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Authorised and notified according
to Article 29 of the Regulation (EU)
No 305/2011 of the European
Parliament and of the Council of 9
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MEMBER OF EOTA



European Technical Assessment ETA-22/0476 of 2023/02/16

I General Part

Technical Assessment Body issuing the ETA and designated according to Article 29 of the Regulation (EU) No 305/2011: ETA-Danmark A/S

Trade name of the
construction product:

STARFLEX MONO Systems

Product family to which the
above construction product
belongs:

Liquid applied roof waterproofing using kits based on
polyurethane membranes

Manufacturer:

Mixer srl
MPM division
St. Adda, 15
IT-20073 Opera (Milano)
Internet www.mpmwaterproofing.com
www.mpmsrl.com

Manufacturing plant:

Mixer srl
MPM division
St. Adda, 15
IT-20073 Opera (Milano)

This European Technical
Assessment contains:

7 pages

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

European Assessment Document (EAD) No.
EAD 030350-00-0402: Liquid applied roof waterproofing
kits

This version replaces:

The ETA with the same number issued on 2022-07-26

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product

The STARFLEX MONO Systems consists of the following components:

- **STARFLEX MONO** – a single component moisture curing polyurethane membrane installed by brush, roller or airless spray compounded to be B_{ROOF}(t4) fire rated for exposed applications
- **STARFLEX MONO 100** – a single component moisture curing polyurethane membrane installed by brush, roller or airless spray compounded to be B_{ROOF}(t4) fire rated for protected specifications, for example with ballast, pavers or using the STARFLEX MONO TOP S
- **STARFLEX ULTRA FR** – a single component moisture curing, thixotropic polyurethane membrane installed by brush, roller or airless spray compounded, B_{ROOF}(t4) fire rated.
- **STARFLEX MONO TOP S** – a single component elastic aliphatic polyurethane, UV resistant top coat, installed by brush, roller or airless spray, for use over the other membranes in exposed uses.
- **STARTEX NW** – 60 g/m² polyester reinforcement for the systems
- **STARTEX GM** – 225 g/m² glass reinforcement for the systems
- **PRIMER 0230** – a single component, solvent based, moisture curing polyurethane primer for use on concrete and bituminous membrane substrates
- **STARCEMENT 5/A** – a two-component, water-based, epoxy primer for bitumen membranes and porous substrates.

The kit is used to produce a two-layer reinforced system.

Ancillary products:

STARTEX TAPE
STARTEX CMA
STARFLEX CMF
STARMASTIC P 95

The mean application rate and finished thickness is given below for the kits:

STARFLEX ULTRA FR

Base coat 1.5 kg/m² minimum
Reinforcement STARTEX NW or STARTEX GM
Top coat 1.8 g/m² minimum
System thickness 2,2 mm

STARFLEX MONO, STARFLEX MONO 100

Base coat 1.5 g/m² minimum
Reinforcement STARTEX NW or STARTEX GM
Top coat 1.8 g/m² minimum

System thickness 2,2 mm

STARFLEX MONO, STARFLEX MONO 100 or STARFLEX ULTRA FR with STARFLEX MONO TOP S

Base coat 1.5 g/m² minimum

Reinforcement STARTEX NW or STARTEX GM

Top coat 1.0 g/m² minimum STARFLEX MONO TOP S 0.3 g/m²

System thickness 1,9 mm

2 Specification of the intended use(s) in accordance with the applicable European Assessment Document (hereinafter EAD)

For use as a liquid-applied roof waterproofing on roofs, balconies and terraces on substrates made from the following:

- concrete and self-supporting cement-based substrates
- Bitumen roofing membranes

The maximum roof slope is categorised as S1 to S4:

Roof slopes < 5% - ≥ 30%, according to table 13 in the EAD 030350-00-0402.

The climate zones of the intended use of the kit are categorised as M, Moderate and S, severe climate.

Concerning product packaging, transport, storage, maintenance, replacement and repair it is the responsibility of the manufacturer to undertake the appropriate measures and to advise their clients on the transport, storage, maintenance, replacement and repair of the product, as the manufacturer considers necessary.

It is assumed that the product will be installed according to the manufacturer's instructions or (in absence of such instructions) according to the usual practice of the building professional.

The provisions made in this European Technical Assessment are based on an assumed working life of the STARFLEX MONO Systems of at least 25 years.

The indications given on the working life cannot be interpreted as a guarantee given by the manufacturer or the Assessment Body 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.

Characteristic	Assessment of characteristic
3.2 Safety in case of fire (BWR 2)	
External fire performance of roofs	The STARFLEX ULTRA FR and STARFLEX MONO/STARFLEX MONO 100 systems are both classified as B_{ROOF}(t4) in accordance with EN 13501-5 and Commission Decision 2000/553/EC applied with the rates stated in section II.1 of this ETA on minimum 8 mm thick fiber cement boards.
Reaction to fire	No performance assessed
3.3 Hygiene, health and the environment (BWR 3)*)	
Content, emission and/or release of dangerous Substances*	No performance assessed
Resistance to water vapour	STARFLEX ULTRA FR glass mat μ = 3154 STARFLEX MONO// MONO 100/MONO TOP S/polyester mat μ = 4112
Watertightness	STARFLEX ULTRA FR glass mat S_d: 5,39 m STARFLEX MONO/MONO 100/MONO TOP S/polyester mat S_d: 7,67 m
Resistance to wind loads - delamination	STARFLEX ULTRA FR glass mat – concrete R = 1236 kPa – bitumen membrane R = 766 kPa
Resistance to mechanical damage (perforation):	STARFLEX ULTRA FR glass mat – carrier membrane/ PIR at 20°C = P3 STARFLEX MONO/MONO 100/MONO TOP S/polyester mat = P4
Resistance to dynamic indentation	STARFLEX ULTRA FR glass mat – steel at 21°C = I₄ – carrier membrane/ PIR at 20°C = I₃ STARFLEX ULTRA FR polyester mat – carrier membrane/ PIR at 20°C = I₄ STARFLEX MONO/MONO 100/MONO TOP S/polyester mat – steel at 20°C = I₄ – carrier membrane/ PIR at 20°C = I₄
Resistance to static indentation	STARFLEX ULTRA FR glass mat – steel at 21°C = L₄ – carrier membrane/ PIR at 20°C = L₃ STARFLEX ULTRA FR polyester mat – carrier membrane/ PIR at 20°C = L₄ STARFLEX MONO/MONO 100/MONO TOP S/polyester mat – steel at 20°C = L₄
Resistance to fatigue movement	Category W3
Resistance to the effect of low and high surface Temperatures	Low temperatures: STARFLEX ULTRA FR glass mat: Category TL3 STARFLEX ULTRA FR polyester mat: Category TL4 STARFLEX MONO/MONO 100/MONO TOP S/polyester mat: Category TL4

Characteristic	Assessment of characteristic
	<p>High temperatures: STARFLEX ULTRA FR glass mat: Category TH4 STARFLEX ULTRA FR polyester mat: Category TH4 STARFLEX MONO/MONO 100/MONO TOP S/polyester mat: Category TH4</p>
Resistance to ageing media (heat)	<p>Category W3</p> <p>Dynamic indentation, steel STARFLEX ULTRA FR glass mat = I₄ STARFLEX ULTRA FR polyester mat = I₄</p> <p>Tensile properties STARFLEX ULTRA FR glass mat Un-aged = 979 N per 50 mm Aged = 1389 N per 50 mm</p> <p>Elongation at break STARFLEX ULTRA FR glass mat Un-aged = 2,97 % Aged = 2,63 %</p>
Resistance to UV radiation in the presence of moisture	<p>Category M/S W3</p> <p>Dynamic indentation, steel at -10 °C STARFLEX ULTRA FR glass mat = I₄ STARFLEX ULTRA FR polyester mat = I₄</p> <p>Tensile properties STARFLEX ULTRA FR glass mat Un-aged = 979 N per 50 mm Aged = 1345 N per 50 mm</p> <p>STARFLEX MONO/MONO 100/MONO TOP S/polyester mat Un-aged = 311 N per 50 mm Aged = 472 N per 50 mm</p> <p>Elongation at break STARFLEX ULTRA FR glass mat Un-aged = 2,97 % Aged = 2,61 %</p> <p>STARFLEX MONO/MONO 100/MONO TOP S/polyester mat Un-aged = 21,97 % Aged = 27,77 %</p>
Resistance to ageing media (water)	<p>Category W3</p> <p>Dynamic indentation, steel STARFLEX ULTRA FR glass mat – Concrete = 1240 kPa – Bitumen membrane = 197 kPa</p>

Characteristic	Assessment of characteristic
	Dynamic indentation, steel at 90 °C STARFLEX ULTRA FR glass mat = I₄ STARFLEX ULTRA FR polyester mat = I₄
Resistance to plant roots	No performance assessed
Effects of variations in kit components and site practices	Tensile strength STARFLEX ULTRA FR glass mat - unaged = 979 N per 50 mm - aged at +5°C = 945 N per 50 mm - aged at +35°C = 1317 N per 50 mm STARFLEX MONO/MONO 100/MONO TOP S/polyester mat - unaged = 311 N per 50 mm - aged at +5°C = 392 N per 50 mm - aged at +35°C = 337 N per 50 mm Elongation at maximum load (%) STARFLEX ULTRA FR glass mat - unaged = 2,97 % - aged at +5°C = 3,50 % - aged at +35°C = 110,50 % STARFLEX MONO/MONO 100/MONO TOP S/polyester mat - unaged = 21,97 % - aged at +5°C = 21,50 % - aged at +35°C = 22,32 % Dynamic indentation – steel at 20°C STARFLEX ULTRA FR glass mat - aged at +5°C = I₄ - aged at +35°C = I₄ STARFLEX MONO/MONO 100/MONO TOP S/polyester mat - aged at +5°C = I₄ - aged at +35°C = I₄ No delamination
Effects of day joints	No delamination
3.4 Safety and accessibility in use (BWR 4)	
Slipperiness	No performance assessed

*) All numeric performance values are nominal values

See additional information in section 3.5-3.6.

3.5 Methods of verification

The assessment of the performance of STARFLEX MONO Systems in relation to the applicable BWR's has been made in accordance with the European Assessment Document (EAD) No. EAD 030350-00-0402 for Liquid applied roof waterproofing kits.

3.6 General aspects related to the fitness for use of the product.

The European Technical Assessment is issued for the product based on agreed data/information, deposited with ETA-Danmark, which identifies the product that has been assessed and judged. Changes to the product or

production process, which could result in this deposited data/information being incorrect, should be notified to ETA-Danmark before the changes are introduced. ETA-Danmark will decide if such changes affect the ETA and consequently the validity of the CE marking based on the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

The construction product is manufactured in accordance with the provisions of this European Technical Assessment using the manufacturing processes as identified in the inspection of the plant by the notified inspection body and laid down in the technical documentation.

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

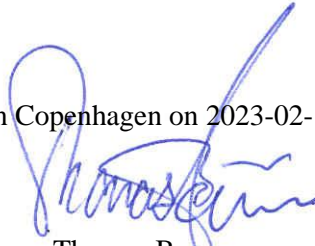
4.1 AVCP system

According to the decision 98/599/EC as amended by 2001/596/EC, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 3.

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

Technical details necessary for the implementation of the AVCP system are laid down in the control plan deposited at ETA-Danmark prior to CE-marking.

Issued in Copenhagen on 2023-02-16 by



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Managing Director, ETA-Danmark