

Product:

Product description:

OLDROYD® DrainX 10 is 0,7 mm thick, extra strong studded membrane with welded geotextile for high load and drainage capacity.

OLDROYD® DrainX 10 is primarily used for horizontal or vertical areas where high drainage capacity is needed.

Polypropylene membrane EN 13967 Type V.

OLDROYD® DrainX 10 contains up to 35 % internally recycled material.

Product specification

OLDROYD® DrainX 10 is black with welded grey geotextile, which prevents particles from blocking the drainage cavity to provide effective drainage.

OLDROYD® DrainX 10 is certified by SINTEF Technical approval for backfill with local excavated soil.

Documentation is provided on request.

Materials	kg	%
Pigments and Fillers	0,02	2,00
Plastic - Internally recycled	0,33	34,93
Plastics	0,60	62,87
Polypropylene felt (PP-felt)	0,00	0,21
Total	0,95	

Packaging	kg	%
Packaging - Wood	0,14	100,00
Total incl. packaging	1,09	

Technical data:

TDS 0402-CPR-455901

Market:

Scandinavia

Reference service life, product

> 50 years

Reference service life, building

60 years

LCA: Calculation rules

Declared unit:

1 m² OLDROYD® DrainX 10

Cut-off criteria:

All major raw materials and all the essential energy is included. The production processes for raw materials and energy flows with very small amounts (less than 1%) are not included. These cut-off criteria do not apply for hazardous materials and substances.

Allocation:

The allocation is made in accordance with the provisions of EN 15804. Incoming energy and water and waste production in-house is allocated equally among all products through mass allocation. Effects of primary production of recycled materials is allocated to the main product in which the material was used. The recycling process and transportation of the material is allocated to this analysis.

Data quality:

Specific data for the product composition are provided by the manufacturer. They represent the production of the declared product and were collected for EPD development in the year of study. Background data is based on registered EPDs according to EN 15804, Ostfold Research databases, ecoinvent and other LCA databases. The data quality of the raw materials in A1 is presented in the table below.

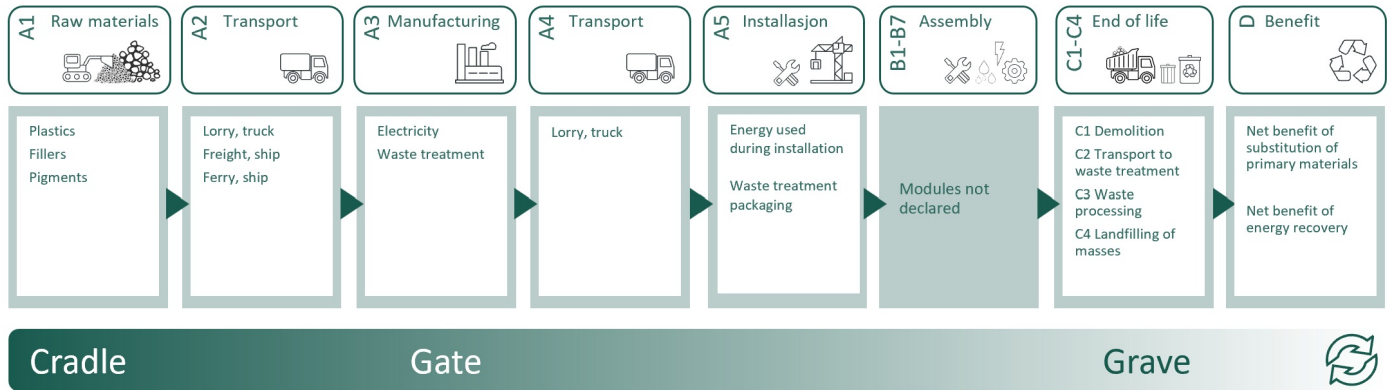
Materials	Source	Data quality	Year
Packaging - Plastic	ecoinvent 3.6	Database	2019
Packaging - Wood	ecoinvent 3.6	Database	2019
Pigments and Fillers	ecoinvent 3.6	Database	2019
Plastic - Internally recycled	ecoinvent 3.6	Database	2019
Plastics	ecoinvent 3.6	Database	2019
Polypropylene felt (PP-felt)	ecoinvent 3.6	Database	2019

System boundaries (X=included, MND=module not declared, MNR=module not relevant)

Product stage			Construction installation stage		Use stage							End of life stage				Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	X	X	X	X	X

System boundary:

All packaging materials on ingoing raw materials, are pelleted inhouse and reused as raw materials in mid-layers in production of membranes.



Additional technical information:

www.oldroyd.no

LCA: Scenarios and additional technical information














The following information describe the scenarios in the different modules of the EPD.

Material loss set as 5 % of product weight.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (kgkm)	36,7 %	300	0,043	l/tkm	12,90
Assembly (A5)					
	Unit	Value			
Electricity, Norway (kWh)	kWh/DU	0,07			
Material loss from installation (psc)	Units/DU	0,05			
Waste treatment of material loss (psc)	Units	0,05			
Waste, packaging, pallet, EUR wooden pallet, single use, average treatment (kg)	kg	0,14			
Waste, packaging, plastic tape, to average treatment (kg)	kg	0,00			
Transport to waste processing (C2)					
	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, 16-32 tonnes, EURO 6 (kgkm)	36,7 %	85	0,043	l/tkm	3,66
Waste processing (C3)					
	Unit	Value			
Waste treatment per kg Sealing sheet, Polypropylene (PP), incineration with energy recovery (kg)	kg/DU	0,95			
Disposal (C4)					
	Unit	Value			
Landfilling of ashes from incineration of Sealing sheet, polypropylene (PP), process of ashes and residues (kg)	kg	0,19			
Benefits and loads beyond the system boundaries (D)					
	Unit	Value			
Substitution of electricity, in Norway (MJ)	MJ	1,57			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	23,69			

LCA: Results

The LCA results are presented below for the declared unit defined on page 2 of the EPD document.

Environmental impact										
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
 GWP-total	kg CO ₂ -eq	2,04E+00	5,36E-02	3,22E-01	0	1,52E-02	2,44E+00	3,96E-03	-1,42E-01	
 GWP-fossil	kg CO ₂ -eq	2,24E+00	5,35E-02	1,20E-01	0	1,52E-02	2,44E+00	3,96E-03	-1,37E-01	
 GWP-biogenic	kg CO ₂ -eq	-2,03E-01	2,21E-05	2,02E-01	0	6,28E-06	2,70E-05	2,46E-06	-2,84E-04	
 GWP-luluc	kg CO ₂ -eq	6,60E-04	1,90E-05	4,17E-05	0	5,40E-06	3,37E-06	8,49E-07	-4,73E-03	
 ODP	kg CFC11 -eq	1,26E-07	1,21E-08	7,61E-09	0	3,43E-09	1,97E-09	7,55E-10	-1,00E-02	
 AP	mol H+ -eq	1,22E-02	1,54E-04	6,63E-04	0	4,36E-05	3,01E-04	1,97E-05	-1,13E-03	
 EP-FreshWater	kg P -eq	3,00E-05	4,28E-07	1,69E-06	0	1,21E-07	2,19E-07	4,77E-08	-1,22E-05	
 EP-Marine	kg N -eq	2,33E-03	3,04E-05	1,32E-04	0	8,62E-06	1,43E-04	6,67E-06	-3,70E-04	
 EP-Terrestrial	mol N -eq	2,59E-02	3,40E-04	1,47E-03	0	9,64E-05	1,55E-03	7,45E-05	-4,00E-03	
 POCP	kg NMVOC -eq	9,46E-03	1,30E-04	5,20E-04	0	3,69E-05	3,73E-04	2,11E-05	-1,10E-03	
 ADP-minerals&metals ¹	kg Sb -eq	2,27E-05	1,48E-06	1,40E-06	0	4,19E-07	9,71E-08	4,13E-08	-1,37E-06	
 ADP-fossil ¹	MJ	7,34E+01	8,09E-01	3,78E+00	0	2,29E-01	1,66E-01	5,85E-02	-1,96E+00	
 WDP ¹	m ³	1,12E+02	7,83E-01	9,63E+00	0	2,22E-01	3,95E-01	2,93E-01	-2,45E+01	







GWP-total = Global Warming Potential total; GWP-fossil = Global Warming Potential fossil fuels; GWP-biogenic = Global Warming Potential biogenic; GWP-luluc = Global Warming Potential land use and land use change; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential, Accumulated Exceedance; EP-freshwater = Eutrophication potential, fraction of nutrients reaching freshwater end compartment; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-minerals&metals = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator

Remarks to environmental impacts

Additional environmental impact indicators										
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
 PM	Disease incidence	7,82E-08	3,28E-09	4,53E-09	0	9,28E-10	1,46E-09	3,13E-10	-6,86E-08	
 IRP ²	kgBq U235 -eq	6,49E-02	3,54E-03	3,99E-03	0	1,00E-03	3,02E-04	2,51E-04	-1,25E-02	
 ETP-fw ¹	CTUe	1,37E+01	6,00E-01	8,68E-01	0	1,70E-01	5,01E-01	6,09E-02	-1,07E+01	
 HTP-c ¹	CTUh	4,74E-10	0,00E+00	3,50E-11	0	0,00E+00	5,70E-11	3,00E-12	-1,96E-10	
 HTP-nc ¹	CTUh	1,48E-08	6,55E-10	1,16E-09	0	1,86E-10	2,27E-09	9,30E-11	-1,02E-08	
 SQP ¹	dimensionless	9,13E+00	5,66E-01	5,21E-01	0	1,60E-01	2,14E-02	1,36E-01	-1,31E+01	

PM = Particulate Matter emissions; IRP = Ionizing radiation – human health; ETP-fw = Eco toxicity – freshwater; HTP-c = Human toxicity – cancer effects; HTP-nc = Human toxicity – non cancer effects; SQP = Soil Quality (dimensionless)

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

1. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator
2. This impact category deals mainly with the eventual impact of low dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure nor due to radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, from radon and from some construction materials is also not measured by this indicator.

Resource use										
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D	
 PERE	MJ	3,76E+00	1,16E-02	4,81E-01	0	3,28E-03	5,36E-03	1,92E-03	-1,21E+01	
 PERM	MJ	1,94E+00	0,00E+00	-1,85E+00	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
 PERT	MJ	5,71E+00	1,16E-02	-1,36E+00	0	3,28E-03	5,36E-03	1,92E-03	-1,21E+01	
 PENRE	MJ	4,54E+01	8,09E-01	2,38E+00	0	2,29E-01	1,66E-01	5,85E-02	-1,96E+00	
 PENRM	MJ	3,06E+01	0,00E+00	1,53E+00	0	0,00E+00	-3,06E+01	0,00E+00	0,00E+00	
 PENRT	MJ	7,60E+01	8,09E-01	3,91E+00	0	2,29E-01	-3,04E+01	5,85E-02	-1,96E+00	
 SM	kg	4,28E-03	0,00E+00	2,14E-04	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
 RSF	MJ	5,75E-02	4,14E-04	3,15E-03	0	1,17E-04	1,60E-04	4,90E-05	-2,12E-03	
 NRSF	MJ	2,02E-02	1,48E-03	1,96E-03	0	4,20E-04	0,00E+00	3,44E-03	-7,19E-01	
 FW	m ³	4,96E-02	8,65E-05	4,70E-03	0	2,45E-05	4,85E-04	5,31E-05	-1,46E-02	

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non renewable primary energy resources used as raw materials; PENRT = Total use of non renewable primary energy resources; SM = Use of secondary materials; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Net use of fresh water

"Reading example: 9,0 E-03 = 9,0*10⁻³ = 0,009"

*INA Indicator Not Assessed

Additional requirements

Greenhouse gas emissions from the use of electricity in the manufacturing phase

National production mix from import, low voltage (production of transmission lines, in addition to direct emissions and losses in grid) of applied electricity for the manufacturing process (A3).

Electricity mix	Data source	Amount	Unit
Electricity, Norway (kWh)	ecoinvent 3.6	24,33	g CO ₂ -eq/kWh

Dangerous substances

The product contains no substances given by the REACH Candidate list.

Indoor environment

No impact

Additional Environmental Information

Additional environmental impact indicators required in NPCR Part A for construction products									
Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWPIOBC	kg CO ₂ -eq	2,13E+00	5,36E-02	1,11E-01	0	1,52E-02	0,00E+00	0,00E+00	-1,40E-01

GWPIOBC: Global warming potential calculated according to the principle of instantaneous oxidation. In order to increase the transparency of biogenic carbon contribution to climate impact, the indicator GWP-IOBC is required as it declares climate impacts calculated according to the principle of instantaneous oxidation. GWP-IOBC is also referred to as GWP-GHG in context to Swedish public procurement legislation.

