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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-15/0868 of 07/12/2016

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:

Mira 4500 vapourmat 100 Watertight covering kit

Product family to which the above construction product belongs:

Watertight covering kit for wet room floors and walls based on flexible sheets

Manufacturer:

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Manufacturing plant:

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This European Technical Assessment contains:

8 pages including 1 annex which form an integral part of the document

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

Guideline for European Technical Approval (ETAG) No 022 Watertight covering kits for wet room floors and/or walls, Part 2: Kits based on flexible sheets, Edition November 2010, used as European Assessment Document (EAD).

This version replaces:

08/01/2016

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II SPECIFIC PART OF THE EUROPEAN TECHNICAL ASSESSMENT

1 Technical description of product

Technical description of the product

General

mira 4500 vapourmat 100 is a flexible sheet membrane kit which serves as a watertight covering for wet room floors and walls beneath a wearing surface.

The kit consists of the following components:

Membrane

mira 4500 vapourmat 100 is a 3-ply waterproof membrane consisting of two outer layers of polypropylene non-wovens and an inner layer of polyethylene. The width of the membrane is 1000 mm, and the thickness of the membrane is 0,42 mm – 0,62 mm and the weight is 201 g/m² – 239 g/m².

The flexible sheet is adhered to the substrate with approx. 0,6 kg/m² mira 4630 aquaflex 2K membrane or with 0,5 kg/m² mira 4400 multicoat liquid membrane or with 0,75 kg/m² mira 3680 vapour component fixering. All overlaps of the mira 4500 vapourmat 100 are adhered with mira 4630 aqua-flex 2K membrane or mira 3690 one-seal.

Reinforcement

The reinforcements are mira 4564 seal band, mira seal corner and mira seal manchet, which are used in connection between the floor and the wall, in corners and around pipe penetrations. The prefabricated corners and mira 4502 vapourband shall be adhered to the substrate with mira 4630 aqua-flex 2K membrane or with mira 3690 one-seal. Mira 4564 sealband is topcoated with approx. 0,5 kg/m² mira multicoat liquid membrane. The reinforcements are not intended to cover the entire floor and wall covering, but are used over joints and in corners and around pipe penetrations. For floor gullies mira 4500 vapourmat 100 or mira 4550 seal manchet or mira 4592 seal manchet or mira 4596 seal manchet or mira 4594 seal manchet are used and are adhered to the substrate with mira 3690 one-seal.

Adhesives

Adhesives covered by this ETA is: mira z-fix excellent, mira 3110 Unifix and mira 3130 Superfix

The kit is constructed as follows:

- reinforcement of in- and out going corners in walls, over joints or cracks in the substrate, around pipe penetrations, floor gullies and along the connection between floor and wall with

reinforcement mira seal band, mira seal corner, mira seal manchet

- mira 4500 vapourmat 100 adhered to the substrate with approx. 0,5 kg/m² 4400 multicoat liquid membrane or 0,6 kg/m² mira 4630 aquaflex 2K membrane or 0,75 kg/m² mira 3680 vapour component fixering.

- a layer of ceramic tiles adhered to the kit with cement based tile adhesive (mira z-fix excellent, mira 3110 Unifix and mira 3130 Superfix).

2 Specification of the intended use in accordance with the applicable EAD

The intended use of the covering kit is:

1. watertight covering for use beneath a wearing surface, normally in the form of tiles, on substrates of wood based panels, gypsum boards, fibre cement boards, cement bonded boards, watertight boards made from a polystyrene core with a cement based glass fibre reinforced covering and concrete, i.e. moisture sensitive substrates, which are flexible and with jointing and susceptible to cracking

The kit can be used with the following types of floor gullies:

Circular and rectangular gullies made from stainless steel or plastic type PE, with flange for adhesion of the membrane or with clamping ring or with collar

2. Indoor applications, where the liquid applied kit is not exposed to temperatures (i.e. temperature of structure) below 5 °C and above 40 °C, in the following uses:

- Floor and wall surfaces with only occasional direct exposure to water, e.g. at a good distance from shower or bathtub.
- Floors and walls in shower areas or around bathtubs used for a few showers daily, e.g. in ordinary dwellings, multi-family houses and hotels
- Floor and wall surfaces with exposure to water more frequent or of longer duration than normally anticipated in dwellings, e.g. public wet rooms, schools and sport facilities.

The provisions made in this European Technical Assessment are based on an assumed intended working life of the kit of 25 years.

The indications given on the working life cannot be interpreted as a guarantee given by the producer or

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 (BWR2)	
Reaction to fire	Euroclass F
3.3 Hygiene, health and the environment (BWR3)	
Dangerous substances	The kit does not contain/release DS specified in TR 034, dated March 2012*)
Vapour permeability	The s_d value of the of the mira 4500 vapourmat 100 membrane tested at 23°C and RH 93 → 50 % is 81,4 m , which is equivalent to $Z_v = 3.058.234$ s/m. The s_d value of the of the mira 4500 vapourmat 100 membrane tested at 23°C and RH 100 → 75 % is 92,0 m , which is equivalent to $Z_v = 3.510.000$ s/m
Moisture resistance	
Water tightness	Watertight according to EN 1928 method B
Crack bridging ability	Assessment category 2: Crack width 0,75 mm
Bond strength	mira 4500 vapourmat 100 adhered with 0,5 kg/m ² mira 4400 multicoat or with 0,6 kg/m ² mira 4630 aquaflex 2K membrane or with 0,75 kg/m ² mira 3680 vapour component fixering and the following tile adhesives; mira z-fix excellent, mira 3110 unifix and mira 3130 superfix on a concrete substrate all comply with Assessment category 2: Bond strength > 0,3 MPa mira 4500 vapourmat 100 adhered with 0,5 kg/m ² mira 4400 multicoat or with 0,6 kg/m ² mira 4630 aquaflex 2K membrane or with 0,75 kg/m ² mira 3680 vapour component fixering and the following tile adhesives; mira z-fix excellent, mira 3110 unifix and mira 3130 superfix on substrates of gypsum boards**) comply with Assessment category 2: Bond strength > 0,3 MPa
Scratching resistance	No performance determined
Joint bridging ability	mira 4500 vapourmat 100 adhered with 0,5 kg/m ² mira 4400 multicoat or with 0,6 kg/m ² mira 4630 aquaflex 2K membrane or with 0,75 kg/m ² mira 3680 vapour component fixering Assesment category 2: Watertight
Water tightness around penetrations	mira 4500 vapourmat 100 adhered with 0,5 kg/m ² mira 4400 multicoat or with 0,6 kg/m ² mira 4630 aquaflex 2K membrane or with 0,75 kg/m ² mira 3680 vapour component fixering and reinforcements (see II.1)***) comply with Assesment category 2: Watertight

Characteristic	Assessment of characteristic
Joint strength	The declared values are: Joint transverse to MD: 328 N Joint transverse to CMD: 229 N
Flexibility	No cracking or other surface deterioration visible
3.7 Sustainable use of natural resources (BWR 7)	No performance determined
3.8 Related aspects of product performance	
Dimensional stability	The declared values are: Longitudinal direction (MD): $\bar{X}_{AL} = -0,12\%$ Transverse direction (CMD): $\bar{X}_{AL} = -0,26\%$
Resistance to temperature	Pass. The tensile strength and the strain at maximum force of a sample of mira 4500 vapourmat 100 were determined before and after heat exposure. The deviation before and after ageing was considerably lower than 20% and therefore no further investigations are required to assess that the resistance to temperature.
Resistance to water	mira 4500 vapourmat 100 adhered with 0,5 kg/m ² mira 4400 multicoat or with 0,6 kg/m ² mira 4630 aquaflex 2K membrane or with 0,75 kg/m ² mira 3680 vapour component fixering and the following tile adhesives; mira z-fix excellent, mira 3110 unifix and mira 3130 superfix, on a concrete substrate all comply with Assessment category 2: Bond strength > 0,3 MPa
Resistance to alkalinity	mira 4500 vapourmat 100 adhered with 0,5 kg/m ² mira 4400 multicoat or with 0,6 kg/m ² mira 4630 aquaflex 2K membrane or with 0,75 kg/m ² mira 3680 vapour component fixering and the following tile adhesives; mira z-fix excellent, mira 3110 unifix and mira 3130 superfix, on a substrate of gypsum boards all comply with Assessment category 2: Bond strength > 0,3 MPa Pass. The tensile strength and the strain at maximum force of a sample of mira 4500 vapourmat 100 were determined before and after alkaline exposure. The deviation before and after ageing was considerably lower than 20% and therefore no further investigations are required to assess that the resistance to alkalinity. Assessment Category 2: 50 °C for 16 weeks
Resistance to mechanical wear	Not relevant
Cleanability	Not relevant

Characteristic	Assessment of characteristic
Repairability	No performance determined
Thickness	The thickness of the mira 4500 vapourmat 100 is determined to be 0,42 – 0,62 mm
Applicability	Applicable

*) In addition to the specific clauses relating to dangerous substances contained in this European technical Assessment, there may be other requirements applicable to the products falling within its scope (e.g. transposed European legislation and national laws, regulations and administrative provisions). In order to meet the provisions of the Construction Products Regulation, these requirements need also to be complied with, when and where they apply.

**) The assessment of the fitness for use of the kit on the generic description of the boards is based on test on the following specified substrates in addition to concrete according to EN 1323; gypsum plasterboard type H in accordance with EN 520

***) In accordance with the provisions of ETAG 022 part 1 – Annex A, the kit has been tested with three types of floor gullies; two circular gullies, one made from stainless steel with a flange for floors with a membrane and one in PP plastic with a clamping ring type KL/150, and two rectangular gullies made from stainless steel with a flange for installation in wood based floors structures

3.9 General aspects related to the performance of the product

The European Technical Assessment is issued for the product on the basis of 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 whether or not such changes affect the ETA and consequently the validity of the CE marking on the basis of the ETA and if so whether further assessment or alterations to the ETA, shall be necessary.

The performance of the watertight membrane kit results from the characteristic values and categories.

The supplementing statements of the manufacturer stated in the MTD for design and application of the watertight system for creating a watertight covering under wearing surface for floors and walls in indoor wet areas shall be considered

The performance of the watertight membrane can be assumed only, if the following aspects are considered:

- only those components which are specified components of the kit can be used,
- the appropriate tools shall be used and adjuvant, precautions shall be taken,
- inspecting the substrate surface for cleanliness and correct treatment,
- inspection in the process of establishing the kit and of the finished watertight membrane and documentation of the results.

The information as to the handling of waste products shall be observed.

It is the manufacturer's responsibility to make sure that all those who utilize the kit will be appropriately informed about the specific conditions according to this ETA and the not confidential parts of the MTD deposited to this ETA

4 Attestation and verification of constancy of performance (AVCP)

4.1 AVCP system

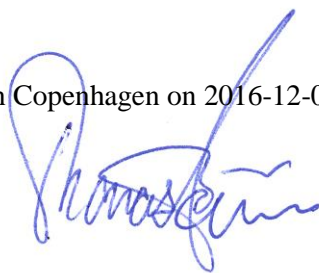
According to the decision 2003/655/EC of the European Commission as amended, the system(s) of assessment and verification of constancy of performance (see Annex V to Regulation (EU) No 305/2011) is 2+.

There is no declared fire performance, and hence the Decision 2003/655/EC of the European Commission with regard to reaction to fire is not relevant.

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 the CE marking.

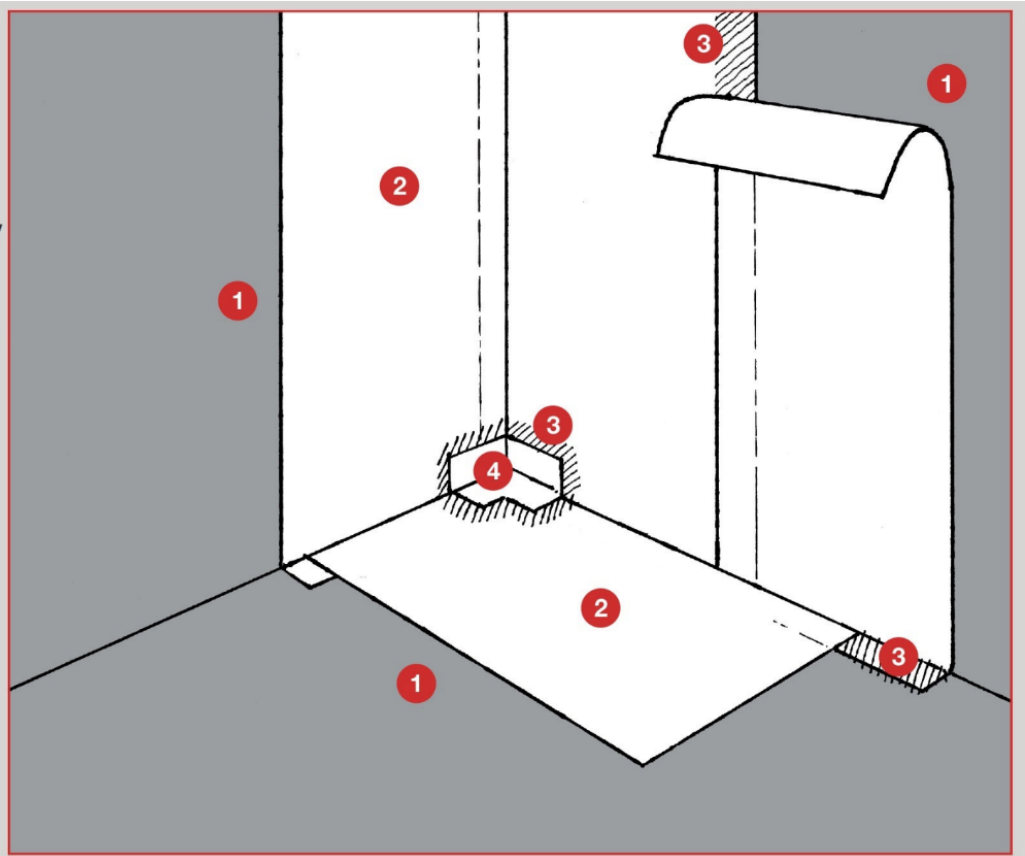
Issued in Copenhagen on 2016-12-07 by



Thomas Bruun
Managing Director, ETA-Danmark

Principskitse af vapourmat
4500 foliesystem

- 1 4400 multicoat /
4630 aqua-flex 2K membran/
3680 vapourkomponent
- 2 4500 vapourmat 100
- 3 4630 aqua-flex 2K membran/
3690 one-seal
- 4 Inderhjørne



Legend:

1. mira 4400 multicoat or with mira 4630 aqua-flex 2K membrane or with mira 3680 vapour component fixering
2. mira 4500 vapourmat 100
3. mira 4630 aqua-flex 2K membrane or with 3690 one-seal
4. mira inner corner

mira 4500 vapourmat 100 watertight covering kit

Principle build-up of the kit

Annex 1

of European Technical Assessment
ETA-15/0868