

SINTEF Technical Approval

TG 20351

SINTEF confirms that

OLDROYD® Vanntett TM

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

Oldroyd AS
Isdammen 25
3960 Stathelle
NORWAY
www.oldroyd.no

2. Product description

OLDROYD® Vanntett TM is a flexible polypropylene (TPO) product in roll form, black on the underside and dark olive green on the upper side. Joints are made with at least 100 mm overlap and are welded with hot air.

Measures and tolerances are stated in Table 1.

Table 1
Measures and tolerances for OLDROYD® Vanntett TM according to EN 1848-2 and EN 1849-2

Property	Measure	Unit	Tolerance
Thickness	1.2	mm	-
Area weight	1.1	kg/m ²	± 0.05 kg/m ²
Width	2.20	m	± 0.05 m
Length of roll ¹⁾	20	m	± 0.10 m

¹⁾ Can also be delivered in roll length 10 and 15 m

3. Fields of application

OLDROYD® Vanntett TM is used as a turf roof membrane where the angle of the roof is 6° or more. See figure 1 and 2. The membrane can also be used with Rockwool Turf roof compact method using Rockwool RockTorv® insulating mats as described in SINTEF Technical Approval no. 2488.

OLDROYD® Vanntett TM can be used under turf roofs on buildings in risk category 4, fire class 1. The distance between buildings must be minimum 8 m, as described in SINTEF Building Research Design Guide no. 544.803 *Torvtak*.

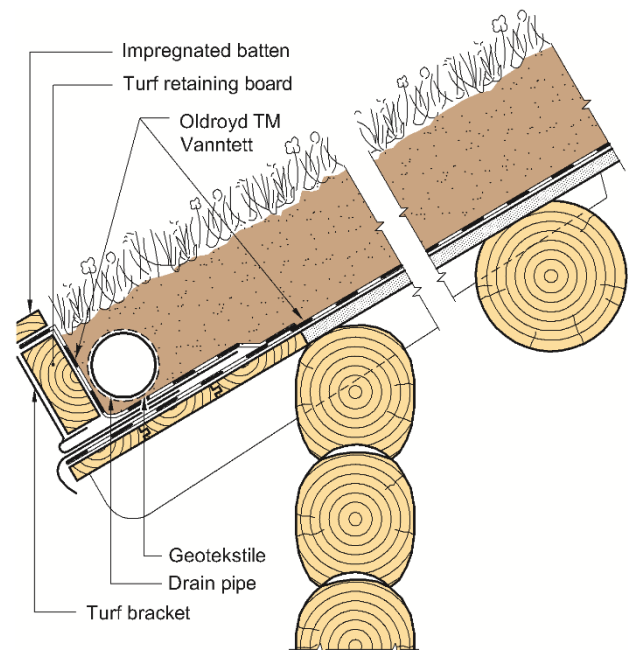


Fig. 1

Example of OLDROYD® Vanntett TM used as roofing membrane in un-insulated turf roof with internal rain gutter.

Un-insulated turf roofs may be used in un-heated buildings.

4. Properties

Product properties

Product properties for fresh material are given in Table 2.

Properties related to fire

Fire classification for OLDROYD® Vanntett TM according to EN 13501-1 has not been determined.

Durability

OLDROYD® Vanntett TM has been tested for resistance to alkalis and heat aging and is considered to have satisfactory properties. It is also documented that the product is resistant to roots and the effect of humus in turf root systems according to CEN/TS 14416.

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

Table 2
Product properties for OLDROYD® Vanntett TM

Property	Test method EN	Control limit ²⁾	Unit
Flexibility at low temperature	495-5	≤ - 40	°C
Dimensional stability - longitudinally - crosswise	1107-2	± 1 ± 0.3	% %
Water tightness (10 kPa)	1928 (A)	Tett ⁵⁾	-
Resistance to tearing - longitudinally - crosswise	12310-2	≥ 145 ≥ 165	N N
Tensile strength - longitudinally - crosswise	12311-2 (B) ³⁾	≥ 600 ≥ 400	N/50 mm N/50 mm
Elongation - longitudinally - crosswise	12311-2 (B)	≥ 600 ≥ 600	% %
Average peel resistance of joints	12316-2	≥ 350	N/50 mm
Shear resistance of joints	12317-2	≥ 500	N/50 mm
Resistance to impact - Soft support - Cylinder - Hardt support -12.7 mm ball - Soft support – 12.7 mm ball	12691:2001 12691 (A) 12691 (B)	≤ 15 ≥ 800 ≥ 1250	mm diameter mm height mm height
- Resistance to static loading ⁶⁾ - Soft support - Hard support	12730 (A) 12730 (B) ⁴⁾	10 20	kg kg
Water vapour diffusion ⁵⁾	ISO 12572	≥ 4.1·10 ¹¹ ≥ 3·10 ⁶ ≥ 80	m ² sPa/kg s/m m ekv. airtayer

¹⁾ Declared value in the manufacturers Declaration of Performance (DOP)

²⁾ The declared values are control limits both for internal control at the producer and for supervising control

³⁾ Is tested according to method B, result recalculated to N/50 mm

⁴⁾ Modified testmethod with underlayer of plywood

⁵⁾ Result from type testing

⁶⁾ OLDROYD® Vanntett TM has limited resistance to static loading, and must therefore be protected when using ladders, scaffolds etc., for example by placing a protective layer on top of the membrane, to avoid puncturing.

5. Environmental aspects

Chemicals hazardous to health and environment

OLDROYD® Vanntett TM 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 soil, surface water and ground water

The leaching properties of OLDROYD® Vanntett TM are evaluated to have no negative effects on soil or water.

Waste treatment/recycling

OLDROYD® Vanntett TM shall be sorted as residual waste. 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 OLDROYD® Vanntett TM.

6. Special conditions for use and installation

Installation

Turf roof membrane shall be installed in accordance with the vendor's installation manual and the principles shown in SINTEF Building Research Design Guide no. 544.202 *Takfolie. Egenskaper og tekking* and 544.204 *Tekking med asfalttakbelegg eller takfolie. Detaljløsninger*. In log cabins bushings passing through the roof, such as pipes, ducts etc., must be given a telescopic construction since a log cabin construction will sink due to timber shrinkage.

OLDROYD® Vanntett TM can be laid either across or along the fall of the roof with minimum 100 mm overlap at the joints. Both the surfaces to be welded must be heated to melting point and then firmly pressed together. Details such as corners, drains etc. should be made in accordance with the principles shown in SINTEF Building Research Design Guide no. 544.202 *Takfolie. Egenskaper og tekking* and 544.204 *Tekking med asfalttakbelegg eller takfolie. Detaljløsninger..*

Substrate

OLDROYD® Vanntett TM should be laid on wooden sheathing. The substrate must be even and smooth without nails or any sharp objects which can damage the membrane.

If the underlying surface is too rough or uneven a layer of PP fiber felt should first be laid to protect the membrane.

Fastening

The membrane should be fastened with screws and steel washers with distance C/C 0.6 m and placed centric along the overlapping joints to ensure the membrane's stability. It is assumed that turf is laid on the roof immediately after the membrane is installed and fastened. If no turf brackets are used, to hold the turf retaining board, the membrane must be securely fastened by other means along the foot of the roof. This also applies to other exposed edges.

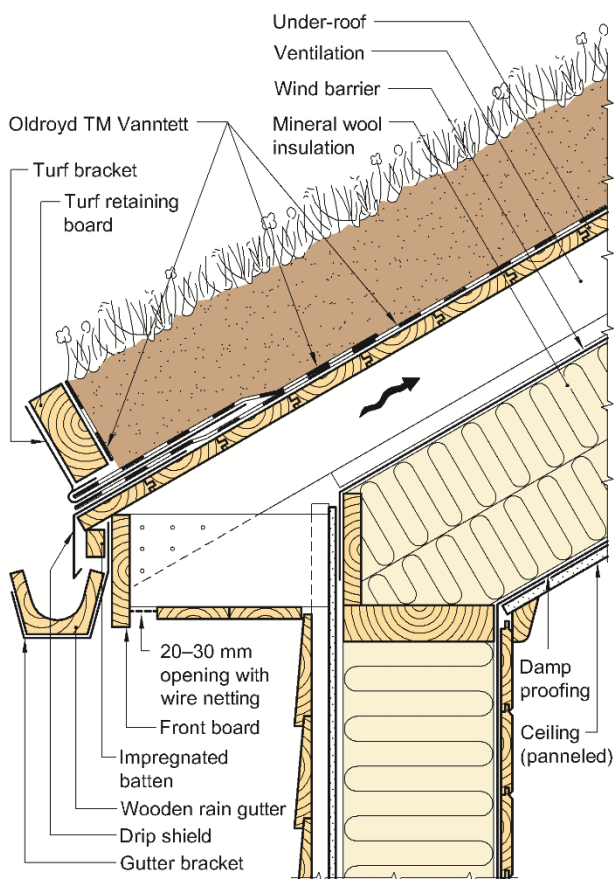


Fig. 2
Example of OLDROYD® Vanntett TM used as roofing membrane in insulated turf roof with external gutter.

Finishing toward rain gutter

The turf brackets holding the turf retaining boards along the foot of the roof should be screwed firmly through the membrane to the underlying boarded roof. If possible; fasten through the roof boards to the rafter underneath.

By using an internal rain gutter (perforated drainage pipe) lying along the turf retaining board the membrane should be turned up on the inside of the retaining board and then over it, see figure 1. The membrane is then secured on top of the turf retaining board by an impregnated batten. Shingle size 8 – 16 mm should be laid around the perforated drainage pipe.

Fastening of the turf

In the case of roof angles greater than 23° support additional to the turf retaining board must be considered in order to stop the turf from sliding on the roof. The critical angle will depend on the quality of the turf, the length of the roof and local snow conditions. SINTEF Building Research Design Guide no. 544 803 *Turf roofs* gives details.

Birch bark

Silver birch bark can be laid along the roof edge when fixing the turf retaining board. It is not necessary to protect the roof under the bark.

Laying of the turf

The turf is laid directly on the OLDROYD® Vanntett TM membrane which is proof against humus and roots. Follow the turf supplier's instructions.

According to " TPF informerer nr. 10 Bygningmessige aspekter ved prosjektering og bygging av grønne tak" turf roofs that are not maintained are considered to have such a high risk of ignition and spread of fire that it will generally not achieve class B_{ROOF} (t2) according to EN 13501-5.

Design for safety in case of fire

OLDROYD® Vanntett TM must be entirely covered with turf.

Snow load

The snow load must be taken into account when fastening turf retaining boards and gutters.

Maintenance

If repairs should be necessary, the area in question must be clean and dry before starting welding.

Storage

OLDROYD® Vanntett TM should be stored protected from direct sunlight.

7. Factory production control

OLDROYD® Vanntett TM is produced by Oldroyd AS, 3960 Stathelle, Norway.

The holder of the approval is responsible for the factory production control in order to ensure that OLDROYD® Vanntett TM is produced in accordance with the preconditions applying to this approval.

The manufacturing of the product(s) 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 manufacturer has a quality system that is certified according to EN ISO 9001 and EN ISO 14001.

8. Basis for the approval

The evaluation of OLDROYD® Vanntett TM 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

All rolls are marked with manufacturer, product description and production date.

The approval mark for SINTEF Technical Approval TG 20351 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
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