epd square .

Aqualex BOARD

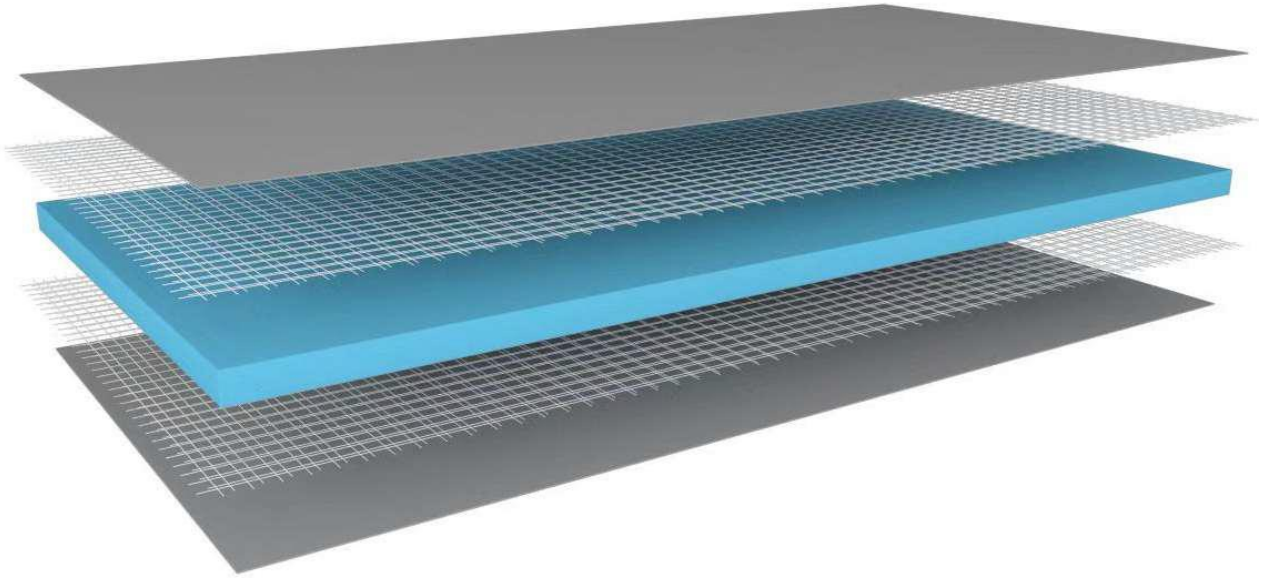
Environmental Product Declaration

Specific EPD

In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021

Aqualex Tile backer board

Nordic Tools AS



Programme
EPD Square | www.epdsquare.com

Programme operator
EPD Square, s.r.o.

EPD Registration number
SQ 00-083

Publication date
14.10.2026

Valid until
13.10.2031

General information

Product
Aqualex Tile backer board

Program operator
EPD Square, s.r.o.
Lermontovova 3, 811 05,
Bratislava, Slovak Republic
Email: info@epdsquare.com

Registration number
SQ 00-083

Publication date
14.10.2026

Valid until date
13.10.2031

Owner of the declaration
Nordic Tools AS
Industriveien 26
1481 Hagan
Contact person: Peder Skjærsveen
Email: post@nordictools.no

Place of production
Production plant 12
Danfeng Industrial Park 9,
Erling Town, Danyang City,
Jiangsu Province, China

Product Category Rules (PCR)
EPD Square PCR v1.0.1, 2025

Declared unit
1 m^2 with 12 mm thickness

Mass per DU
3,28 kg

UN CPC code
37590 - Other articles of cement, concrete or artificial stone

Geographical scope
Europe

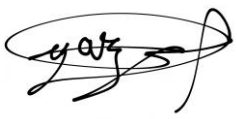
Year of study
2025

Comparability
EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in the context of the building.

EPD author
Ludmila Vaculova Meciarova, Silvia Vilcekova, EPD Clarity, s.r.o.

Verification type
Independent verification of the declaration and data, according to ISO14025:2006
Internal: ☐
External: ☑

Verified by
Yazan Badour



The owner of the declaration shall be liable for the underlying information and evidence.
EPD Square shall not be liable with respect to manufacturer, life cycle assessment data and evidence.

System boundaries

Cradle to gate with options, modules C1-C4, module D and additional modules A4, A5.

Modules declared and geographical scope

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	✓	✓	✓	✓	✓	ND	ND	ND	ND	ND	ND	ND	✓	✓	✓	✓	✓
Geographic scope	CN	CN	CN	EU	EU	ND	ND	ND	ND	ND	ND	ND	EU	EU	EU	EU	EU

Not declared = ND.

Description of organization

Nordic Tools is a manufacturer and a distributor of tools and tile backer/ membrane boards with main focus on the Nordic countries of Europe.

Product information

Product name

Aqualex Tile backer board

Product description

The Aqualex Tile backer board is made of an XPS foam core reinforced on both surfaces with fiberglass and cement mortar. It has the properties of light weight, low water absorption, vapor permeability, good compressive strength, etc.

Product application

It is widely used as an inherently watertight board on walls and floors in houses or hotels, especially in wet areas such as bathrooms, shower rooms, and other places that need to be insulated and waterproofed.

Technical specifications

Properties	Standard	Rating
Thermal Conductivity (> 5yrs)	BS EN 13164	0.030-0.036 WatmK
Compressive Strength (10% deflection)	EN 826	300 Kpa++
Bond Strength	AS/NZS 2588	401 N
Maximum Tile Loading Weight	CERAM121107	62kg/m^2
Flexural Strength	ASTM C203	2.05 + 0.02 Mpa
Water Vapour Permeability (Sd)	DIN EN 12086	1.5 m
Resistance to body impact	ETAG003	3 x 120N/m
Bending Stiffness,El(20mm/30mm)	EN 12089	285 kNmm^2/mm 399 kNmm^2/mm
Working temperature range	N/A	-50℃ to +80℃

Normative regulations

The products are manufactured in accordance with the following standard: EN 13164

Geographical scope

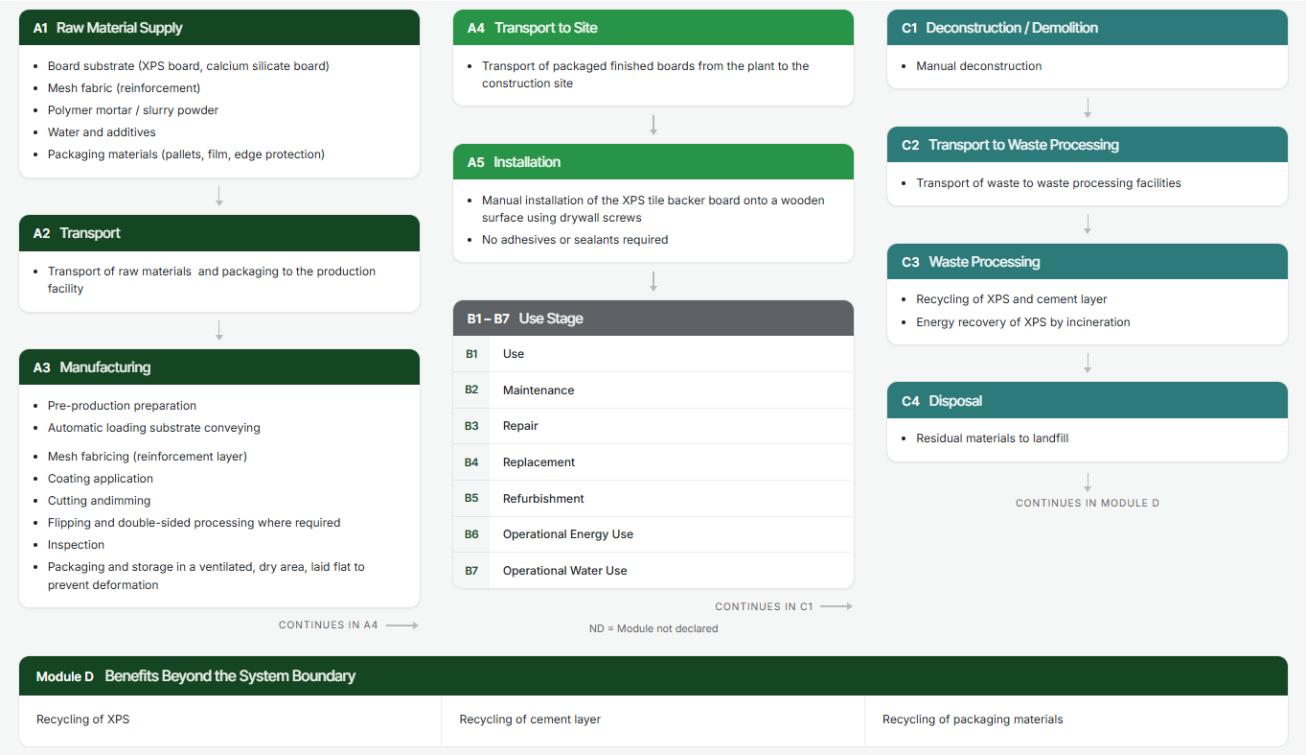
Europe

Product contents information

Product components	Weight, kg	Post-consumer material, weight-%	Renewable material, weight-%
XPS	0,28	0	0
Cementitious binder	0,91	0	0
Mineral fillers	1,06	0	0
Latex binder	0,06	0	0
Glass fibre mesh	0,22	0	0
Water	0,75	0	0
TOTAL	3,28	0	0

Packaging materials	Weight, kg	Weight-% (versus the product)
Cardboard	0,02	0,61
Plastic film	0,01	0,30
Wooden pallets	0,13	3,96
TOTAL	0,16	4,87

Manufacturing process



Life cycle assessment

Cut-off criteria

The study does not exclude any modules or processes which are stated mandatory in the reference standard 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. Drywall screws used during installation are excluded from this study, as their contribution is considered negligible relative to the declared unit and falls within the cut-off criteria applied in this LCA.

Allocation, estimations, and assumptions

The results presented in this EPD are based on production data from the single manufacturing site of Nanjing Banarta New Materials Co.,Ltd covering one year of production. Since production takes place at only one site, the results are considered directly representative of the declared product manufactured there. The values per 1 m² (12 mm thickness) of product used in this study are calculated based on the total product weight relative to annual production. As several product types are manufactured at the plant, allocation is based on the share of the declared product's annual production volume relative to the plant's total annual production volume. According to this ratio, the plant's total annual energy consumption, packaging materials, and generated waste are allocated to the declared product. The resulting product output is subsequently normalized to 1 m², and the corresponding quantity of product is used in the calculations.

Database(s) and LCA software

This EPD has been created using One Click LCA Pre-Verified EPD Generator. Ecoinvent v3.11 and One Click LCA databases were used as sources of environmental data.

LCA scenarios and additional technical information

Module A1

This module includes the extraction and processing of all raw materials. It covers upstream energy use, raw material extraction, processing, and internal handling prior to transport to the plant. Within the product stage accurate data has been used. In the case of absence in the database, it was modelled as close to reality as possible using proxy, representative datapoint.

Module A2

The transportation impacts considered include exhaust emissions resulting from transportation of all raw materials from suppliers to production plant as well as the environmental impacts of production of the used fuel. Transport distances and vehicle types (16-32 metric ton lorry) are based on supplier-specific data.

Module A3

Module A3 covers on-site processes related to the production and packaging of Aqualex Tile backer board. The environmental impacts considered for the production stage cover the manufacturing of the production materials and fuels used by machines. The environmental impacts of this stage have been calculated using the most recent data applicable to the factory. The data is from 2025. The study considers the losses of main raw materials occurring during the manufacturing process. These processes were modelled based on primary data collection. At the plant, electricity and diesel are allocated based on annual consumption. The waste is considered to transfer to the waste treatment facility for recycling. Direct process emissions were also taken into account.

Manufacturing energy scenario (A3)

Electricity data source and quality	Market for electricity, medium voltage (Reference product: electricity, medium voltage)
Electricity CO_2 eq. / kWh	0,76
Energy data source and quality	Diesel, burned in building machine (Reference product: diesel, burned in building machine)
Diesel CO_2 eq. / MJ	0,1

Module A4

The considered transportation impacts include exhaust emissions resulting from transportation of final products to construction site as well as the environmental impacts of production of the used fuel. Transport modes and distances were based on the manufacturer's logistics records covering the period from January 2025 to December 2025.

Transportation scenario (A4)

Vehicle type used for transport	Transport, freight, sea, container ship, heavy fuel oil, Ecoinvent 3.11
Distance to the construction site	21779 km
Capacity utilization	100%
Capacity utilization factor	1

Module A5

Module A5 includes processes related to the installation of products on the construction site. The installation is done manually on wooden surface with drywall screws, this means that energy consumption is negligible. Installation losses are assumed to be 4%. This module accounts for packaging waste, with cardboard, plastic film and wooden pallets sent to recycling, incineration as well as landfill. Drywall screws used during installation are excluded from this study, as their contribution is considered negligible relative to the declared unit.

Module C1

The energy and use of natural resources during deconstruction are considered negligible; dismantling is assumed to be carried out manually with basic hand tools and no significant auxiliary inputs. It is assumed that 100% of waste is collected.

Module C2

Following removal, materials are collected as mixed construction and demolition waste and transported by lorry representing the most common transport method for construction and demolition waste (Transport, freight, lorry, >32 metric ton, diesel, EURO 6). Transport distances are assumed as 250 km to recycling facility, 150 km to energy-recovery plants, and 50 km to landfill according to Gervasio, H. and Dimova, S., JRC Technical Report: Life Cycle Assessment (LCA) Model for Buildings, 2018.

Module C3

At end of life, it is assumed that the cement layer and the XPS core of the panel are manually separated on-site. Based on the weighted average recovery rate for construction and demolition (C&D) waste, derived from the Nordic Council of Ministers' report TemaNord 2023:544 ("Reuse, recycling and recovery of construction and demolition waste in the Nordic countries"), it was estimated that 44% of the cement layer is recycled. According to Plastics Europe (2020), it is estimated that 59% of XPS is incinerated and 9% is recycled.

Module C4

It is assumed that 56% of the cement layer and 32% of XPS core will be sent to landfill.

End of life (C1, C3, C4)

	Value	Unit
Collected separately	0	kg
Collected as mixed construction waste	3,28	kg
Reuse	0	kg
Recycling	1,35	kg
Energy recovery	0,16	kg
To landfill	1,77	kg

Module D

Module D accounts for the declared benefits associated with recycling of cement and recycling as well as incineration of XPS layer. The benefits associated with the recycling and incineration of packaging materials were also considered in this module.

Data quality

Specific data on the product composition are provided by the manufacturing plant. The data represents the production of the declared product and was collected for EPD development in the year of study. Background data is based on different LCA databases. The data quality information has been provided according to the requirements of EN 15941. The data assessment was done using the Product Environmental Footprint Category Rules. The data has been collected internally, considering the latest available average production amounts and measurements during the time period of 2025. In accordance with EN 15804, Annex E, E.2, the quality of the relevant data is generally good, with no data classified as low or very low quality. Time representativeness is very good, as the difference between the validity period of all data used and the reference year does not exceed two years. Geographical representativeness is very good for electricity data and one raw material, good for transport to waste processing in the EOL, treatment of cement layer, and fair for all other data. Technical representativeness is very good for electricity and waste treatment, good for most of raw materials and transportation data, and fair for some of raw materials and recycling of polystyrene.

LCA results

Results are presented per 1 m^2 with 12 mm thickness (Declared Unit) of the product. Estimated impact results are only relative statements which do not indicate the end points of the impact categories, exceeding threshold values, safety margins or risks.

Core environmental impact indicators – EN 15804+A2

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP-total	kg CO_2 eq.	3,14E+00	7,41E-01	2,21E-01	0,00E+00	4,58E-02	5,05E-01	2,10E-02	-2,65E-01
GWP-fossil	kg CO_2 eq.	3,19E+00	7,40E-01	1,74E-01	0,00E+00	4,57E-02	5,05E-01	2,10E-02	-2,59E-01
GWP-biogenic	kg CO_2 eq.	-4,61E-02	0,00E+00	4,61E-02	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-5,56E-03
GWP-LULUC	kg CO_2 eq.	1,80E-03	3,98E-04	9,01E-05	0,00E+00	1,71E-05	4,82E-06	6,61E-06	-2,40E-04
ODP	kg CFC-11 eq.	4,62E-08	1,04E-08	2,34E-09	0,00E+00	1,04E-09	8,45E-11	3,17E-10	-3,39E-09
AP	mol H^+ eq.	1,51E-02	2,17E-02	1,50E-03	0,00E+00	1,11E-04	7,17E-05	8,05E-05	-1,40E-03
EP-freshwater	kg P eq.	4,83E-04	2,63E-05	2,30E-05	0,00E+00	3,34E-06	1,52E-06	1,02E-06	-1,09E-04
EP-marine	kg N eq.	4,48E-03	5,41E-03	4,08E-04	0,00E+00	2,92E-05	3,78E-05	8,59E-05	-2,11E-04
EP-terrestrial	mol N eq.	3,45E-02	6,01E-02	3,86E-03	0,00E+00	3,17E-04	3,45E-04	3,37E-04	-2,16E-03
POCP	kg NMVOC eq.	1,19E-02	1,63E-02	1,16E-03	0,00E+00	1,86E-04	8,74E-05	1,24E-04	-8,20E-04
ADP-M&M	kg Sb eq.	6,98E-05	7,57E-07	2,84E-06	0,00E+00	1,36E-07	2,81E-08	1,75E-08	-2,63E-07
ADP-fossil	MJ	4,77E+01	9,06E+00	2,33E+00	0,00E+00	6,94E-01	6,76E-02	2,79E-01	-5,05E+00
WDP	m^3	1,39E+00	2,61E-02	5,89E-02	0,00E+00	4,03E-03	1,09E-02	1,23E-02	-1,41E-01

***GWP-total**: Global Warming Potential; **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; See "additional requirements" for indicator given as PO4 eq. **EP-marine**: Eutrophication potential, fraction of nutrients reaching freshwater end compartment; **EP-terrestrial**: Eutrophication potential, Accumulated Exceedance; **POCP**: Formation potential of tropospheric ozone; **ADP-M&M**: Abiotic depletion potential for non-fossil resources (minerals and metals); **ADP-fossil**: Abiotic depletion potential for fossil resources; **WDP**: Water deprivation potential, deprivation weighted water consumption*

Additional (optional) environmental impact indicators – EN 15804+A2

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
PM	Disease incidence	1,62E-07	2,19E-08	7,98E-09	0,00E+00	4,54E-09	1,14E-09	1,85E-09	-1,18E-08
IRP	kBq U235 eq.	1,03E-01	3,92E-03	4,38E-03	0,00E+00	7,77E-04	3,15E-04	1,72E-04	-5,34E-02
ETP-fw	CTUe	7,23E+01	5,78E+00	5,07E+00	0,00E+00	5,97E-01	3,04E+00	2,33E-01	-3,31E+00
HTP-c	CTUh	7,92E-10	1,57E-10	4,12E-11	0,00E+00	7,62E-12	3,63E-11	2,27E-12	-2,98E-11
HTP-nc	CTUh	4,41E-08	2,20E-09	1,97E-09	0,00E+00	4,46E-10	1,29E-09	9,16E-11	-1,21E-09
SQP	Dimensionless	7,95E+00	6,60E-01	4,47E-01	0,00E+00	6,97E-01	3,75E-02	5,57E-01	-9,10E-01

***PM**: Particulate matter emissions; **IRP**: Ionising radiation, human health; **ETP-fw**: Ecotoxicity (freshwater); **ETP-c**: Human toxicity, cancer effects; **HTP-nc**: Human toxicity, non-cancer effects; **SQP**: Land use related impacts / soil quality*

Use of natural resources

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
RPEE	MJ	2,07E+00	6,93E-02	-3,84E-01	0,00E+00	1,07E-02	4,27E-03	2,70E-03	-5,04E-01
RPEM	MJ	3,88E-01	0,00E+00	-3,88E-01	0,00E+00	0,00E+00	0,00E+00	0,00E+00	5,29E-02
TPE	MJ	2,46E+00	6,93E-02	-7,73E-01	0,00E+00	1,07E-02	4,27E-03	2,70E-03	-4,51E-01
NRPE	MJ	3,45E+01	9,07E+00	2,46E+00	0,00E+00	6,94E-01	4,53E+00	3,75E+00	-5,14E+00
NRPM	MJ	1,13E+01	0,00E+00	-5,55E-01	0,00E+00	0,00E+00	-7,37E+00	-3,47E+00	1,13E+00
TRPE	MJ	4,58E+01	9,07E+00	1,91E+00	0,00E+00	6,94E-01	-2,84E+00	2,79E-01	-4,00E+00
SM	kg	8,13E-03	4,31E-03	5,43E-04	0,00E+00	2,93E-04	1,40E-04	7,14E-05	3,01E-02
RSF	MJ	5,64E-03	9,45E-06	2,26E-04	0,00E+00	3,87E-06	1,20E-06	1,49E-06	4,83E-08
NRSF	MJ	1,33E-01	0,00E+00	5,33E-03	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
W	m^3	3,25E-02	5,97E-04	9,40E-04	0,00E+00	9,37E-05	1,53E-04	-4,97E-05	-3,25E-03

***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; **NRSF**: Use of non-renewable secondary fuels; **W**: Use of net fresh water*

End of life – Waste

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
HW	kg	1,52E-01	1,21E-02	6,94E-03	0,00E+00	1,01E-03	4,93E-03	3,29E-04	-1,27E-02
NHW	kg	2,83E+00	1,76E-01	5,83E-01	0,00E+00	2,06E-02	1,76E-01	2,33E-01	-6,10E-01
RW	kg	3,18E-05	9,56E-07	1,33E-06	0,00E+00	1,91E-07	8,01E-08	4,19E-08	-1,37E-05

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

End of life – Output flows

Parameter	Unit	A1-A3	A4	A5	C1	C2	C3	C4	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	2,81E-03	0,00E+00	2,38E-02	0,00E+00	0,00E+00	1,35E+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	4,09E-02	0,00E+00	0,00E+00	8,14E-01	0,00E+00	0,00E+00
ETE	MJ	0,00E+00	0,00E+00	5,66E-02	0,00E+00	0,00E+00	1,12E+00	0,00E+00	0,00E+00

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

Information describing biogenic carbon content at factory gate

Biogenic carbon content	Value	Unit
Biogenic carbon content in product	0	kg C
Biogenic carbon content in the accompanying packaging	0,0126	kg C

Specific data (GWP-GHG) and data variation for A1-A3

Specific data and data variation	Value-%
Specific data	11,18
Variation - product	0
Variation - site	0

Hazardous substances

☑ The product does not contain any REACH SVHC substances in amounts greater than 0,1 %.

Contact information

Programme operator
EPD Square, s.r.o.
Lermontovova 3, 811 05
Bratislava, Slovak Republic
Email: info@epdsquare.com

EPD owner
Nordic Tools AS
Industriveien 26
1481 Hagan
Contact person: Peder Skjærsveen
Email: post@nordictools.no
Website: www.nordictools.no

Author of Life Cycle Assessment (LCA)
Ludmila Vaculova Meciarova, Silvia Vilcekova, EPD Clarity, s.r.o.
Email: meciarova@epdclarity.com, vilcekova@epdclarity.com
Website: www.epdclarity.com

EPD verifier
Yazan Badour
Email: yazan.badour.phd@gmail.com

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Nordic Council of Ministers' report TemaNord 2023:544, "Reuse, recycling and recovery of construction and demolition waste in the Nordic countries"

Annex

Environmental impacts – GWP-GHG

Indicator	Unit	A1-A3	A4	A5	C1	C2	C3	C4	D
GWP - GHG	kg CO_2 eq.	3,19E+00	7,41E-01	1,75E-01	0,00E+00	4,58E-02	5,05E-01	2,10E-02	-2,60E-01

***GWP- GHG**: Global Warming Potential, greenhouse gases*