SINTEF Technical Approval

TG 20671

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Amended:
Valid until 01.03.2029
Provided listed on
www.sintefcertification.no

SINTEF confirms that

Kiilto KeraPro

has been found to be fit for use in Norway and to meet the provisions regarding product documentation given in the regulation relating to the marketing of products for construction works (DOK) and regulations on technical requirements for building works (TEK), with the properties, fields of application and conditions for use as stated in this document

1. Holder of the approval

Kiilto Oy
FI-33101 Tampere
Finland
https://www.kiilto.no/

2. Product description

Kiilto KeraPro membrane system is designed for use in wet rooms as illustrated in figure 1. The components comprising the membrane system are shown in table 1. KeraPro is a one component and flexible liquid applied membrane based on styrene-butadiene copolymer. The membrane is applied to the underlay with brush, roll or notched spatule.

3. Fields of application

Kiilto KeraPro is used as watertight layer on floors and walls in bathrooms and laundry rooms in homes, hotels and rooms with similar water exposure. Other conditions for use are given in clause 6.

The membrane may be used on concrete or building board underlays. The membrane shall always be covered by ceramic tiles or other types of flooring or wall lining. The membrane has not been assessed for use under concrete slabs.

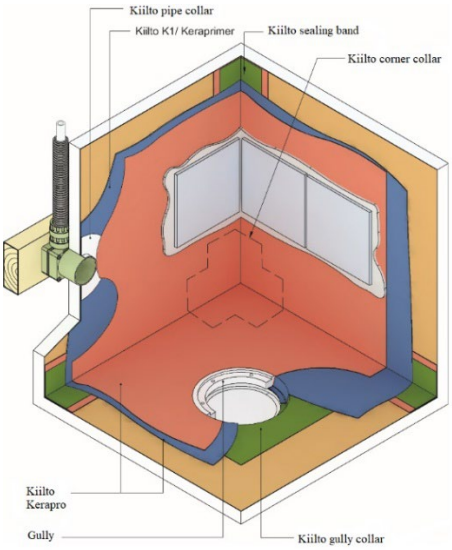

Fig. 1
Structure of the Kiilto KeraPro membrane system

Table 1
Components in the Kiilto KeraPro membrane system

Component	description
Kiilto KeraPro	Liquid applied membrane for floor and wall
Kiilto K1	Primer for higher water vapour transmission
Kiilto Keraprimer	Primer for better bond strength
Kiilto Läpivientikappale 10-16 mm	Pipe collar for pipes between 10-16 mm
Kiilto Läpivientikappale 18-34 mm	Pipe collar for pipes between 18-34 mm
Kiilto Läpivientikappale 34-55 mm	Pipe collar for pipes between 34-55 mm
Kiilto Läpivientikappale 55-75 mm	Pipe collar for pipes between 55-75 mm
Kiilto Läpivientikappale 100-140 mm	Pipe collar for pipes between 100-140 mm
Kiilto Sisänurkkavahvike	Corner collar for inbound corners
Kiilto Ulkonurkkavahvike	Corner collar for outbound corners
Kiilto KeraSafe saumanauha	Jointing strips
Kiilto Easy Kaivolaippa	Butyl gully sleeve for various floor gullies
Kiilto Lattiakaivovahvike	Fibre gully sleeve for gullies with clamping ring
Kiilto Pro Sanitary Silicone [1)]	Silicone copmpound for use in wet rooms

SINTEF Certification
www.sintefcertification.no
e-mail: certification@sintef.no
Contact, SINTEF: Camilla Bakken Aas
Author: Camilla Bakken Aas
SINTEF AS
www.sintef.no
Entreprise register: NO 919 303 808 MVA

4. Properties

Table 2 shows properties of the membrane system determined by type testing according to EAD 030352-00-0503 Liquid applied watertight covering kits for wet room floors and/or walls, dated January 2019.

Table 2
Product properties of Kiilto KeraPro membrane system determined by type testing according to ETAG 022

Property	Value	Test Method
Water vapor resistance: - K1 primer + Kerapro - Keraprimer + Kerapro	 s_d > 35 m s_d = 5,1 m	EN ISO 12572
Water tightness at 1,5 bar water pressure in 7 days and nights. 2 x Primer K1 and 2 x KeraPro	Passed	EN 14891 A.7
Crack building ability (concrete underlay)	Passed Category 1: 0,4 mm	EAD Chapt. 2.2.5
Bond strength [1)]	≥ 0,5 MPa Category 2	EN 14891 A.6
Joint bridging ability	Passed Category 2: 2,0 mm	EAD Annex B
Water tightness around floor penetrations [2)]	Passed	EAD Annex A
Water tightness around wall penetrations	Passed	EAD Annex F
Resistance to temperature [1)]	≥ 0,5 MPa Category 2	EN 14891 A.6.5
Resistance to water [1)]	≥ 0,5 MPa Category 2	EN 14891 A.6.3
Resistance to alkalinity [1)]	≥ 0,3 MPa Category 1	EN 14891 A.6.9
Necessary quantity of primer and membrane: - For 1,0 mm thickness - For 0,5 mm thickness:	 2,2 kg/m^2 1,1 kg/m^2	EAD Annex D

[1)] Tile adhesive: Kiilto Lightfix

[2)] Gully used for testing gully sleeve: Jafo with sleeve for gluing, Purus Oden with pressure clamping ring, and Vieser One with clamping ring fixed with scews

5. Environmental aspects

Substances hazardous to health and environment

The product contains no hazardous substances with priority, or other relevant substances, in quantities that pose any increased risk for human health and environment. Chemicals with priority include CMR, PBT and vPvB substances.

Effect on indoor environment

The product is evaluated according to SINTEF Technical Approval – Health and Environmental Requirements version 09.05.2022. The product is not regarded as emitting any particles, gases or radiation that have a perceptible impact on the indoor climate, or to have any significant impact on health. The product meets the requirements in BREEAM-NOR v6.0, Emissions from building products according to Hea 02 Indoor air quality.

Waste treatment/recycling

The product shall be sorted as residual waste. The product shall be delivered to an authorized waste treatment plant for energy recycling.

Non-hardened primer, membrane and silicone is defined as hazardous waste (according to the Norwegian Waste Regulation (Avfallsforskriften)). The product must be sorted as hazardous waste on the building site and be delivered to an authorized treatment plant for hazardous waste. Dried products are not hazardous waste.

Environmental declaration

No environmental product declaration (EPD) has been issued for the product.

6. Special conditions for use and installation

Type of floor underlay

The membrane shall be installed on concrete or a subfloor of board sheathing with stiffness and construction details according to SINTEF Building Research Design Guides 522.861 *Subfloor on timber joists* and 541.805 *Floors in bathrooms and other wet rooms*.

Type of wall underlay

The membrane shall be installed on rendering, concrete or board sheathing according to SINTEF Building Research Design Guides 543.506 *Wet room walls with ceramic tiles*.

Underlay preparation

The underlay must be clean and dry before application. Cracks, damages and sunken screw heads must be filled with putty. Loose particles, fat and oil must be removed from the underlay. The moisture content in concrete shall not exceed 85 % RH at the time of installation, and the underlay shall always be primed with Kiilto Keraprimer or K1.

Water vapor resistance

Walls and floors where the wet zone faces external climate or rooms with none or limited heating must have an inside water vapor resistance $s_d \geq 10$ m. Kerapro liquid applied membrane with K1 primer satisfy the recommended water vapor resistance, see table 2. Kerapro liquid applied membrane with Kerapro primer shall only be used towards warm rooms due to low water vapor resistance, see table 2. No plastic water vapor barrier shall be used behind panel or board sheathing in wet zones of external walls.

Application of primer and membrane

Two layers of primer and two or more layers of membrane to a total thickness of min. 1 mm shall be applied on floors. Two layers of primer and two or more layers of membrane to a total thickness of min. 0,5 mm shall be applied on walls.

Primer and membrane must be surface dry before the next layer is applied. At all joints between floor and wall, at all corners, board joints, and at all connections Kiilto strips and corner collars shall be applied., see figure 1.

Temperature at application shall be minimum + 5°C.

Tightening around pipe penetrations and wall boxes

Special pipe collars adapted to the pipe diameter are used for pipe penetrations, see table 1. The textiles layer on both sides of the pipe collars must be completely covered by membrane. Membrane shall not be applied behind the rubber core of the of the pipe collar. The pipe shall be well cleaned before installing the pipe collar.

Tightening around floor gully
For gullies with pressure clamping rings a fibre gully sleeve is installed before applying two layers of membrane on top. The gully sleeve is led down in the gully and clamped with the clamping ring after the membrane has dried, see figure 2.

For gullies with steel sleeve for gluing a butyl gully collar is first installed over any dry primer before two layers of membrane are applied over the collar, see figure 3.

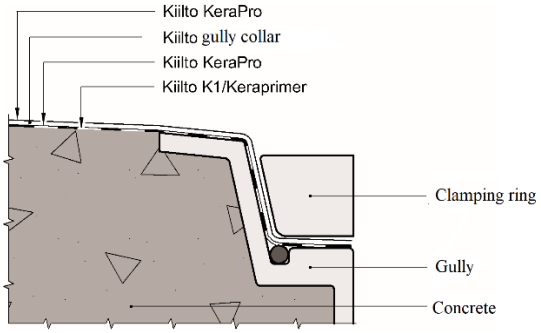

Fig. 2
Detail of floor gully with pressure clamping ring

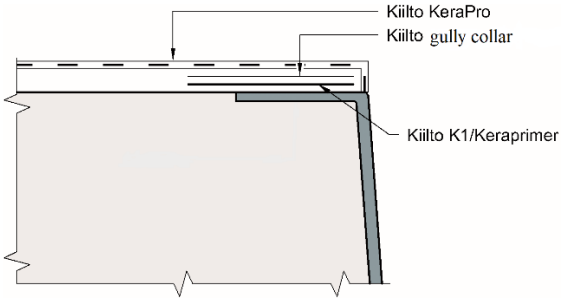

Fig. 3
Detail of floor gully with glued collar

Tile adhesive
Tile adhesive given in table 3 is tested for bond strength with Kiilto Kerapro. The tile adhesive can be used for attachment of tiles to the membrane. Other tile adhesives have not been evaluated by SINTEF. If other tile adhesives are used, this must be clarified with the owner of this certificate.

Tabell 3
Flislim som er testet mot Kiilto Kerapro

Flislim
Kiilto lightfix

Water tightness test
A water tightness test of the membrane system should be performed before the installation of the flooring layer, see *Byggebransjens Våtromsnorm, BVN 53.010*.

7. Factory production control
Kiilto KeraPro is produced by Kiilto Oy Tampereentie 408, 33880 Lempäälä, Finland.

The holder of the approval is responsible for the factory production control in order to ensure that Kiilto KeraPro is produced in accordance with the preconditions applying to this approval.

The manufacturing of the product and the manufacturer's system for factory production control (FPC) is subject to continuous surveillance in accordance with the contract regarding SINTEF Technical Approval.

The factory has a quality system certified according to EN ISO 9001 and an environmental management system certified according to EN ISO 14001.

8. Basis for the approval
The evaluation of Kiilto KeraPro is based on reports owned by the holder of the approval.

9. Marking
Her angis krav til merking av produktene (hva og hvordan). Merkingen skal minst omfatte produsent, produktnavn/kvalitet og produksjonstidspunkt.

The approval mark for SINTEF Technical Approval TG 20671 may also be used.

10. Liability
The holder/manufacturer has sole product responsibility according to existing law. Claims resulting from the use of the product cannot be brought against SINTEF beyond the provisions of Norwegian Standard NS 8402

for SINTEF

Susanne Skjervø

Susanne Skjervø
Approval Manager