

# Environmental product declaration

In accordance with ISO 14025 and EN 15804 +A2

NorDan NTech Villa Topswing reversible - BG 105/80 (With Aluminium Cladding)



**Owner of the declaration:**  
NorDan AS

**Declared unit:**  
1 pcs NorDan NTech Villa Topswing reversible - BG 105/80  
(With Aluminium Cladding)

**This declaration is based on Product Category Rules:**  
CEN Standard EN 15804:2012+A2:2019 serves as core PCR  
NCPR 014:2019 Part B for Windows and doors

**Program operator:**  
The Norwegian EPD Foundation

**Declaration number:**

**Registration number:**

**Issue date:**

**Valid to:**

**EPD Software:**  
LCA.no EPD generator

**System ID:**  
50906

The Norwegian EPD Foundation



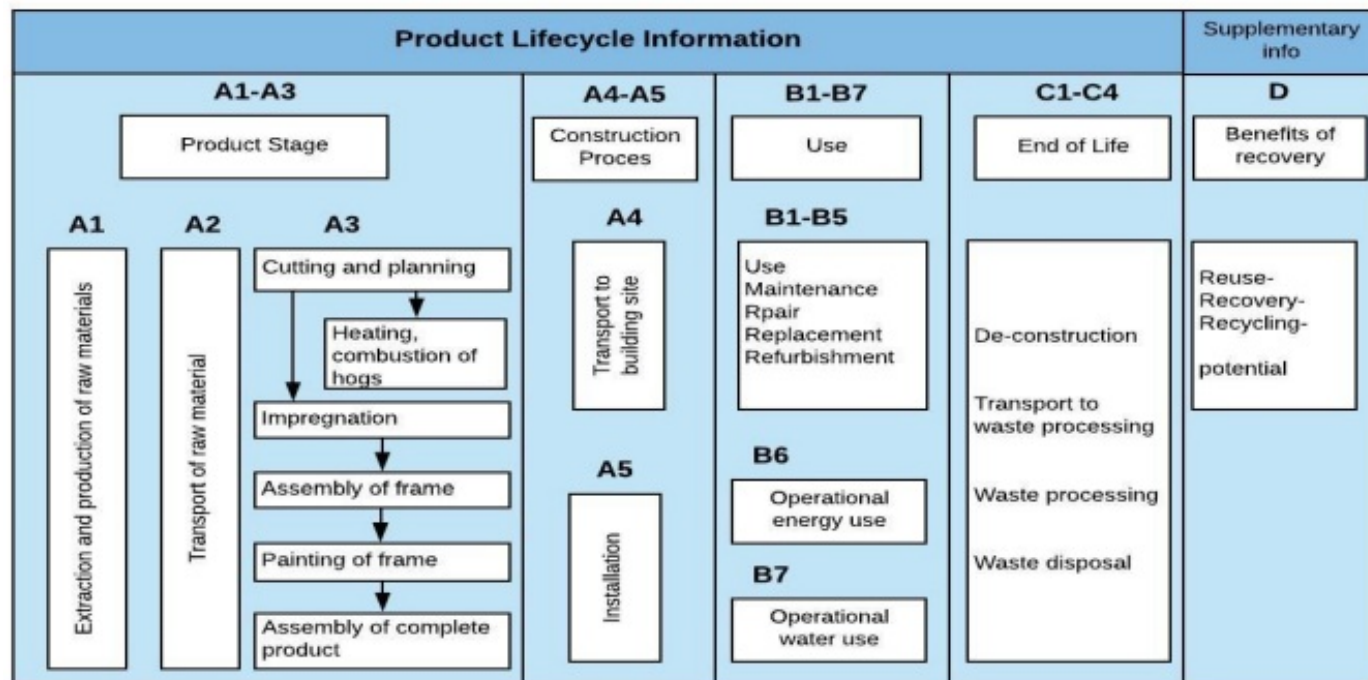


Materials	Source	Data quality	Year
Packaging - Plastic	ecoinvent 3.6	Database	2019
Packaging - Steel	ecoinvent 3.6	Database	2019
Packaging - Wood	ecoinvent 3.6	Database	2019
Argon gas - IGU	ecoinvent 3.7.1	Database	2020
Glass	ecoinvent 3.7.1	Database	2020
Insulation	ecoinvent 3.7.1	Database	2020
Absorbent - IGU	ecoinvent 3.7.1	Specific	2020
Adhesive and sealant	ecoinvent 3.7.1	Specific	2020
Aluminium	ecoinvent 3.7.1	Specific	2020
Coating materials	ecoinvent 3.7.1	Specific	2020
Gasket	ecoinvent 3.7.1	Specific	2020
Metal	ecoinvent 3.7.1	Specific	2020
Plastic	ecoinvent 3.7.1	Specific	2020
Sealant - IGU	ecoinvent 3.7.1	Specific	2020
Wood	ecoinvent 3.7.1	Specific	2020

**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	X	X	X	X	X	MNR	MNR	X	X	X	X	X

System boundary:



**Additional technical information:**

For the products with different sizes from the declared unit, the environmental impacts must be converted by using a conversion factor. The Norwegian EPD Foundation has published instructions on how to interpret EPDs for windows on its website ([www.epdnorge.no](http://www.epdnorge.no)) where different calculation methods have been stated. (Document: Bruksanvisninger i hvordan tolke EPD'er - Vinduer).

## LCA: Scenarios and additional technical information

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

### A4

The transportation from production to construction site is based on a scenario where the product is transported on a large lorry from Otta to warehouse in Oslo, Norway (291 km) . Transport from warehouse to a construction site is assumed to be 50 km on a medium truck.

### A5

According to the report from EPD-Norge Harmonising the documentation of scenarios beyond cradle to gate, EN 15804 there is no loss on site during construction activities. The window products in this EPD are painted and surface treated in the production and not at the building site. Therefore, there is only 2 items left in this module. 1) Waste treatment of packaging which is considered in the EPD calculations. 1) Energy use during installation. This can be varied depending on the floor, type of building and several other unknown parameters, and therefore ignored in the calculation.

### B2/B3

The maintenance scenario included cleaning, painting and change of IGU. Cleaning is performed three times per year. It is calculated with 1,5 dl of detergent and 3 litres of water each year. Windows with aluminium cladding are assumed to be painted 3 times during its lifetime from inside. It is assumed that 5 gr of lubricating oil is used every year for fittings and moving parts. The glazing unit is changed once during the lifetime for the windows with aluminium cladding. No repair is assumed during the product lifetime.

### B4/B5

\* Number or RSL (Reference Service Life). The window has RSL of 60 years. Therefore, it is assumed to replace the insulated glass unit after 30 years (See Module B2). The RSL is determined by using SINTEF design guide 700.320. There is no need for refurbishment during the product lifetime.

### C1

As there are no data for de-construction, it is assumed no activities in C1 in this study. The windows are assumed to be treated as mixed waste and sent to incineration. The combustible materials are then energy recovered, while glass is assumed to end up in the bottom ash and then landfilled. The metals are usually sorted out of the bottom ash and then recycled, but there is no data of the share which are recycled and therefore standard values from Ecoinvent is utilized.

### C2

The transport of window as waste is calculated based on a scenario with 50 km distance.

### C3

Windows are assumed to be sorted as mixed construction waste and treated with incineration with energy recovery. However, the manufacturer has documented the recycling potentials for its product in the Construction Product Declaration eBVD NorDan BG Vridf?nster Tr?/Alu 105, ID: C-SE556294452901-67  
 URL:<https://www.ebvd.org/BMI/Document/Export/2952/0/Pdf> In the documentation, Chapter 10, the specific material recovery, and energy recovery potential is reported for the product.

### D

The benefits beyond life cycle has been modelled based on the output flows from module C3. This includes energy from incineration and scrap metal recovered from the ashes. The amount recovered metal is assumed to avoid production of primary metals in accordance to 6.4.3.3 in EN 15804. The exported energy is substituting Norwegian district heating mix and electricity mix. Inventory processes causing substitution of avoided virgin raw materials has been constructed for each material.

Transport from production place to user (A4)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, over 32 tonnes, EURO 5 (kgkm) - RER	53,3 %	291	0,023	l/tkm	6,69
Truck, 16-32 tonnes, EURO 5 (kgkm) - RER	36,7 %	50	0,044	l/tkm	2,20

Assembly (A5)	Unit	Value			
Waste, metal, average treatment (kg)	kg	0,05			
Waste, packaging, pallet, EUR wooden pallet, reusable, average treatment (kg) A5	kg	3,59			
Waste, packaging, plastic film (LDPE), to average treatment (kg)	kg	0,13			

Maintenance (B2)	Unit	Value			
Waste treatment per kg Paint, hazardous waste incineration (kg)	kg	0,55			
Waste, glass, incineration (kg)	kg	40,86			
Waste, plastic, mixture, for incineration (kg)	kg	0,34			
110 Plastic parts, gasket, Ethylene propylene diene monomer (EPDM), Europe (kg)	kg/DU	0,34			
179 Uncoated flat glass, Europe (kg)	kg/DU	13,62			
180 Coated flat glass, Europe (kg)	kg/DU	27,24			
193 Spacer for IGU, Europe (kg)	kg/DU	0,74			
194 Argon gas for IGU, liquid, global (kg)	kg/DU	0,06			
208 Sealant for IGU, generic, global (kg)	kg/DU	1,10			
209 Absorbent for IGU, generic, global (kg)	kg/DU	0,02			
Detergent, Husvask (kg)	kg/DU	9,00			
Lubricating oil (kg) - RER	kg/DU	0,30			
Paint, 50% water, wet mass (kg)	kg/DU	0,55			
Water, tap water (kg) - Europe without Switzerland	kg/DU	180,00			
Truck, over 32 tonnes, EURO 5 (kgkm) - RER	kgkm/DU	2955,50			

Transport to waste processing (C2)	Capacity utilisation (incl. return) %	Distance (km)	Fuel/Energy Consumption	Unit	Value (Liter/tonne)
Truck, unspecified (kgkm) - RER	48,7 %	50	0,051	l/tkm	2,55














Waste processing (C3)	Unit	Value			
Materials to recycling (kg)	kg	0,37			
Waste treatment per kg Glass, incineration with fly ash extraction (kg) - CH - C3	kg	42,55			
Waste treatment per kg Hazardous waste, incineration (kg)	kg	0,01			
Waste treatment per kg Paint, hazardous waste incineration (kg)	kg	0,79			
Waste treatment per kg Paint, hazardous waste incineration (kg) - C3	kg	0,01			
Waste treatment per kg Plastic, Mixture, municipal incineration with fly ash extraction (kg)	kg	0,75			
Waste treatment per kg Polyurethane (PU), incineration (kg)	kg	0,55			
Waste treatment per kg Scrap aluminium, incineration with fly ash extraction (kg) - CH - C3	kg	3,54			
Waste treatment per kg Scrap steel, incineration with fly ash extraction (kg) - CH - C3	kg	4,03			
Waste treatment per kg Wood, from incineration (kg)	kg	18,10			














Disposal (C4)	Unit	Value			
Landfilling of ashes from incineration of Glass, process of ashes and residues (kg) - CH - C4	kg	49,15			
Landfilling of ashes from incineration of Plastics, Mixture, municipal incineration with fly ash extraction, process per kg ashes and residues (kg)	kg	0,03			
Landfilling of ashes from incineration of Polyurethane (PU), process per kg ashes and residues - C4 (kg)	kg	0,02			
Landfilling of ashes from incineration of Scrap aluminium, process of ashes and residues (kg) - CH - C4	kg	3,17			
Landfilling of ashes from incineration of Scrap steel, process of ashes and residues (kg) - CH - C4	kg	2,66			
Landfilling of ashes from incineration of Wood, process per kg ashes and residues - C4 (kg)	kg	0,21			
Landfilling of ashes from incineration per kg Paint, hazardous waste incineration (kg)	kg	0,02			

Benefits and loads beyond the system boundaries (D)	Unit	Value			
Substitution of primary aluminium with net scrap (kg)	kg	0,28			
Substitution of primary steel with net scrap (kg)	kg	0,06			
Substitution of electricity, in Norway (MJ)	MJ	16,38			
Substitution of thermal energy, district heating, in Norway (MJ)	MJ	247,77			

## LCA: Results

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

Environmental impact								
Parameter		Unit	A1-A3	A4	A5	B1	B2	B3
	GWP-total	kg CO <sub>2</sub> -eq	1,06E+02	2,53E+00	5,55E+00	0	6,27E+01	0
	GWP-fossil	kg CO <sub>2</sub> -eq	1,37E+02	2,53E+00	1,08E-01	0	6,18E+01	0
	GWP-biogenic	kg CO <sub>2</sub> -eq	-3,15E+01	1,04E-03	5,44E+00	0	4,82E-01	0
	GWP-luluc	kg CO <sub>2</sub> -eq	5,05E-01	7,73E-04	2,58E-05	0	4,76E-01	0
	ODP	kg CFC11 -eq	1,36E-05	5,82E-07	1,62E-08	0	6,93E-06	0
	AP	mol H+ -eq	1,04E+00	1,06E-02	7,92E-04	0	5,44E-01	0
	EP-FreshWater	kg P -eq	5,36E-03	1,94E-05	1,18E-06	0	1,75E-03	0
	EP-Marine	kg N -eq	1,79E-01	3,16E-03	3,46E-04	0	9,02E-02	0
	EP-Terrestrial	mol N eq	2,03E+00	3,50E-02	3,63E-03	0	1,06E+00	0
	POCP	kg NMVOC -eq	5,89E-01	1,11E-02	9,36E-04	0	2,91E-01	0
	ADP-minerals&metals <sup>1</sup>	Kg Sb-eq	1,54E-03	4,92E-05	1,64E-06	0	8,25E-04	0
	ADP-fossil <sup>1</sup>	MJ	1,78E+03	3,90E+01	1,19E+00	0	8,69E+02	0
	WDP <sup>1</sup>	m <sup>3</sup>	3,44E+03	3,17E+01	1,91E+00	0	9,97E+01	0

Parameter		Unit	B4	B5	C1	C2	C3	C4	D
	GWP-total	kg CO <sub>2</sub> -eq	0	0	0	4,79E-01	3,26E+01	6,34E-01	-4,12E+00
	GWP-fossil	kg CO <sub>2</sub> -eq	0	0	0	4,78E-01	6,33E+00	6,33E-01	-4,01E+00
	GWP-biogenic	kg CO <sub>2</sub> -eq	0	0	0	2,05E-04	2,63E+01	4,23E-04	-1,40E-02
	GWP-luluc	kg CO <sub>2</sub> -eq	0	0	0	1,69E-04	3,66E-04	1,57E-04	-9,67E-02
	ODP	kg CFC11 -eq	0	0	0	1,09E-07	2,09E-07	1,80E-07	-1,05E-01
	AP	mol H+ -eq	0	0	0	2,73E-03	7,95E-03	4,51E-03	-2,90E-02
	EP-FreshWater	kg P -eq	0	0	0	3,94E-06	1,56E-05	5,04E-06	-2,28E-04
	EP-Marine	kg N -eq	0	0	0	9,75E-04	3,06E-03	1,66E-03	-6,07E-03
	EP-Terrestrial	mol N eq	0	0	0	1,07E-02	3,22E-02	1,83E-02	-6,60E-02
	POCP	kg NMVOC -eq	0	0	0	3,07E-03	8,75E-03	5,22E-03	-1,98E-02
	ADP-minerals&metals <sup>1</sup>	Kg Sb-eq	0	0	0	1,24E-05	5,11E-06	1,03E-05	-1,17E-05
	ADP-fossil <sup>1</sup>	MJ	0	0	0	7,34E+00	1,47E+01	1,40E+01	-5,30E+01
	WDP <sup>1</sup>	m <sup>3</sup>	0	0	0	6,96E+00	5,88E+01	2,80E+01	-1,74E+03

GWP total Global Warming Potential total; GWP fossil Global Warming Potential fossil fuels ; GWP biogenic Global Warming Potential biogenic; GWP luluc Global W Potential land use change; ODP Ozone Depletion; AP Acidification; EP freshwater Eutrophication aquatic freshwater; EP marine Eutrophication aquatic marine; EP terrestrial Eutrophication terrestrial ;POCP Photochemical zone formation; ADPE Abiotic Depletion Potential minerals and metals; ADPf Abiotic Depletion Potential fossil fuels;

\*Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 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

Global warming potential in A1-A3 includes sequestration of carbon in the wood. This amount is accounted as an emission in module C3. Additionally, it is included sequestration in the wood packaging. This is accounted as an emission in module A5.



### Additional environmental impact indicators

Parameter		Unit	A1-A3	A4	A5	B1	B2	B3
	PM	Disease incidence	1,32E-05	2,13E-07	9,78E-09	0	5,48E-06	0
	IRP <sup>2</sup>	kgBq U235 eq.	6,37E+00	1,71E-01	4,36E-03	0	2,21E+00	0
	ETP-fw <sup>1</sup>	CTUe	3,71E+03	2,86E+01	1,34E+00	0	1,50E+03	0
	HTP-c <sup>1</sup>	CTUh	3,04E-07	0,00E+00	1,45E-10	0	9,69E-08	0
	HTP-nc <sup>1</sup>	CTUh	2,82E-06	2,84E-08	6,95E-09	0	8,66E-07	0
	SQP <sup>1</sup>	Pt	7,57E+03	4,06E+01	7,18E-01	0	3,33E+02	0











Parameter		Unit	B4	B5	C1	C2	C3	C4	D
	PM	Disease incidence	0	0	0	4,36E-08	1,76E-07	7,99E-08	-8,97E-07
	IRP <sup>2</sup>	kgBq U235 eq.	0	0	0	3,21E-02	5,90E-02	5,57E-02	-2,75E-01
	ETP-fw <sup>1</sup>	CTUe	0	0	0	5,49E+00	4,79E+01	7,14E+00	-1,53E+02
	HTP-c <sup>1</sup>	CTUh	0	0	0	0,00E+00	7,56E-09	2,39E-10	-8,65E-09
	HTP-nc <sup>1</sup>	CTUh	0	0	0	7,27E-09	6,03E-08	9,72E-09	-1,73E-07
	SQP <sup>1</sup>	Pt	0	0	0	6,28E+00	6,08E+00	3,05E+01	-1,38E+02











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<sup>-3</sup> = 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								
Parameter		Unit	A1-A3	A4	A5	B1	B2	B3
	PERE	MJ	5,74E+02	5,05E-01	2,46E-02	0	5,08E+01	0
	PERM	MJ	3,39E+02	0,00E+00	-4,98E+01	0	0,00E+00	0
	PERT	MJ	9,14E+02	5,05E-01	-4,98E+01	0	5,08E+01	0
	PENRE	MJ	1,67E+03	3,90E+01	1,19E+00	0	8,67E+02	0
	PENRM	MJ	1,10E+02	0,00E+00	-5,56E+00	0	2,80E+00	0
	PENRT	MJ	1,78E+03	3,90E+01	-4,37E+00	0	8,70E+02	0
	SM	kg	1,08E+00	0,00E+00	4,31E-06	0	1,34E-02	0
	RSF	MJ	1,15E+00	1,78E-02	7,14E-04	0	5,35E-01	0
	NRSF	MJ	9,42E-01	6,06E-02	7,84E-03	0	1,10E-01	0
	FW	m <sup>3</sup>	3,14E+00	4,37E-03	8,50E-04	0	7,63E-01	0




Parameter		Unit	B4	B5	C1	C2	C3	C4	D
	PERE	MJ	0	0	0	1,05E-01	2,45E+00	2,39E-01	-1,43E+02
	PERM	MJ	0	0	0	0,00E+00	-2,89E+02	0,00E+00	0,00E+00
	PERT	MJ	0	0	0	1,05E-01	-2,87E+02	2,38E-01	-1,43E+02
	PENRE	MJ	0	0	0	7,34E+00	1,47E+01	1,40E+01	-5,30E+01
	PENRM	MJ	0	0	0	0,00E+00	-1,05E+02	0,00E+00	0,00E+00
	PENRT	MJ	0	0	0	7,34E+00	-9,02E+01	1,40E+01	-1,42E+02
	SM	kg	0	0	0	0,00E+00	5,00E-05	3,61E-05	3,57E-01
	RSF	MJ	0	0	0	3,75E-03	5,07E-02	6,29E-03	-2,84E-02
	NRSF	MJ	0	0	0	1,32E-02	-1,30E-01	2,76E-01	-7,44E+00
	FW	m <sup>3</sup>	0	0	0	8,31E-04	1,20E-02	1,46E-02	-2,53E-01

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 Use of net fresh water




"Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 0,009"

\*INA Indicator Not Assessed

### End of life - Waste

Parameter		Unit	A1-A3	A4	A5	B1	B2	B3
	HWD	kg	1,49E+00	2,10E-03	3,71E-02	0	4,78E+01	0
	NHWD	kg	2,99E+01	3,04E+00	1,25E-01	0	8,25E+00	0
	RWD	kg	6,62E-03	2,66E-04	6,55E-06	0	2,66E-03	0






Parameter		Unit	B4	B5	C1	C2	C3	C4	D
	HWD	kg	0	0	0	3,96E-04	3,19E-02	5,52E+01	9,12E-03
	NHWD	kg	0	0	0	4,55E-01	1,88E-01	4,64E-01	-1,26E+00
	RWD	kg	0	0	0	4,99E-05	8,53E-05	8,63E-05	-2,39E-04

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed;






"Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 0,009"

\*INA Indicator Not Assessed

### End of life - Output flow

Parameter		Unit	A1-A3	A4	A5	B1	B2	B3
	CRU	kg	0,00E+00	0,00E+00	0,00E+00	0	0,00E+00	0
	MFR	kg	5,02E-01	0,00E+00	1,42E+00	0	2,12E-02	0
	MER	kg	9,77E-03	0,00E+00	6,75E-06	0	4,91E-03	0
	EEE	MJ	6,76E-01	0,00E+00	1,56E+00	0	1,07E+00	0
	EET	MJ	9,58E+00	0,00E+00	2,36E+01	0	1,62E+01	0

Parameter		Unit	B4	B5	C1	C2	C3	C4	D
	CRU	kg	0	0	0	0,00E+00	0,00E+00	0,00E+00	0,00E+00
	MFR	kg	0	0	0	0,00E+00	3,97E-01	3,00E+00	3,26E-01
	MER	kg	0	0	0	0,00E+00	4,24E-04	6,62E-05	-6,10E-04
	EEE	MJ	0	0	0	0,00E+00	1,53E+01	1,43E+00	1,79E-02
	EET	MJ	0	0	0	0,00E+00	2,32E+02	2,16E+01	2,71E-01

CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported energy Thermal

"Reading example: 9,0 E-03 = 9,0\*10<sup>-3</sup> = 0,009"

\*INA Indicator Not Assessed

### Biogenic Carbon Content

Parameter	Unit	At the factory gate
Biogenic carbon content in product	kg C	7,47E+00
Biogenic carbon content in accompanying packaging	kg C	1,56E+00

Note: 1 kg biogenic carbon is equivalent to 44/12 kg CO<sub>2</sub>

## Additional Norwegian 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, Poland (kWh)	ecoinvent 3.6	1060,47	g CO <sub>2</sub> -eq/kWh
Electricity, Norway (kWh)	ecoinvent 3.6	24,33	g CO <sub>2</sub> -eq/kWh

### Dangerous substances

The product contains no substances on the REACH Candidate list or the Norwegian priority list at or above 100 ppm, 0,01 % by weight.

### Indoor environment

The product has not been tested for emissions to indoor environments.

## Additional Environmental Information

Environmental impact indicators EN 15804+A1 and NPCR Part A v2.0								
Parameter	Unit	A1-A3	A4	A5	B1	B2	B3	
GWP	kg CO <sub>2</sub> -eq	1,58E+01	2,50E+00	1,05E-01	0	1,21E+01	0	
ODP	kg CFC11 -eq	1,45E-06	4,69E-07	1,33E-08	0	7,09E-07	0	
POCP	kg C <sub>2</sub> H <sub>4</sub> -eq	5,14E-03	3,28E-04	2,19E-05	0	5,15E-03	0	
AP	kg SO <sub>2</sub> -eq	7,16E-02	5,03E-03	4,97E-04	0	4,95E-02	0	
EP	kg PO <sub>4</sub> <sup>3-</sup> -eq	8,09E-03	5,46E-04	1,49E-04	0	6,16E-03	0	
ADPM	kg Sb -eq	2,05E-04	4,92E-05	1,64E-06	0	1,65E-04	0	
ADPE	MJ	1,78E+02	3,83E+01	1,16E+00	0	2,29E+02	0	
GWPIOBC	kg CO <sub>2</sub> -eq	1,37E+02	2,53E+00	0,00E+00	0	6,19E+01	0	





Parameter	Unit	B4	B5	C1	C2	C3	C4	D
GWP	kg CO <sub>2</sub> -eq	0	0	0	4,73E-01	5,62E+01	1,33E-02	-4,01E+00
ODP	kg CFC11 -eq	0	0	0	8,72E-08	2,90E-08	1,14E-09	-3,53E-07
POCP	kg C <sub>2</sub> H <sub>4</sub> -eq	0	0	0	6,75E-05	8,44E-05	1,53E-06	-2,99E-03
AP	kg SO <sub>2</sub> -eq	0	0	0	9,62E-04	3,12E-03	2,37E-05	-2,25E-02
EP	kg PO <sub>4</sub> <sup>3-</sup> -eq	0	0	0	1,00E-04	1,16E-03	3,21E-06	-3,56E-03
ADPM	kg Sb -eq	0	0	0	1,24E-05	1,43E-06	7,31E-08	-1,17E-05
ADPE	MJ	0	0	0	7,19E+00	2,69E+00	1,18E-01	-4,38E+01
GWPIOBC	kg CO <sub>2</sub> -eq	0	0	0	4,79E-01	3,00E+01	1,33E-02	-4,02E+00

GWP Global warming potential; ODP Depletion potential of the stratospheric ozone layer; POCP Formation potential of tropospheric photochemical oxidants; AP Acidification potential of land and water; EP Eutrophication potential; ADPM Abiotic depletion potential for non fossil resources; ADPE Abiotic depletion potential for fossil resources; GWP-IOBC/GHG Global warming potential calculated according to the principle of instantaneous oxidation (except emissions and uptake of biogenic carbon)

## Bibliography

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.  
 ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.  
 EN 15804:2012+A2:2019 Environmental product declaration - Core rules for the product category of construction products.  
 ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products.  
 ecoinvent v3, Allocation, cut-off by classification, Swiss Centre of Life Cycle Inventories.  
 Iversen et al., (2021) eEPD v2021.09 Background information for EPD generator tool system verification, LCA.no Report number: 07.21  
 Iversen et al., (2022) EPD generator for EPD generator for NPCR 014  
 Part B for Windows and doors, Background information for EPD generator application and LCA data, LCA.no report number: xx.xx  
 NPCR Part A: Construction products and services. Ver. 2.0. April 2021, EPD-Norge.  
 NPCR 014 Part B for Windows and doors, Ver. 4.0, 20.09.2021, EPD Norway.

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	<b>Program operator and publisher</b> The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo, Norway	Phone: +47 23 08 80 00 e-mail: <a href="mailto:post@epd-norge.no">post@epd-norge.no</a> web: <a href="http://www.epd-norge.no">www.epd-norge.no</a>
	<b>Owner of the declaration:</b> NorDan AS Stasjonsveien 46, 4460 Moi	Phone: +46 (0) 10-130 01 78 e-mail: <a href="mailto:fredrik.jonsson@nordan.se">fredrik.jonsson@nordan.se</a> web: <a href="http://www.nordan.no">www.nordan.no</a>
	<b>Author of the Life Cycle Assessment</b> Norsk Tretknisk Institutt Postboks 113 Blindern, 0314	Phone: +47 98 85 33 33 e-mail: <a href="mailto:firmapost@tretknisk.no">firmapost@tretknisk.no</a> web: <a href="http://www.tretknisk.no">www.tretknisk.no</a>
	<b>Developer of EPD generator</b> LCA.no AS Dokka 6B, 1671 Kråkerøy	Phone: +47 916 50 916 e-mail: <a href="mailto:post@lca.no">post@lca.no</a> web: <a href="http://www.lca.no">www.lca.no</a>
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