ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

Nanten HM Bio, Nanten HM Bio AR, Nanten HM Bio True Colors

Fescon Oy

EPD HUB, HUB-3466
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Life Cycle Assessment study has been performed in accordance with the requirements of EN 15804, EPD Hub PCR version 1.2 (24 Mar 2025) and JRC characterization factors EF 3.1.

Created with One Click LCA

GENERAL INFORMATION

MANUFACTURER

Manufacturer	Fescon Oy
Address	Hämeenkatu 9, 05820 Hyvinkää, Finland
Contact details	fescon@fescon.fi, nanten@fescon.fi
Website	www.fescon.fi

EPD STANDARDS, SCOPE AND VERIFICATION

Program operator	EPD Hub, hub@epdhub.com
Reference standard	EN 15804+A2:2019 and ISO 14025
PCR	EPD Hub Core PCR Version 1.2, 24 Mar 2025
Sector	Construction product
Category of EPD	Third party verified EPD
Parent EPD number	-
Scope of the EPD	Cradle to gate with options, A4-A5, and modules C1-C4, D
EPD author	Pirjo Isosaari, Fescon Oy
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Lucas Rodriguez, 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	Nanten HM Bio, Nanten HM Bio AR and Nanten HM Bio True Colors
Additional labels	Nanten HM Bio A-osa (Part A), Nanten HM Bio True Colors A-osa, Nanten HM Bio B-osa (Part B), Nanten HM Bio AR B-osa
Product reference	15005, 15006, 15009, 15090, 15091, 15093, 15094
Place of production	Fescon Oy Tuusula Factory, Tuusula, Finland
Period for data	Calendar year 2024
Averaging in EPD	Multiple products
Variation in GWP-fossil for A1-A3 (%)	−2
A1-A3 Specific data (%)	5,18%

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of product (A+B)
Declared unit mass	1 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	5,97E+00
GWP-total, A1-A3 ($kgCO_2e$)	5,95E+00
Secondary material, inputs (%)	10,8
Secondary material, outputs (%)	0
Total energy use, A1-A3 (kWh)	27,5
Net freshwater use, A1-A3 (m^3)	0,04

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Fescon is Finland's largest developer and manufacturer of mortar, sand, and coating products and a solution provider for the construction industry.

PRODUCT DESCRIPTION

Nanten HM Bio products are two-component high-solids epoxy lacquers designed for use as a primer, topcoat, and binder in trowel-applied floor coatings. Part A (resin) of the product is a reactive polymer component based on epoxy resin. Part B (curing agent /hardener) is a crosslinking component based on polyamines.

This EPD covers Nanten HM Bio and its varieties Nanten HM Bio AR and Nanten HM Bio True Colors. The standard Nanten HM Bio can be used as a binder and lacquer in Nanten HM Bio and HM Bio ESD coatings, but also a multi-purpose primer in Nanten epoxy and polyurethane coating systems. Nanten HM Bio AR provides the highest resistance to chemicals. Nanten HM Bio True Colors is a tinted product that gives floors a unique color.

TECHNICAL INFORMATION
Components: 1 kg of the product consists of 0,67 to 0,69 kg of Part A and 0,31 to 0,33 kg of Part B.
Consumption: 0,2 to 0,3 liters/m2 for primer, 0,35 to 0,45 liters/m2 for topcoat, ca. 1,3 liters/m2 as a binder for 4-mm thick trowel-applied coating.
Density: ca. 1,1 kg/l
Solids content: 86 %
Abrasion resistance: < 3000 mg
Capillary absorption and permeability to water: w < 0,1 kg/m2 x h0,5
Impact resistance: Class III ≥ 20 Nm
Adhesion strength by pull-off test: ≥ 1,5 N/mm2
Resistance to severe chemical attack: Class II
Reaction to fire: Class Bfl – s1
VOC content (EU Decopaint Directive, 2004/42/EC): ≤ 150 g/l
Bio-based materials: 25 to 35% of the product's mass, based on unverified supplier information.

PRODUCT STANDARDS
Nanten HM Bio, HM Bio AR, and HM Bio True Colors are CE-marked construction products that comply with the principles defined in EN 1504-2 Products and systems for the protection and repair of concrete structures. Essential characteristics are notified on the Declarations of Performance of the products.
proven by the Finnish M1 Emission Classification of Building Materials.

DELIVERY STATUS
Part A of Nanten HM Bio is delivered in a tin-plated steel pail of 10 liters or a steel drum of 200 liters (net contents). Part B is delivered in a plastic jerry can of 5 liters or a steel drum of 200 liters (net contents). Nanten HM Bio and HM Bio AR are clear, non-pigmented products. Nanten HM Bio True Colors is available in 10 Nanten colors and other colors on request.

Further information can be found at www.fescon.fi

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	< 1	Europe
Fossil materials	99 - 100	Europe
Bio-based materials	0	-

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	0,007

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of product (A+B)
Mass per declared unit	1 kg
Functional unit	-
Reference service life	-

SUBSTANCES, REACH - VERY HIGH CONCERN

The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

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		
x	x	x	x	x	MND	MND	MND	MND	MND	MND	MND	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

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

The main manufacturing processes of the product are mixing the ingredients in batch mode and packaging. The ingredients, consisting of epoxy resins, diluents, and additives, are loaded into an industrial high-speed disperser. The disperser is operated at different shear rates to obtain appropriate dispersing and mixing functions. Quality control tests are performed on each batch.

The finished Part A component is filled into a tin-plated steel pail or a steel drum. Part B is either filled into a polyethylene jerry can or delivered in a steel drum. The containers are placed on a wooden pallet and wrapped in polyethylene film for transportation to the customer or building site.

The manufacturing processes comply with the quality standard ISO 9001:2015, environmental standard ISO 14001:2025, and occupational health and safety standard ISO 45001:2018. The provisions outlined in the relevant regulations are adhered to. Waste formed in the manufacture is sent to a licensed waste management provider.

TRANSPORT AND INSTALLATION (A4-A5)

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

The main delivery modes of the product to customers are truck transportation and self-pick-up. Products sent to the customer (or directly to the building site; 48% of sales) have an average transportation distance of 302 km. The trucks are assumed to be in a full load. Products picked up by the customer (52% of sales) from the factory's warehouse are assumed to be transported to the installation site by a van. Transportation distance is assumed to be 50 km.

The product is installed manually. Part A and B are mixed at 2:1 (by volume). The mixture is poured on the substrate. Primer and topcoat are applied with a paint brush or roller. Sand-filled coating is leveled by a steel trowel or concrete trowel machine. The coating is allowed to cure and harden before use. Installation loss of 1% is assumed to result from improper draining of the product from containers. As a worst-case scenario, the lost product has not been properly hardened and needs to be incinerated as hazardous waste. Empty, dried containers can be returned to the organized collection points of packaging waste in the framework of the producer responsibility system.

PRODUCT USE AND MAINTENANCE (B1-B7)

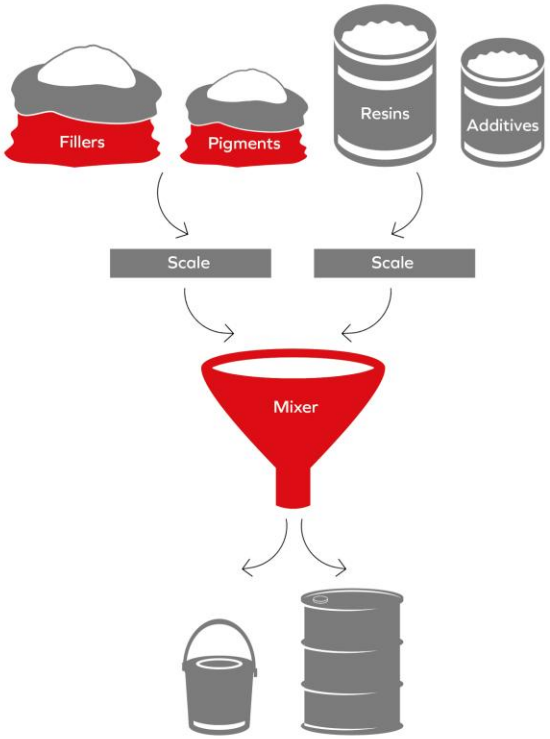
This EPD does not cover the use phase. Air, soil, and water impacts during the use phase have not been studied.

PRODUCT END OF LIFE (C1-C4, D)

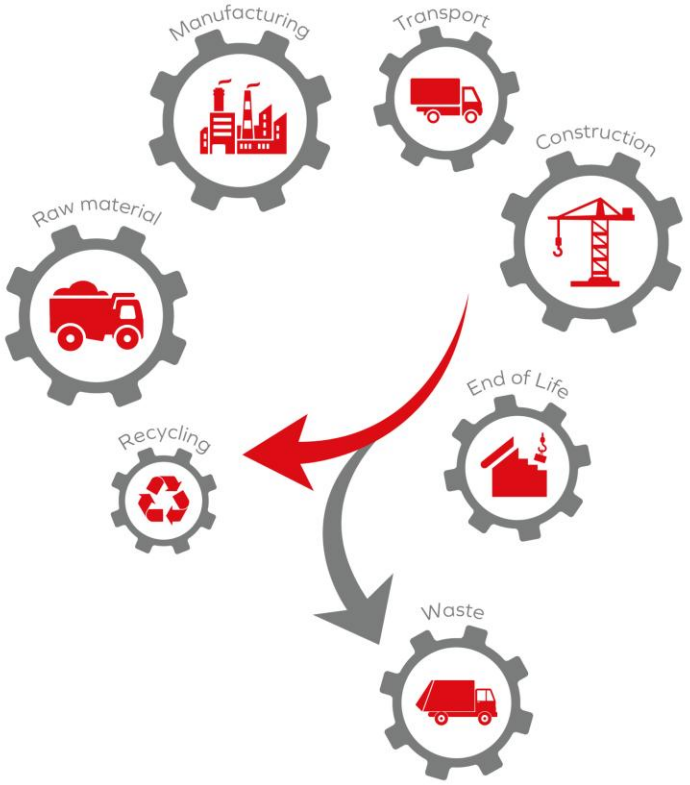
After application, solvents volatilize from the coating surface and pores. At the end of the product life cycle, the remaining solid coating material is strongly attached to the substrate and cannot be separated without great effort. Hence, the product is assumed to be demolished and crushed with concrete. In principle, the product does not contain hazardous compounds that could leach from the material and prevent concrete recycling according to the national end-of-waste criteria in Finland (VNa 466/2022). As a conservative approach and to simplify the calculation, however, it is assumed that the coating material is landfilled as inert waste. Benefits included in Module D are obtained from recycling and incineration of the packaging materials.

MANUFACTURING PROCESS

Manufacturing process - Coating products



Product life-cycle



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.

The next processes have not been included since its impact is not significant:

- Manufacture of equipment used in production, buildings or any other capital goods;
- Environmental impact from infrastructure, construction, production equipment, and tools that are not directly consumed in the production process.
- Personnel-related impacts, such as transportation to and from work.
- Research and development activities.
- Long-term emissions.

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	No allocation
Packaging material	Allocated by mass or volume
Ancillary materials	Not applicable
Manufacturing energy and waste	Allocated by mass or volume

Waste treatment scenarios for packaging waste were based on the most recent statistics of the European Union countries (Eurostat, 2022).

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	Multiple products
Grouping method	Representative product
Variation in GWP-fossil for A1-A3 (%)	−2%

This is an EPD of multiple products, based on a representative product. It covers Nanten HM Bio, Nanten HM Bio AR, and Nanten HM Bio True Colors. The products consist of similar materials. They are manufactured at the same site and with the same processes.

The average life-cycle impacts in the EPD are based on the product with the biggest production volume. This product has the highest GWP fossil for A1-A3, and the difference from the average in the lowest impact product is -2%. Contribution of the other modules (A4-A5, C1-C4) to the GWP fossil is less than 3% in each product; hence, variation in A1-A3 represents the entire life-cycle and product group covered in the EPD.

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

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	5,33E+00	2,05E-01	4,09E-01	5,95E+00	3,15E-02	1,21E-01	MND	MND	MND	MND	MND	MND	MND	3,10E-03	5,36E-03	0,00E+00	8,61E-03	-1,11E-01
GWP – fossil	kg CO_2e	5,33E+00	2,05E-01	4,34E-01	5,97E+00	3,15E-02	9,55E-02	MND	MND	MND	MND	MND	MND	MND	3,10E-03	5,36E-03	0,00E+00	8,61E-03	-1,20E-01
GWP – biogenic	kg CO_2e	0,00E+00	0,00E+00	-2,59E-02	-2,59E-02	0,00E+00	2,59E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	8,90E-03
GWP – LULUC	kg CO_2e	4,10E-03	9,71E-05	7,67E-04	4,96E-03	1,29E-05	5,62E-05	MND	MND	MND	MND	MND	MND	MND	3,18E-07	2,07E-06	0,00E+00	2,37E-06	-3,14E-05
Ozone depletion pot.	kg CFC-$_{11}$e	1,78E-07	2,97E-09	6,07E-09	1,87E-07	6,50E-10	2,15E-09	MND	MND	MND	MND	MND	MND	MND	4,75E-11	1,04E-10	0,00E+00	2,70E-10	-6,91E-10
Acidification potential	mol H^+e	2,12E-02	4,30E-03	2,39E-03	2,79E-02	7,87E-05	3,28E-04	MND	MND	MND	MND	MND	MND	MND	2,80E-05	1,74E-05	0,00E+00	9,49E-05	-4,97E-04
EP-freshwater[2)]	kg Pe	1,51E-03	9,18E-06	1,38E-04	1,66E-03	2,98E-06	2,47E-05	MND	MND	MND	MND	MND	MND	MND	8,95E-08	3,69E-07	0,00E+00	1,44E-05	-4,95E-05
EP-marine	kg Ne	4,66E-03	1,10E-03	4,01E-04	6,16E-03	1,74E-05	7,65E-05	MND	MND	MND	MND	MND	MND	MND	1,30E-05	5,90E-06	0,00E+00	2,37E-05	-1,05E-04
EP-terrestrial	mol Ne	4,24E-02	1,22E-02	5,10E-03	5,98E-02	1,88E-04	7,25E-04	MND	MND	MND	MND	MND	MND	MND	1,42E-04	6,41E-05	0,00E+00	2,54E-04	-1,14E-03
POCP ("smog")[3)]	kg NMVOCe	2,20E-02	3,42E-03	1,42E-03	2,68E-02	1,19E-04	3,16E-04	MND	MND	MND	MND	MND	MND	MND	4,24E-05	2,80E-05	0,00E+00	1,40E-01	-4,08E-04
ADP-minerals & metals[4)]	kg Sbe	6,33E-05	3,09E-07	7,06E-06	7,06E-05	1,95E-07	8,83E-07	MND	MND	MND	MND	MND	MND	MND	1,11E-09	1,48E-08	0,00E+00	1,69E-08	-1,08E-06
ADP-fossil resources	MJ	1,05E+02	2,66E+00	5,66E+00	1,13E+02	4,42E-01	1,29E+00	MND	MND	MND	MND	MND	MND	MND	4,05E-02	7,77E-02	0,00E+00	2,00E-01	-1,26E+00
Water use[5)]	m^3e depr.	1,50E+00	9,17E-03	1,88E-01	1,70E+00	2,82E-03	1,93E-02	MND	MND	MND	MND	MND	MND	MND	1,01E-04	3,96E-04	0,00E+00	1,21E-03	-2,05E-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.

ADDITIONAL (OPTIONAL) ENVIRONMENTAL IMPACT INDICATORS – EN 15804+A2

Impact category	Unit	A1	A2	A3	A1-A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Particulate matter	Incidence	2,11E-07	1,07E-08	3,20E-08	2,54E-07	2,33E-09	3,18E-09	MND	MND	MND	MND	MND	MND	MND	7,95E-10	5,34E-10	0,00E+00	1,44E-09	-7,80E-09
Ionizing radiation[6)]	kBq U235e	3,76E-01	1,53E-03	7,81E-02	4,56E-01	6,63E-04	5,35E-03	MND	MND	MND	MND	MND	MND	MND	1,80E-05	9,00E-05	0,00E+00	2,67E-04	1,66E-03
Ecotoxicity (freshwater)	CTUe	1,98E+02	2,57E-01	2,27E+00	2,00E+02	8,25E-02	2,38E+00	MND	MND	MND	MND	MND	MND	MND	2,23E-03	9,41E-03	0,00E+00	1,34E+00	-2,85E-01
Human toxicity, cancer	CTUh	7,92E-09	3,94E-11	4,91E-10	8,45E-09	7,27E-12	1,14E-10	MND	MND	MND	MND	MND	MND	MND	3,19E-13	8,83E-13	0,00E+00	3,71E-12	-1,98E-11
Human tox. non-cancer	CTUh	5,35E-08	1,03E-09	7,09E-09	6,16E-08	2,75E-10	8,13E-10	MND	MND	MND	MND	MND	MND	MND	5,05E-12	5,04E-11	0,00E+00	8,94E-09	-9,49E-10
SQP[7)]	-	1,67E+01	1,11E+00	4,01E+00	2,18E+01	3,35E-01	2,96E-01	MND	MND	MND	MND	MND	MND	MND	2,84E-03	7,82E-02	0,00E+00	4,92E-01	-3,87E-01

6) 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; 7) SQP = Land use related impacts/soil quality.

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	5,14E+00	2,50E-02	1,28E+00	6,44E+00	9,66E-03	-8,74E-02	MND	MND	MND	MND	MND	MND	MND	2,57E-04	1,24E-03	0,00E+00	4,21E-03	-4,51E-02
Renew. PER as material	MJ	0,00E+00	0,00E+00	2,26E-01	2,26E-01	0,00E+00	-2,26E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	-4,90E-02
Total use of renew. PER	MJ	5,14E+00	2,50E-02	1,50E+00	6,66E+00	9,66E-03	-3,14E-01	MND	MND	MND	MND	MND	MND	MND	2,57E-04	1,24E-03	0,00E+00	4,21E-03	-9,40E-02
Non-re. PER as energy	MJ	8,48E+01	2,66E+00	5,21E+00	9,27E+01	4,42E-01	6,30E-01	MND	MND	MND	MND	MND	MND	MND	4,06E-02	7,77E-02	0,00E+00	2,00E-01	-1,26E+00
Non-re. PER as material	MJ	2,03E+01	0,00E+00	7,70E-02	2,04E+01	0,00E+00	-2,78E-01	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	-2,01E+01	0,00E+00
Total use of non-re. PER	MJ	1,05E+02	2,66E+00	5,29E+00	1,13E+02	4,42E-01	3,52E-01	MND	MND	MND	MND	MND	MND	MND	4,06E-02	7,77E-02	0,00E+00	-1,99E+01	-1,26E+00
Secondary materials	kg	1,08E-01	1,15E-03	3,90E-02	1,48E-01	2,92E-04	1,56E-03	MND	MND	MND	MND	MND	MND	MND	1,68E-05	3,35E-05	0,00E+00	6,66E-05	6,12E-02
Renew. secondary fuels	MJ	5,81E-04	6,91E-06	7,82E-03	8,41E-03	2,83E-06	8,60E-05	MND	MND	MND	MND	MND	MND	MND	4,40E-08	4,23E-07	0,00E+00	1,20E-06	-9,03E-06
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	4,06E-02	2,51E-04	4,15E-03	4,50E-02	7,59E-05	4,87E-04	MND	MND	MND	MND	MND	MND	MND	2,68E-06	1,15E-05	0,00E+00	-2,42E-03	-3,47E-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	4,40E-01	3,70E-03	2,85E-01	7,29E-01	1,02E-03	1,16E-02	MND	MND	MND	MND	MND	MND	MND	4,51E-05	1,15E-04	0,00E+00	3,38E-04	-3,60E-02
Non-hazardous waste	kg	1,18E+01	5,81E-02	1,03E+00	1,29E+01	1,82E-02	1,88E-01	MND	MND	MND	MND	MND	MND	MND	6,15E-04	2,28E-03	0,00E+00	3,07E+00	-3,42E-01
Radioactive waste	kg	9,68E-05	3,74E-07	1,84E-05	1,16E-04	1,65E-07	1,37E-06	MND	MND	MND	MND	MND	MND	MND	4,41E-09	2,22E-08	0,00E+00	6,53E-08	5,24E-07

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	0,00E+00	0,00E+00	0,00E+00	7,04E-02	MND	MND	MND	MND	MND	MND	MND	0,00E+00	0,00E+00	0,00E+00	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	1,26E-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	1,90E-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	1,07E-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

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	5,29E+00	2,04E-01	4,35E-01	5,93E+00	3,13E-02	9,54E-02	MND	MND	MND	MND	MND	MND	MND	3,08E-03	5,33E-03	0,00E+00	8,53E-03	-1,19E-01
Ozone depletion Pot.	kg CFC_{-11}e	1,56E-07	2,36E-09	5,04E-09	1,64E-07	5,18E-10	1,87E-09	MND	MND	MND	MND	MND	MND	MND	3,76E-11	8,26E-11	0,00E+00	2,15E-10	-6,67E-10
Acidification	kg SO_2e	1,75E-02	3,42E-03	1,92E-03	2,28E-02	6,36E-05	2,67E-04	MND	MND	MND	MND	MND	MND	MND	1,97E-05	1,32E-05	0,00E+00	7,62E-05	-4,03E-04
Eutrophication	kg PO_4^3e	2,60E-02	4,04E-04	5,62E-04	2,70E-02	2,27E-05	2,78E-04	MND	MND	MND	MND	MND	MND	MND	4,60E-06	3,33E-06	0,00E+00	2,03E-05	-7,57E-05
POCP (“smog”)	kg C_2H_4e	2,74E-03	1,76E-04	1,30E-04	3,05E-03	7,05E-06	3,33E-05	MND	MND	MND	MND	MND	MND	MND	1,47E-06	1,23E-06	0,00E+00	4,94E-06	-5,84E-05
ADP-elements	kg Sbe	5,13E-05	3,03E-07	7,00E-06	5,86E-05	1,92E-07	7,27E-07	MND	MND	MND	MND	MND	MND	MND	1,08E-09	1,45E-08	0,00E+00	1,64E-08	-1,08E-06
ADP-fossil	MJ	9,87E+01	2,63E+00	4,51E+00	1,06E+02	4,31E-01	1,20E+00	MND	MND	MND	MND	MND	MND	MND	4,03E-02	7,62E-02	0,00E+00	1,96E-01	-1,30E+00

ENVIRONMENTAL IMPACTS – 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	5,33E+00	2,05E-01	4,34E-01	5,97E+00	3,15E-02	9,56E-02	MND	MND	MND	MND	MND	MND	MND	3,10E-03	5,36E-03	0,00E+00	8,61E-03	-1,20E-01

9) This indicator includes all greenhouse gases excluding biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product as defined by IPCC AR 5 (IPCC 2013). In addition, the characterisation factors for the flows - CH4 fossil, CH4 biogenic and Dinitrogen monoxide - were updated in line with the guidance of IES PCR 1.2.5 Annex 1. This indicator is identical to the GWP-total of EN 15804:2012+A2:2019 except that the characterization factor for biogenic CO2 is set to zero.

SCENARIO DOCUMENTATION

Manufacturing energy scenario documentation

Scenario parameter	Value
Electricity data source and quality	Market for electricity, medium voltage
Electricity CO2e / kWh	0,14
District heating data source and quality	District Heat, Finland,
District heating CO2e / kWh	0,0934

Transport scenario documentation A4

Scenario parameter	Value
Fuel and vehicle type	Diesel truck (52%), petrol van (48%)
Average transport distance, km	Truck 302 km, van 50 km
Capacity utilization (including empty return) %	100
Bulk density of transported products	1
Volume capacity utilization factor	1

Installation scenario documentation A5

Scenario information	Value
Ancillary materials for installation /kg	0
Water use / m³	0
Other resource use / kg	0
Quantitative description of energy type (regional mix) and consumption during the installation process / kWh or MJ	0
Waste materials on the building site before waste processing, generated by the product's installation (specified by type) / kg	Packaging waste: 0,0963 kg, installation loss: 0,01 kg
Output materials (specified by type) as result of waste processing at the building site e.g. collection for recycling, for energy recovery, disposal (specified by route) / kg	Recycling: steel 0,0629 kg, wood 0,0049 kg, PE plastics 0,0026 kg. Energy recovery: wood 0,0044 kg, PE plastics 0,0028 kg. Landfill: steel 0,012 kg, wood 0,0052 kg, PE plastics 0,0015 kg. Hazardous waste incineration: 0,01 kg.
Direct emissions to ambient air, soil and water / kg	0

End of life scenario documentation

Scenario information	Value
Collection process – kg collected separately	0,86
Disposal (total) – kg for final deposition	0,86
Scenario assumptions e.g. transportation	0,14 kg of solvents evaporated. 50 km truck transportation to disposal.

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.

Lucas Rodriguez, as an authorized verifier acting for EPD Hub Limited.

19.06.2025