

ENVIRONMENTAL PRODUCT DECLARATION

in accordance with ISO 14025, ISO 21930 and EN 15804+A2

Owner of the declaration:	Norgesvinduet Kompetanse AS
Program operator:	The Norwegian EPD Foundation
Publisher:	The Norwegian EPD Foundation
Declaration number:	NEPD-2997-1653-EN
Registration number:	NEPD-2997-1653-EN
ECO Platform reference number:	-
Issue date:	13.08.2021
Valid to:	13.08.2026

Balcony Door



Norgesvinduet Kompetanse AS

www.epd-norge.no



General information

Product:

Norgesvinduet Balcony Door with and without aluminium cladding

Program holder:

The Norwegian EPD Foundation
Post Box 5250 Majorstuen, 0303 Oslo
Tel: +47 977 22 020
E-mail: post@epd-norge.no

Declaration number:

NEPD-2997-1653-EN

ECO Platform registration number

This declaration is based on Product Category Rules

The CEN standard EN 15804 serves as the core PCR. In addition, NPCR Part A: Construction products and services, version 2.0 (according to EN15804: 2012 + A2: 2019) + NPCR 014: 2019 Part B for windows and doors, version 3.0

Declaration of responsibility:

The owner of the declaration shall be responsible for the underlying information and evidence. EPD Norway shall not be responsible with regard to manufacturer information, life cycle data and evidence.

Declared unit:

Declared unit with option:

Functional unit:

1 triple glazed balcony door measuring 1,23 m × 2,18 m with wood frame and a reference service life of 40/60 years without/with aluminium cladding

Verification

(Why does verification transparency matter? [Read more online](#))

The CEN Norm EN 15804 serves as the core PCR.
Independent verification of the declaration and data, according to ISO14025

☐ Internal certification ☒ External verification
Third party verifier:



Elisabet Amat Guasch
(Independent verifier approved by EPD-Norway)

Owner of the declaration:

Norgesvinduet Kompetanse AS
Contact person: Kent Tryggestad
Phone: +47 57 88 50 35
e-post: kent.tryggestad@norgesvinduet.no

Manufacturer:

Norgesvinduet Bjørlo AS Øyane 1, 6770 Nordfjordeid
Norgesvinduet Svenningdal AS Industriveien 1, 8680 Trofors

Place of production:

Norgesvinduet Bjørlo, Nordfjordeid, Norge
Norgesvinduet Svenningdal, Trofors, Norge

Management system:

NS-EN ISO 9001:2015, NS-EN ISO 14001:2015

Org. no:

959189412

Issue date: 13.08.2021

Valid to: 13.08.2026

Year of Study:

LCA conducted in 2021. Production data is from 2018

Comparability:

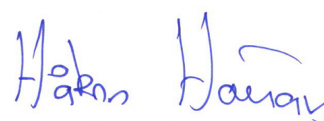
Construction products EPDs may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

The EPD has been worked out by:

Hetal Parekh Udas
(One Click LCA Ltd, Suvilahdenkatu 10 B, 00500 Helsinki, Finland (www.oneclicklca.com))




Approved



Håkon Hauan
Managing Director of EPD-Norway

Product

Product Description:

Balcony Door Opening (BDU) with 3-layer energy glass (4S-18Ar-4-18Ar-S4). All weather exposed parts are made of heartwood as standard.

Technical Data

The product has SINTEF Technical Approval no. 20447. U-value for the product: 0,78 W / m² K. The product complies with the requirements of the Norwegian Door and Window control (NDVK). Fire classification= EI 30 and EI 30 according to NS-EN 13501-2, noise reduction= 26-42 dB

PRODUCT specification

The weight of the product is 65,77kg and 70,46kg without and with aluminium cladding. Results are calculated separately for without and with aluminium cladding.

Market

Norway, scenarios are calculated for the Norwegian market.

Reference Service Lifetime:

40 years without aluminium cladding, 60 years with aluminium cladding

Product Raw Material Composition

	Without Aluminium Cladding		With Aluminium Cladding	
Material	Weight (kg)	%	Weight (kg)	%
Glazing	34,8	52,91 %	34,8	49,39 %
Wooden frame	14,55	22,12 %	14,55	20,65 %
Rubber gasket	0,273	0,42 %	0,273	0,39 %
Steel parts	0,871	1,32 %	0,871	1,24 %
Paint	4,158	6,32 %	4,158	5,9 %
Aluminium	0,288	0,44 %	4,64	6,59 %
Plastic parts	0,127	0,19 %	0,471	0,67 %
Threshold	1,6	2,43 %	1,6	2,27 %
Sandwich panel	9,1	13,84 %	9,1	12,91 %
Total weight of balcony door	65,77	100 %	70,46	100 %
Wood packaging	2,5		2,5	
Steel packaging	0,04		0,04	
Plastic packaging	0,03		0,03	
Paper packaging	0,01		0,01	
Total weight with packaging	68,35		73,04	

LCA: Calculation Rules

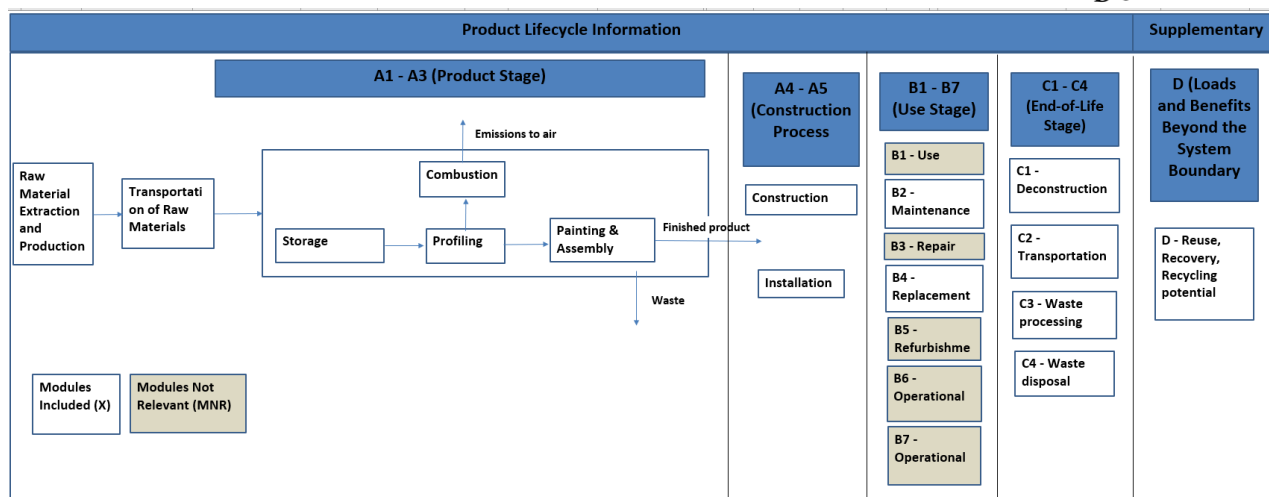
Functional unit:

1 triple glazed balcony door measuring 1.23 m × 2.18 m with wood frame and a reference service life of 40/60 years without/with aluminium cladding

System boundary:

This EPD covers the cradle to grave scope with following modules; A1 (Raw material supply), A2 (Transport) and A3 (Manufacturing), A4 (Transport), A5 (Assembly), B1 – B7 (use phase) as well as C1 (Deconstruction), C2 (Transport at end-of-life), C3 (Waste processing) and C4 (Disposal). In addition, module D - benefits and loads beyond the system boundary is included. B1, B3, B5, B6, B7 are however not relevant for the product system under study.

Below is the flow chart for the manufacturing process.



Data quality:

According to EN 15804+A2 Section 6.3.8.3 data quality of the life cycle inventory data should be assessed using one of the of the schemes in Annex E of the standard. The life cycle inventory was analysed for geographical, technological and time representativeness for a data quality rating as defined in Product Environmental Footprint Guide; CONSOLIDATED VERSION 2012 using the formula provided in the same document. The DQR calculated was then studied for the datasets that contribute to more than 70% of the impacts and the data quality level was analysed as "good quality".

Allocations:

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. The factory is a producer of windows, doors and utforings. These products are produced in various sizes and types. Economic allocation was calculated based on the revenue of the company from doors and windows compared to the utforing. Following that the production volumes at the Bjorlo and Svenningdal sites were used to allocate energy use for production, internal transport, waste produced during manufacturing, and the water use per balcony door. Additionally, an assumption used is that the inputs and outputs for the doors and windows are the same. The doors in this study can be considered as close to an average sized balcony door, and therefore the energy use, outgoing waste from production and consumption of packaging materials in production are allocated to the declared unit based on the number of doors produced.

All other assumptions are listed in their respective sections under Product Life Cycle. Allocation for generic data used from Ecoinvent 3.6 environmental data sources follows the methodology 'allocation, cut-off by classification'. This methodology is in line with the requirements of the EN 15804-standard.

Cut-off criteria:

The study does not exclude any modules or processes which are stated mandatory in the EN 15804:2012+A2:2019 and the applied PCR. The study does not exclude any hazardous materials or substances.

The study includes all major raw material and energy consumption. All inputs and outputs of the unit processes, for which data is available for, are included in the calculation. There is no neglected unit process more than 1% of total mass or energy flows. The module specific total neglected input and output flows also do not exceed 5% of energy usage or mass.

Calculations of biogenic carbon:

Product's biogenic carbon content at the factory gate:

Biogenic carbon content in product, kg C	5,02
Biogenic carbon content in packaging, kg C	1,25

LCA: Scenarios and additional technical information

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

Transport from production place to assembly/user (A4)

Type	Capacity Utilization	Type of vehicle	Distance (km)	Fuel /Energy Consumption per t-km	Fuel/Energy Consumption per km
Truck	95%	EURO5>32 ton	300	0,022 l/t-km	0.31 l/km
Truck	95%	EURO5, 16-32 ton	30	0,045 l/t-km	0.25 l/km

Transport from production to the building site is assumed to be carried out by truck and a total distance of 330 km. It is assumed 300 km on a large truck and 30 km on a medium size truck. Norgesvinduet has its own truck that is used to transport balcony doors to the building sites.

Installation (A5)

	Unit	Value
Auxiliary	kg	-
Water consumption	m ³	-
Electricity consumption	kWh	-
Other energy carriers	MJ	-
Material loss	kg	-
Output materials from waste treatment	kg	2,58
Dust in the air	kg	-

According to the report from EPD-Norge 'Harmonizing the documentation of scenarios beyond cradle to gate, EN 15804' Section 5.2 Table 3 there is no loss on site during construction activities. The balcony door products in this EPD are painted and surface treated in the production and not at the building site. Therefore, there are only 2 items left in this module. 1) Waste treatment of packaging which is considered in the EPD calculations, 2) 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.

Maintenance (B2)

Material or energy	Quantity per functional unit		
	Without Al cladding	With Al cladding	
Paint	1,342	0,374	kg
Water	120	180	l
Lubricating oil	0,2	0,3	kg
Detergent	6,3	9,45	kg

Maintenance – The scenario includes cleaning and painting. Cleaning is performed three times per year. It is calculated with 1,5 dl of detergent and 3 litres of water each year. The products are assumed to be painted and cleaned during their lifetime. The windows without aluminium cladding are painted exterior after ten years and every sixth year until its ended lifetime. Interior, it is assumed to be painted once during its lifetime of 40 years. It is assumed that 5 gr of lubricating oil is used every year for fittings and moving parts. A previous EPD for the Norgesvinduet Balcony Door was referred to for this data and confirmed with the manufacturer. There is no need for repair during the product lifetime.

Replacement (B4)

Material or energy	Quantity per functional unit		
	Without Al cladding	With Al cladding	
Glazing	34,8	34,8	kg
Gasket	0,273	0,273	kg

Replacement – EN17213 6.3.4.4.2 states that "The IGU shall always be calculated with a maximum of 30 years, unless otherwise indicated in the product standard EN 1279-5 or specified by the manufacturer for specific in-use conditions." The door has a RSL of 40 and 60 years respectively for without and with aluminium cladding, so the insulated glass unit must be replaced after 30 years. This is included in Module B4, along with the packaging and waste treatment for original glazing in product. There is no need for refurbishment during the product lifetime.

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

Transport to waste processing (C2)

Type	Capacity Utilization	Type of vehicle	Distance (km)	Fuel /Energy Consumption	Fuel/Energy Consumption
Truck	95%	Unspecified	50	0,033 l/t-km	0,28 l/km

End of Life (C1, C3, C4)

The EOL waste treatment scenario has been created based on two references. The first one is EN17213 Annex B, which gives generic scenarios for different types of windows and door sets. Additionally, Statistics Norway was referred to in order to get reference numbers for treatment of construction waste in Norway (<https://www.ssb.no/en>) in 2019. At the end of the RSL of the balcony door, it is assumed that it will be dismantled and transported as mixed waste to the scrap recycling centre, where the wood, metal, glass and plastics will be separated and treated for recycling, energy recovery or will go to landfill per % calculated from Statistics Norway 2019 for Construction Waste. The only deviation from this scenario is that for glass where energy by incineration has been assumed instead of material recovery. This is in accordance with NPCR-014-Part-B Section 6.3.8.4, the most conservative scenario should be included if there are several relevant common practices

Scenario parameter	Value		Unit
	Without Al cladding	With Al cladding	
Collection process – kg collected separately	--	--	kg
Collection process – kg collected with mixed waste	66,36	70,69	kg
Recovery process – kg for re-use	0	0	kg
Recovery process – kg for recycling	6,82	11,15	kg
Recovery process – kg for energy recovery	38,19	37,80	kg
Disposal (total) – kg for final deposition	21,96	21,46	kg

Benefits and loads beyond system boundaries (D)

	Quantity per functional unit		
	Without Al cladding	With Al cladding	
Substitution of thermal energy	68,205	68,205	MJ
Substitution of electrical energy	34,02	34,02	MJ
Substitution of raw materials	6,89	11,24	kg

LCA: Results

Raw material extraction and processing contributes to about 48-51% of the life cycle impacts and the top three contributors are glazing, sandwich panel and paint. The flows that are allocated in the production, like electricity, waste and packaging have a minor contribution. The replacement of glazing after 30 years has close to 20-22% impacts across the life cycle. This is again due to the glazing. Maintenance is the next highest contributor to environmental impacts contributing to about 5-7% of environmental impacts and the top contributors here are the paint and detergent used through the RSL for maintenance. It must be noted that for the product with aluminium cladding the contribution of paint during maintenance to the environmental impacts is much lower than that for the product without the cladding. The % contributions are quoted for GWP total, however similar trend is seen across all impact categories.

X = included; MNR: Module Not Relevant

Product stage			Assembly stage		Use stage							End of life stage				Beyond the system boundaries		
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	D	D
X	X	X	X	X	MNR	X	MNR	X	MNR	MNR	MNR	X	X	X	X	X	X	X
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction/Demolition	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Environmental impact

BALCONY DOOR WITHOUT ALUMINIUM CLADDING : CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Please note that Modules B1, B3, B5, B6, B7 are not included in the results tables because they have been assigned as MNR

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
Climate change – total	kg CO ₂ e	1,34E2	9,07E0	3,85E0	1,47E2	2,05E0	6,28E-2	1,93E1	5,75E1	0	5,44E-1	2,56E1	9,27E0	5,84E0
Climate change – fossil	kg CO ₂ e	1,41E2	9,06E0	2,47E0	1,53E2	2,06E0	6,01E-2	1,84E1	6,52E1	0	5,43E-1	5,66E0	8,95E0	-2,28E1
Climate change – biogenic	kg CO ₂ e	-1,32E1	4,88E-3	1,37E0	-1,19E1	1,5E-3	2,54E-3	-1,17E0	-7,78E0	0	2,92E-4	1,99E1	3,12E-1	2,87E1
Climate change – LULUC	kg CO ₂ e	5,66E0	3,27E-3	6,78E-3	5,67E0	6,21E-4	8,08E-5	2,11E0	8,09E-2	0	1,96E-4	3,21E-3	1,52E-3	-5,4E-2
Ozone depletion	kg CFC11e	1,02E-5	2,06E-6	2,1E-7	1,25E-5	4,85E-7	5,29E-9	1,97E-6	6,2E-6	0	1,24E-7	4,03E-7	5,76E-7	-1,71E-6
Acidification	mol H ⁺ e	1,1E0	2,6E-2	1,33E-2	1,13E0	8,67E-3	3,09E-4	1,35E-1	5,48E-1	0	1,56E-3	1,91E-2	3,29E-2	-1,18E-1

Eutrophication, aquatic freshwater ²⁾	kg Pe	5,64E-3	7,7E-5	1,44E-4	5,86E-3	1,68E-5	2,5E-6	9,83E-4	2,37E-3	0	4,62E-6	1,2E-4	2,03E-4	-4,89E-4
Eutrophication, aquatic marine	kg Ne	1,67E-1	5,18E-3	3,27E-3	1,75E-1	2,61E-3	7,61E-5	2,52E-2	8,86E-2	0	3,1E-4	4,53E-3	3,91E-3	-1,34E-2
Eutrophication, terrestrial	mol Ne	1,72E0	5,78E-2	3,21E-2	1,81E0	2,89E-2	8,51E-4	2,16E-1	1,05E0	0	3,45E-3	5,03E-2	5,12E-2	-1,49E-1
Photochemical ozone formation	kg NMVOCe	6,27E-1	2,21E-2	1,21E-2	6,61E-1	9,28E-3	2,39E-4	8,77E-2	2,71E-1	0	1,32E-3	1,61E-2	2,5E-2	-6,56E-2
Abiotic depletion, minerals & metals	kg Sbe	3,03E-3	2,5E-4	6,4E-5	3,34E-3	3,52E-5	7,45E-7	7,85E-4	1,83E-3	0	1,5E-5	7,53E-5	3,84E-5	-1,26E-4
Abiotic depletion of fossil resources	MJ	2,16E3	1,37E2	3,42E1	2,33E3	3,21E1	7,85E-1	4,48E2	8,09E2	0	8,21E0	5,2E1	5,14E1	-5,29E2
Water use ¹⁾	m3e depr.	6,6E1	4,48E-1	6,72E-1	6,71E1	1,19E-1	7,12E-3	1,14E1	1,65E1	0	2,69E-2	1,43E0	1,04E0	-7,04E0

1) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator. 2) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e.

BALCONY DOOR WITHOUT ALUMINIUM CLADDING : ADDITIONAL (OPTIONAL) INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
Particulate matter	Incidence	9,42E-6	5,77E-7	2,17E-7	1,02E-5	1,87E-7	3,54E-9	1,29E-6	5,28E-6	0	3,46E-8	2,74E-7	3,01E-7	-9,68E-7
Ionizing radiation, human health ³⁾	kBq U235e	4,49E0	5,99E-1	2,02E-1	5,29E0	1,4E-1	3,6E-3	4,37E-1	2,92E0	0	3,59E-2	1,69E-1	1,15E-1	-6,88E-1
Eco-toxicity (freshwater)	CTUe	3,2E3	1,06E2	8,68E1	3,39E3	2,45E1	9,15E-1	4,99E2	1,66E3	0	6,38E0	9,47E1	2,29E2	-2,7E2
Human toxicity, cancer effects	CTUh	9,03E-8	3,06E-9	5,94E-9	9,93E-8	6,28E-10	4,73E-11	4,19E-8	4,05E-8	0	1,83E-10	5,23E-9	3,37E-9	-1,9E-8
Human toxicity, non-cancer	CTUh	2,07E-6	1,16E-7	8,46E-8	2,27E-6	2,91E-8	7,85E-10	6,82E-7	8,45E-7	0	6,97E-9	1,12E-7	3,58E-7	-2,17E-7
Land use related impacts/soil quality	-	3,98E2	1,16E2	8,09E0	5,22E2	4,85E1	2,73E-1	1,01E2	1,65E2	0	6,96E0	3,23E1	3,02E1	1,67E1

3) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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

BALCONY DOOR WINDOW WITHOUT ALUMINIUM CLADDING: USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
RPEE	MJ	1,87E2	1,96E0	1,14E2	3,03E2	4,04E-1	9,49E-3	3,5E1	8,71E1	0	1,18E-1	2,68E0	1,86E0	-5,44E1
RPEM	MJ	1,49E2	0E0	7,85E1	2,27E2	0E0	5,83E-2	0E0	7,85E1	0	0E0	3,39E-1	0E0	0E0
TPE	MJ	3,36E2	1,96E0	1,92E2	5,3E2	4,04E-1	6,78E-2	3,5E1	1,66E2	0	1,18E-1	3,01E0	1,86E0	-5,44E1
NRPE	MJ	1,72E3	1,37E2	3,27E1	1,89E3	3,21E1	7,85E-1	4,48E2	8,09E2	0	8,21E0	5,2E1	5,14E1	-2,64E2
NRPM	MJ	4,4E2	0E0	1,43E0	4,41E2	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	-2,66E2
TRPE	MJ	2,16E3	1,37E2	3,42E1	2,33E3	3,21E1	7,85E-1	4,48E2	8,09E2	0	8,21E0	5,2E1	5,14E1	-5,29E2
SM	kg	1,06E0	0E0	2,23E-2	1,09E0	0E0	0E0	1,88E-1	1,21E-2	0	0E0	0E0	0E0	-2,29E-1
RSF	MJ	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	0E0
NRSP	MJ	0E0	0E0	8,37E1	8,37E1	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	0E0
W	m3	1,08E0	2,37E-2	1,74E-2	1,12E0	6,69E-3	2,42E-4	3,23E-1	4E-1	0	1,42E-3	2,59E-2	3,38E-2	-4,55E-2

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSP Use of non renewable secondary fuels; W Use of net fresh water

BALCONY DOOR WINDOW WITHOUT ALUMINIUM CLADDING: END OF LIFE-WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
HW	kg	1,03E1	1,41E-1	2,38E0	1,28E1	3,12E-2	4,1E-3	2,26E0	4,01E0	0	8,45E-3	0E0	1,47E0	-1,29E0
NHW	kg	1,79E2	9,72E0	5,71E0	1,94E2	3,45E0	1,29E-1	3,1E1	1,18E2	0	5,82E-1	0E0	2,3E1	4,08E1
RW	kg	4,3E-3	9,38E-4	1,41E-4	5,38E-3	2,2E-4	3,38E-6	4,73E-4	2,85E-3	0	5,62E-5	0E0	1,45E-4	-8,3E-4

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

FIXED FRAME WINDOW WITHOUT ALUMINIUM CLADDING: END OF LIFE-OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
CR	kg	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	0E0
MR	kg	0E0	0E0	1,41E-1	1,41E-1	0E0	7E-2	0E0	0E0	0	0E0	1,23E1	0E0	0E0
MER	kg	0E0	0E0	7,38E-1	7,38E-1	0E0	2,51E0	0E0	0E0	0	0E0	3,83E1	0E0	0E0
EEE	MJ	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	0E0
ETE	MJ	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	0E0

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

Environmental impact

BALCONY DOOR WITH ALUMINIUM CLADDING : CORE ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Please note that Modules B1, B3, B5, B6, B7 are not included in the results tables because they have been assigned as MNR

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
Climate change – total	kg CO ₂ e	1,44E2	9,73E0	3,85E0	1,57E2	2,19E0	6,28E-2	1,87E1	5,75E1	0	5,78E-1	2,88E1	6,37E0	-2,54E1
Climate change – fossil	kg CO ₂ e	1,52E2	9,72E0	2,47E0	1,64E2	2,21E0	6,01E-2	1,84E1	6,52E1	0	5,78E-1	8,87E0	6,16E0	-5,31E1
Climate change – biogenic	kg CO ₂ e	-1,35E1	5,23E-3	1,37E0	-1,21E1	1,61E-3	2,54E-3	-3,13E-1	-7,78E0	0	3,11E-4	2E1	2,11E-1	2,85E1
Climate change – LULUC	kg CO ₂ e	5,69E0	3,51E-3	6,78E-3	5,7E0	6,65E-4	8,08E-5	5,96E-1	8,09E-2	0	2,09E-4	5,84E-3	1,05E-3	-7,77E-1
Ozone depletion	kg CFC11e	1,09E-5	2,21E-6	2,1E-7	1,34E-5	5,2E-7	5,29E-9	2,09E-6	6,2E-6	0	1,31E-7	6,72E-7	4,12E-7	-5,54E-6
Acidification	mol H ⁺ e	1,16E0	2,79E-2	1,33E-2	1,2E0	9,29E-3	3,09E-4	1,36E-1	5,48E-1	0	1,66E-3	6,48E-2	2,28E-2	-3,19E-1
Eutrophication, aquatic freshwater ²⁾	kg Pe	6,06E-3	8,27E-5	1,44E-4	6,29E-3	1,8E-5	2,5E-6	7,86E-4	2,37E-3	0	4,91E-6	4,83E-4	1,38E-4	-2,16E-3
Eutrophication, aquatic marine	kg Ne	1,78E-1	5,56E-3	3,27E-3	1,86E-1	2,8E-3	7,61E-5	2,11E-2	8,86E-2	0	3,29E-4	8,18E-3	2,86E-3	-3,57E-2
Eutrophication, terrestrial	mol Ne	1,86E0	6,2E-2	3,21E-2	1,95E0	3,09E-2	8,51E-4	2,17E-1	1,05E0	0	3,67E-3	9,79E-2	3,7E-2	-3,97E-1
Photochemical ozone formation	kg NMVOCe	6,68E-1	2,37E-2	1,21E-2	7,04E-1	9,94E-3	2,39E-4	9,21E-2	2,71E-1	0	1,41E-3	2,96E-2	1,76E-2	-1,58E-1
Abiotic depletion, minerals & metals	kg Sbe	3,87E-3	2,68E-4	6,4E-5	4,21E-3	3,77E-5	7,45E-7	6,44E-4	1,83E-3	0	1,59E-5	2,97E-4	2,67E-5	-2,79E-4
Abiotic depletion of fossil	MJ	2,29E3	1,47E2	3,42E1	2,47E3	3,44E1	7,85E-1	5,55E2	8,09E2	0	8,73E0	8,92E1	3,64E1	-9,95E2
Water use ¹⁾	m ³ e depr.	6,98E1	4,81E-1	6,72E-1	7,1E1	1,28E-1	7,12E-3	1,12E1	1,65E1	0	2,86E-2	3,78E0	7,85E-1	-9,92E0

1) EN 15804+A2 disclaimer for Abiotic depletion and Water use and optional indicators except Particulate matter and Ionizing radiation, human health. The results of these environmental impact indicators shall be used with care as the uncertainties on these results are high or as there is limited experience with the indicator. 2) Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO₄e.

BALCONY DOOR WITH ALUMINIUM CLADDING: ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2, PEF

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
Particulate matter	Incidence	1,02E-5	6,19E-7	2,17E-7	1,1E-5	2E-7	3,54E-9	1,34E-6	5,28E-6	0	3,68E-8	4,67E-7	2,15E-7	-3,01E-6
Ionizing radiation, human health ³⁾	kBq U235e	4,79E0	6,42E-1	2,02E-1	5,64E0	1,5E-1	3,6E-3	3,82E-1	2,92E0	0	3,82E-2	2,92E-1	8,45E-2	-3,89E0
Eco-toxicity (freshwater)	CTUe	3,46E3	1,14E2	8,68E1	3,66E3	2,63E1	9,15E-1	4,65E2	1,66E3	0	6,78E0	4,64E2	1,57E2	-8,21E2

Human toxicity, cancer effects	CTUh	1,19E-7	3,28E-9	5,94E-9	1,28E-7	6,72E-10	4,73E-11	5,67E-8	4,05E-8	0	1,95E-10	1,19E-8	2,32E-9	-1,16E-7
Human toxicity, non-cancer	CTUh	2,37E-6	1,25E-7	8,46E-8	2,58E-6	3,11E-8	7,85E-10	6,99E-7	8,45E-7	0	7,41E-9	5,37E-7	2,42E-7	-1,54E-6
Land use related impacts/soil quality	-	4,28E2	1,25E2	8,09E0	5,61E2	5,19E1	2,73E-1	5,3E1	1,65E2	0	7,4E0	4,08E1	2,7E1	-9,01E0

3) EN 15804+A2 disclaimer for Ionizing radiation, human health. 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

BALCONY DOOR WITH ALUMINIUM CLADDING: USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
RPEE	MJ	2,01E2	2,1E0	1,14E2	3,17E2	4,33E-1	9,49E-3	1,88E1	8,71E1	0	1,25E-1	8,12E0	1,28E0	-2,44E2
RPEM	MJ	1,49E2	0E0	7,85E1	2,27E2	0E0	5,83E-2	0E0	7,85E1	0	0E0	3,39E-1	0E0	0E0
TPE	MJ	3,49E2	2,1E0	1,92E2	5,44E2	4,33E-1	6,78E-2	1,88E1	1,66E2	0	1,25E-1	8,45E0	1,28E0	-2,44E2
NRPE	MJ	1,83E3	1,47E2	3,27E1	2,01E3	3,44E1	7,85E-1	5,55E2	8,09E2	0	8,73E0	8,92E1	3,64E1	-7,3E2
NRPM	MJ	4,51E2	0E0	1,43E0	4,52E2	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	-2,65E2
TRPE	MJ	2,29E3	1,47E2	3,42E1	2,47E3	3,44E1	7,85E-1	5,55E2	8,09E2	0	8,73E0	8,92E1	3,64E1	-9,95E2
SM	kg	1,07E0	0E0	2,23E-2	1,09E0	0E0	0E0	1,46E-1	1,21E-2	0	0E0	0E0	0E0	-3,25E-1
RSF	MJ	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	0E0
NRSP	MJ	0E0	0E0	8,37E1	8,37E1	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	0E0
W	m3	1,14E0	2,54E-2	1,74E-2	1,18E0	7,16E-3	2,42E-4	2,6E-1	4E-1	0	1,51E-3	4,57E-2	2,49E-2	-2,31E-1

RPEE Renewable primary energy resources used as energy carrier; RPEM Renewable primary energy resources used as raw materials; TPE Total use of renewable primary energy resources; NRPE Non renewable primary energy resources used as energy carrier; NRPM Non renewable primary energy resources used as materials; TRPE Total use of non renewable primary energy resources; SM Use of secondary materials; RSF Use of renewable secondary fuels; NRSP Use of non renewable secondary fuels; W Use of net fresh water)

BALCONY DOOR WITH ALUMINIUM CLADDING: END OF LIFE-WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
HW	kg	1,2E1	1,51E-1	2,38E0	1,45E1	3,34E-2	4,1E-3	1,65E0	4,01E0	0	8,99E-3	0E0	9,95E-1	-9,18E0
NHW	kg	1,97E2	1,04E1	5,71E0	2,13E2	3,7E0	1,29E-1	3,08E1	1,18E2	0	6,19E-1	0E0	2,31E1	-3,62E1
RW	kg	4,6E-3	1,01E-3	1,41E-4	5,74E-3	2,36E-4	3,38E-6	4,16E-4	2,85E-3	0	5,98E-5	0E0	1,09E-4	-3,56E-3

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

BALCONY DOOR WITH ALUMINIUM CLADDING: END OF LIFE-OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B2	B4	C1	C2	C3	C4	D
CR	kg	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	0E0
MR	kg	0E0	0E0	0E0	0E0	0E0	7E-2	0E0	0E0	0	0E0	1,66E1	0E0	0E0
MER	kg	0E0	0E0	7,38E-1	7,38E-1	0E0	2,51E0	0E0	0E0	0	0E0	3,78E1	0E0	0E0
EEE	MJ	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	0E0
ETE	MJ	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0E0	0	0E0	0E0	0E0	0E0

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

Norwegian Additional Requirements

Greenhouse gas emissions from the use of electricity in A3 manufacturing

Data Source	Amount	Unit
Ecoinvent v3.6 (2019)	23.1	g CO ₂ -eqv/ kWh

Hazardous substances

- ☒ The product contains no substances from REACH Candidate List or the Norwegian Priority List
- ☐ The product contains substances below 0.1% by weight on the REACH Candidate List
- ☐ The product contains substances from REACH Candidate List or the Norwegian Priority List, see table under Specific Norwegian requirements
- ☐ The product does not contain any substances on the REACH Candidate List or the Norwegian Priority List. The product can be characterized as hazardous waste (according to the Waste Shift, Appendix III), see table under Specific Norwegian requirements.

Transport




Transport from production site to construction site in A4: 330km

Indoor air quality

According to SINTEF Technical Approval No. 20447, the products are evaluated to not release any particles, gases or radiation that has a negative impact on the indoor climate or to health.

Bibliography

ISO 14025:2010	Environmental labels and declarations – Type III environmental declarations. Principles and procedures.
ISO 14040:2006	Environmental management. Life cycle assessment. Principles and frameworks.
ISO 14044:2006	Environmental management. Life cycle assessment. Requirements and guidelines.
EN 15804:2012+A2:2019	Sustainability in construction works – Environmental product declarations – Core rules for the product category of construction products.
NPCR- Part A	Construction products and services, version 2.0 (according to EN15804: 2012 + A2: 2019)
NPCR014 version 3.0 (2019)	PCR Part B for windows and doors
LCA background report 20.06.2021	Norgesvinduet Kompetanse AS Fixed Frame Window, Balcony Door and Laminated Pine Utforing
EN 17213	Windows and doors - Environmental Product Declarations - Product category rules for windows and pedestrian doorsets
Statistics Norway	https://www.ssb.no/en
Tellnes, Lars et al. (2014) EPD-Norge	Harmonising the documentation of scenarios beyond cradle to gate, EN 15804
EPD # NEPD-393-278-NO	Norgesvinduet Kompetanse AS Balcony Door 2015

 epd-norge.no The Norwegian EPD Foundation	Program operator: The Norwegian EPD Foundation Post Box 5250 Majorstuen, 0303 Oslo Norway	Phone E-mail Web	+47 97722020 post@epd-norge.no www.epd-norge.no
	Owner of the declaration: Norgesvinduet Kompetanse AS Øyane 1, 6770 Nordfjordeid, Norge Industriveien 1, 8680 Trofors, Norge	Phone E-mail Web	+47 57 88 50 00 / 57 18 09 00 bjorlo@norgesvinduet.no svenningdal@norgesvinduet.no www.norgesvinduet.no
	Author of the Life Cycle Assessment: Hetal Parekh Udas One Click LCA, Suvilahdenkatu 10 B, 00500 Helsinki, Finland	Phone E-mail Web	+358 40 549 4710 hello@oneclicklca.com https://www.oneclicklca.com/