

SINTEF Technical Approval

TG 2518

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 Provided listed on
www.sintefcertification.no

SINTEF confirms that

Icopal Fonda Geoplex, Type V

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

BMI Norge AS
 Postboks 55
 1477 Fjellhamar
 Norway
www.bmigroup.com

2. Product description

Icopal Fonda Geoplex is a combined water proofing, capillary breaking and drainage layer for use on the outside of basement walls. Icopal Fonda Geoplex is black and has octagonal dimples where a geotextile fiber mesh is welded on

Icopal Fonda Geoplex is supplied as roll-product and is produced of polypropylene (PP) with a density of 950 kg/m³. The dimples with the on welded geotextile shall also in contact with small particles in the backfill sustain an airgap between external side of basement construction and backfill. See figure 1 and figure 2.

Measures and tolerances are shown in table 1.

Product specifications for additional accessories for mounting fixing Icopal Fonda Geoplex are given in Table 3.

Table 1
 Measures and tolerances for Icopal Fonda Geoplex, Type V

Property	Test method EN	Measure	Unit	Tolerance
Spec. weight	1849-2	0,5	kg/m ²	± 10 %
Weight geotextile	1849-2	0,11	kg/m ²	± 5 %
Total height	1849-2	5	mm	± 5 %
Std. roll width	1848-2	1,28 / 1,65 2,08 / 2,40	m	+ 1 % / - 0 %
Std. roll length	1848-2	20	m	+ 1 % / - 0 %

3. Fields of application

Icopal Fonda Geoplex can be used in buildings in hazard classes 1-6 in fire classes 1-3 as waterproofing and capillary breaking layer outside of walls against terrain. See also fig. 2 and 3.

Related to the function of the geotextile also non-draining soil may be used as backfill. Backfill can therewith happen with excavated soil, except if the soil is frost susceptible.

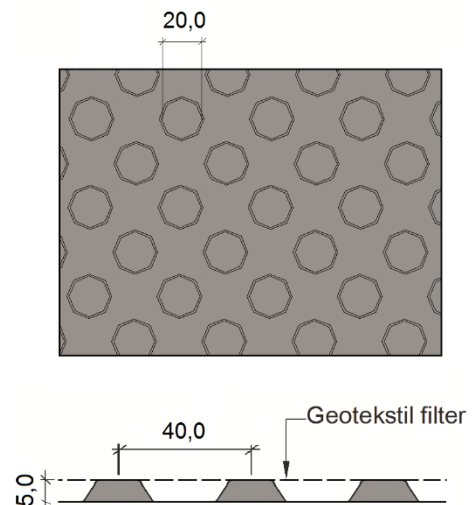


Fig. 1
 Plan and section drawing of Icopal Fonda Geoplex. Measurements in mm.

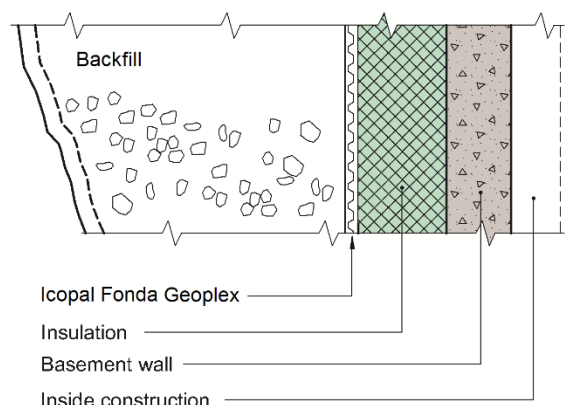


Fig. 2
 Icopal Fonda Geoplex, used as moisture protection of external walls against terrain, it is recommended to place the sheet outside a vapour open insulation, as e.g. EPS. See also SINTEF Building Research Design Guide 523.111 *Yttervegger mot terreng. Varmeisolering og tetting.*

SINTEF is the Norwegian member of European Organisation for Technical Assessment, EOTA, and European Union of Agrément, UEAtc

Table 2
Product properties of Icopal Fonda Geoplex

Property	Test method EN	Icopal Fonda Geoplex		Unit
		DoP ¹⁾	Control limits ²⁾	
Water tightness 2 kPa, 24 h	1928	tight	tight	-
Water vapour resistance	1931	-	$\geq 1 \times 10^{12}$ ≥ 200	m ² sPa/kg m (equivalent air layer thickn., s _d)
Tearing resistance (nail shank)	L T 12310-1	550 550	≥ 550 ≥ 550	N
Tensile strength	L T 12311-2 (A)	550 550	≥ 550 ≥ 550	N/50 mm
Elongation	L T 12311-2 (A)	200 200	≥ 200 ≥ 200	%
Puncturing - Impact at/23°C - Static load	12691 (A) ³⁾ 12730 (B) ³⁾	300 -	≥ 300 ≥ 20	mm kg
Deformation at load after 60 hour	13967, Annex B	-	≤ 1 ≥ 250	mm deformation kN/m ² Load
Geotextiles opening size	ISO 12956	-	$\leq 0,10 \times 0,14$	mm

¹⁾ Manufacturers Declaration of Performance, DoP

²⁾ Control limit shows values, product need to satisfy during internal factory production control and audit testing

³⁾ Tested on hard support

Table 3
Product specifications for associated installation components for Icopal Fonda Geoplex

Component	Material type	Description	Measures
Joining tape	Butyl rubber with lining of PE	Overlap of joints	Width / Thickn.: 30 mm / 1,0mm 50 mm / 1,5 mm Length: 5, 10, 20 m
Multitape Butyl	Butyl rubber with lining of HDPE	Overlap of joints	Width / Thickn.: 80 mm / 1,0mm Length: 20 m
Sealing butyl MATERIAL IS NOT INTENDED FOR USE INSIDE OF THE VAPOUR BARRIER.	Pasty butyl rubber	Sealing of turf roof- or moisture protection of basement joints.	Cartridge: 310 ml.

4. Properties

Product properties

Product properties of Icopal Fonda Geoplex are shown in table 2. Product is classified from manufacturer according EN 13967 as Type V.

Properties related to fire

Classification of reaction to fire according to EN 13501-1 is not defined for Icopal Fonda Geoplex.

Durability

Icopal Fonda Geoplex is evaluated to have satisfying durability in physical contact to concrete- and mortar materials, based on testing before and after accelerated alkali, climate ageing (NT Poly 161).

5. Environmental aspects

Substances hazardous to health and environment

Icopal Fonda Geoplex contains no hazardous substances with priority in quantities that pose any increased risk for human health and environment. Chemicals with priority include CMR, PBT or vPvB substances.

Effect on indoor environment

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.

Effect on soil, surface water and ground water

The leaching properties of the product are evaluated to have no negative effects on soil or ground water.

Waste treatment/recycling

The product shall be sorted as residual waste on the building/demolition site. The product shall be delivered to an authorized waste treatment plant for energy recovery

Environmental declaration

No environmental declaration (EPD) has been worked out for Icopal Fonda Geoplex.

6. Special conditions for use and installation

Icopal Fonda Geoplex need to be separated at fire cell limiting constructions in a way that fire spread is avoided and the fire cell limiting function is ensured.

Icopal Fonda Geoplex shall be completely covered of soil. Regarding covering of insulation of basement walls see also to SINTEF Building Research Design Guide:

- 520.339 *Bruk av brennbar isolasjon i bygninger*

Mounting

Icopal Fonda Geoplex should be applied with the studs away from the wall and rolled out along the length of the wall. Installation shall start at the bottom of the wall, and horizontal joints should have an overlap of 120 mm and vertical joints of 500 mm.

Icopal Fonda Geoplex is fastened with nails and plugs every 250 mm along the top edge after which the finishing profile is applied. Fastening plugs shall be fixed with 6 mm pre-bored holes in concrete and 5,5 mm holes in expanded clay aggregate blocks.

Icopal Fonda Geoplex should cover both the foundations and the wall and installed up to finished terrain.

Icopal Fonda Geoplex used as basement dimple sheet shall avoid that water can penetrate insulation and concrete construction uncontrolled.

With draining backfill on the outside and draining pipes underneath bottom of the dimple sheet are necessary to drain water satisfying fast away from the basement construction.

With non-draining backfill shall eventually be used draining pipes in different heights outside at the basement wall construction. Extra measures like establishing drain ditches or special ground slope must be applied if there is a risk for large exposure from surface water.

Other conditions for use of non-draining backfill soil:

- Roof water shall be directed away from the building on ground or in draining pipes
- Ground surface shall slope away from the building
- Backfilling shall be done without damaging the membrane or the wall insulation
- Basement wall must be designed to resist horizontal ground pressure

External insulation between concrete and dimple sheet should be vapour open to ensure a faster drying of the basement wall.

Icopal Fonda Geoplex used as basement dimple sheet shall follow principles shown in SINTEF Building Research Design Guide:

- 514.221 *Fuktsikring av bygninger*
- 523.111 *Yttervegger mot terreng. Varmeisolering / tetting*

Transport and storage

The rolls shall be stored and transported standing vertically on pallets, protected from sunlight. Pallets may be stacked in two levels, providing the stacks are staggered. Caution must be shown when stacking pallets.

7. Factory production control

The product is produced in France for BMI Norge AS, Postbox 55, 1477 Fjellhamar, Norway.

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

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

Manufacturer of Icopal Fonda Geoplex has a certified quality management system according to EN-ISO 9001.

8. Basis for the approval

The evaluation of Icopal Fonda Geoplex is based on reports owned by the holder of the approval.

The evaluation of design and technical solutions are based on recommendations given in SINTEF Building Research Design Guides.

9. Marking

The rolls of Icopal Fonda Geoplex shall be marked with name of producer, name of product and date of production.

The product is CE marked in accordance with EN 13967

The approval mark for SINTEF Technical Approval No. 2518 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
Approval Manager