

Approval body for construction products
and types of construction

Bautechnisches Prüfamt

An institution established by the Federal and
Laender Governments



European Technical Assessment

ETA-20/0384
of 14 December 2021

English translation prepared by DIBt - Original version in German language

General Part

Technical Assessment Body issuing the
European Technical Assessment:

Deutsches Institut für Bautechnik

Trade name of the construction product

DELTA-FOXX / DELTA-FOXX PLUS

Product family
to which the construction product belongs

Membrane for use as roof underlay

Manufacturer

Dörken GmbH & Co. KG
Wetterstraße 58
58313 Herdecke
DEUTSCHLAND

Manufacturing plant

Dörken GmbH & Co. KG
Wetterstraße 58
58313 Herdecke
DEUTSCHLAND

This European Technical Assessment
contains

9 pages including 4 annexes which form an integral part
of this assessment

This European Technical Assessment is
issued in accordance with Regulation (EU)
No 305/2011, on the basis of

EAD 030218-01-0402

This version replaces

ETA-20/0384 issued on 4 September 2020

The European Technical Assessment is issued by the Technical Assessment Body in its official language. Translations of this European Technical Assessment in other languages shall fully correspond to the original issued document and shall be identified as such.

Communication of this European Technical Assessment, including transmission by electronic means, shall be in full. However, partial reproduction may only be made with the written consent of the issuing Technical Assessment Body. Any partial reproduction shall be identified as such.

This European Technical Assessment may be withdrawn by the issuing Technical Assessment Body, in particular pursuant to information by the Commission in accordance with Article 25(3) of Regulation (EU) No 305/2011.

Specific part

1 Technical description of the product

"DELTA-FOXX" and "DELTA-FOXX PLUS" are roof underlay membranes, which consist of a polyester nonwoven (PET) with a diffusion-open waterproof acrylic coating.

"DELTA-FOXX PLUS" is provided with a factory-integrated self-adhesive zone along both edges (integrated self-sealing edge).

The membranes do not contain any substances that are intended to inhibit or prevent root penetration (root protection agents).

The roof underlay membranes are fastened to the timber joists with nails or screws, e.g. by means of nailed or screwed counter battens.

For an adequate application of product – depending on the specific roof design, e. g. roof slope, roof built-up, details – other adjuvants may be needed, e. g. mastic sealant, adhesive tape, nail-sealing tape. In general, these adjuvants are given in the manufacturer's technical documents¹.

An additional product description is given in Annex A.

2 Specification of the intended use in accordance with the applicable European Assessment Document

The membranes are intended for use as underlays, which are to be used under roof covering of roofs with roof pitch from 5° to 90°.

In the technical documents the manufacturer gives information concerning the substrates/roof build-up which the product is suitable for.

The membranes are intended to be exposed to weathering (UV rays) in accordance with EN 13859-1 and EN 13859-2.

The performance given in Section 3 is only valid if the roof underlay membranes are used in compliance with the specifications and conditions given in Annex B

The verifications and assessment methods on which this European Technical Assessment is based lead to the assumption of a working life of the roof underlay membranes of at least 25 years. The indications given on the working life cannot be interpreted as a guarantee given by the producer, but are to be regarded only as a means for choosing the right products in relation to the expected economically reasonable working life of the works.

3 Performance of the product and references to the methods used for its assessment

3.1 Safety in case of fire (BWR 2)

Essential characteristic	Performance
Reaction to fire	see Annex A

¹ The manufacturer's technical documents comprise all information necessary for the production and the installation of the product as well as for the repair and it is deposited with DIBt.

3.2 Hygiene, health and the environment (BWR 3)

Essential characteristic	Performance
Resistance to water penetration	see Annex A
Water vapour transmission	see Annex A
Tensile properties	see Annex A
Resistance to tearing	see Annex A
Resistance to perforation: - Hail resistance - Resistance to persons stepping through the membrane	see Annex A
Dimensional stability	see Annex A
Flexibility at low temperature	see Annex A
Resistance to artificial ageing: - Artificial ageing behaviour (standard) - UV resistance 5000h and exposure to heat - Prolonged exposure to heat with accelerated air-speed 5±2 m/s	see Annex A
Resistance to penetration of air	see Annex A
Water tightness of seams	see Annex A
Emissivity	see Annex A
Tightness of perforations from nails and screws	see Annex A
Content, emission and/or release of dangerous substances	see Annex A

4 Assessment and verification of constancy of performance (AVCP) system applied, with reference to its legal base

In accordance with EAD No. 030218-01-0402, the applicable European legal act is: Decision 1999/90/EC.

The system to be applied is: 3

In addition, with regard to reaction to fire for products covered by this EAD the applicable European legal act is: Decision 1999/90/EC, as amended by 2001/596/EC.

The system to be applied is: 1

5 Technical details necessary for the implementation of the AVCP system, as provided for in the applicable EAD

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited with Deutsches Institut für Bautechnik.

Issued in Berlin on 14 December 2021 by Deutsches Institut für Bautechnik

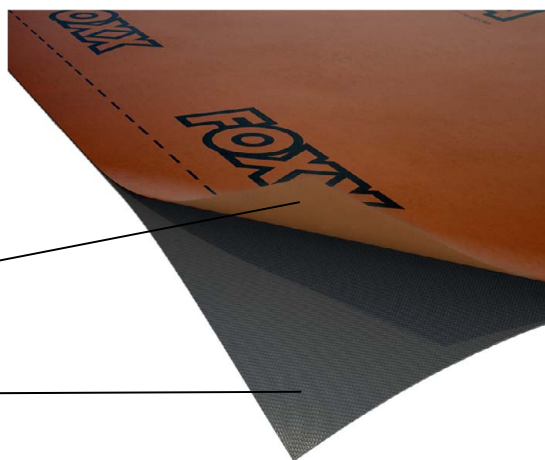
Bettina Hemme
Head of Section

beglaubigt:
Hannoun

Roof underlay membranes
"DELTA-FOXX" /
"DELTA-FOXX PLUS" consist of:

Waterproof acrylic coating

Polyester nonwoven (PET)



Additional description of the roof underlay membranes "DELTA-FOXX" / "DELTA-FOXX PLUS"

Length	50 m (- 0 %)
Width	1.5 m (+1.5 / - 0.5 %)
Straightness	≤ 10 mm/10 m
Mass per unit area	270 g/m ² (+ 20 / - 10 %)

Performance of the roof underlay membranes "DELTA-FOXX" / "DELTA-FOXX PLUS"

Essential characteristic	Performance
Reaction to fire	Class B – s1, d0 ¹⁾
Resistance to water penetration	Class W1 ²⁾
Water vapour transmission	S _d = 0.05 m
Tensile properties	
F _{max}	longitudinal / transverse 350 N/50 mm / 280 N/50 mm
Elongation	longitudinal / transverse 30 % / 45 %
Resistance to tearing (nail shank)	longitudinal / transverse 180 N / 200 N
Resistance to perforation:	
- Hail resistance	No performance assessed
- Resistance to persons stepping through the membrane	No performance assessed
Dimensional stability	longitudinal / transverse ≤ 0.5 %
Flexibility at low temperature	- 40 °C

DELTA-FOXX / DELTA-FOXX PLUS
Dörken GmbH & Co. KG

Description and performance of product

Annex A1

Performance of the roof underlay membranes "DELTA-FOXX" and "DELTA-FOXX PLUS" (Continued)	
Essential characteristic	Performance
Resistance to artificial ageing:	
- Artificial ageing behaviour (standard)	
Resistance to water penetration after aging	Class W1 ²⁾ (resistant against artificial ageing; 336 h UV + 90 d at 70 °C)
Tensile properties after aging	
Maximum tensile force	longitudinal / transverse
Elongation	longitudinal / transverse
	350 N/50 mm / 280 N/50 mm
	30 % / 45 %
- UV resistance 5000 h and exposure to heat	
Resistance to water penetration after aging	Class W1 ²⁾ (resistant against artificial ageing; 5000 h UV + 90 d at 70 °C)
Tensile properties after aging	
Maximum tensile force	longitudinal / transverse
Elongation	longitudinal / transverse
	340 N/50 mm / 260 N/50 mm
	25 % / 35 %
- Prolonged exposure to heat with accelerated air-speed 5±2 m/s	
Resistance to water penetration after aging	Class W1 ²⁾ (resistant against prolonged exposure to heat with accelerated air-speed 5±2 m/s; 64 weeks at 70 °C)
Resistance to penetration of air	No performance assessed
Water tightness of seams applies to: "Integrated self-sealing edge" of "DELTA-FOXX PLUS"	Watertight (2 h, 200 mm water column)
Emissivity	No performance assessed
DELTA-FOXX / DELTA-FOXX PLUS Dörken GmbH & Co. KG	
Performance of product	Annex A2

Performance of the roof underlay membranes "DELTA-FOXX" and "DELTA-FOXX PLUS" (Continued)

Essential characteristic	Performance
Tightness of perforations from nails and screws	No additional nail sealing material is necessary under the following boundary conditions: - on a full-surface and pressure-resistant substrate (at fastening points), - heavy rain $\leq 2 \text{ l/m}^2 \times \text{min}$ and wind pressure $\leq 600 \text{ Pa}$, - central European climate conditions (altitudes $\leq 690 \text{ m}$ above sea level with an average total annual rainfall $\leq 1185 \text{ mm/a}$).
Content, emission and/or release of dangerous substances	No performance assessed

1) Class according to EN 13501-1, The classification is valid for the following end use conditions:

- without substrate
- with or without horizontal lap joint
- all unsupported and supported end use applications

2) Class according to 13859-1

DELTA-FOXX / DELTA-FOXX PLUS
Dörken GmbH & Co. KG

Performance of product

Annex A3

Installation

The performance of the roof underlay membrane can be assumed only, if the installation is carried out according to the installation instructions stated in the technical documents of the manufacturer, in particular taking account of the following points:

- installation by appropriately trained personnel,
- installation with the required tools and adjuvants,
- precautions during installation,
- inspecting the substrate in the overlapping (and bonding) areas which shall be clean, dry and free of dust, frost and grease,
- inspecting the roof structure for sufficient stability,
- inspecting compliance with suitable weather conditions, e. g. gluing of overlaps at $\geq +5$ °C,
- appropriate fixation, maximum / minimum fixing distances, e.g. permanent fixation with nailed or screwed counter battens, maximum / minimum fixing distances,
- treatment of details in accordance with manufacturer's instructions, e.g. eave, ridge, free end,
- applying a nail-sealing tape where necessary (in accordance with manufacturer's instructions), e. g. in case of non-full-surface or non-pressure-resistant substrate at fastening points.

DELTA-FOXX / DELTA-FOXX PLUS Dörken GmbH & Co. KG	Annex B
Intended use Specifications	