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The Norwegian EPD Foundation

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804

Declaration owner:	Talgø Møretre AS
Program operator:	Næringslivets Stiftelse for Miljødeklarasjoner
Published by:	Næringslivets Stiftelse for Miljødeklarasjoner
Declaration number:	NEPD-1808-766-EN
Publishing number:	NEPD-1808-766-EN
ECO Platform registration number:	-
Date approved:	21.06.2019
Valid to:	21.06.2024

Royal impregnated timber

Talgø Møretre AS

www.epd-norge.no

General information

Product:
Royal impregnated timber

Program operator:
Næringslivets Stiftelse for Miljødeklarasjoner
Postboks 5250 Majorstuen, 0303 Oslo
Tel: +47 977 22 020
email: post@epd-norge.no

Declaration number:
NEPD-1808-766-EN

ECO Platform registration number:

Declaration based on PCR:
CEN Standard EN 15804 serves as core PCR
NPCR015 rev1 wood and wood-based products for use in construction (08/2013).

Declaration on liability:
The declaration owner is liable for the underlying information and certificate. EPD Norge cannot be held liable with regard to information on the manufacturer, lifecycle evaluation data and certificate.

Declared unit:
Production of 1 m³ royal impregnated pine timber.

Declared unit with option:

Functional unit:
1 m³ royal impregnated pine timber from cradle to grave with a reference lifetime of 60 years.

Verification:
Independent verification of the declaration and data according to ISO 14025:2010

☐ internal ☑ external

Third party verifier:

Ellen Soldal, Senior research scientist
(Independent verifier approved by EPD Norge)

Declaration owner:
Talgø Møretre AS
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Manufacturer:
Talgø Møretre AS

Manufacturing locations:
Talgø Møretre AS
Industrivegen 7, 6652 Surnadal

Quality/Environment system:
PEFC ST 2002:2013 - Chain of Custody of Forest Based Products

Org. no.:
NO 978 706 843 MVA

Date approved:
21.06.2019

Valid to:
21.06.2024

Year of study:
2019

Comparability:
EPD of building materials is not necessarily comparable if not in accordance with NS-EN 15804 and seen in a building context.

Environmental declaration compiled by:
Vegard Ruttenborg

Carlos Einar Myrebøe

Norwegian Institute of Wood Technology (NIK)

Approved by

Håkon Hauan
CEO, EPD-Norge

Product

Product description:
MøreRoyal is for outdoor use as terrace boards, cladding and roof boards. Oil sealing reduces absorption of moisture, swelling, shrinking and splitting,

Technical data:
The declared unit: consists of timber with a dry weight of 435 kg/m3. At 17% timber humidity, it has a density of 509 kg/m3.

Cladding is produced according to SN/TS 3186, Construction timber according to NS-EN 14081 and terrace boards according to SN/TS 3188. Talgø Møretre AS is a member of NIK's 'Norsk Impregneringskontroll' (Norwegian impregnation control).

Product specification:
MøreRoyal is pine timber that has been initially pressure-impregnated with a copper-based impregnating agent, and then boiled for 10 - 12 hours in oil in a vacuum, with or without pigment.

Materials	kg	%
Pine timber, dry weight	435.0	82.7%
Timber moisture content	74.0	14.1%
Impregnation agent, dry weight	3.3	0.6%
Royal Oil and pigment	13.6	2.6%
Total for product	**525.8**	**100.00%**
Wooden packaging	4.0	
Steel packaging	0.4	
Plastic packaging	0.03	
Total with packaging	**530.2**	

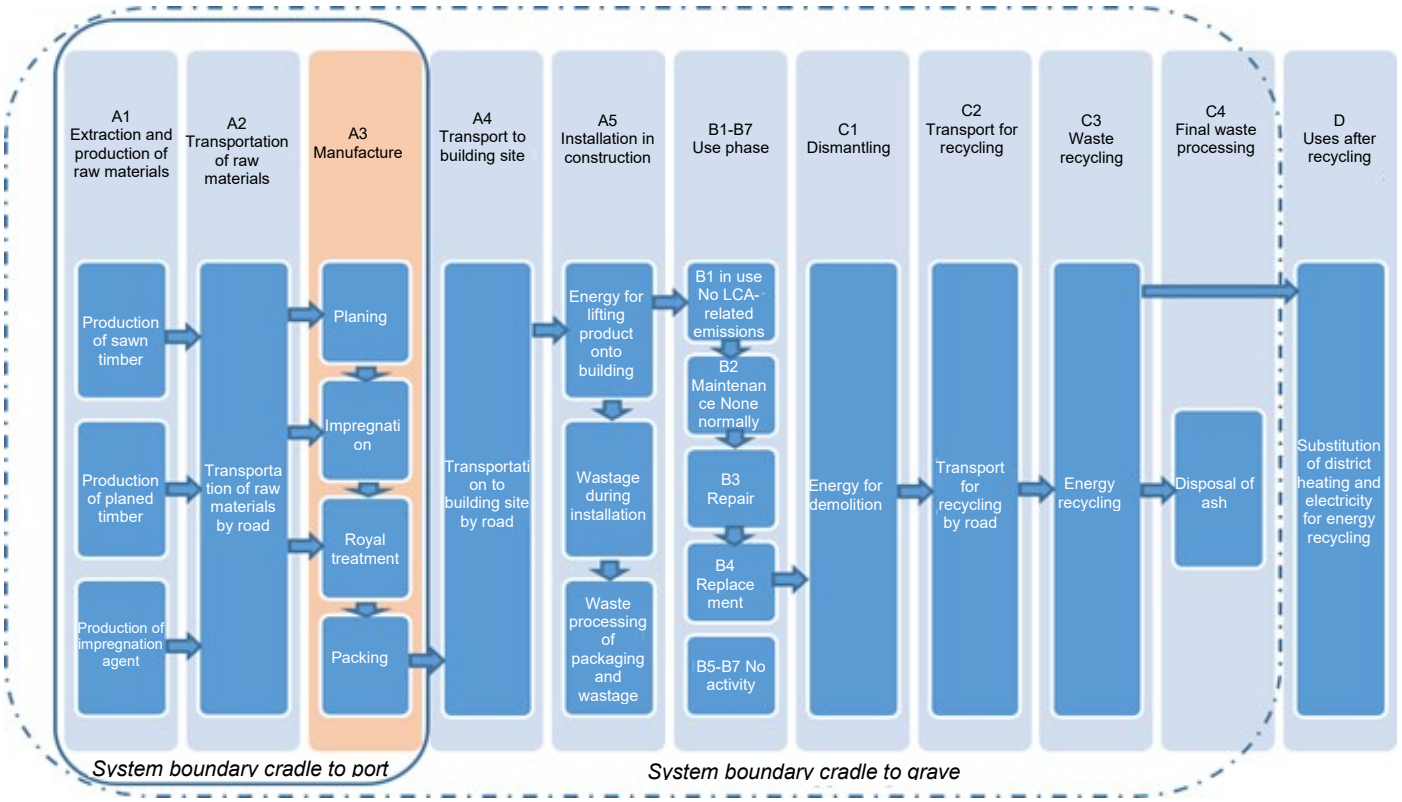
Market:
Norway

Lifetime:
Reference lifetime for Royal impregnated timber cladding is at least 60 years, depending on climatic conditions and external effects. When used as terrace boards the lifetime is set to 30 years.

LCA: Calculation rules

Declared unit:
Production of 1 m³ royal impregnated pine timber.

System boundaries:
Flow chart for system boundaries shown below. Module D is calculated with energy substitution and is explained in more detail under the scenarios.



Data quality:
Production data obtained from Talgø Møretre AS in 2018 (2017 figures). Data for production of sawn timber from Norway is based on NEPD-307-179, but adjusted for Talgø Møretre's data and with Ecoinvent v3.4 as background data. Data for Royal Oil and impregnation agents are specific and obtained from a previous EPD project. The remaining data are based on Ecoinvent v3.4 "Allocation cut-off by classification" (2017), but adjusted to improve representation.

Cut-off criteria:
All key raw materials and important energy use are included. The production process for the raw materials and energy flows that involve only very small amounts (<1%) are not included. The total of excluded material and energy flows does not exceed 5% per module. These cut-off criteria do not apply to hazardous materials and substances. Production facilities and equipment in A3 are excluded.

Allocation:
Allocation was made according to the provisions in EN 15804. Input energy, water, waste and internal transport are broken down in the sub-processes and allocated according to intake between main and by-products. The effect on primary production of recycled materials is allocated to the main product where the material was used.

Calculation of biogenic carbon content:
Uptake and emission of CO2 of biological origin is calculated based on NS-EN 16485:2014. This method is based on the modularity principle in EN 15804:2012, and where emissions have to be included in the lifecycle module where they actually occur. The amount of CO2 is calculated according to NS- EN 16449:2014. The net contribution to GWP from biogenic carbon is shown for each module on page 8. Timber comes from sustainable forestry and has PEFC certified traceability.

LCA: Scenarios and other technical information

The following information describes the scenarios for the EPD modules.

Transportation to the building site of 330 km is envisaged, of which 300 km is in a large goods vehicle and 30 km on a medium-sized goods vehicle.

Transport from production location to user (A4)

Type	Capacity utilisation, including return (%)	Vehicle type	Distance km	Fuel/Energy consumption	Unit
Truck	53	EURO5, >32 tonnes	300	0.02	l/tkm
Truck	26	EURO5, 16-32 tonnes	30	0.048	l/tkm

5% wastage of the product is presumed on site, 1 MJ energy use and waste processing of packaging.

There are no LCA-related environment impacts in use. Copper-impregnated timber exposed to rain or washing will leach 5-10% of its copper content (Evans, 2010). Leach testing not required in EPD until the measurement methods are harmonised. For Royal impregnated timber, leaching is significantly less, as the oil impregnation makes the timber more waterproof.

Building phase (A5)

	Unit	Value
Other materials	kg	
Water consumption	m^3	
Electricity consumption	MJ	1.0
Other energy sources	MJ	
Material loss	kg	26.3
Materials from waste processing	kg	4.36
Airborne dust	kg	

Mounted products in use (B1)

	Unit	Value
Copper leaching	kg	<0.1

For maintenance, it is presumed that Royal Oil is applied every 10 years, totalling 22.5 kg during lifetime. Repair is also presumed with replacement of 10% of the timber at exposed locations. The surface is washed prior to each oil application.

Maintenance (B2)/Repair (B3)

	Unit	Value
Maintenance frequency*	Year	10
Other materials - detergent per time	kg	0.114
Other resources - oil per time	kg	4.5
Water consumption - washing prior to oil per time	kg	2.28
Electricity consumption	kWh	
Other energy sources	MJ	
Material loss	kg	52.58

The product when used as cladding and for construction does not normally need replacement during the building's lifetime, but if used for terrace boards it will normally need to be replaced within a period of 60 years. In a scenario with normal use, it is presumed that terrace boards will be replaced once within 60 years.

Replacement (B4)/Renovation (B5)

	Unit	Value
Replacement frequency*	Year	30/60
Electricity consumption	kWh	
Replacement of worn parts	0	

* Figure or reference lifetime

The product requires no energy or water consumption in use.

Energy (B6) and water consumption (B7) in use

	Unit	Value
Water consumption	m_3	
Electricity consumption	kWh	
Other energy sources	MJ	
Equipment heat production	kW	

Waste of copper-impregnated timber is classified as processed timber (1142) in NS 9431:2011, but in the event of doubt, is processed as CCA-impregnated timber (7098). It is incinerated with energy utilisation (0007) in plants permitted to do so. Amounts are stated for one declared unit.

Final phase (C1, C3, C4)

	Unit	Value
Hazardous waste	kg	
Mixed waste	kg	525.81
Reuse	kg	
Recycling	kg	
Energy recovery	kg	525.81
Dumped	kg	

Transportation of timber waste is based on the average distance for 2007 in Norway and comprises 85 km (Raadal et al. (2009).

Transportation, waste processing (C2)

Type	Capacity utilisation, including return (%)	Vehicle type	Distance km	Fuel/Energy consumption	Unit
Truck		Unspecified	85	0.045	l/tkm

The benefit of exported energy from energy recovery in a municipal waste plant is calculated with replacement of Norwegian electricity mix and Norwegian district heating mix. Data for electricity mix is the same as used in A1-A3 and district heating mix is based on the production in 2017.

Benefit and impacts after end of life (D)

	Unit	Cladding	Terrace
Substitution of electrical energy	MJ	929	1674
Substitution of thermal energy	MJ	6387	11510
Substitution of raw materials	kg	0	0

LCA: Results

Global warming potential in A1-A3 includes the absorption of 797.5 kg CO2 through photosynthesis, bound as carbon in the timber. Royal Oil also contains biogenic carbon equivalent to 18 kg CO_2 per declared unit. The same amount of CO_2 is released again when the timber is incinerated in module C3.

Terrace boards:
When used as terrace boards, replacement in B4 is included in the results. This affects the results in module D and is therefore calculated separately.

System boundaries (X = included, MID = module not declared, MIR = module not relevant)

Product phase			Construction installation phase		Use phase							Final phase				After end of life
Raw materials	Transport	Manufacture	Transport	Construction installation phase	Use	Maintenance	Repair	Replacements	Renovation	Operational energy use	Operational water consumption	Dismantling	Transport	Waste processing	Waste for final processing	Reuse/recycling-recycling potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Environmental impact

Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	Terrace B4	B5
GWP	kg CO_2 -eqv	-7.03E+02	1.63E+01	1.41E+01	0.00E+00	2.11E+01	1.80E+01	1.80E+02	0.00E+00
ODP	kg CFC11-eqv	1.67E-05	3.19E-06	1.08E-06	0.00E+00	3.99E-06	2.26E-06	2.26E-05	0.00E+00
POCP	kg C_2H_4 -eqv	1.31E-01	2.61E-03	6.97E-03	0.00E+00	2.32E-02	1.46E-02	1.46E-01	0.00E+00
AP	kg SO_2 -eqv	1.04E+00	5.27E-02	6.18E-02	0.00E+00	7.00E-01	1.30E-01	1.30E+00	0.00E+00
EP	kg PO_4^{3-}-eqv	4.42E-01	8.85E-03	2.43E-02	0.00E+00	4.57E-01	5.10E-02	5.10E-01	0.00E+00
ADPM	kg Sb-eqv	8.39E-04	3.47E-05	4.52E-05	0.00E+00	1.59E-04	9.47E-05	9.47E-04	0.00E+00
ADPE	MJ	1.93E+03	2.71E+02	1.19E+02	0.00E+00	9.29E+02	2.51E+02	2.51E+03	0.00E+00

Environmental impact

Parameter	Unit	B6	B7	C1	C2	C3	C4	D	Terrace D
GWP	kg CO_2 -eqv	0.00E+00	0.00E+00	8.62E-03	5.96E+00	9.10E+02	3.34E-02	-4.53E+01	-8.17E+01
ODP	kg CFC11-eqv	0.00E+00	0.00E+00	8.15E-10	1.10E-06	6.96E-07	1.04E-08	-4.96E-06	-8.94E-06
POCP	kg C_2H_4 -eqv	0.00E+00	0.00E+00	1.93E-06	9.98E-04	5.14E-03	1.32E-05	-2.48E-02	-4.47E-02
AP	kg SO_2 -eqv	0.00E+00	0.00E+00	4.02E-05	2.34E-02	1.25E-01	2.34E-04	-2.50E-01	-4.52E-01
EP	kg PO_4^{3-}-eqv	0.00E+00	0.00E+00	9.70E-06	4.10E-03	3.29E-02	3.76E-05	-6.51E-02	-1.18E-01
ADPM	kg Sb-eqv	0.00E+00	0.00E+00	1.41E-07	1.68E-05	1.33E-05	4.14E-08	-1.74E-04	-3.20E-04
ADPE	MJ	0.00E+00	0.00E+00	9.54E-02	9.67E+01	1.00E+02	1.04E+00	-6.10E+02	-1.10E+03

GWP Global Warming Potential; ODP Ozone Depletion Potential; POCP Photochemical Ozone Creation Potential; AP Acidification Potential for sources on land and water; EP Eutrophication Potential; ADPM ADPM Abiotic Depletion Potential for non-fossil resources; ADPE ADPM Abiotic Depletion Potential for fossil resources

Resource consumption								Terrace	
Parameter	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**
RPEE	MJ	4.97E+03	4.40E+00	6.75E+02	0.00E+00	1.12E+02	1.41E+03	1.41E+04	0.00E+00
RPEM	MJ	8.81E+03	0.00E+00	9.86E+00	0.00E+00	4.36E+02	2.07E+01	2.07E+02	0.00E+00
TPE	MJ	1.38E+04	4.40E+00	6.84E+02	0.00E+00	5.47E+02	1.44E+03	1.44E+04	0.00E+00
NRPE	MJ	1.93E+03	2.79E+02	1.34E+02	0.00E+00	5.80E+02	2.80E+02	2.80E+03	0.00E+00
NRPM	MJ	3.88E+02	0.00E+00	4.40E+00	0.00E+00	4.50E+02	9.25E+00	9.25E+01	0.00E+00
TRPE	MJ	2.32E+03	2.79E+02	1.38E+02	0.00E+00	1.03E+03	2.90E+02	2.90E+03	0.00E+00
SM	kg	2.20E-01	0.00E+00	1.10E-02	0.00E+00	0.00E+00	2.31E-02	2.31E-01	0.00E+00
RSF	MJ	7.29E-01	0.00E+00	1.09E-01	0.00E+00	0.00E+00	2.29E-01	2.29E+00	0.00E+00
NRSF	MJ	4.86E-01	0.00E+00	7.26E-02	0.00E+00	0.00E+00	1.52E-01	1.52E+00	0.00E+00
W	m^3	5.80E+00	5.47E-02	3.16E-01	0.00E+00	3.83E+00	6.46E-01	6.47E+00	0.00E+00

Resource consumption									Terrace
Parameter	**Unit**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**	**D**
RPEE	MJ	0.00E+00	0.00E+00	1.14E+00	1.25E+00	8.93E+03	2.61E-02	-3.90E+03	-7.04E+03
RPEM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-9.05E+03	0.00E+00	0.00E+00	0.00E+00
TPE	MJ	0.00E+00	0.00E+00	1.14E+00	1.25E+00	-1.18E+02	2.61E-02	-3.90E+03	-7.04E+03
NRPE	MJ	0.00E+00	0.00E+00	1.58E-01	9.84E+01	8.24E+02	1.06E+00	-7.43E+02	-1.34E+03
NRPM	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	-7.50E+02	0.00E+00	0.00E+00	0.00E+00
TRPE	MJ	0.00E+00	0.00E+00	1.58E-01	9.84E+01	7.35E+01	1.06E+00	-7.43E+02	-1.34E+03
SM	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
RSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.59E+00	0.00E+00	-2.81E+03	-5.07E+03
NRSF	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	1.06E+00	0.00E+00	-1.88E+03	-3.38E+03
W	m^3	0.00E+00	0.00E+00	8.46E-03	1.77E-02	2.97E-01	1.17E-03	-1.57E+01	-2.83E+01

RPEE Renewable primary energy as energy carrier; RPEM Renewable primary energy as material utilisation; TPE Total use of renewable primary energy sources; NRPE Non-renewable primary energy as energy carrier; NRPM Non-renewable primary energy as material utilization; TRPE Total use of non-renewable primary energy sources; SM Use of secondary materials; RSF Renewable secondary fuels; NRSF Non-renewable secondary fuels; W Net use of fresh water [total freshwater consumption]

End of lifecycle - Waste								Terrace	
Parameter	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**
HW	kg	4.65E-01	1.56E-02	2.96E-01	0.00E+00	4.61E-01	6.22E-01	6.22E+00	0.00E+00
NHW	kg	5.77E+01	2.13E+01	4.58E+00	0.00E+00	5.97E+00	9.60E+00	9.60E+01	0.00E+00
RW	kg	1.16E-02	1.84E-03	7.12E-04	0.00E+00	1.84E-03	1.49E-03	1.49E-02	0.00E+00

End of lifecycle - Waste									Terrace
Parameter	**Unit**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**	**D**
HW	kg	0.00E+00	0.00E+00	5.13E-05	2.87E-03	2.29E+00	3.34E+00	-2.65E-01	-4.79E-01
NHW	kg	0.00E+00	0.00E+00	7.23E-03	5.78E+00	6.31E+00	1.40E+00	-1.61E+01	-2.90E+01
RW	kg	0.00E+00	0.00E+00	9.72E-07	6.24E-04	1.85E-04	5.87E-06	-3.05E-03	-5.50E-03

HW Hazardous waste disposed; NHW Non Hazardous waste disposed; RW Radioactive waste disposed

End of lifecycle - Output factors								Terrace	
Parameter	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**
CR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR	kg	8.90E-01	0.00E+00	4.58E-01	0.00E+00	0.00E+00	1.41E-01	1.41E+00	0.00E+00
MER	kg	6.74E+00	0.00E+00	4.31E+00	0.00E+00	0.00E+00	1.11E+00	1.11E+01	0.00E+00
EEE	MJ	4.37E-01	0.00E+00	3.73E+01	0.00E+00	0.00E+00	7.82E+01	7.82E+02	0.00E+00
ETE	MJ	2.00E+01	0.00E+00	2.57E+02	0.00E+00	0.00E+00	5.40E+02	5.40E+03	0.00E+00

End of lifecycle - Output factors									Terrace
Parameter	**Unit**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**	**D**
CR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
MR	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.46E-01	0.00E+00	0.00E+00	0.00E+00
MER	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
EEE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	8.16E+02	0.00E+00	-9.29E+02	-1.67E+03
ETE	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.61E+03	0.00E+00	-6.39E+03	-1.15E+04

CR Components for recycling, MR Materials for recycling; MER Materials for energy recovery, EEE Exported electric energy; ETE Exported thermal energy

Read example: 9.0 E-03 = 9.0 x 10^{-3} = 0.009

Norwegian emission requirements

Greenhouse gas emissions from the use of electricity during the production phase
National production mix from import, medium voltage (production of transfer lines in addition to direct emissions loss in the grid) of electricity used for the production process (A3).

Data source	Amount	Unit
Econinvent v3.4 (October 2017)	31.0	gram CO_2-eqv./kWh

Hazardous substances

- ☑ The product contains no substances on the REACH Candidate List or the Norwegian priority list
- ☐ The product contains substances that are under 0.1 weight% on the REACH Candidate List
- ☐ The product contains substances from the REACH Candidate List or the Norwegian priority list. See table under Specific Norwegian Requirements.
- ☐ The product contains no substances on the REACH Candidate List or the Norwegian priority list. The product can be characterised as hazardous waste (according to Annex III of the Norwegian Waste Regulations), see table under Specific Norwegian Requirements.

Transport
Transportation from the production site to the building site according to scenario in A4: 330km

Indoor climate
No tests on the product have been conducted with regard to the indoor climate. The product is intended for outdoor use.

Climate declaration
To increase the transparency of contribution to climate impact, the GWP indicator has been broken down into sub-indicators:
GWP-IOBC Climate impact calculated according to the immediate oxidation of biogenic carbon principle.
GWP-BC Climate impact from net absorption and emission of biogenic carbon from the materials in each module.

Climate impact								Terrace	
Parameter	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**
GWP-IOBC	kg CO_2 -eqv	9.97E+01	1.63E+01	8.59E+00	0.00E+00	2.11E+01	1.80E+01	1.80E+02	0.00E+00
GWP-BC	kg CO_2 -eqv	-8.03E+02	0.00E+00	5.54E+00	0.00E+00	0.00E+00	-8.98E-03	-8.98E-02	0.00E+00
GWP	kg CO_2 -eqv	-7.03E+02	1.63E+01	1.41E+01	0.00E+00	2.11E+01	1.80E+01	1.80E+02	0.00E+00

Climate impact									Terrace
Parameter	**Unit**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**	**D**
GWP-IOBC	kg CO_2 -eqv	0.00E+00	0.00E+00	8.62E-03	5.96E+00	1.13E+02	3.34E-02	-4.53E+01	-8.17E+01
GWP-BC	kg CO_2 -eqv	0.00E+00	0.00E+00	0.00E+00	0.00E+00	7.98E+02	0.00E+00	0.00E+00	0.00E+00
GWP	kg CO_2 -eqv	0.00E+00	0.00E+00	8.62E-03	5.96E+00	9.10E+02	3.34E-02	-4.53E+01	-8.17E+01

Bibliography

NS-EN ISO 14025:2010	*Environmental Labels And Declarations - Type 3 Environmental Declarations - Principles And Procedures*
NS-EN ISO 14044:2006	*Environmental management — Life cycle assessment — Requirements and guidelines*
NS-EN 15804:2012+A1:2013	*Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products*
ISO 21930:2007	*Sustainability in building construction - Environmental declaration of building products*
Ruttenborg and Myrebøe (2019)	*LCA-report for Talgø Møretre AS. Report no. 325028-1 from Norwegian Institute of Wood Technology, Oslo, Norway.*
NPCR015 rev1	*Product category rules for wood and wood-based products for use in construction*
Ecoinvent v3.4	*Swiss Centre of Life Cycle Inventories. www.ecoinvent.ch*
Statistics Norway (2018a)	*Table 04730: Consumption of fuel for gross production of district heating, 2017*
Statistics Norway (2018b)	*Table 04727: The district heating balance, 2017*
Statistics Norway (2018c)	*Table 09469: Net production of district heating, 2017*
NS-EN 16449:2014	*Wood And Wood-Based Products - Calculation Of The Biogenic Carbon Content Of Wood And Conversion To Carbon Dioxide*
NS-EN 16485:2014	*Round And Sawn Timber - Environmental Product Declarations - Product Category Rules For Wood And Wood-Based Products For Use In Construction*
Raadal et al. (2009).	*Raadal, H. L., Modahl, I. S & Lyng, K-A. (2009). Climate accounts for waste processing, Phases I and II. Commissions report no. 18.09 from Østfoldforskning, Norway.*
Evans, F. G. 2010	*Low leaching from copper-impregnated wood. Final report from the Copper Leaching project. Norwegian Institute of Wood Technology.*
NEPD-307-179-NO	*EPD for sawn timber of pine or spruce Treindustrien.*
NS 9431:2011	*Classification of waste*
NS-EN 14915:2013	*Solid wood panelling and cladding - Characteristics, evaluation of conformity and marking*
Plesser et al. (2013)	*Environmental analysis of timber facades*
Venås et al (2011)	*Characterizing long term leaching behaviour of copper from preservative treated wood in a practical exposure scenario*

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