ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Norstal – welded plates (columns, beams) – 80

Norstal Steel Structure S.R.L.

EPD HUB, HUB-3956

Published on 12.09.2025, last updated on 12.09.2025, valid until 11.09.2030

Life Cycle Assessment study has been performed in accordance with EN 15804+A2 & ISO 14025, EPD Hub PCR version 1.1 (5 Dec 2023) and JRC characterization factors EF 3.1.

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Norstal Steel Structure S.R.L.
Address	236-238 Libertatii str., Apahida, Cluj County, Romania
Contact details	office.norstal@gmail.com
Website	www.norstal.ro

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804:2012+A2:2019/AC:2021 and ISO 14025
PCR	EPD Hub Core PCR Version 1.1, 5 Dec 2023 EN 17662 Execution of steel structures and aluminium structures
Sector	Construction product
Category of EPD	Sister EPD
Parent EPD number	HUB-0641
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	eng. Tudor Iuga, eng. Lavinia Ienciu, greengineers (MINIMIT SRL)
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Haiha Nguyen, as an authorized verifier acting for EPD Hub Limited

This EPD is intended for business-to-business and/or business-to-consumer communication. The manufacturer has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programs may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804 and if they are not compared in a building context.

PRODUCT

Product name	Norstal – welded plates (columns, beams) – 80
Place of production	Apahida, Cluj County, Romania
Period for data	January 2022 to December 2022
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	Not Relevant

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of steel structures
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	1,13E+00
GWP-total, A1-A3 ($kgCO_2e$)	1,084E+00
Secondary material, inputs (%)	96,1
Secondary material, outputs (%)	95
Total energy use, A1-A3 (kWh)	4,97
Net freshwater use, A1-A3 (m^3)	0,02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

We are a steel structure producer that runs high-quality custom projects for clients. The main areas of activities include steel structures production, steel design and logistics. Norway, Finland and Sweden are the main export markets where we are delivering our products.

Norstal produces a broad range of steel structures for: residential and office buildings, shopping centres, industrial buildings, sport halls, hangars, fish farms and many others.

PRODUCT DESCRIPTION

Steel structures for the construction of buildings are manufactured from 80% recycled welded steel plates (HSQ, welded plates columns and beams, etc), starting from hot-rolled steel raw products and subsequently processed through cutting and welding (with various technologies).

Further information can be found at: www.norstal.ro.

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	100	Europe

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	0.0129

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of steel structures
Mass per declared unit	1 kg
Reference service life	100 years

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances.

SUBSTANCES, VOC

The product does not contain any VOC substances.

SUBSTANCES, A20 LIST COMPLIANCE (BREEAM):

The product is free from substances listed on the A20 Environmental Toxin List (Annex A), in accordance with BREEAM requirements.

PRODUCT LIFE-CYCLE

SYSTEM BOUNDARY

This EPD covers the life-cycle modules listed in the following table.

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		
×	×	×	×	×	MND	MND	MND	MND	MND	MND	MND	×	×	×	×	×		
Raw materials	Transport	Manufacturing	Transport	Assembly	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy	Operational water	Deconstruction/	Transport	Waste processing	Disposal	Reuse	Recovery	Recycling

Modules not declared = MND. Modules not relevant = MNR

MANUFACTURING AND PACKAGING (A1-A3)

The environmental impacts considered for the product stage cover the manufacturing of raw materials used in the production as well as packaging materials and other ancillary materials. Also, fuels used by machines, and handling of waste formed in the production processes at the manufacturing facilities are included in this stage. The study also considers the material losses occurring during the manufacturing processes as well as losses during electricity transmission.

A market-based approach is used in modelling the electricity mix utilized in the factory.

The steel raw materials go through a cutting process (band saw or plasma cutting) according to the project requirements. The components are assembled and then the final components are welded and cleaned. The welding process consumes welding wires and gases. The manufacturing process also requires natural gas, electricity, and water. All steel waste produced at the plant is directed to recycling. During transportation, to protect the product from the factory gate to the construction site, wood spacers are used.

The use of green energy in manufacturing is demonstrated through contractual instruments (GOs, RECs, etc.), and its use is ensured throughout the validity period of this EPD.

TRANSPORT AND INSTALLATION (A4-A5)

Transportation impacts that occurred from final product delivery to the construction site (A4) cover fuel direct exhaust emissions, environmental impacts of fuel production, as well as related infrastructure emissions.

The transportation distance was calculated based on the weighted average distances for the 2022 deliveries, from the production plant to the construction sites, as 2016.67 km with lorries as transportation method. Vehicle capacity utilization volume factor is 100% which means full load (in reality, it may vary but as role of transportation emissions in total results is small, the variety in load is negligible). Transportation does not cause losses as products are protected properly. Installation does not cause losses as well, due to the tailor-made structures and thorough factory quality checks.

Density of the product is 7850 kg/m3, however bulk density varies depending on product type and thickness. Therefore, the average loss due to the openings both in the product itself and between the nested products is assumed as 10%; accordingly, bulk density is calculated as an approximate 7000 kg/m3.

Installation consumes 10 kWh of energy for assembling 1 tone of product. This means that 0.01 kWh is required to assemble 1 kilogram of steel beam. Further, steel bolts and fasteners are also included in the modelling. Wood used in transport has been conservatively assumed to be incinerated for energy.

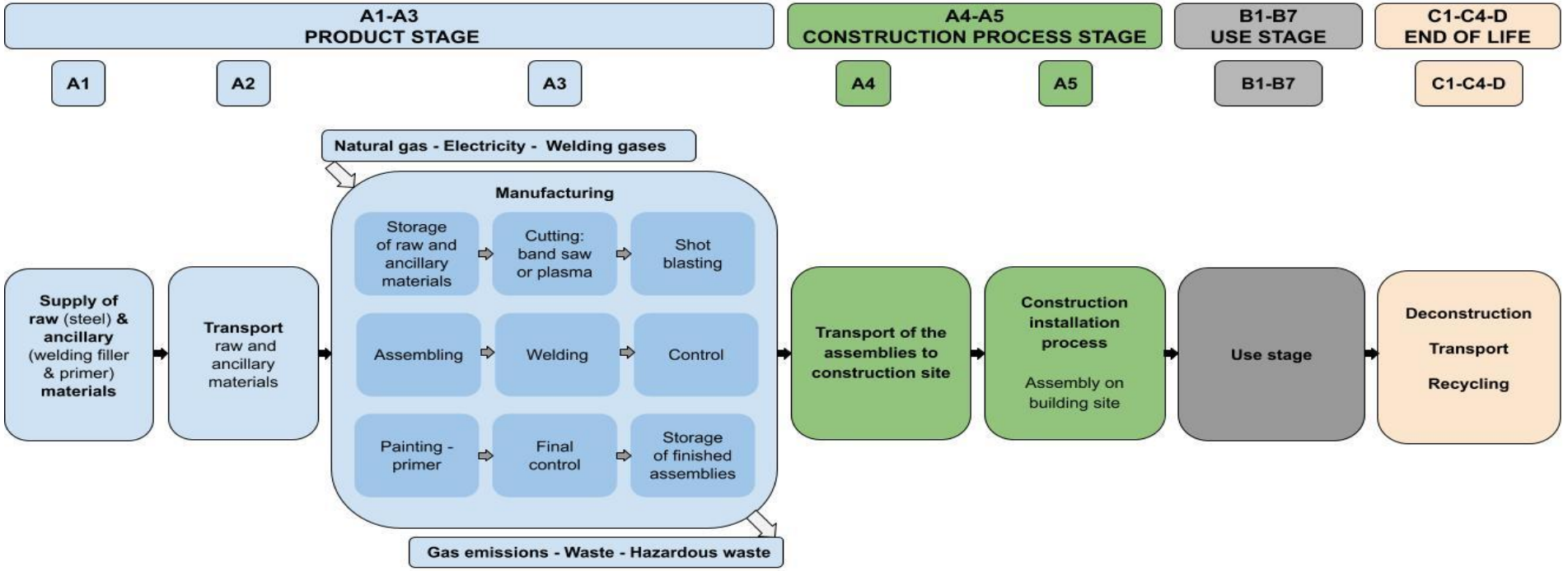
PRODUCT USE AND MAINTENANCE (B1-B7)

This EPD does not cover the use phase.
Air, soil, and water impacts during the use phase have not been studied

PRODUCT END OF LIFE (C1-C4, D)

Demolition is assumed to consume 0,01 kWh/kg of product. The source of energy is diesel fuel used by construction machines (C1). It is assumed that 100% of the waste is collected and transported to the waste treatment center. Transportation distance to treatment is assumed as 50 km and the transportation method is assumed to be lorry (C2). Approximately 95% of steel is assumed to be recycled based on World Steel Association, 2020 (C3). It is assumed that the remaining 5 % of steel is taken to landfill for final disposal (C4). Module D also claim the benefit of avoided production of energy due to the incineration with energy recovery of wood spacer.

MANUFACTURING PROCESS AND SYSTEM BOUNDARY



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.

VALIDATION OF DATA

Data collection for production, transport, and packaging was conducted using time and site-specific information, as defined in the general information section on page 1 and 2. Upstream process calculations rely on generic data as defined in the Bibliography section. Manufacturer-provided specific and generic data were used for the product's manufacturing stage. The analysis was performed in One Click LCA EPD Generator, with the 'Cut-Off, EN 15804+A2' allocation method, and characterization factors according to EN 15804:2012+A2:2019/AC:2021 and JRC EF 3.1.

ALLOCATION, ESTIMATES AND ASSUMPTIONS

Allocation is required if some material, energy, and waste data cannot be measured separately for the product under investigation. All allocations are done as per the reference standards and the applied PCR. In this study, allocation has been done in the following ways:

Data type	Allocation
Raw materials	Partly allocated by mass or volume
Packaging material	Allocated by mass or volume
Ancillary materials	Allocated by mass or volume
Manufacturing energy and waste	Allocated by mass or volume

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	Not Relevant

N/A

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1 environmental data sources follow the methodology 'allocation, Cut-off, EN 15804+A2'.

ENVIRONMENTAL IMPACT DATA

The 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, EF 3.1

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP – total[1)]	kg CO_2e	1,07E+00	1,68E-03	1,59E-02	1,084E+00	2,23E-01	7,04E-02	MND	MND	MND	MND	MND	MND	MND	3,61E-03	5,38E-03	2,15E-02	3,12E-04	-2,74E-01
GWP – fossil	kg CO_2e	1,06E+00	1,68E-03	6,31E-02	1,13E+00	2,23E-01	2,31E-02	MND	MND	MND	MND	MND	MND	MND	3,60E-03	5,38E-03	2,15E-02	3,12E-04	-2,74E-01
GWP – biogenic	kg CO_2e	9,02E-04	3,63E-07	-4,73E-02	-4,64E-02	0,00E+00	4,73E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-6,71E-05
GWP – LULUC	kg CO_2e	9,74E-04	7,47E-07	1,44E-04	1,12E-03	8,36E-05	1,37E-05	MND	MND	MND	MND	MND	MND	MND	3,69E-07	2,41E-06	2,65E-05	1,78E-07	-4,13E-05
Ozone depletion pot.	kg CFC_{-11}e	1,03E-08	2,50E-11	2,17E-09	1,25E-08	4,48E-09	2,48E-10	MND	MND	MND	MND	MND	MND	MND	5,52E-11	7,95E-11	2,89E-10	9,04E-12	-1,00E-09
Acidification potential	mol H^+e	4,14E-03	5,71E-06	1,13E-03	5,28E-03	7,18E-04	1,12E-04	MND	MND	MND	MND	MND	MND	MND	3,25E-05	1,84E-05	2,55E-04	2,21E-06	-1,15E-03
EP-freshwater[2)]	kg Pe	5,04E-04	1,30E-07	3,16E-05	5,35E-04	1,50E-05	8,64E-06	MND	MND	MND	MND	MND	MND	MND	1,04E-07	4,19E-07	1,38E-05	2,57E-08	-1,20E-04
EP-marine	kg Ne	9,14E-04	1,88E-06	5,02E-04	1,42E-03	2,44E-04	3,44E-05	MND	MND	MND	MND	MND	MND	MND	1,51E-05	6,03E-06	5,66E-05	8,44E-07	-2,42E-04
EP-terrestrial	mol Ne	9,55E-03	2,04E-05	5,44E-03	1,50E-02	2,65E-03	3,56E-04	MND	MND	MND	MND	MND	MND	MND	1,65E-04	6,56E-05	6,39E-04	9,21E-06	-2,64E-03
POCP ("smog")[3)]	kg NMVOCe	3,60E-03	8,43E-06	1,36E-03	4,97E-03	1,17E-03	1,13E-04	MND	MND	MND	MND	MND	MND	MND	4,93E-05	2,70E-05	1,89E-04	3,30E-06	-8,93E-04
ADP-minerals & metals[4)]	kg Sbe	4,94E-06	4,67E-09	1,10E-06	6,05E-06	6,15E-07	1,43E-07	MND	MND	MND	MND	MND	MND	MND	1,29E-09	1,50E-08	1,52E-06	4,96E-10	-2,46E-06
ADP-fossil resources	MJ	1,35E+01	2,43E-02	1,13E+00	1,46E+01	3,22E+00	2,81E-01	MND	MND	MND	MND	MND	MND	MND	4,72E-02	7,81E-02	2,88E-01	7,66E-03	-2,55E+00
Water use[5)]	m^3e depr.	7,12E-01	1,20E-04	7,92E-02	7,92E-01	1,65E-02	7,14E-03	MND	MND	MND	MND	MND	MND	MND	1,18E-04	3,86E-04	5,18E-03	2,21E-05	-4,49E-02

1) GWP = Global Warming Potential; 2) EP = Eutrophication potential. Required characterisation method and data are in kg P-eq. Multiply by 3,07 to get PO4e; 3) POCP = Photochemical ozone formation; 4) ADP = Abiotic depletion potential; 5) 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.

USE OF NATURAL RESOURCES

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Renew. PER as energy[8)]	MJ	1,76E+00	3,35E-04	1,50E+00	3,26E+00	5,25E-02	-4,14E-01	MND	MND	MND	MND	MND	MND	MND	2,99E-04	1,07E-03	5,37E-02	7,39E-05	-2,04E-01
Renew. PER as material	MJ	0,00E+00	0,00E+00	3,78E-01	3,78E-01	0,00E+00	-3,78E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of renew. PER	MJ	1,76E+00	3,35E-04	1,88E+00	3,64E+00	5,25E-02	-7,92E-01	MND	MND	MND	MND	MND	MND	MND	2,99E-04	1,07E-03	5,37E-02	7,39E-05	-2,04E-01
Non-re. PER as energy	MJ	1,35E+01	2,43E-02	1,13E+00	1,46E+01	3,22E+00	2,81E-01	MND	MND	MND	MND	MND	MND	MND	4,72E-02	7,81E-02	2,88E-01	7,66E-03	-2,55E+00
Non-re. PER as material	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Total use of non-re. PER	MJ	1,35E+01	2,43E-02	1,13E+00	1,46E+01	3,22E+00	2,81E-01	MND	MND	MND	MND	MND	MND	MND	4,72E-02	7,81E-02	2,88E-01	7,66E-03	-2,55E+00
Secondary materials	kg	9,61E-01	1,04E-05	5,23E-04	9,61E-01	1,39E-03	1,49E-03	MND	MND	MND	MND	MND	MND	MND	1,96E-05	3,32E-05	3,52E-04	1,93E-06	1,40E-01
Renew. secondary fuels	MJ	1,41E-04	1,32E-07	1,30E-05	1,54E-04	1,76E-05	5,95E-06	MND	MND	MND	MND	MND	MND	MND	5,12E-08	4,22E-07	1,63E-05	3,99E-08	-2,10E-05
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	1,88E-02	3,59E-06	1,97E-03	2,07E-02	4,76E-04	1,38E-04	MND	MND	MND	MND	MND	MND	MND	3,12E-06	1,15E-05	1,53E-04	7,97E-06	-7,29E-04

8) PER = Primary energy resources.

END OF LIFE – WASTE

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Hazardous waste	kg	5,64E-01	4,10E-05	3,56E-03	5,68E-01	4,67E-03	6,22E-03	MND	MND	MND	MND	MND	MND	MND	5,25E-05	1,32E-04	1,88E-03	8,46E-06	-8,54E-02
Non-hazardous waste	kg	2,51E+00	7,61E-04	1,58E-01	2,67E+00	9,34E-02	1,32E-01	MND	MND	MND	MND	MND	MND	MND	7,15E-04	2,45E-03	6,80E-02	1,93E-04	-7,05E-01
Radioactive waste	kg	4,03E-05	5,24E-09	4,37E-06	4,47E-05	9,62E-07	4,68E-07	MND	MND	MND	MND	MND	MND	MND	5,12E-09	1,67E-08	6,26E-07	1,17E-09	1,76E-06

END OF LIFE – OUTPUT FLOWS

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Components for re-use	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling	kg	0,00E+00	0,00E+00	1,04E-01	1,04E-01	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	9,50E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,76E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	4,16E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy – Heat	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	2,35E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

ENVIRONMENTAL IMPACTS – EN 15804+A1, CML / ISO 21930

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Global Warming Pot.	kg CO_2e	1,06E+00	1,67E-03	6,30E-02	1,12E+00	2,21E-01	2,32E-02	MND	MND	MND	MND	MND	MND	MND	3,59E-03	5,35E-03	2,14E-02	3,09E-04	-2,72E-01
Ozone depletion Pot.	kg CFC_{-11}e	8,79E-09	1,99E-11	1,90E-09	1,07E-08	3,56E-09	2,11E-10	MND	MND	MND	MND	MND	MND	MND	4,37E-11	6,34E-11	2,38E-10	7,18E-12	-1,07E-09
Acidification	kg SO_2e	3,36E-03	4,36E-06	8,06E-04	4,17E-03	5,45E-04	8,68E-05	MND	MND	MND	MND	MND	MND	MND	2,29E-05	1,40E-05	2,05E-04	1,64E-06	-9,32E-04
Eutrophication	kg PO_4^3e	5,73E-04	1,06E-06	1,99E-04	7,73E-04	1,38E-04	1,86E-05	MND	MND	MND	MND	MND	MND	MND	5,34E-06	3,41E-06	2,98E-05	5,21E-07	-1,60E-04
POCP (“smog”)	kg C_2H_4e	3,70E-04	3,89E-07	5,00E-05	4,20E-04	5,12E-05	9,09E-06	MND	MND	MND	MND	MND	MND	MND	1,71E-06	1,25E-06	1,22E-05	1,55E-07	-1,34E-04
ADP-elements	kg Sbe	4,79E-06	4,56E-09	1,09E-06	5,89E-06	6,00E-07	1,41E-07	MND	MND	MND	MND	MND	MND	MND	1,26E-09	1,46E-08	1,52E-06	4,86E-10	-2,46E-06
ADP-fossil	MJ	1,07E+01	2,40E-02	8,28E-01	1,16E+01	3,16E+00	2,49E-01	MND	MND	MND	MND	MND	MND	MND	4,68E-02	7,70E-02	2,46E-01	7,58E-03	-2,68E+00

ADDITIONAL INDICATOR – GWP-GHG

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
GWP-GHG[9)]	kg CO_2e	1,07E+00	1,68E-03	6,33E-02	1,13E+00	2,23E-01	2,31E-02	MND	MND	MND	MND	MND	MND	MND	3,61E-03	5,38E-03	2,15E-02	3,12E-04	-2,74E-01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. In addition, the characterisation factors for the flows – CH4 fossil, CH4 biogenic and Dinitrogen monoxide – were updated. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterisation factor for biogenic CO2 is set to zero.

THIRD-PARTY VERIFICATION STATEMENT

VERIFICATION PROCESS FOR THIS EPD

This EPD has been verified in accordance with ISO 14025 by an independent, third-party verifier by reviewing results, documents and compliancy with reference standard, ISO 14025 and ISO 14040/14044, following the process and checklists of the program operator for:

- This Environmental Product Declaration
- The Life-Cycle Assessment used in this EPD
- The digital background data for this EPD

Why does verification transparency matter? Read more online

This EPD has been generated by One Click LCA EPD generator, which has been verified and approved by the EPD Hub.

THIRD-PARTY VERIFICATION STATEMENT

I hereby confirm that, following detailed examination, I have not established any relevant deviations by the studied Environmental Product Declaration (EPD), its LCA and project report, in terms of the data collected and used in the LCA calculations, the way the LCA-based calculations have been carried out, the presentation of environmental data in the EPD, and other additional environmental information, as present with respect to the procedural and methodological requirements in ISO 14025:2010 and reference standard.

I confirm that the company-specific data has been examined as regards plausibility and consistency; the declaration owner is responsible for its factual integrity and legal compliance.

I confirm that I have sufficient knowledge and experience of construction products, this specific product category, the construction industry, relevant standards, and the geographical area of the EPD to carry out this verification.

I confirm my independence in my role as verifier; I have not been involved in the execution of the LCA or in the development of the declaration and have no conflicts of interest regarding this verification.

HaiHa Nguyen, as an authorized verifier acting for EPD Hub Limited

12.09.2025

VERIFIED ISO 14025

ANNEX A – A20 ENVIRONMENTAL TOXIN LIST (BREEAM)

Checklist A20

Table 55: Environmental toxin list

PRODUCT GROUP	CHEMICALS TO AVOID For more information of the listed substances and other substances to be aware of, see www.erdetfarlig.no or www.miljodirektoratet.no/kjemikaliesok	DOCUMENTATION (to be completed for each project)
Building materials		
Building boards	Arsenic, Lead, Brominated flame retardants (HBCD, TBBPA), Phthalates (DEHP), Chromium, Octyl-/Nonylphenol	
Vinyl or PVC flooring	Phthalates (DEHP), Bisphenol A, Lead, Arsenic, Brominated flame retardants (HBCD, TBBPA), medium-chained chlorinated paraphins (short-chain chlorinated paraphins are prohibited)	
Wallpaper (vinyl-/wet room wallpaper and fibreglass wallpaper)	Brominated flame retardants (HBCD, TBBPA), Phthalates (DEHP) ,, Lead, Arsenic and medium-chained chlorinated paraffins	
Carpets	Lead, Brominated flame retardants (HBCD, TBBPA), Chlorinated paraffins, Chromium , Octyl-/Nonylphenol, PFOS/PFOA/PFCA,	
Preservative treated wood	Arsenic, Chromium, Creosote	
XPS (extruded polystyrene), EPS (expanded polystyrene) Cellular rubber insulation	Brominated flame retardants (HBCD, TBBPA) (flame retardants penta-, octa- og deca-BDE are prohibited)	
Polycarbonate sheets	All polycarbonate contains Bisphenol A	
Windows/ exterior doors	Bisphenol A, Lead, Brominated flame retardants (HBCD, TBBPA), Phthalates (DEHP), chlorinated paraphins, PFOS/PFOA, Octyl-/Nonylphenol	
Chemical products		
Glue	Bisphenol A, Lead, chlorinated paraphins, Chromium, Octyl-/Nonylphenol, TCEP	
Fillers, sealants and foam	Bisphenol A, Phthalates (DEHP), chlorinated paraphins, Chromium, Octyl-/Nonylphenol , siloxan (D4/D5)	
Paint, stains and varnishes	Bisphenol A, Lead, Phthalates (DEHP), cadmium, chlorinated paraphins, Chromium, Octyl-/Nonylphenol, PFOS/PFOA/PFCA, siloxan (D4/D5)	

(Source: BREEAM 2016 New Construction Technical Manual, v1.2)