DELTA® protects property

DELTA®-PENTAXX

Laying instructions

General information and UV-related outdoor exposure time

General instructions
These laying instructions show examples of installation and recommendations in accordance with the roofer's rules, published by the Zentralverband des Deutschen Dachdeckkerhandwerks (Central Association of the German Roofing Trade). If national requirements exist outside Germany for a recommendation on the execution of these installation instructions, then the recommendations or requirements of higher value must be taken into account.

Other designs are possible if they comply with the generally accepted rules of technology and standards. Any deviations that may be required can be discussed in individual cases with Dörken GmbH & Co. KG. An extensive collection of details and further information on DELTA® underlays can be found at www.doerken.com/int.

When fitting the DELTA®-PENTAXX sarking, roofing and formwork sheet, the information on the standard roof pitch of the covering material must be factored into the generally recognised rules of technology, standards and/or manufacturer's specifications.

When processing, the structural-physical aspects of the component must be taken into account. A ventilated construction is particularly recommended for pitched roofs with outer diffusion-inhibiting or diffusion-tight layers.

The sheet is fastened by the counter battens. Tacker clamps or wide head pins can be used concealed in the area of the height and side overlaps or under the counter battens as fitting aids. If open fastening is unavoidable, it is done with the DELTA®-DICHTNAGEL and/or by masking the fastening points with the DELTA®-MULTI-BAND. These points should be kept to a minimum and should not be located in the main watercourse, e. g. of collars. The overlaps are bonded by using DELTA®-PLUS variants or DELTA®-MULTI-BAND.

Where there is heavy mechanical stress, e. g. in the area of transport and work routes as well as in material storage areas, the sheets must be protected from damage.

UV-related outdoor exposure time
DELTA®-PENTAXX underlays can be exposed to UV radiation during the construction phase for a maximum period of 16 weeks. Once the roof covering is fully fitted, the membranes can also be exposed to UV radiation by light entering through windows or similar into unfinished roof spaces. This is to be avoided by appropriate measures. In general, we recommend covering the sheets in good time.

These laying instructions show examples. Other designs are possible if they comply with the generally accepted rules of technology. Any deviations that may be required can be discussed in individual cases with Dörken GmbH & Co. KG.

Enhanced protective function and pre-covering

Enhanced protective function during the outdoor exposure time

If the DELTA®-PENTAXX underlays are to provide rainproof protection for the building or the underlying component layers for a limited period of time, the following recommendations should be followed:
Connections to rising building components must be rainproof and the entry of water through the fastening points of e. g. counter battens and cleats must be avoided. The use of DELTA® system components is required.
The overlaps must be bonded. DELTA®-PENTAXX PLUS products with self-adhesive edges are to be preferred because of the high level of safety during bonding. The sheets are fastened exclusively concealed within the overlaps. If open fixings are unavoidable, they should be made with DELTA®-DICHTNAGEL or covered with DELTA®-MULTI-BAND. Such fastenings should be kept to a minimum and should not be located in the main watercourse, e. g. of collars. Alternatively, the position can be secured by storm battens with sections of DELTA®-SCHAUM-BAND or DELTA®-DICHT-BAND D 50 at the nail points. The penetration points of the fastener must be sealed after the storm batten is removed. If roof coverings are fastened directly to the formwork, e. g. slate, this is not necessary if the storm batten is removed step by step with the application of the roof covering.

The roof pitch must be at least 14°.

If components other than DELTA® system components – e. g. adhesives, nail sealing tapes, etc. – are to be used to produce this temporary protective function, the manufacturer of the replacement material must guarantee the protective function in conjunction with the DELTA®-PENTAXX underlay used with regard to resistance to ageing and driving rain.

The possible time period for this enhanced protective function may depend, among other things, on the following factors:

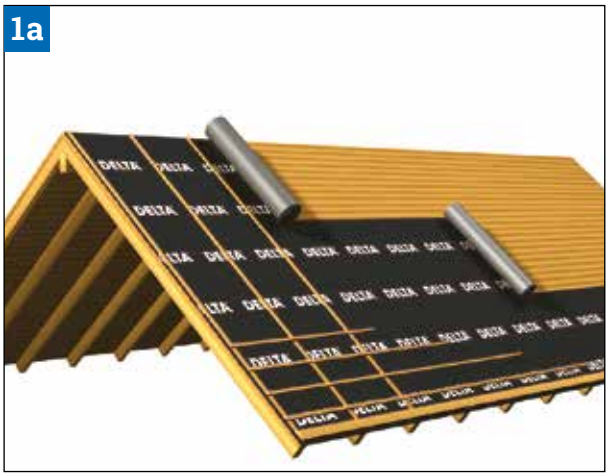
- National or regional requirements that limit the duration of ”outdoor exposure“
- Geometry of the pitched roof (e. g. rafter length, roof pitch, presence or number of skylights, dormers, ducts etc.)
- Climatic conditions

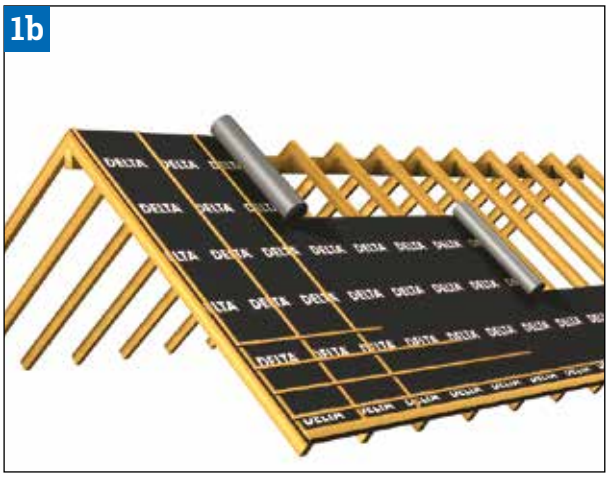
and may in individual cases be discussed with Dörken GmbH & Co. KG.

Pre-covering

DELTA®- PENTAXX underlays serve as a pre-covering for roof coverings fastened directly to formwork, such as slate, fibre cement roofing tiles or non-self-supporting metal coverings. The pre-covering is fitted before the roofing with the actual roof material. Pre-covering sheets can be fitted parallel to the eaves as well as from the ridge to the eaves. When fitting from the ridge to the eaves, the sheets should be installed at a slight angle so that the water runs away from the overlap. The weather direction must be observed. If the roofing is interrupted, e. g. in the case of slate coverings, the pre-covering above the last truss must be cut open and a narrow drag strip inserted into the cut. This will lead draining water to the finished roof covering. Pre-covering can also fulfil the function of a separating layer. Depending on the type and design of the pre-covering, it can also provide rainproof protection for the building or the underlying structural layers for a limited period of time. The minimum roof pitch of the roof material must be observed.

Surface fitting and nail sealing





Surface fitting

(Image 1a and 1b) The DELTA®-PENTAXX underlays are as a rule fitted parallel to the eaves. The minimum overlap is 10 cm. Side overlaps must be arranged under the counter batten. The printed side is the top side and faces the processor when fitted.

Nail sealing

(Image 2) To prevent water from penetrating through the fixing points of the counter battens and cleats, the use of DELTA®-SCHAUM-BAND or DELTA®-DICHT- BAND D 50 under the counter battens is recommended.
If the DELTA®-PENTAXX underlay is to provide rainproof protection for a limited period of time for the building or the underlying component layers, or if the roof slope falls below the standard roof pitch, the use of DELTA® nail sealing tapes is absolutely necessary. When fitting on formwork, the use of DELTA®-SCHAUM-BAND makes sense to compensate for uneven board thicknesses and deformations in the formwork. DELTA®-SCHAUM-BAND can be glued both to the upper side of the additional measure and to the underside of the counter batten. DELTA®-DICHT-BAND D 50 must be pressed against the substrate with a pressure roller in order to ensure tightness during installation on the sheet. All DELTA® nail sealing tapes must be sufficiently pressed against the substrate by means of counter battens or similar.

Eaves and ridge

Eaves/Ridge

(Image 3) At the eaves, DELTA®-PENTAXX underlays lie below the counter battens and eaves board on a drip plate or above the eaves board on an eaves plate. Water pocket formation or counter slopes must be avoided.

(Image 4a) At the ridge, the sheets are fitted over the ridge in non-ventilated roof constructions in order to achieve snow and rain proofing.

(Image 4b) In ventilated roof constructions, the sheets end approx. 50 mm as an under-span and approx. 30 mm before the apex of the ridge as an underlay and formwork sheet. The resulting ventilation opening can be spanned above the counter batten with a strip of sheet in such a way that it covers the entire surface of the sheet by at least 15 cm. In the case of unfinished attic floors, in which moisture convection cannot be ruled out, sufficient transverse ventilation can be achieved, e. g. by a design such as in Fig. 4b. A larger opening in the ridge area or further openings may be necessary. If an open ridge or hip is required for special protection requirements, it must be clarified with the client whether the openings may already be present during the construction phase or whether they are not to be made until the roof covering has been completed.

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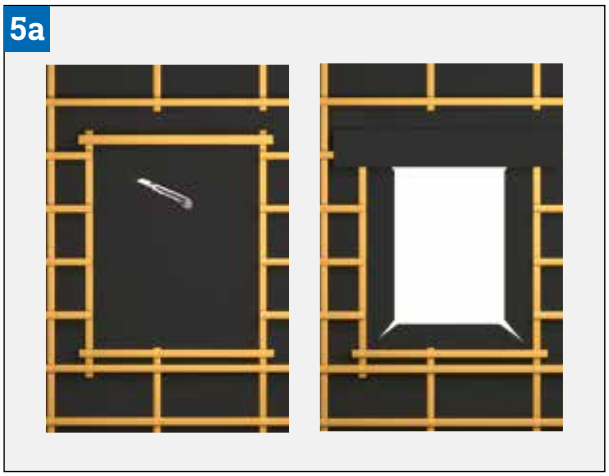
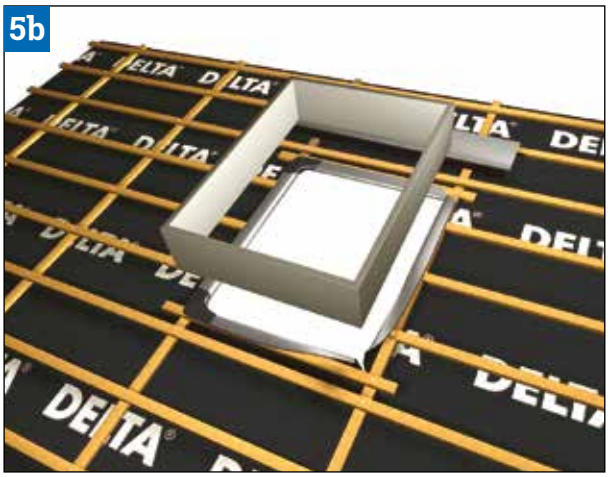
4a **Non-ventilated**

4b **Ventilated**

Skylights





Skylights

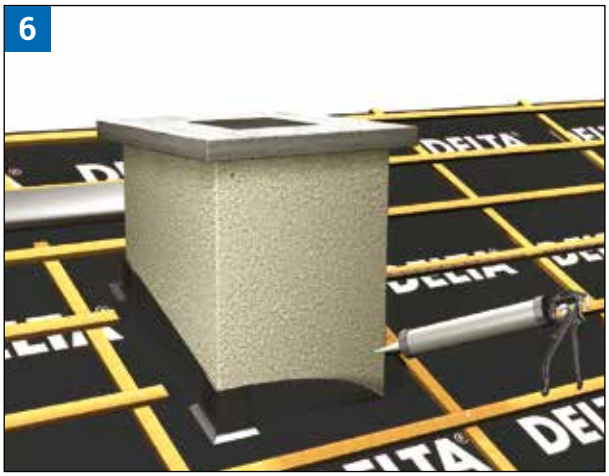
(Image 5a) When installing skylights, the position of the window must be determined where the upper and lower mounting laths for the window are to be installed. Remove counter battens in the area of the required foil gutter and cut in DELTA®-PENTAXX underlays as shown in Fig. 5a. Line the counter battens in the window area between the slats with pieces of battens, fold back any foil strips that have been created onto them and fasten. Using strips of sheeting approx. 30–40 cm wide and sufficiently long on the ridge side of the window, create a foil channel so that there is a gradient to drain the water into an adjacent rafter field. If wind-proofing is required, the resulting overlaps must be glued laterally and transversely. If wind-proofing is required, the resulting overlaps must be glued laterally and transversely. If there are special protection requirements, the sheet strip of the foil gutter must be guided under the next ridge-side height overlap and glued all around with the DELTA®-MULTI-BAND. This avoids a cut in the surface.

(Image 5b) The open, gaping joints of the corners are sealed with DELTA®-FLEXX-BAND to make them rain-proof. The skylight is inserted into the resulting opening and fastened. If wind-proofing is required and/or if the counter battens or the resulting frames are further away from the window, separate strips of sheet must be attached to the window. It must be ensured that the sheets folded over on the frame are connected wind-proof on the substrate with DELTA®-MULTI-BAND and on the window with DELTA®-THAN or DELTA®-MULTI-BAND. The corners should be taped with DELTA®-FLEXX-BAND.

Connections and collar formation

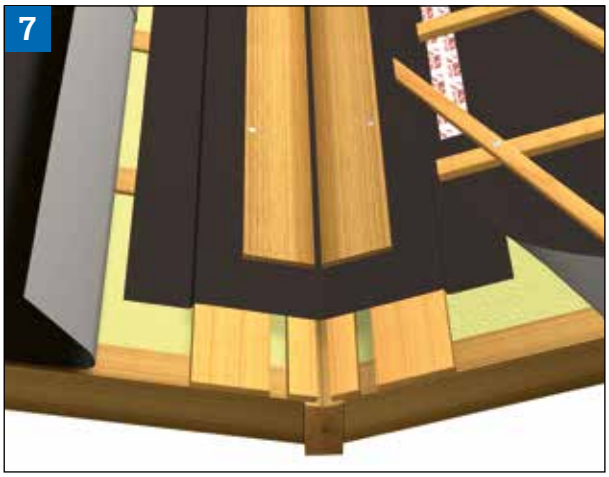
Connections

(Image 6) Connections to rising components are made by raising and fastening the sheets themselves or separate foil strips. When using separate strips, these are glued to the surface with DELTA®-MULTI-BAND and the corners are glued with DELTA®-FLEXX-BAND. If wind-proofing is required, the connection to the rising component is made with DELTA®-THAN. Above penetrating components, an inclined foil channel is attached as shown in Fig. 5a. If special protection requirements exist, additional connections must be glued to rising components and secured against water getting in.



Collar formation

(Image 7) Collars should be designed in such a way that a supporting construction of laths or planks is provided as a support for the collar formwork and the outgoing cleats. Then the collar formwork is applied and covered with a strip of sheeting so wide that the sheeting can be covered and glued to the collar sheeting at a distance from the supporting structure. Alternatively, the supporting structure can first be covered with the collar sheet and the collar formwork attached to it.



Notice

The content of these installation instructions reflects the current level of knowledge at the time of publication. It does not claim to be complete and does not release the user from his responsibility. With the publication of these installation instructions, all previous versions lose their validity.

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