

SINTEF Technical Approval

TG 20067

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 Provided listed on
www.sintefcertification.no

SINTEF confirms that

OLDROYD® Xv and OLDROYD® Xv20

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
 3962 Stathelle
 Norway
www.OLDROYD.no

2. Product description

OLDROYD® Xv and OLDROYD® Xv20 (in the following called OLDROYD® Xv products) is a combined waterproof membrane and protection sheet for use on outside walls against the ground, as drainage plate under turf on turfed roof and as versatile layer on concrete under flooring.

OLDROYD® Xv and OLDROYD® Xv20 are supplied as roll-product and is produced of polypropylene (PP) with a density of 910 kg/m³. The products have a nominal thickness of respectively 0,5 mm og 0,8 mm. The sheet is made with dimple studs and a pattern of intersecting channels forming a air gap of respectively 7 mm and 20 mm between the sheet and the underlying surface, see figure 1. The membrane has flat jointing flanges on each side. Measures and tolerances are shown in table 1.

Product specifications for additional accessories for mounting fixing OLDROYD® Xv products are given in Table 3.

Table 1
 Measures and tolerances for OLDROYD® Xv products

Property	Test-method EN	OLDROYD® Xv	OLDROYD® Xv 20	Unit	Tolerance
Spec. weight	1849-2	0,5	0,8	kg/m ²	± 10 %
Total height	1849-2	7	20	mm	± 5 %
Std. roll width	1848-2	2,08	2,0	m	+ 1 % / - 0 %
Std. roll length	1848-2	20	15	m	+ 1 % / - 0 %

3. Fields of application

Moisture protection of external walls against terrain

OLDROYD® Xv products 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 figure 2 and 3.

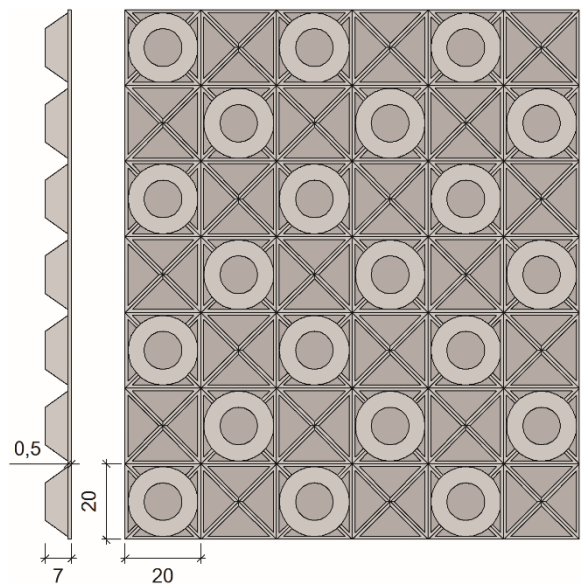


Fig. 1
 Plan and section drawing of OLDROYD® Xv shows pattern with their channels and dimples. Measurements in mm.

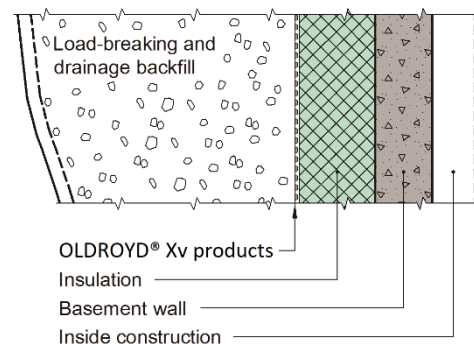


Fig. 2
 OLDROYD® Xv products, used as moisture protection of external walls against terrain, is recommended to be placed outside a vapour open insulation, as e.g. EPS, with dimples against the insulation. See also SINTEF Building Research Design Guide 523.111 *Yttervegger mot terreng. Varmeisolering og tetting.*

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

Table 2
Material properties for OLDROYD® Xv products

Property	Test method EN	OLDROYD® Xv		OLDROYD® Xv20		Unit
		DoP ¹⁾	Control limit ²⁾	DoP ¹⁾	Control limit ²⁾	
Watertightness 2 kPa, 24 hours	1928	tight	tight	tight	Tight	-
Water vapour resistance	1931	-	≥ 1x10 ¹² ≥ 200	-	≥ 1x10 ¹² ≥ 200	m ² sPa/kg m (equivalent air layer thickness, s _d)
Tearing (nail shank)	L T 12310-1	> 300 > 300	≥ 300 ≥ 300	> 700 > 700	≥ 700 ≥ 700	N
Tensile strength	L T 12311-2 (A)	> 300 > 300	≥ 300 ≥ 300	> 350 > 350	≥ 350 ≥ 350	N/50 mm
Elongation	L T 12311-2 (A)	- -	≥ 30 ≥ 30	- -	≥ 30 ≥ 30	%
Shear resistance of joint	12317-2	-	≥ 5	-	≥ 5	N
Puncturing	- Impact v/23°C - Static load	12691 ³⁾ 12730 ³⁾	> 400 > 20	≥ 400 ≥ 20	> 500 > 20	mm kg
Deformation at load after 60 hours	13967, Annex B	-	≤ 1,4 ≥ 50	-	≤ 2,0 ≥ 40	mm deformation kN/m ² Load

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
Material specifications for associated installation components for OLDROYD® Xv products

Component	Material type	Description	Dimensions
Butyl joining tape ¹⁾	Butyl rubber	Butyl-tape for additional sealing of joints in OLDROYD® Xv products, especially for roof with low slope.	Width: 50 mm Length: 10 m
Butyl joining Flextape ¹⁾	Butyl rubber	Butyl-tape for sealing of connections from OLDROYD® Xv products to other building units.	Width: 100 mm Length: 10 m
Butyl Sealant ¹⁾	Pasty butyl rubber	Pasty butyl rubber for sealing of joints and connections of OLDROYD® Xv products to other building units	Cartridge 310 ml
Topplist	Plastic rail	Rail as protection of the upper edge over terrain. Topplist can be supplied for basement wall insulation of 50 and 100mm thickness	Length: 2,0 m

1) MATERIAL IS NOT INTENDED FOR USE INSIDE OF THE VAPOUR BARRIER.

Turf roof

OLDROYD® Xv products can be used in buildings in hazard class 4 in fire class 1. Distance between building shall be in minimum 8 m according to SINTEF Building Research Design Guide:

- 544.803 *Torvtak*.

OLDROYD® Xv products are used for protection of the waterproofing roofing layer to avoid growing through and ensure the permanent drainage over roofing layer, see figure 4.

Moisture barrier on concrete floors

OLDROYD® Xv products can be used in buildings in hazard classes 1-6 in fire classes 1-3 as moisture barrier on concrete floor or concrete slab under floating floor of plates, lamella- or laminated parquet, levelling mortar or floating floor screed. An example of floor setup is shown in in principle in figure 5. Moisture barrier can be used both for new buildings and for refurbishment.

Moisture barrier can be used in floor constructions with imposed traffic loads category A and B according to EN 1991-1-1:2002 up to 3,0 kN/m² evenly distributed load and 2,0 kN point load.

Where there are problems with odour / degassing from the ground, special solutions need to be used, as e.g. systems with mechanical ventilation of air gaps under the moisture barrier.

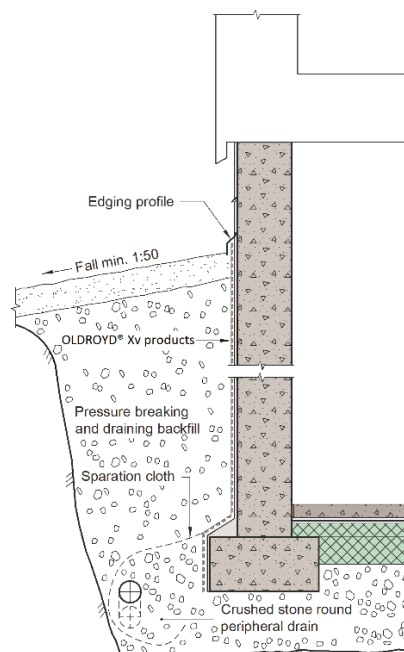


Fig. 3
Example for OLDROYD® Xv products, used as moisture barrier for unheated basements.

4. Properties

Product properties

Product properties of OLDROYD® Xv products 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 OLDROYD® Xv products.

Load-carrying capacity

Strength and stiffness properties of 14 mm laminated parquet laid as a floating floor on OLDROYD® Xv-products have been tested according to NT Build 384.

Sound insulation

Weighted reduction in impact sound pressure $\Delta L_{n,w}$ according to ISO 717/2 is 17dB for floating floors with 14 mm parquet on OLDROYD® Xv-products. Such flooring on concrete decks with minimum thickness 180 mm satisfy Class C in NS 8175, except for residential housing.

Durability

OLDROYD® Xv products 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

OLDROYD® Xv products contain 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 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.

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. The product shall be delivered to an authorized waste treatment plant for energy and material recovery.

Unused sealant 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. The dried product is not hazardous waste.

Environmental declaration

No environmental declaration (EPD) has been worked out for OLDROYD® Xv products.

6. Special conditions for use and installation

Design considerations regarding safety in case of fire, in general
 OLDROYD® Xv products 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.

Design considerations regarding safety in case of fire (external walls against terrain)

OLDROYD® Xv products 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*

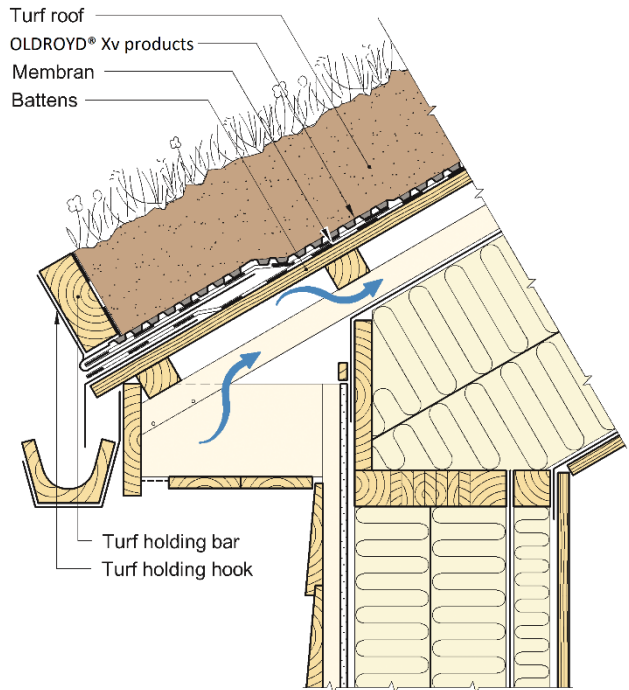


Fig. 4. Example of the use of OLDROYD® Xv products as protection for drainage for of penetrating water between dimple sheet and roofing layer.

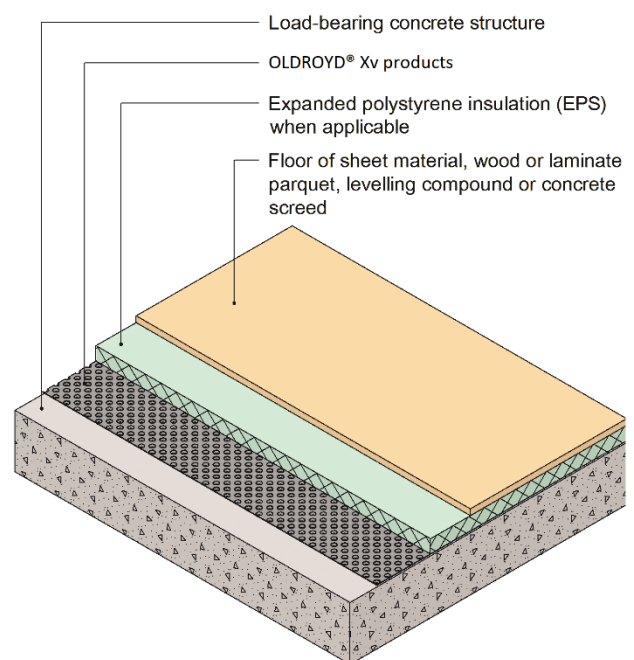


Fig. 5 Example for a floating floor construction with OLDROYD® Xv products.

Design considerations regarding safety in case of fire (turf roof)

OLDROYD® Xv products need to be completely covered with turf.

Design considerations regarding safety in case of fire (Moisture barrier on concrete floors)

OLDROYD® Xv products need always to be covered with materials which satisfies actual fire requirements for the room they are used in. Insulation plates to be used under or over OLDROYD® Xv products must be evaluated according to Technical Regulation or to SINTEF Building Research Design Guide:

- 520.339 *Bruk av brennbar isolasjon i bygninger*

External walls against terrain

OLDROYD® Xv products should be applied with the dimples against 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.

OLDROYD® Xv products 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.

OLDROYD® Xv products should cover both the foundations and the wall and installed up to outside ground level.

OLDROYD® Xv products used as dimple sheet for protection of the basement wall shall avoid that water can penetrate insulation and concrete construction uncontrolled. Self-draining back-fill on the outside and draining pipes underneath bottom of the dimple sheet are necessary to drain water satisfying fast away from the basement construction.

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

OLDROYD® Xv products used as basement dimple sheet shall follow principles shown in SINTEF Building Research Design Guide:

- 514.221 *Fuktsikring av konstruksjoner mot grunnen*
- 523.111 *Yttervegger mot terreng. Varmeisolering / og tetting*

Turfed roof

OLDROYD® Xv products shall be mounted with dimples orientated downwards to the roofing layer. The structured surface on top shall avoid that the turf glides down the roof slope to the turf-hold bar. With bigger roof slopes the turf needs to be reinforced.

To avoid accumulation of water between dimple sheet and roofing layer the dimple sheet needs to be installed as described. The system with two tight layers with possibilities of drying out makes it probable that the construction has a durability for the buildings entire lifetime. Principle is shown in figure 4.

Mounting of OLDROYD® Xv products should start at the eaves of the roof. Sheets shall be fastened along the upper edge with plugs and nails. Maximum of nail distance should be 100 mm.

With a roof pitch $\geq 25^\circ$ joints along the length should have a minimum overlap of 250 mm, and 300 mm for roofs with less fall. Overlap at transverse joints should be 400 mm.

Dimples of the upper plate shall fit right into the dimples of the lower sheet for to increase the safety for water penetration.

OLDROYD® Xv products used as turfed roof dimple sheet shall follow principles shown in SINTEF Building Research Design Guide:

- 544.803 *Torvtak*

Moisture barrier on concrete floors

The building, where OLDROYD® Xv products shall be used, is presumed to have a normal indoor climate. OLDROYD® Xv products can be laid independently of the moisture content of the underlying concrete construction. OLDROYD® Xv products cannot be used where free flowing water can occur.

Wall strips should be installed to avoid increased moisture content of the lower parts of existing walls standing on concrete floors. These should be fixed with the dimples behind the skirting to form an air gap between the skirting and the wall. The membrane may also be installed with the edges raised against the wall. The skirting must allow passage between the air gap under the membrane and the air in the room. The wall strip is fastened to the membrane using joining tape or joint filler.

Floors may be insulated with polystyrene sheets between the waterproof membrane and the floating floor. When parquet flooring or sheet materials are used over insulation it is required to use extruded polystyrene (XPS) or expanded polystyrene (EPS) sheets with a resistance to compression of at least 200 kN/m² (CS(10)200)). A thin fibre cloth or equivalent should be laid between the insulation and flooring to avoid squeaking.

Regarding covering of XPS or EPS see also to SINTEF Building Research Design Guide:

- 520.339 *Bruk av brennbar isolasjon i bygninger*

OLDROYD® Xv products shall be joined by using joining tape. Lengthwise joints are performed with tape between the overlapping flanges of the membrane. Transverse joints are made as butt joints with Butyl tape across the joint.

Pipes or the equivalent passing through the membrane should be sealed with two rings of joining tape against the concrete floor which must be primed beforehand to bind any dust.

Non load bearing walls which do not have any requirement according to safety in case of fire can be erected directly on the membrane.

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 of Oldroyd AS, Isdammen 25, 3962 Stathelle, Norway

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

The manufacturing of OLDROYD® Xv products 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 OLDROYD® Xv products have a certified quality management system according to EN-ISO 9001.

8. Basis for the approval

The evaluation of OLDROYD® Xv products 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 OLDROYD® Xv products shall be marked with name of producer, name of product and date of production.

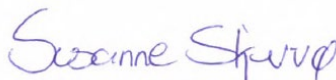
The product is CE marked in accordance with EN 13967

The approval mark for SINTEF Technical Approval No. 20067 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