porous (factory high-frequency testing).
- Resistant to flying sparks and radiant heat according to DIN CEN/TS 1187, confirmed by official test certificates.
- Not resistant to: organic solvents such as benzene, toluene, paraffin, trichlorethylene; solvent-containing materials such as lacquers, paints; fats, oils, such as oily cements, forming oils.

Storage

- Rolls should be stored horizontally!
- Until used, the roofing membrane Rhepanol hfk-sk must be stored in a dark and dry place or covered with tarpaulin, to preserve the high adhesiveness of the self-adhesive layer.
- Unsealed packing units must be carefully closed, if stored in the open for a longer period.
- Single rolls, bent Rhepanol coated metal sheets and accessories should be covered with tarpaulin.

Note

Application should be carried out in dry weather conditions and outside temperature >10 °C.

Preparing the substrate for adhesive bonding

Substrate conditions:

- stable
- solid
- even
- dry
- clean
- free of dust, oil and grease
- free of separating agents

Application of Rhepanol primer sk-L/sk-W

Thoroughly stir the Rhepanol primer sk-L (9 kg and 22.5 kg container)/Rhepanol primer sk-W (10 kg /25 kg) in the container. Apply evenly to the complete surface with a brush or a paint roller.

Min. quantity of primer:

- approx. 0.2 l/m² (wet, depending on the substrate).
- The applied quantities must be increased for rugged and absorbent substrates. The primer must be completely dry before applying the Rhepanol hfk-sk membrane.

Note:
In cool weather conditions, the Rhepanol primer sk-L will dry faster. The condition of the bonding substrates and the necessity for precoating with primer Rhepanol sk-L/ Rhepanol sk-W (according to the table on p. 29) may change depending on the weather and construction site conditions. If necessary, a test bonding has to be carried out.

Existing substrate

Substrate	Surface condition	Rhepanol primer sk-L/sk-W
Bituminous sheet	PE foil/fleece	yes[1)]
Bituminous sheet	fine sand /talcum coating	yes
Bituminous sheet	grit or fine slate coating	yes
Old bituminous sheet	weathered, soiled	yes
Synthetic membranes	weathered	yes[2)]
Concrete	slightly moist to dry, smoothed and well-cleaned, free of gravel clusters, burrs and sharp edges	yes
Steel / zinc sheets	degreased	yes[2)]
EPS		yes[3)]
Timber	flat, even	yes

[1)] Shortly torch with propane.
[2)] May be necessary depending on the type of material. To be tested in individual cases; generally, consultations with the FDT Technical Department are obligatory.
[3)] Only with Rhepanol primer sk-W.

Bonding on unbacked EPS rigid foam boards

- In general the EPS rigid foam boards have to be coated with Rhepanol primer sk-W.
  Please use exclusively polystyrole boards with high compressive strength min. 150 kpa (dh).

- The substrate must be clean, dry and free from dust. The lap width should be at least 75 mm (the self-adhesive layer will adhere to the overlapped membrane at a width of approx. 35 mm in the rear area) in order to avoid damage to the insulation material by hot air ingress or spilt Rhepanol h seam cleaner.

- Rhepanol hfk-sk membranes can be applied, as described, without any additional precautions at rated wind loads up to 3.0 kN/m² (Wres according to DIN EN 1991-1-4).

Perimeter fastening is obligatory!

Note

Application should be carried out in dry weather conditions and outside temperature >10 °C.

Bonding on other substrates, e.g. bituminous sheets

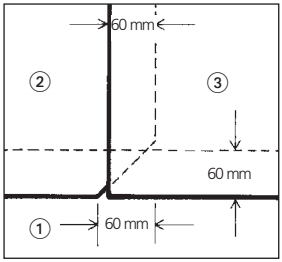
- In this case, bonding is generally to be carried out with primer.

- The underside coating of the Rhepanol hfk-sk membranes, also in connection with Rhepanol primer sk-L and Rhepanol primer sk-W, adheres to various standard substrates, e. g. bituminous sheets, concrete, zinc and steel sheets, aluminium and synthetic materials (up to rated wind loads of 3.5 kN/m^2).

- In this case, the overlap must be at least 60 mm.

Perimeter fastening is obligatory!

- Unroll the roofing membranes.
- Longitudinal seams and cross joints should overlap by 60 mm.
- When applying directly on EPS, the longitudinal and cross joints should overlap by 75 mm.
- Place the overlapping membrane directly along the marking at 75 mm from the membrane edge.
- If possible, avoid seams against the waterflow.
- Cut off the corner of the lower membrane.
- Tear off the **separation foil** at one end of the membrane, approx. 100-150 cm, fix the membrane end by bonding, **and pull the separation foil to one side from underneath the membrane.**
  Then press or roll on the membrane over the full surface.



① to ③
Layout of the membranes.
②
Lower membrane with cut-off corner.

Flashings and trims to the roofing membranes Rhepanol® hfk and Rhepanol® hfk-sk

Rhepanol hsg flashing strip – the reliable flashing material

The performance of a flat roof significantly depends on the functional efficiency of flashings and trims.

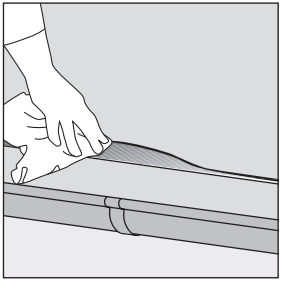
Decisive advantages of Rhepanol

- Rhepanol is flexible and ensures effective movement compensation.
- Rhepanol is easily adaptable to all upstands.
- When laying **Rhepanol hfk roofing membranes**, at the area of roof edge trims, bracket mounted eaves gutters and wall flashings also Rhepanol laminated metal sheets can be used.
- The corresponding flashing and trim profiles are cut from Rhepanol laminated metal sheets and bent as required like galvanized sheets, depending on the local conditions.

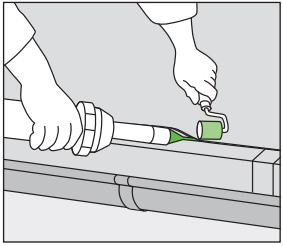
Important aspects for correct application:

- In order to avoid capillary action at overlapping membrane edges of T-joints, the seam edge must be slightly melt and chamfered.
- Valley areas are left unbonded at a width of 200 mm.
- At all flashings and trims, rooflights etc. the layer build-up must be specially secured by circumferential rows of fasteners through the roofing membrane. Alternatively, for perimeter fixing, the FDT fastening profile can be used. In general, at least 4 fasteners per metre are required. Apply flashing strips max. 150 mm in the roof area.
- Sealings of flashings and trims must be secured against wind intrusion by bonding, clamping or full-size fastening.
- The flashing strips must be sufficiently fixed. If the flashing membrane is bonded with Rhepanol contact adhesive 50, at flashing heights over 200 mm a full-size adhesive bonding is necessary. Valley areas are left unbonded at a width of 200 mm to allow movement compensation.
- In case of mechanical fastening of the flashing membrane (intermediate fixing), e. g. the FDT fastening profile or the Rhepanol coated metal sheet can be used.

- In order to avoid capillary action at profile joints, prior to sealing the seams the 150 mm wide Rhepanol hsg trim strips must be slightly melt and chamfered.



- Then the seam is welded with hot air. Avoid folds or pleats in the seam.



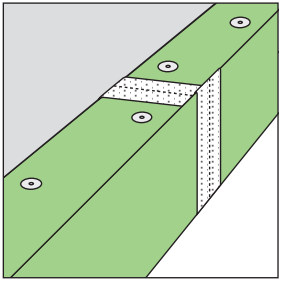
- In order to avoid capillary action at profile joints, prior to sealing the seams the 150 mm wide Rhepanol hsg trim strips must be slightly melt and chamfered.

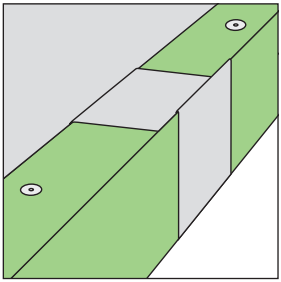
- The bent and de-burred Rhepanol coated metal sheets are fastened at a spacing of 150 mm in a staggered pattern with suitable screws.

- If required for wind security or stiffness reasons, additional stiffeners or continuous stiffening pro files should be installed (see page 45).

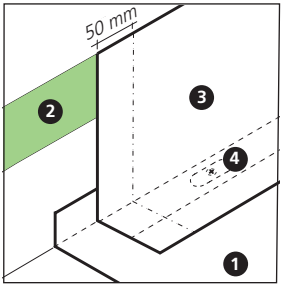
At all flashings and trims make sure that seam connections are not in the vertical area (up slope) and that the seams do not have to take any peeling or shearing forces.

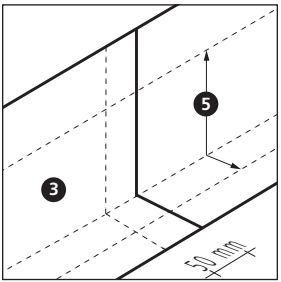
- Rhepanol coated metal sheets (de-burred cut edges) are applied with a clearance of 4 mm (profile length max. 2 m). With profile lengths exceeding 2 m, the joint clearance must be 10 mm.
- Cover the joint area with 38 mm wide FDT adhesive tape (upper figure).
- Afterwards, a 150 mm wide Rhepanol h strip is applied which is homogeneously welded with hot air (lower figure).





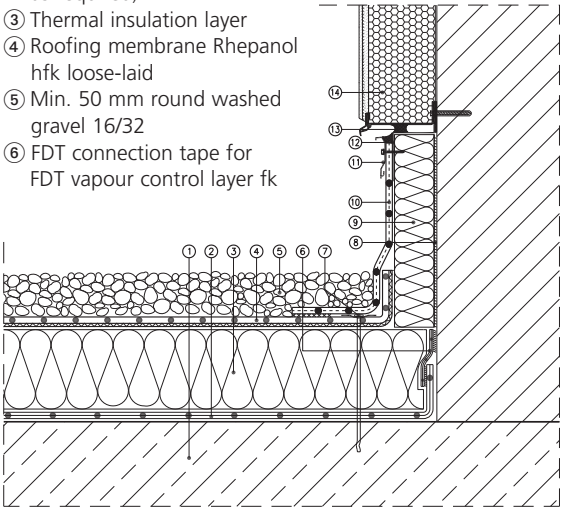
① Roofing membrane Rhepanol hfk or Rhepanol hfk-sk
② Rhepanol contact adhesive 50, only for heights over 200 mm
③ Rhepanol hsg flashing strip
④ Perimeter fixing
⑤ 200 mm unbonded valley area





According to the Technical Rules for Roofs with Covering, Instructions for Flat Roofs, the height of the covering at roof edge trims for roof slopes up to 5° (8.8 %) should be at least 150 mm and for roof slopes over 5° (8.8 %) at least 100 mm higher than the upper edge of the bulk gravel, paving slabs etc.

① Reinforced concrete
② FDT vapour control layer fk (protection layer on concrete, as required)
③ Thermal insulation layer
④ Roofing membrane Rhepanol hfk loose-laid
⑤ Min. 50 mm round washed gravel 16/32
⑥ FDT connection tape for FDT vapour control layer fk
⑦ Perimeter fixing with single fasteners through the roofing membrane
⑧ Adhesive bond
⑨ Vertical thermal insulation layer
⑩ Rhepanol hsg flashing strip
⑪ FDT aluminium wall connection profile Classic
⑫ Z-profile with sealing towards pos. 11
⑬ Permanently elastic sealing
⑭ Thermal insulation composite system with base profile



If draining of roof areas is done with bracket-mounted gutters, for transition there must be a steel drip angle (eave).

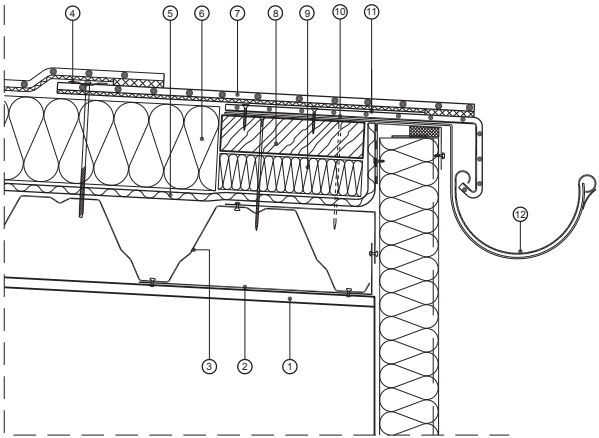
In order to fasten the steel drip angles made of Rhepanol coated metal sheet, edge boards or thermally insulated metal profiles can be used. They must be 10 mm lower than the existing thermal insulation layer and at the roof side must project at least 20 mm over the edge of the drip angle.

In the case of bonded fixing of the roof covering, a 100 mm wide area must be left unbonded. The wind load must be diverted by means of an adhesive tape at the steel drip angle.

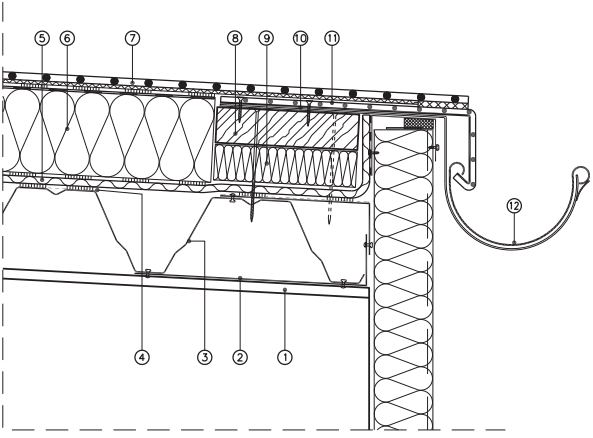
In case of Rhepanol hfk-sk, in the non-adhesive area FDT adhesive tape must be used.

Gutter brackets are to be mounted flush with the supporting construction or edge boards, otherwise the spaces must be filled.

① Supporting deck
② Supporting bracket
③ Profiled steel decking, corrosion protected
④ Mechanical fastening at membrane overlap
⑤ Vapour control layer
⑥ Mineral wool thermal insulation
⑦ Roofing membrane Rhepanol hfk, mechanically fastened
⑧ Treated timber profile (salt-based)
⑨ Pressure-resistant thermal insulation
⑩ Bracket
⑪ Rhepanol coated metal sheet
⑫ Gutter



① Supporting deck
② Supporting bracket
③ Profiled steel decking, corrosion protected
④ Cold bitumen pre-coating, as required
⑤ Vapour control layer, bonded
⑥ Thermal insulation, e. g. EPS, bituminous felt facing, bonded with FDT adhesive U
⑦ Roofing membrane Rhepanol hfk, bonded with FDT roofing membrane adhesive
⑧ Treated timber profile (salt-based)
⑨ Pressure-resistant thermal insulation
⑩ Bracket
⑪ Rhepanol coated metal sheet
⑫ Gutter



According to the Technical Rules for Roofs with Covering, Instructions for Flat Roofs, the height of the covering at roof edge trims for roof slopes up to 5° (8.8 %) should be at least 100 mm and for roof slopes over 5° (8.8 %) at least 50 mm higher than the upper edge of the bulk gravel, paving slabs etc.

The bend (outer vertical flange of the profiles or cappings) must overlap render finish, fair-faced brickwork, fair-faced concrete, curtain wall and similar at building heights up to 8 m by at least 50 mm, from 8 to 20 m by at least 80 mm and at building heights over 20 m by at least 100 mm.

The dripping edge must be at least 20 mm away from the lower components.

When using Rhepanol coated metal sheets as a roof edge trim or as a parapet capping, depending on the cover height and the building geometry, with every profile joint additional stiffeners or continuous stiffing profiles must be installed according to the tables (see page 45 and 46).

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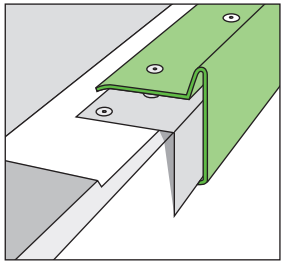
- The 200 mm long and 1.2 mm thick stiffeners should be fixed each with two fasteners in the supporting construction, the also 1.2 mm thick stiffening profiles should be fixed staggered at a spacing of not more than 200 mm.



	Number of stiffeners per metre*						
	Perimeter area:						
	Cover height in mm						
Building height[1)] in windzone 1 and 2	80	110	130	150	170	190	210
≤ 8 m	0	0	1	1	1	2	3
≤ 20 m	0	1	2	2	3	3	D
≤ 100 m	1	2	2	3	D	D	D

* in addition to the stiffeners below the profile joints.

[1)] For buildings in windzone 3 and 4 the number of stiffeners per metre is to be defined depending on the project acc. to DIN EN 1991-1- 4 (Eurocode 1).

D = continuous stiffening profiles

	Number of stiffeners per metre*						
	Perimeter area:						
	Cover height in mm						
Building height [1] in windzone 1 und 2	80	110	130	150	170	190	210
≤ 8 m	0	0	1	2	2	3	D
≤ 20 m	1	2	2	D	D	D	D
≤ 100 m	1	3	D	D	D	D	D

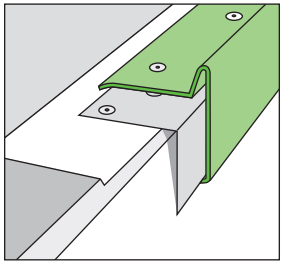
* in addition to the stiffeners below the profile joints.

[1] For buildings in windzone 3 and 4 the number of stiffeners per metre is to be defined depending on the project acc. to DIN EN 1991-1- 4 (Eurocode 1).

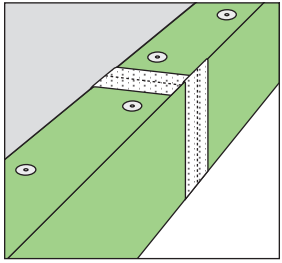
D = continuous stiffening profiles

- Roof edge trims must be inclined towards the roof side.
- The bent and de-burred Rhepanol coated metal sheets are fastened in a staggered pattern at a spacing of 150 mm with suitable fasteners.

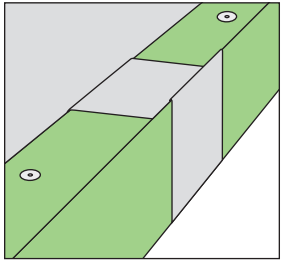
- Screw on the stiffening profile, hang up the roof edge trim and fasten in the substrate.



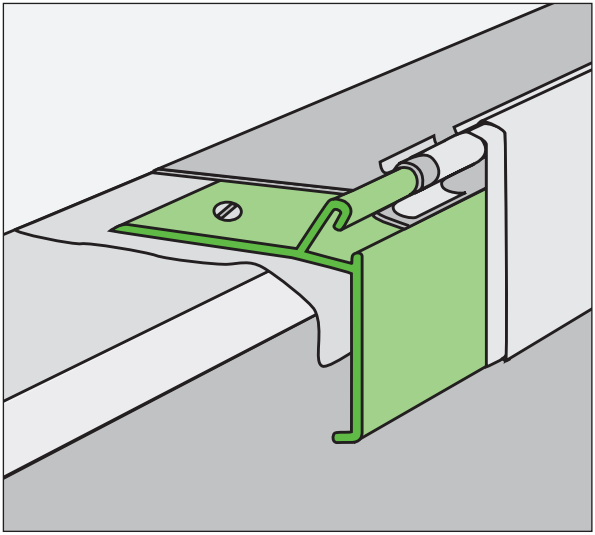
- Affix two FDT adhesive tapes 50 mm wide over the joint area.

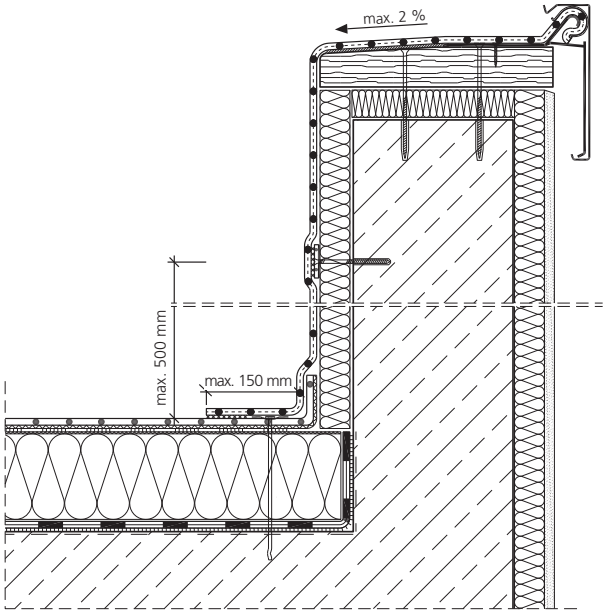


- Place a 150 mm wide Rhepanol hsg flashing strip over the centre of the joint, clean the seam area (see p. 11) and weld with hot air.

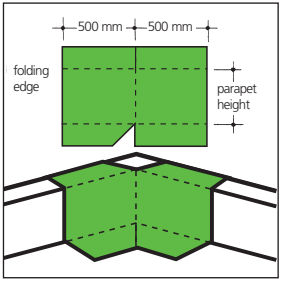


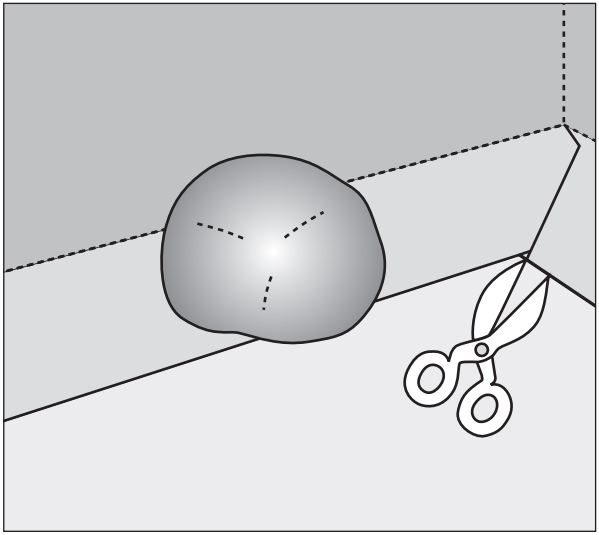
- Take the Rhepanol hsg flashing strip over the mounting rail.
- Fix with plastic clamps at a distance of 150 mm and install the fascia board (see installation instructions for FDT aluminium roof edge trims).




max. 2 %
max. 500 mm
max. 150 mm

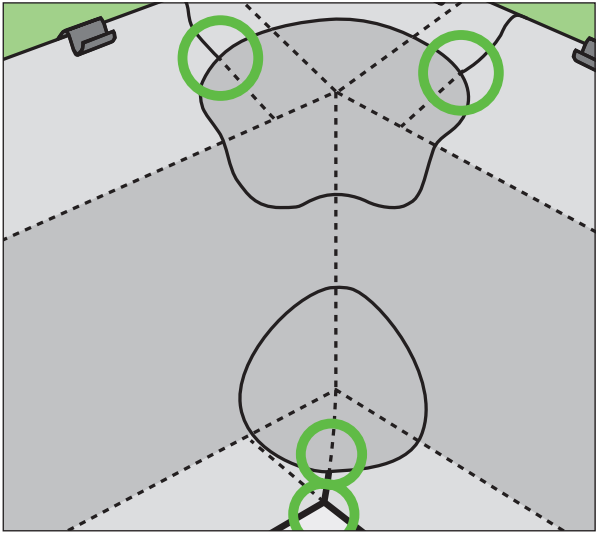
- Cut a Rhepanol hsg flashing strip to size and bond it with Rhepanol contact adhesive 50.
- Clean the seams.
- Weld the seams with hot air. Place the Rhepanol h internal corner 90°.



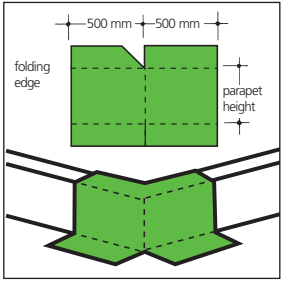


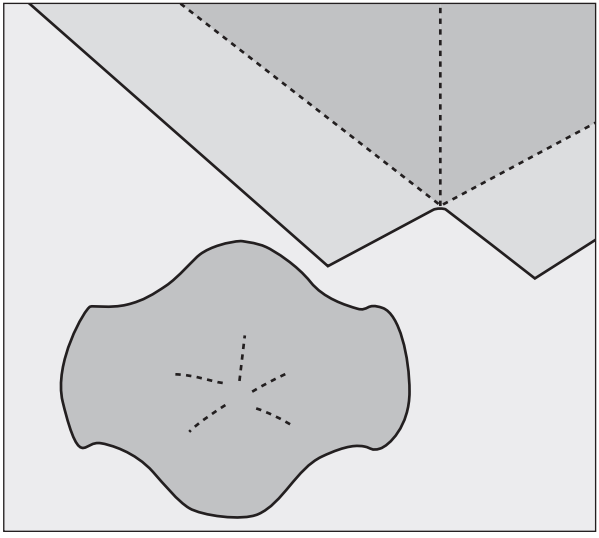
Upper trim of the parapet completed with cut-to-size Rhepanol hsg and Rhepanol h external corner 90°.

- Clean the area, weld the seams and check the seam edges.



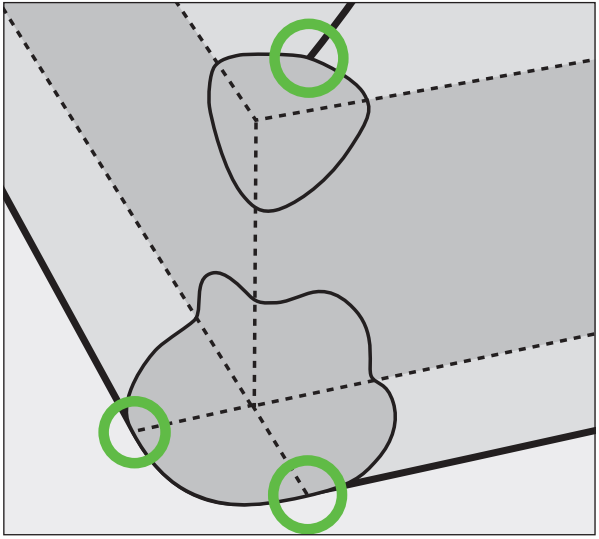
- Cut a Rhepanol hsg flashing strip to size.
- Clean the seams with Rhepanol h solvent welding agent.
- Weld all seams and chamfer the T-joints (green circles, see sketch on p. 53).
- Weld in the Rhepanol h external corner.





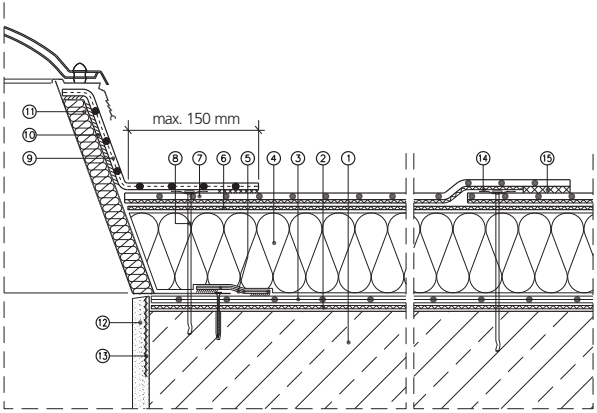
Upper trim of the parapet completed with prefabricated Rhepanol h internal corner.

- Clean the seams before sealing, check all seam edges.

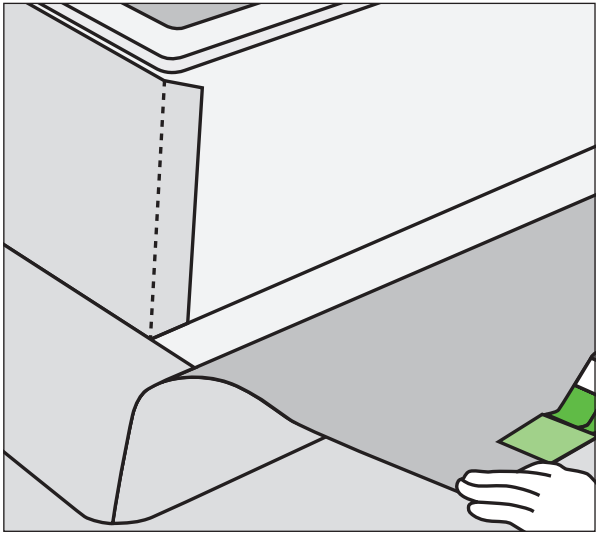


■ Roofing membrane Rhepanol hfk mechanically fastened with single fasteners.

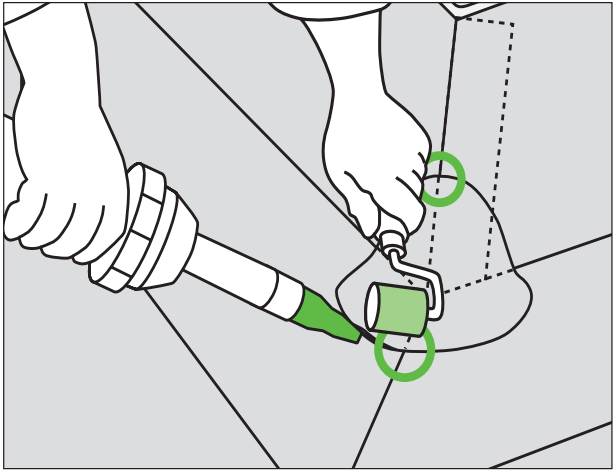
① Reinforced concrete
② Protection layer on concrete (e. g. FDT synthetic fleece 300 g/m²)
③ FDT vapour control layer fk
④ Thermal insulation EPS
⑤ FDT connection tape for FDT vapour control layer fk
⑥ FDT glass fleece 120 g/m²
⑦ Roofing membrane Rhepanol hfk, mechanically fastened
⑧ Perimeter fixing with single fasteners through the roofing membrane
⑨ Rhepanol hsg flashing strip
⑩ Rhepanol contact adhesive 50
⑪ Rooflight kerb
⑫ Render
⑬ Structural support
⑭ Mechanical fastening at membrane overlap
⑮ Hot air welded seam



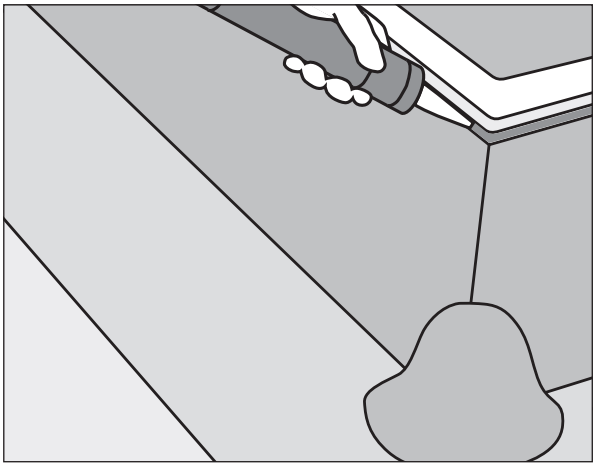
- Bond a Rhepanol hsg flashing strip to the rooflight kerb using Rhepanol contact adhesive 50.



- Weld the Rhepanol hsg flashing strip to the roofing membrane.
- Weld the overlapping seams of the flashing strips, slightly melt and chamfer the T-joints (green circles, see sketch), then weld on the Rhepanol h rooflight corner.



- Seal the upper edge with FDT sealant S.

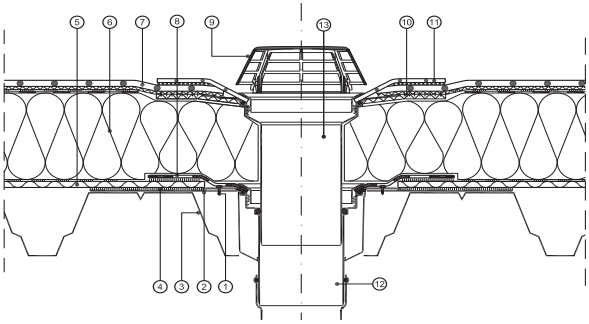


FDT system parts for roofing membranes Rhepanol® hfk and Rhepanol® hfk-sk

Built-in details must be fastened to the supporting deck with at least 4 fasteners.

For other built-in details, mechanical fixing of the field membrane is also necessary. This can be done by single fasteners.

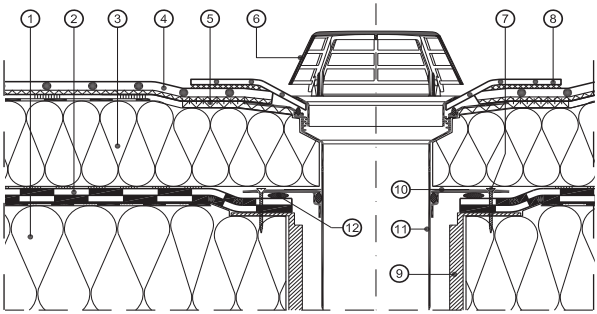
- Install FDT VarioGully or FDT VarioGully warm roof extension in the substrate or rather thermal insulation to avoid ponding water around the rainwater outlet.
- Fasten the FDT VarioGully to the supporting deck (4 fasteners/rainwater outlet vertical, 3 fasteners/ rainwater outlet angled).
- Roof opening: Ø 200 mm (rainwater outlet angled, DN 125, 200 x 280 mm or rainwater outlet angled, DN 70/100, 200 x 350 mm).



① FDT VarioGully fixing (4 fasteners per outlet)
② Stiffening metal plate
③ Profiled steel decking, corrosion protected
④ Cold bitumen pre-coating, as required
⑤ Vapour control layer, bonded
⑥ Thermal insulation, e. g. EPS, bituminous felt facing, bonded with FDT adhesive U
⑦ Roofing membrane Rhepanol hfk, bonded with FDT roofing membrane adhesive
⑧ Vapour control collar
⑨ FDT gravel stop/leaf guard
⑩ Gripfix ring
⑪ Rhepanol h-collar
⑫ FDT VarioGully
⑬ FDT VarioGully warm roof extension

The VarioGully refurbishment can be used for existing roof outlets up to DN 150, depending on the diameter of the run-in area of the existing roof outlet (min. 137 mm and max. 210 mm).

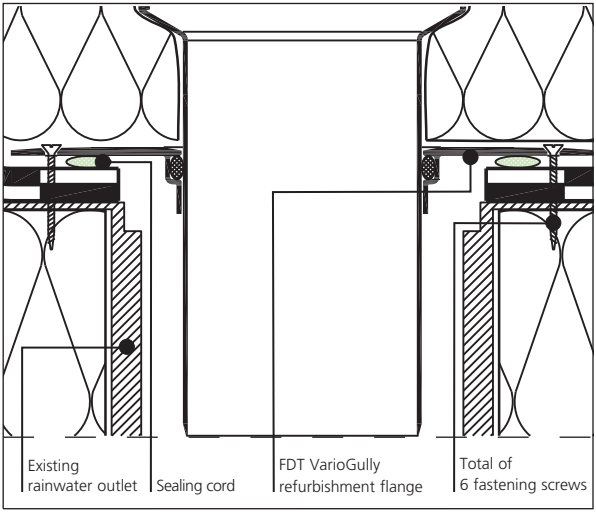
① Existing thermal insulation
② Old roof sealing with bitumen
③ EPS thermal insulation layer, bituminous felt facing, bonded with FDT adhesive U
④ Roofing membrane Rhepanol hfk, bonded with FDT roofing membrane adhesive
⑤ Gripfix ring
⑥ FDT gravel stop/leaf guard
⑦ FDT VarioGully fixing (4 fasteners per outlet)
⑧ Rhepanol h collar
⑨ Existing old roof rainwater outlet
⑩ FDT VarioGully refurbishment flange
⑪ FDT VarioGully warm roof extension
⑫ Sealing cord



Installation

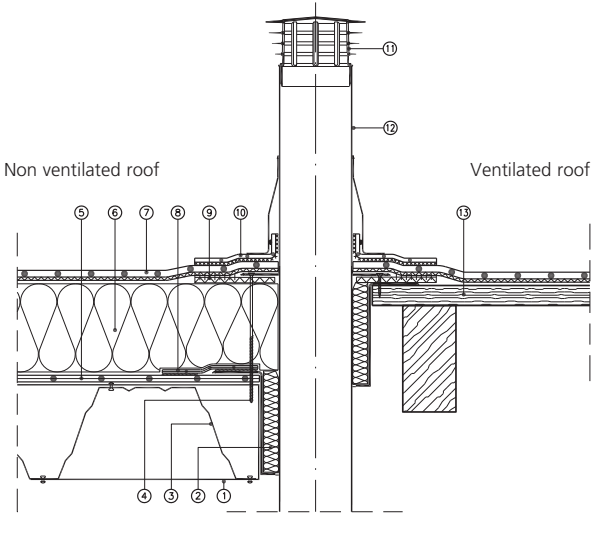
- Clean the flange area of the existing roof outlet.
- Apply the sealing cord **in the fastening** at the lower side of the flange.
- Place the FDT VarioGully refurbishment and fasten it with enclosed 6 fastening screws.
- Place the FDT VarioGully warm roof extension to cover additional thermal insulation.
- Flashing against the roofing membrane Rhepanol hfk with Rhepanol h collar.

Installation detail



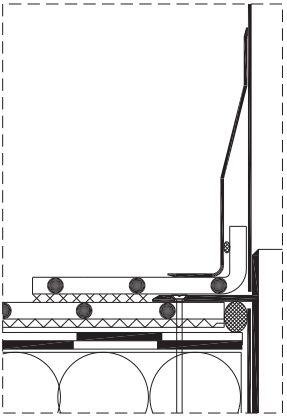
FDT flat roof vent pipe DN 125/DN 100 with Rhepanol h collar.
Roof penetration: Ø 190 mm

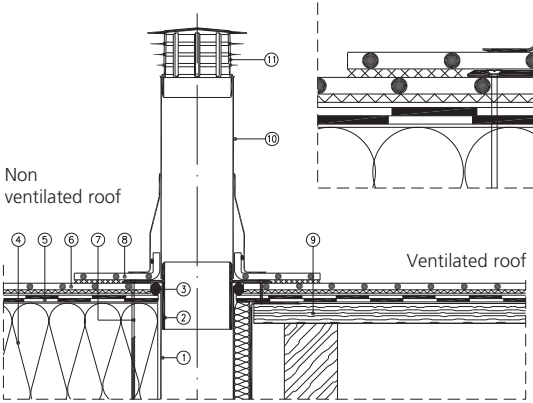
① Metal angle
② Penetration curb and insulation sleeve
③ Profiled steel decking, corrosion protected
④ Mechanical fastening
⑤ FDT vapour barrier fk
⑥ Thermal insulation according to specification
⑦ Roofing membrane Rhepanol hfk, mechanically fastened
⑧ FDT sealing tape for FDT vapour barrier fk
⑨ Gripfix ring
⑩ Rhepanol h collar
⑪ Vent pipe cowl, removable
⑫ FDT flat roof vent pipe DN 125/DN 100
⑬ Roof boarding



FDT refurbishment vent pipe for DN 100 for flashing against existing vents.

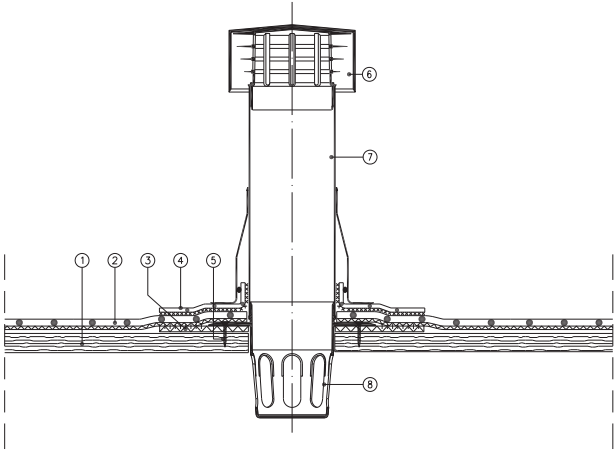
① Existing vent pipe, cut flush at the old roof area
② Pipe socket at refurbishment vent pipe
③ FDT sealant S or Rhepanol paste
④ Thermal insulation
⑤ Old roof covering
⑥ Roofing membrane Rhepanol hfk, mechanically fastened
⑦ Mechanical fastening of the pipe socket
⑧ Rhepanol h collar
⑨ Roof boarding
⑩ FDT refurbishment vent pipe DN 100
⑪ Vent pipe cowl, removable



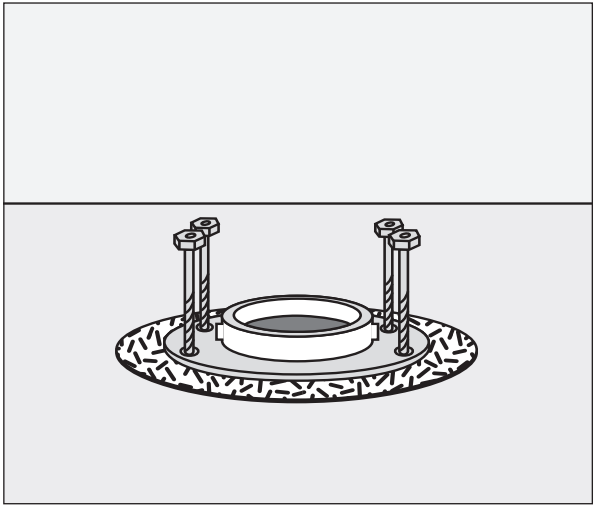


FDT cold roof vent DN 125 with Rhepanol h collar and Gripfix ring.

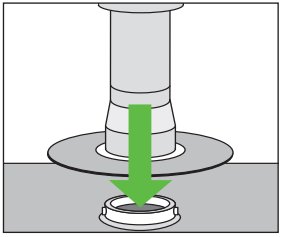
① Roof boarding
② Roofing membrane Rhepanol hfk, mechanically fastened
③ Gripfix ring
④ Rhepanol h collar
⑤ Mechanical fastening
⑥ FDT weather cap DN 125
⑦ FDT cold roof vent DN 125
⑧ Condensate collector



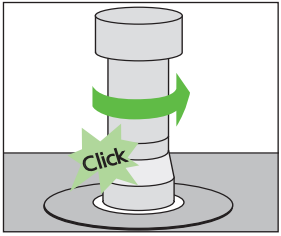
- Install flange including underlying Gripfix ring.
- Then apply the roofing membrane Rhepanol hfk.



- Cut out the membrane (10 mm wider all around).
- Put on the FDT cold roof vent.

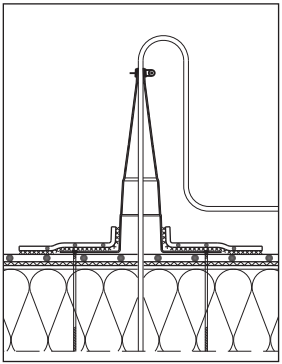


- Turn the FDT cold roof vent until it clicks into place.
- Seal the collar with the roofing membrane by hot air welding.



Flashing against the roofing membrane
The FDT lightning conductor collar is directly welded to the Rhepanol hfk roofing membrane with its flange (cut off the mounting straps).

Beforehand, clean the areas to be welded with Rhepanol h seam cleaner.



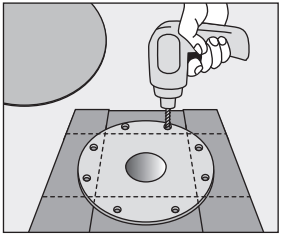
Flashing against lightning protection wire, cable, pipes with 8 mm diameter
Seal the collar with the supplied jubilee clip by squeezing the squeeze point with pincers.

Flashings with wider passages up to max. 51 mm diameter
For wider diameters simply cut off the FDT lightning conductor collar. The inner diameter at the cut point should be at least 2 mm narrower than the component to be passed through.

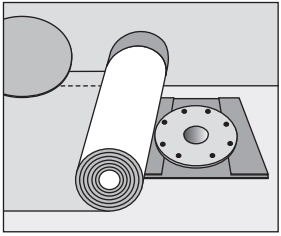
For passing through, the end is heated up with a hot-air blower and stretched while putting it on. At the forming cylindrical shaft, carry out the flashing with a suitable stainless steel clamp.

Attention:
Check flashing height.

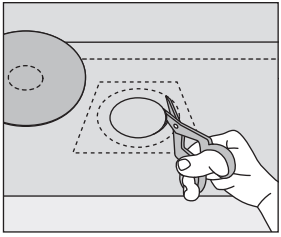
Put the **FDT RWE rainwater outlet** in place and screw it to the substrate, with 4 Gripfix strips placed under the flange by half. Alternatively, bond Rhepanol hfk to the flange with Rhepanol contact adhesive 50.



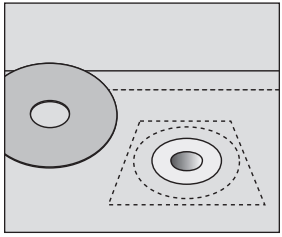
Align and unroll the roofing membrane.



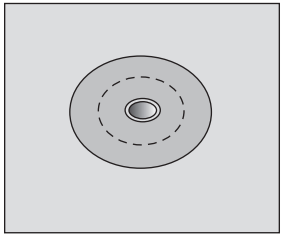
Cut out Rhepanol hfk 100 mm wider than the outlet diameter.



Cut to size the Rhepanol h universal collar.



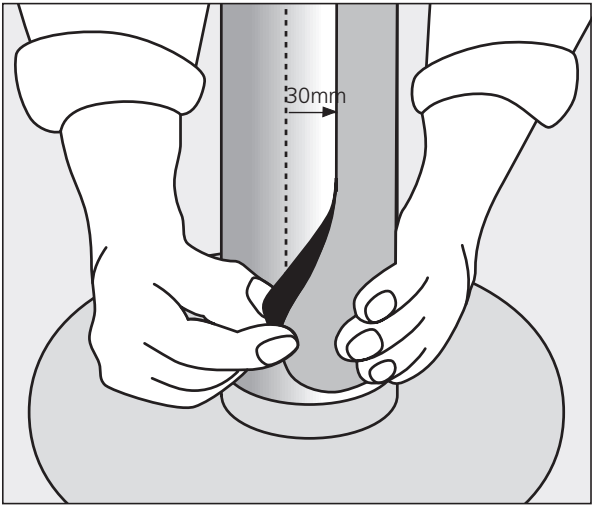
Clean the seam area with Rhepanol h seam cleaner and weld the collar to the roofing membrane and the flange.



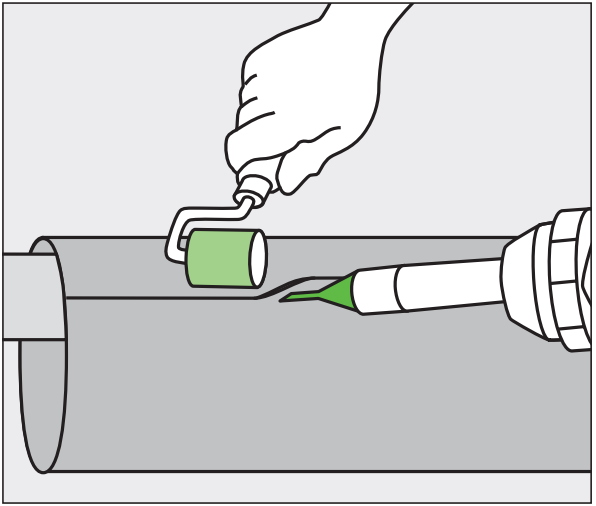
FDT emergency overflow is flashed against Rhepanol hfk the same way. Alternatively, Rhepanol hsg flashing strips can be used.

- Cut the Rhepanol h collar to size, pull it over the pipe and weld it to the membrane. The cut out hole equals approx. 1/3 of the pipe diameter.

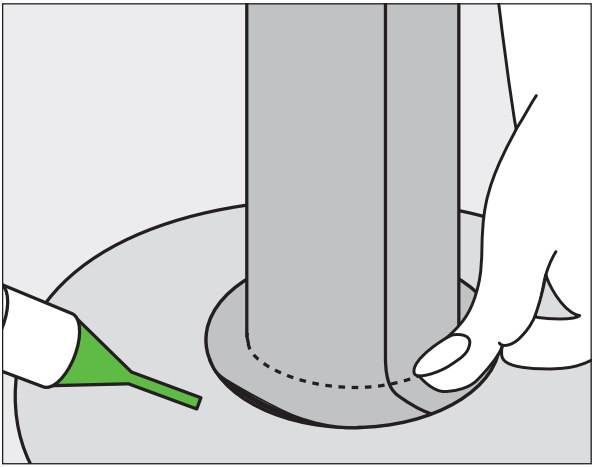
- Cut the Rhepanol h roofing membrane for the pipe sheathing to size so that it will overlap by 30 mm for forming the welding seam. Round off both sides (lower and upper membrane) at the seam area.
  Fix and tack the overlap.



- Preweld and finish weld the pipe sheathing.
  Attention: Before welding, clean the seams with Rhepanol h seam cleaner.

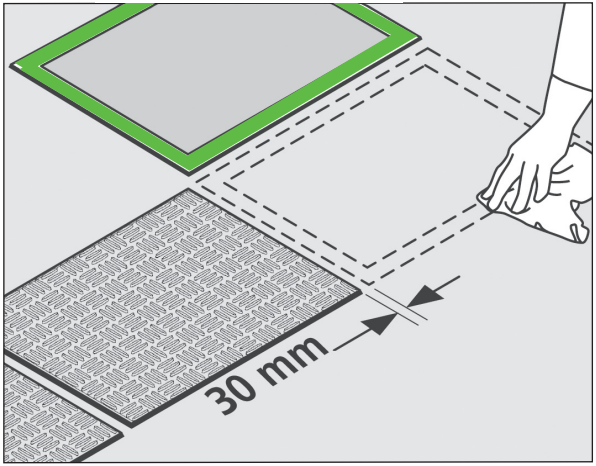


- Remove the sheathing from the pipe. Evenly heat up the flashing overlap and spread it to 20 - 30 mm. Chamfer the inner seam edge.
- Pull the preformed Rhepanol h pipe sheathing over the pipe and weld it to the Rhepanol h collar.

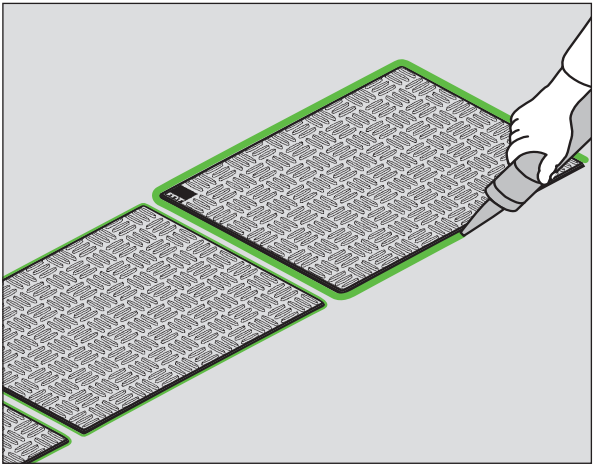


For maintenance walkways on Rhepanol hfk and Rhepanol hfk-sk.

- Clean the seam area with Rhepanol solvent welding agent.
- Seal T-joints with Rhepanol paste.
- Peel off the release paper and roll on with the Rhepanol universal roller.

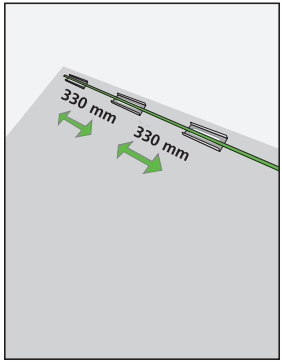


- At cut-to-size tiles, Rhepanol paste is applied to substitute the self-sealing edge.
- The edges must be sealed with Rhepanol paste all around the paving tiles (consumption is approx. 80 g per tile).

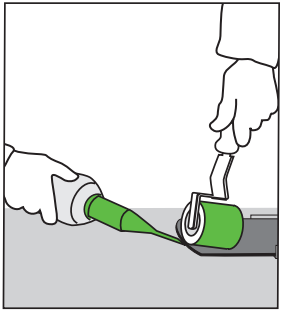


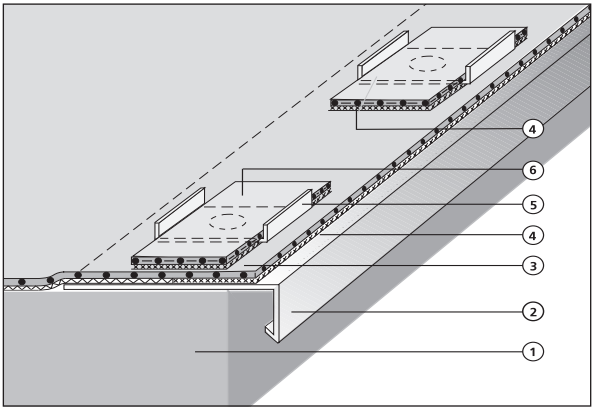
The FDT holders for the FDT gravel stop profiles are installed after laying the membranes. When laying the membranes, please take care that a Rhepanol coated metal sheet is fastened in the substrate in the FDT holder areas.
In these areas the membrane must be fully welded (see sketch on page 76).

- Mark the position of the FDT holders. The holders must be in alignment with each other. **Holder spacing at roof slopes up to 5° is 330 mm!**
  At joints of the FDT gravel stop profiles the FDT holders must be installed in such a way that the profiles are equally positioned on the FDT holder. If there is no joint at the last FDT holder, the FDT gravel stop profile may project over it by 150 mm.



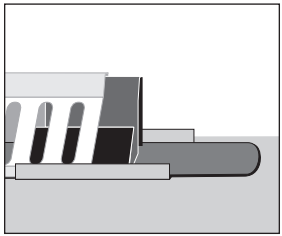
- Place the FDT holder and completely weld a 48 mm x 120 mm Rhepanol hsg flashing strip onto it.
  Attention: Weld also in the cut-out for the holder.



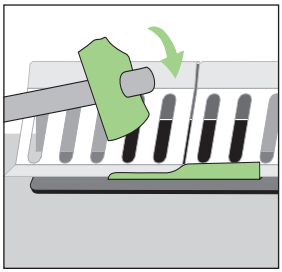


① Supporting deck
② Rhepanol coated metal sheet
③ Roofing membrane Rhepanol hfk/Rhepanol hfk-sk
④ Welded seam
⑤ FDT holder for FDT gravel stop profile
⑥ Rhepanol hsg flashing strip

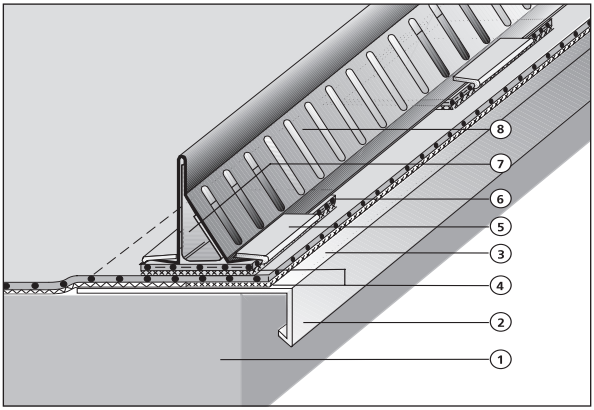
- Insert the gravel stop pro files into the FDT holders and push in clamp at the holder area.
  The gravel stop profiles must not be butt jointed but left with a clearance of 2 mm at the joint!



- Bend the holder flange with a hammer.



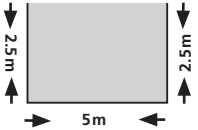
- **Forming corners**
  The preformed details for corner connections provided with the system allow for easy installation.
  Place the FDT holders each at 150 mm from the corner.
  Simply push in the gravel stop profiles into the corners, then place them into the holders, align them and bend the holder flanges.



① Supporting deck
② Rhepanol coated metal sheet
③ Roofing membrane Rhepanol hfk/Rhepanol hfk-sk
④ Welded seam
⑤ FDT holder for FDT gravel stop profile
⑥ Rhepanol hsg flashing strip
⑦ FDT clamp
⑧ FDT gravel stop profile

Determination of the number of holders required for the FDT gravel stop profile:
Divide the exact length in meter by 0.334 and round up to an even amount of metres. The rounded up sum of metres +1 is the required number of holders.
In case of discontinued sections every partial section is to be considered separately.

Example:



2.5m + 5m + 2.5m
= 10m gravel stop profile

Calculation of FDT holder for gravel stop profile:

2.5 : 0.334 = 7.4; rounded = 8 + 1 = 9
5.0 : 0.334 = 14.9; rounded = 15 + 1 = 16
2.5 : 0.334 = 7.4; rounded = 8 + 1 = 9

Total = 34 FDT holder

Product range

Forms of supply

Tools

Accessories

Roofing membrane Rhepanol hfk
Bitumen-compatible, homogeneous, fleece-backed synthetic roofing membrane. The nominal thickness of the waterproofing layer is 1.5 mm plus 1 mm synthetic fleece.

Item No.	Colour	Thickness mm	Forms of supply Rolls Length x width (m)
17 04 100	grey	1.5	15 x 1.50
17 04 110	grey	1.5	15 x 1.00
17 04 120	grey	1.5	15 x 0.50

Roofing membrane Rhepanol hfk-sk
Bitumen-compatible, homogeneous synthetic roofing membrane with fleece backing and self-adhesive coating. The nominal thickness of the waterproofing layer is 1.5 mm plus 1 mm synthetic fleece and self-adhesive coating.

17 03 100	grey	1.5	15 x 1.50
17 03 110	grey	1.5	15 x 1.00
17 03 120	grey	1.5	15 x 0.50

Note: Rolls must be stored horizontally in a dry place; additionally, Rhepanol hfk-sk must be stored in a dark place.

Rhepanol hsg flashing strip
for roofing membranes Rhepanol hfk and Rhepanol hfk-sk
PIB flashing strip with glass fleece reinforcement. Is used as a flashing membrane and covering strip on the roof area and for connections at e. g. parapets, walls.

Item No.	Colour	Thickness mm	Forms of supply Rolls Length x width (m)
17 05 130	grey	1.5	15 x 0.75
17 05 120	grey	1.5	15 x 0.50
17 05 110	grey	1.5	15 x 0.35
17 05 100	grey	1.5	15 x 0.15

Note: Rolls must be stored horizontally in a dry place.

Roofing membrane Rhepanol h for individual detail forming (Strips for collars)

17 08 900	grey/black	1.8	20 x 0.50

Rhepanol h internal corner 90°

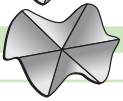
Item No.	Colour
17 10 010	grey/black

Rhepanol h external corner 90°

17 11 000	grey/black	

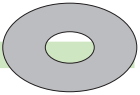
Rhepanol h universal rooflight corner

17 12 000	grey/black	73°
17 12 010	grey/black	60°



Rhepanol h collar

14 18 300	grey/black	

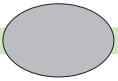


Rhepanol Gripfix ring

14 30 640	black	

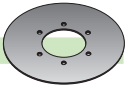
Rhepanol h universal collar

10 18 590	grey/black	



Rhepanol h collar loose/fixed flange

14 18 990	grey/black	



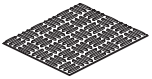
Rhepanol EPDM framing rings

14 18 910	black	

Rhepanol paving tiles

For maintenance walkways
on Rhepanol hfk and Rhepanol hfk-sk.

14 50 050	anthracite/black*	600 x 800 mm	90 pc per box



* colour may differ.

Rhepanol primer 1 S
Bonding agent for ferrous metals, concrete, render finish, timber and rigid PVC with Rhepanol contact adhesive 50.
Consumption: approx. 150–250 g/m².
Can be stored for at least 2 years.

Item No.	Colour	Forms of supply
15 00 900	blue	5 kg container

Rhepanol primer 2 S
Bonding agent for non-ferrous metals and stainless steels with Rhepanol contact adhesive 50.
Consumption: approx. 150-250 g/m².
Can be stored for at least 2 years.

15 00 905	colourless	4.5 kg container

Rhepanol primer sk-L
Solvent-containing primer for bonding Rhepanol hfk-sk roofing membranes. Consumption: approx. 180 g/m² (0.2 l).

17 30 080	9 kg container
17 30 090	22.5 kg container

Rhepanol primer sk-W
Solvent-free primer for bonding Rhepanol hfk-sk roofing membranes. Consumption: approx. 200 g/m² (0.2 l) - wet, depending on the substrate.

17 30 060	10 kg container
17 30 070	25 kg container

FDT sealant A
For flashings with wall connection profile. Consumption: approx. 50 ml/m. Can be stored for at least 1 year.

12 65 200	grey	300 ml cartridge

FDT sealant S
For flashings with wall connection profile and against rooflights. Consumption: approx. 50 ml/m. Can be stored for at least 1 year.

Item No.	Colour	Forms of supply
10 14 300	grey	300 ml cartridge

Rhepanol h seam cleaner
For cleaning the seams. Consumption: approx. 10 g/m. Can be stored for at least 4 years.

17 30 000	5 kg container

FDT cleaning kit
For cleaning seams with Rhepanol h seam cleaner. The cleaning kit contains 150 absorbent cleansing tissues and 100 disposable PE gloves.

17 50 010

Rhepanol h intensive cleaner 50
For cleaning heavily soiled Rhepanol hfk and Rhepanol hfk-sk areas. Also suitable for diluting Rhepanol h contact adhesive 50. Can be stored for at least 4 years.

17 30 010	2 kg container

Rhepanol contact adhesive 50
For bonding Rhepanol hsg flashing strips, roofing membrane Rhepanol hg and Rhepanol fk to concrete, render finish, brick work, derived timber products, polyester, rigid PVC, metals and bituminous roofing membranes. Not suitable for polystyrole. Consumption: approx. 500 g/m^2. Can be stored for at least 2 years.

17 30 030	4.5 kg container
17 30 020	12 kg container

Note: Always apply Rhepanol contact adhesive 50 on both the substrate and the underside of Rhepanol hsg flashing strips, roofing membrane Rhepanol hg or on the fleece side of the Rhepanol fk roofing membrane. Note the flash-off time!
Check: At the finger test, the adhesive must not produce threads.

FDT roofing membrane adhesive
One-component adhesive based on PU.
For strip bonding of FDT fleece backed roofing membranes.
Can be stored for at least 1 year.

Item No.	Forms of supply
14 68 010	10 kg container

Rhepanol adhesive 90
For strip bonding of Rhepanol hfk and Rhepanol fk on bituminous membranes (without PE backing), derived timber products, lightweight concrete and concrete. Pre-coat as required.
Can be stored for at least 2 years.

10 09 650	9 kg container
10 09 660	12 kg container
10 09 670	25 kg container

Application instructions for FDT roofing membrane adhesive and Rhepanol adhesive 90: Do not apply at temperatures below 5 °C, in wet ambient conditions or on wet substrates.
The substrate must be solid, even, clean, dry and free of grease and oil. Lay roofing membranes Rhepanol onto the fresh adhesive using the rolling or folding method. Adjust the application time of the adhesive to the "open time", which is up to 20 minutes depending on the weather conditions.
Avoid excessive application of adhesive!
For further application instructions see adhesive container.

Consumption of FDT roofing membrane adhesive

Building heigth[1] in windzone 1 and 2	Inner area DIN EN 1991-1-4	Perimeter and corner areas DIN EN 1991-1-4	Min. amount of adhesives stripes/m
0 to 8 m[2]	150 g/m²	200 g/m²	8
over 8 m to 20 m	180 g/m²	250 g/m²	8

Note: For mineral fibre insulation materials, adhesive consumption acc. to DIN EN 1991-1-4 is to be defined depending on the project.

Consumption of Rhepanol adhesive 90

Building heigth[1] in windzone 1 and 2	Inner area DIN EN 1991-1-4	Perimeter and corner areas DIN EN 1991-1-4	Min. amount of adhesives stripes/m
0 to 8 m[2]	160 g/m²	240 g/m²	8
over 8 m to 20 m	200 g/m²	280 g/m²	8

Note: For mineral fibre insulation materials, adhesive consumption acc. to DIN EN 1991-1-4 is to be defined depending on the project.

[1] For building heights over 20 m and buildings in windzone 3 and 4 the adhesive consumption acc. to DIN EN 1991-1-4 is to be defined depending on the project.

[2] With consumption of 160 g/m² the dispensing adhesive application shout be about 8 mm wide.

FDT adhesive U

Liquid one-component polyurethane adhesive for striped bonding of, among others, rigid polystyrene foam and bituminous vapour control sheets **(without PE backing or talcum coating)**. Can be stored for at least 1 year.

Item No.	Forms of supply
10 09 500	6.5 kg container

Application instructions: Do not apply at temperatures below 5 °C, in wet ambient conditions or on wet substrates. The substrate must be solid, even, clean, dry and free of grease and oil. With high summer temperatures (approx. 25 °C and above) and low air humidity, it is recommended to slightly moisten the substrate after applying the adhesive to ensure a sufficient degree of moisture for foaming. Roll or fold the bituminous membranes or insulating materials onto the fresh adhesive. If necessary, weigh down raised ends. Adjust the application time of the adhesive to the "open time", which is up to 15 minutes depending on the weather conditions.

Consumption of FDT adhesive U for thermal insulation[2)]

Building heigth[1)] in windzone 1 and 2	Inner area DIN EN 1991-1-4	Perimeter and corner areas DIN EN 1991-1-4	Min. amount of adhesives stripes[3)]/m
0 to 8 m	160 g/m²	220 g/m²	8
over 8 m to 20 m	180 g/m²	250 g/m²	8

Do not use FDT adhesive U for bonding Rhepanol hfk!

[1)] For building heights over 20 m and buildings in windzone 3 and 4 the adhesive consumption acc. to DIN EN 1991-1-4 is to be defined depending on the project.
[2)] For mineral fibre insulation materials, adhesive consumption is to be defined depending on the project.
[3)] With profiled steel decking, two adhesive strips per corrugation.

FDT application trolley universal
For Rhepanol adhesive 90 in completely drainable 25 kg container.
Application width: 1 m.

Item No.	Forms of supply
10 16 600	1 unit

FDT Adapter for application trolley universal
Suitable for FDT adhesive U in 6.5 kg container, FDT roofing membrane adhesive in 10 kg container and Rhepanol adhesive 90 in 9 kg container.

10 16 610	1 unit

FDT application trolley 1 m
For Rhepanol adhesive 90 in 9 kg container and FDT roofing membrane adhesive in 10 kg container.
Application width: 1 m.

10 16 400	1 unit

FDT discharging funnel

Item No.	Forms of supply
10 16 620	1 unit

FDT metal hand roller small

15 01 100	1 unit

FDT Teflon roller

17 50 000	1 unit

FDT felt roller

10 12 000	1 unit

FDT handheld pistol

10 12 950	1 unit

FDT scissors 250 mm

10 03 500	1 unit

FDT welding brush 50 mm

10 10 000	1 unit

FDT carrying aid

14 70 090	1 unit

FDT protection layer
Made of PIB with polyester fleece backing as a highly perforation-resistant protection layer, with fleece free welding edge.

Item No.	Colour	Thickness mm	Forms of supply Rolls Length x width (m)
17 09 000	black	1.8[1)]	20 x 2.05

FDT synthetic fleece 300 g/m²
Highly tear-resistant and thermally bound, drill resistant, alkali-resistant.[2)]

12 90 900	white		50 x 2.10

FDT synthetic fleece 180 g/m²
Highly tear-resistant and thermally bound, drill resistant.

12 60 200	white		100 x 2.10

FDT vapour control layer fk
Polyethylene foil with $s_d \geq 120$ m.

10 10 900		0.4	25 x 4.00

FDT vapour control layer alu-gv-sk
Aluminium foil with polyester fabric reinforcement and adhesive coating according to DIN 18234; $s_d > 1.500$ m (practically vapour-proof).

12 90 670		0.25	100 x 1.50

FDT connection tape
Special adhesive agent on carrier foil.

10 11 000	black		30 x 0.08

FDT seam tape
Butyl adhesive agent fibre-reinforced.

10 11 100	grey		25 x 0.015

[1)] Thickness including synthetic fleece. [2)] Other qualities on request.

FDT VarioGully roof outlet programme

Item No.	Application	Dimension/colour
14 30 010	vertical	DN 125/DN 100
14 30 020	vertical, heatable*	DN 125/DN 100
14 30 030	vertical	DN 150 (OD 160)
14 30 040	vertical, heatable*	DN 150 (OD 160)
14 30 060	angled	DN 125
14 30 070	angled, heatable*	DN 125
14 30 080	angled	DN 70/DN 100
14 30 090	angled, heatable*	DN 70/DN 100
14 30 510	FDT VarioGully refurbishment flange	

FDT VarioGully warm roof attachment

14 30 210	for insulation thicknesses from 50 mm to 200 mm
14 30 220	for insulation thicknesses from 50 mm to 400 mm
14 30 230	for insulation thicknesses > 400 mm tailor made production[1)]
14 17 100	FDT reducer DN 125/70 excentric, black
14 17 200	FDT lift ring
14 17 300	FDT terrace grating with lift ring
14 30 820	FDT emergency overflow socket, 20–50 mm storage level
14 30 830	FDT emergency overflow socket, 20–110 mm storage level

[1)] Indication of thickness of thermal insulation necessary when ordering.

*** Note on heating:**
The splash-proof installed – not foamed-in – heater unit is double protected by the two integrated safety systems (heat monitoring relay and fuse). **The installation of the heating system must be carried out by a professional electrician, using a safety transformer 220/24 V. Control of the heating system is carried out by the client.**
The power of the heating system is 10 W. In the area of heatable outlets only non-combustible insulation materials must be used.

FDT screwing aid for VarioGully

Tool for simple and reliable installation of the screw rings for the FDT VarioGully.

Item No.
14 30 620

FDT rainwater outlet (RWE)

Item No.	Description Ø (mm)	Outer Ø (mm)	For inner pipe	Application
14 20 000	Rhepanol RWE	50		for bushing DN 50
14 20 010	Rhepanol RWE	56		for down pipe Ø 60
14 20 020	Rhepanol RWE	63	70	for down pipe Ø 80
14 20 030	Rhepanol RWE	75		for bushing DN 70
14 20 040	Rhepanol RWE	95	100	FDT lip seal (see below)
14 20 050	Rhepanol RWE	110	125	for bushing DN 100
14 20 060	Rhepanol RWE	125		for bushing DN 125
14 20 070	Rhepanol RWE	140		
14 20 080	Rhepanol RWE	160		for bushing DN 150

FDT leaf guard for RWE

The leaf guard is suitable for all FDT rainwater outlets (RWE) and can be cut to size to fit the corresponding diametre. Also suitable for all water spouts when cut to size.

14 22 000	universal

FDT lip seal

The FDT lip seals are used for safe installation of FDT rain-water outlets preventing backflow directly into the downpipe or old rainwater outlets.

14 22 010	for RWE 95	DN 100
14 22 020	for RWE 95	DN 125
14 22 030	for RWE 125	DN 150
14 22 040	for RWE 160	DN 200

FDT water spout

Item No.	Description	Outer Ø (mm)	Fall	Pipe length (mm)
14 20 500	Rhepanol water spout 50	50	5°	480
14 20 510	Rhepanol water spout 75	75	5°	480
14 20 520	Rhepanol water spout 110	110	5°	480

FDT weir overflow

14 20 840	Rhepanol weir overflow 75	75	5°	500
14 20 810	Rhepanol weir overflow 110	110	5°	500
14 20 860	Rhepanol weir overflow 200 x 100	210 x 110	2°	400
14 20 870	Rhepanol weir overflow 300 x 100	310 x 110	2°	400
14 20 880	Rhepanol weir overflow 450 x 100	460 x 110	2°	400
14 20 820	Rhepanol weir overflow 600 x 100	610 x 110	2°	400
14 20 890	Rhepanol weir overflow 800 x 100	810 x 110	2°	400
14 20 910	Rhepanol weir overflow1000x 100	1010 x 110	2°	400
14 20 830	Rhepanol weir overflow,		2°	
	„tailor made[1)]		as per demand [2)]	

[1)] also available as water spout [2)] please ask for order form

FDT flat roof vent pipe DN 125/DN100

Made of rigid PVC with increased impact strength. With removable cap and bearing ring. Ready for installation with integrated collar.

Item No.	For flashing against	Colour	For insulation material thickness up to (mm)
14 03 160	Rhepanol hfk/hg	grey	200
14 03 180	Rhepanol hfk/hg	grey	400

FDT refurbishment vent pipe DN 100

Made of rigid PVC with increased impact strength. With removable cap and integrated collar. For flashing against vents in the case of roof refurbishment.

Item No.	For flashing against	Colour
14 03 630	Rhepanol hfk/hg	grey

FDT cold roof vent DN 125

Made of rigid PVC with increased impact strength. Vent cross section of 114 cm². Weather cap can be removed for maintenance. Ready for installation with integrated collar.

14 10 350	Rhepanol hfk/hg	grey

FDT hose connection

Made of polypropylene. Nominal width - DN 100. Flexible flashing against the vent pipe. Bellows length from 200 to 500 mm.

14 13 300	for FDT vent pipe DN 125/DN 100

FDT vent pipe cowl DN 125

Made of rigid PVC with increased impact strength. In combination with FDT vent pipe/refurbishment vent pipe, for rain-proof flashing in case of room ventilation.

14 12 500	for vent pipe DN 125
14 12 629	for FDT refurbishment vent pipe DN 100

FDT lightning conductor sleeve

For flashing against lightning protectors and for penetrations up to Ø 51 mm or as water spout and emergency outlet with connection to DN 50. Height: 250 mm, body colour: black

Item No.	For flashing against	colour
14 40 050	Rhepanol hfk/hg	grey

FDT universal collar

For flashing the roofing membrane against penetrations from 14 mm up to 48 mm Ø. Flange diameter: 200 mm

14 60 100		grey

FDT support covering

For flashing against penetrations from 14 mm to 50 mm. With stainless steel clamp for safety holders with Ø 14 - 16 mm. Total height: 150 mm. Body colour: grey.

14 60 000		grey

FDT wall connection profiles/roof edge trims

Item No.		length
14 09 930	FDT alu wall connection profile Economy	3 m
14 09 900	FDT alu wall connection profile Classic	4 m
14 09 940	FDT fastening profile	4 m
14 11 500	FDT alu roof edge trim 110 metallic silver	4 m
14 12 200	FDT corner 110 metallic silver	4 m
14 12 100	FDT joint connector 110 metallic silver	
14 11 501	FDT alu roof edge trim 175 metallic silver	4 m
14 12 201	FDT corner 175 metallic silver	
14 12 101	FDT joint connector 175 metallic silver	
14 12 000	FDT plastic clamps (additional/replacement) black	

Package of FDT gravel stop profile

Stainless steel gravel stop profile for roof edge trimming of gravelled and terraced roofs.

Item No.		
14 40 150	60 mm high	10 units at 2 m each incl. 61 FDT holders and clamp
14 40 250	100 mm high	10 units at 2 m each incl. 61 FDT holders and clamp

Supplementary package of FDT gravel stop profiles as required

Item No.		Colour	Height/mm
14 40 170	FDT holders and clamp	grey/black	60
14 40 270	FDT holders and clamp	grey/black	100
14 40 140	FDT gravel stop 2 m	silver	60
14 40 240	FDT gravel stop 2 m	silver	100
14 40 120	FDT internal corner for gravel stop profile silver*)		60
14 40 220	FDT internal corner for gravel stop profile silver*)		100
14 40 130	FDT external corner for gravel stop profile silver*)		60
14 40 230	FDT external corner for gravel stop profile silver*)		100

*) silver – stainless steel

Fastening material for roofing systems

Item No.	Max. thickness of layer build-up		
	steel (mm)	timber (mm)	length of fastener (mm)
FDT type SS, self-tapping screw[1] for steel profiles and derived timber products Ø 4.8 mm.			
14 15 000		10	35[3]
14 15 010		20	50[3]
14 16 000	100	90	120
14 16 010	120	110	140
14 16 020	140	130	160
14 16 040	160	150	180
14 16 050	180	170	200[2]

FDT washer D51 for self-tapping screws and wooden screws up to Ø 5.0 mm	
14 16 500	drill hole Ø 5.1 mm

FDT washer D65 for nail plugs Ø 6.0 mm	
14 16 510	drill hole Ø 6.5 mm

[1] Setting the fastening elements with a bit holder for screwdriver drills is recommended. With crosstip bit PH2 (Phillips size 2).
[2] Other lengths on request
[3] Screws Ø 5.5 mm only for derived timber products

Note:

For further application instructions please check manufacturer instructions for use.

Top performance of a roofing membrane is always a question of professional application!

In order to ensure this, we offer special practical training, supervised by our experienced Technical Department staff.

Rhepanol and Rhenofol training for apprentices, journeymen and foremen provide knowledge for the installation of synthetic roof sealing membranes.
Advanced Rhepanol courses for foremen and masters of the roofing craft are designed to provide wider and more comprehensive knowledge for the installation of synthetic roof sealing membranes.

Please contact
Export department
Phone: +49 621-8504-372
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E-Mail: export@fdt.de

ROOFCOLLECT®
Recycling System for Thermoplastic Membranes

FDT– commitment to synthetic roofing membrane recycling for the sake of environment.

Together with ESWA (European Single Ply Waterproofing Association), the European Organisation of Synthetic Roofing Membrane Manufacturers, we have installed a recycling solution for old PVC roofing membranes within Europe, based on a unique German recycling solution, where we played an important role during the development. ESWA today will provide innovative recycling possibilities, regardless of the manufacturers for different synthetic roofing membranes. For the return of materials the following procedure has to be considered:

- After ordering, you will receive from Interseroh Entsorgungsleistungs GmbH (recycling provider) big bags with a capacity of 300 to 400 square metres and a load capacity of up to1.000 kg or for big job sites containers.
- It has to be stated whether the roof membrane consists of PVC-P, EVA-PVC, PE-C, ECB, TPO or PIB.
- Even fleece backed and bonded old roofing membranes made of these materials will be accepted.
- They have to be declared separately.
- The roofing membranes have to be clean swept. The area has to be cut into one metre wide membranes and rolled.
  Remark: roll up the membranes tight to reduce the transporting volume.

Service upon request

For questions and remarks our Export department is available for you

Phone: + 49 621-8504-372
Fax: + 49 621-8504-378
E-Mail: export@fdt.de

FDT – Legal Notice

We explicitly point out that all above information, in particular, all recommendations relating to the processing and application of the indicated products and system accessories, are based on our knowledge and experience obtained under standard conditions. Furthermore, appropriate storage and use of the products is assumed.

In view of the different materials, substrates and varying working conditions, no warranty claims in respect of any results or liability can be derived neither from this notice nor from any oral statements, irrespective of any legal relationship.

In the case of FDT being accused of having acted with wilful intent or gross negligence, the user has to provide evidence that he has submitted to FDT on time, in full and effectively all information and details required for a factual and relevant assessment.

It is the responsibility of the user to verify the suitability of the products for their intended use. FDT reserves the right to make changes to the product specifications.

Third party proprietary rights must be complied with. Moreover, our respective Terms of Sale and Delivery shall apply. In addition, the latest published or available edition of the product data sheet, which can be requested directly from FDT, shall be binding.

Disclaimer

Roofing membrane
Rhepanol® hfk and
Rhepanol® hfk-sk
Application manual
As of May 2016

Editor:

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This manual corresponds with the FDT manufacturer application instructions for designers and applicators in the Federal Republic of Germany. It cannot, however, replace professional knowledge. Every user is obliged to keep his knowledge up to date!

Technical changes reserved.

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Tip:
Scan the QR code for direct access to the FDT installation videos.

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