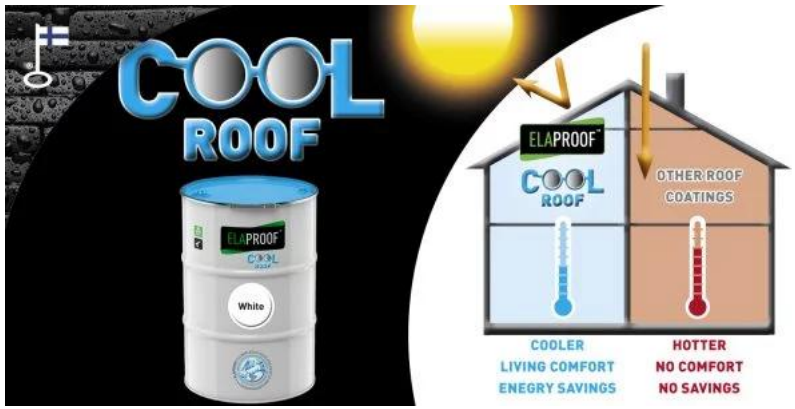
ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH EN 15804+A2 & ISO 14025

ElaProof Cool Roof
Build Care Oy



EPD HUB, HUB-6015
Published on 16.04.2026, last updated on 16.04.2026, valid until 15.04.2031

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	Build Care Oy
Address	Kelatie 6, 01450 Vantaa, Finland
Contact details	info@buildcare.fi
Website	https://www.elaproof.com/

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 1.2, 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	Virpi Rahikkala, Build Care Ltd.
EPD verification	Independent verification of this EPD and data, according to ISO 14025: ☐ Internal verification ☑ External verification
EPD verifier	Sarah Curpen as an authorized verifier for EPD Hub

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	ElaProof Cool Roof
Additional labels	ElaProof Cool Roof coloured
Product reference	6160W
Place(s) of raw material origin	Europe
Place of production	Vantaa, Finland
Place(s) of installation and use	Europe
Period for data	Jan2025- Dec2025
Averaging in EPD	No grouping
Variation in GWP-fossil for A1-A3 (%)	0
GTIN (Global Trade Item Number)	6430068691287
NOBB (Norwegian Building Product Database)	-
A1-A3 Specific data (%)	3,67

ENVIRONMENTAL DATA SUMMARY

Declared unit	1 kg of wet coating
Declared unit mass	1 kg
Mass of packaging	0,0324 kg
GWP-fossil, A1-A3 ($kgCO_2e$)	1,09
GWP-total, A1-A3 ($kgCO_2e$)	1,05
Secondary material, inputs (%)	14,8
Secondary material, outputs (%)	62,4
Total energy use, A1-A3 (kWh)	4,02
Net freshwater use, A1-A3 (m^3)	0,02

PRODUCT AND MANUFACTURER

ABOUT THE MANUFACTURER

Build Care Ltd. manufactures patented ElaProof products for professional and consumer use. Company's highest quality products are designed for protection and coating of structures and different building materials both indoor and outdoor. The product offering includes, among others, radon and indoor air leak protection, coating of roofs and floors, terraces, balconies, concrete structures and protecting various materials e.g., bitumen, brick, concrete, metal, and wood.

PRODUCT DESCRIPTION

This EPD covers ElaProof Cool Roof of roof coatings for outdoor use for professionals.

ElaProof Cool Roof is water-based polyacrylic emulsion, an economical one-component product. It is iso-cyanate- and solvent free, and easy to use with high-pressure spray-gun, with viscosity level around 5t to 15t mPaS. ElaProof Cool Roof has pH around 9, so it is slightly alkaline with very low odour. ElaProof Cool Roof is coming in a colour of white to bring the highest reflecting properties to the product. The product is designed to increase energy output on solar-panelled roofs and to decrease thermal input on solar reflection. The recipe can be adjusted with different colour if needed, but tested values are colour white as reference. ElaProof Cool Roof is an easy-to-use, single-component product formulated with carefully selected raw materials to ensure high performance and durability. ElaProof Cool Roof incorporates 10% post-consumer recycled glass beads, reducing the requirement for virgin mineral aggregates. Additionally, the product contains an 8% cellulose-water suspension (with a 3% biogenic fibre content), utilizing renewable bio-based raw materials to replace fossil-based alternatives.

ElaProof Cool Roof is a next-generation reflective roof coating designed to reduce heat absorption and lower indoor temperatures, helping building owners cut cooling energy use and extend roof lifespan. While solar reflectance keeps the roof from getting hot by reflecting sunlight, high thermal emittance works to cool it down by radiating absorbed heat. Combined with high solar reflectance, high thermal emittance keeps rooftops 28–33°C (50 F+) cooler than conventional materials during peak summer. High thermal emittance (>0.80) is essential for cooling because it allows roofs to shed absorbed heat back into the atmosphere, preventing that heat from entering the building.

ElaProof Cool Roof has been independently rated by the Cool Roof Rating Council (CRRC) — a first for a Nordic product — validating its reflective properties and energy performance benefits.

ElaProof Cool Roof has values mentioned below from the initial CRRC testing at ACE Laboratories:
Solar Reflectance = 0.82 (0.823)
Thermal Emittance = 0.92
Initial SRI = 104

ElaProof Cool Roof is vapor-open, water- and frost-resistant, and isocyanate-free for safer application and environmental performance. Our product is listed in the Nordic Ecolabelling construction product database and can be used in Swan-labelled buildings.

ElaProof Cool Roof is elastic and therefore withstands structure movements, both moisture and temperature. The reason the product has solid contain around 64 v/v% added the fact it is air drying with water evaporation, is then recommended to spread wet layer as 2 mm thickness (around 2,5 L/m2) to get at least 0,6 mm (< 1,0 mm) thick dry layer. The needed thickness can be spread with 2 layers.

Further information can be found at:
https://www.elaproof.com/

PRODUCT RAW MATERIAL MAIN COMPOSITION

Raw material category	Amount, mass %	Material origin
Metals	0	-
Minerals	24	Europe
Fossil materials	38	Europe
Bio-based materials	0,3	Europe
Water	37,7	Europe

BIOGENIC CARBON CONTENT

Product's biogenic carbon content at the factory gate

Biogenic carbon content in product, kg C	0,041
Biogenic carbon content in packaging, kg C	0,014

FUNCTIONAL UNIT AND SERVICE LIFE

Declared unit	1 kg of wet coating
Mass per declared unit	1 kg
Functional unit	-
Reference service life	25

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	ND	ND	ND	ND	ND	ND	ND	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

Not declared = ND.

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.

Manufacturing and packaging (A1-A3)

The manufacturing process involves a single-stage mixing of raw materials for approximately 1 hour at room temperature. A residual mix approach is used for the electricity profile (Finland, high voltage). Raw materials are delivered to the factory in Finland with transport distances (A2) modelled based on specific supplier locations (Lorry >32t, EURO 6).

The product is a water-based coating with a solid content of approximately 63 % (37 % water). Physical mass allocation based on production batches is applied to all process inputs. Energy consumption is calculated specifically per 1000 kg batch (approx. 40 kWh) and divided by the batch yield to ensure accurate environmental attribution without double counting.

Production losses are estimated at 2% and are accounted for in the mass balance. Equipment is cleaned with water, which is internally circulated to maximize resource efficiency. Final wastewater and production wastes are treated according to EN 15804+A2.

The product is packaged in HDPE barrels (50% recycled content) on wooden pallets. The End-of-Life (EoL) for packaging follows average EU scenarios (40% recycling, 37% incineration, and 23% landfill).

TRANSPORT AND INSTALLATION (A4-A5)

A4 Transport to site:

Transportation impacts from the production plant to the construction site cover direct fuel exhaust emissions, fuel production, and related infrastructure. According to the EPD Hub PCR, the average transportation

distance is assumed to be 800 km by lorry (>32t, EURO 6). Products are packaged to prevent material loss during transport.

A5 Installation:

The installation stage accounts for the environmental impacts of the coating application. The product has a solid content of approximately 63% (consistent with the 36% water content mentioned in A1-A3). During installation, the water content (0.37 kg per 1 kg of wet coating) evaporates, which is modelled as a direct emission to air. This explains the mass transition to a 0.63 kg dry film for the remaining life cycle stages (B-C).

The modelling of A5 includes:

- Energy: Electricity consumption for high-pressure spray equipment.
- Auxiliary materials: Tap water for cleaning tools after application.
- Waste and emissions: Treatment of wastewater from tool cleaning (municipal sewer system) and the disposal of packaging waste.
- Material loss: A spray application loss of 2% is accounted for in the mass balance.
- Waste transport: A 50 km transport distance by lorry is assumed for installation-related waste to the nearest treatment facility.

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)

C1 Deconstruction:
The product (0.63 kg dry film per declared unit) is a surface treatment applied to bitumen roofing. At the end-of-life, it is inseparable from the substrate. Following EN 15804+A2 (Section 6.3.4.5), the energy required for deconstruction is attributed to the primary roofing material, and the specific impact of the 0.63 kg coating is considered negligible (<1 % of the total deconstruction energy).

C2 Transport to waste processing:
The 0.63 kg of dry waste is assumed to be transported 100 km to a construction waste processing facility using a lorry (>32 t, EURO 6).

C3 Waste processing:
In Finland, bitumen-based construction waste is collected and crushed for use as a secondary raw material in asphalt production (Official Statistics of Finland: Waste Statistics). Therefore, 100 % of the 0.63 kg is modelled as material for recycling/recovery.

C4 Disposal:
As the material is fully recycled/recovered into asphalt production, the impact for final disposal (landfill) is zero.

D Benefits and loads beyond the system boundary:
Module D includes the benefits from the energy recovery of packaging materials (HDPE and wood) from stage A3, replacing fossil fuels in heat and power production. Additionally, the recycled coating-bitumen mix provides a benefit by replacing virgin bitumen in asphalt applications.

SYSTEM DIAGRAM

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 production of capital equipment, construction activities, and infrastructure, maintenance and operation of capital equipment, personnel-related activities, energy and water use related to company management and sales activities are excluded.

The following processes and materials are excluded from the life cycle assessment based on the cut-off criteria of the PCR:
- Minor Additives: Anti-foamer, dispersant, and thickener are excluded due to the lack of representative datasets and their negligible impact (totalling 0.7% of the product mass). To maintain mass balance, these minor components are modelled using the tap water dataset.
- Water Evaporation: The water content within the raw materials (binders) is included in the input stages (A1-A3). The evaporation of this water during the drying process in the installation stage (A5) is accounted for in the mass balance. Therefore, the End-of-Life stages (C1-C4) are calculated based on the dry solid content (0.63 kg per 1 kg of wet coating).
- Packaging and production waste: Small amounts of production-related auxiliary materials with a mass share of less than 1% are excluded.

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.

DATA QUALITY AND DATA QUALITY RATING (DQR)

The quality of the data used in this LCA is assessed as Good/Very Good, following the requirements of EN 15804+A2.

Data Category	TeR	GeR	TiR	P	DQR Average	Overall Rating
Raw Materials	3	2	2	2	2,25	Good
Packaging	2	2	2	2	2,0	Very Good
Transport	2	1	2	2	1,75	Very Good
Energy (A3)	1	1	1	1	1,0	Excellent
Waste Treatment	2	2	2	2	2,0	Very Good
Installation	2	1	2	2	1,75	Very Good
EoL	3	2	2	3	2,5	Good

The Data Quality Rating (DQR) is calculated based on the PEF (Product Environmental Footprint) methodology, where 1 is Excellent and 5 is Poor. Primary data for energy (A3) is based on specific batch measurements (Rating 1). Secondary data for raw materials includes representative proxies (TeR 3) to ensure methodological consistency with EN 15804+A2.

SUMMARY OF DATA QUALITY:

Technological representativeness: High. Specific primary data from the year 2025 was used for the manufacturing process (A3). Raw material profiles (A1) are modelled using the latest **Ecoinvent 3.10** database, ensuring up-to-date environmental impacts.

Geographical representativeness: High. The data is specific to the production site in Finland. Electricity reflects the Finnish residual/grid mix.

Time representativeness: High. Primary data covers a full 12-month production period (2025). Secondary data from Ecoinvent 3.10 is current.

Secondary data: Modelled using the latest **Ecoinvent 3.10** database.

Proxy data: Minor use of proxies, which are representative technological proxies (Wood pulp and Expanded glass, Germany) were used for MFC, and glass granulate as supplier-specific EN 15804+A2 data was unavailable. These proxies were selected based on matching production technology, chemical identity, and bulk density (530 kg/m³) to ensure methodological consistency and a conservative environmental profile.

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	No allocation
Ancillary materials	No allocation
Manufacturing energy and waste	Allocated by mass or volume

1. Manufacturing Energy (A3):
Energy consumption is estimated based on batch-specific production data. The total electricity used for a specific production batch is divided by the total yield (kg). Factory overhead energy (lighting/heating) is allocated by mass based on annual totals.
2. Transport (A4):
The average distance for transportation to the building site is assumed to be 800 km (lorry, 100% fill rate). This is a representative average for the primary market area according to the PCR.
3. Installation (A5):
- Material loss: A spray application loss of 2% is assumed.
- Water evaporation: The product is assumed to have a 63% solid content. The evaporation of water (0.37 kg per 1 kg of wet coating) is accounted for in the mass balance of stage A5.
- Cleaning: An estimate of 0.01 litres of tap water is used per kg of product for tool cleaning, and the wastewater is assumed to be treated via the municipal sewer system.

4. End-of-Life (C-modules):
- Waste transport: A conservative distance of 50 km is assumed for transporting construction waste to the nearest treatment facility.
- Collection rate: It is assumed that 100% of the dry-film coating is collected and treated as part of the substrate material (e.g., inert construction waste).

PRODUCT & MANUFACTURING SITES GROUPING

Type of grouping	No grouping
Grouping method	Not applicable
Variation in GWP-fossil for A1-A3, %	0

This EPD is product and factory specific.

LCA SOFTWARE AND BIBLIOGRAPHY

This EPD has been created using One Click LCA EPD Generator for EPD Hub V3 and EPD Process Certification v3.2.4. The LCA and EPD have been prepared according to the reference standards and ISO 14040/14044. The EPD Generator uses Ecoinvent v3.10.1/3.11/3.12 and One Click LCA databases as sources of environmental data. Allocation used in Ecoinvent 3.10.1/3.11/3.12 environmental data sources follow the methodology ‘allocation, Cut-off, EN 15804+A2‘.

- ISO 14025:2006 Environmental labels and declarations — Type III environmental declarations.
- EN 15804:2012+A2:2019 Sustainability of construction works — Environmental product declarations.
- EPD Hub Core PCR, version 1.0.
- One Click LCA LCI Database.
- EEA (2020) / One Click LCA EoL Scenarios (Source for end-of-life treatment rates and material-specific scenarios).
- One Click LCA (2024). LCI Database Documentation: End-of-life scenarios and average waste treatment statistics.
- Ecoinvent v3.10.1/3.11/3.12. (Source for technical LCI data like rock crushing and energy).

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	9,94E-01	3,43E-02	1,90E-02	1,05E+00	8,78E-02	1,16E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,52E-03	-2,96E-04	-8,29E-06	1,74E-02
GWP – fossil	kg CO_2e	9,95E-01	3,43E-02	6,50E-02	1,09E+00	8,77E-02	6,88E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,52E-03	1,56E-04	0,00E+00	1,91E-02
GWP – biogenic	kg CO_2e	-8,26E-03	7,42E-06	-4,62E-02	-5,45E-02	1,91E-05	4,67E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,42E-06	-4,52E-04	-8,29E-06	-1,75E-03
GWP – LULUC	kg CO_2e	6,74E-03	1,40E-05	1,96E-04	6,95E-03	3,41E-05	1,43E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,54E-06	4,60E-07	0,00E+00	1,61E-05
Ozone depletion pot.	kg $CFC\text{-}_{11}$e	1,53E-08	6,50E-10	2,41E-09	1,84E-08	1,83E-09	4,46E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,36E-10	2,60E-12	0,00E+00	8,07E-10
Acidification potential	mol H^+e	7,80E-03	9,19E-05	2,34E-04	8,13E-03	2,07E-04	1,84E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,54E-05	7,83E-07	0,00E+00	6,97E-05
EP-freshwater[2)]	kg Pe	2,45E-04	2,48E-06	1,79E-05	2,66E-04	6,13E-06	6,50E-06	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,55E-07	1,33E-07	0,00E+00	6,52E-06
EP-marine	kg Ne	9,94E-04	2,65E-05	5,17E-05	1,07E-03	5,43E-05	4,23E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,03E-06	1,38E-07	0,00E+00	8,82E-06
EP-terrestrial	mol Ne	9,11E-03	2,87E-04	5,25E-04	9,92E-03	5,87E-04	2,80E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,36E-05	1,21E-06	0,00E+00	7,44E-05
POCP ("smog")[3)]	kg NMVOCe	4,15E-03	1,50E-04	3,34E-04	4,63E-03	3,60E-04	1,21E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,67E-05	4,11E-07	0,00E+00	8,69E-05
ADP-minerals & metals[4)]	kg Sbe	1,24E-05	9,73E-08	5,18E-07	1,30E-05	2,51E-07	2,79E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,86E-08	3,76E-10	0,00E+00	1,09E-07
ADP-fossil resources	MJ	1,54E+01	5,09E-01	1,91E+00	1,78E+01	1,32E+00	4,18E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,78E-02	3,57E-03	0,00E+00	5,89E-01
Water use[5)]	m^3e depr.	7,36E-01	2,58E-03	3,70E-02	7,75E-01	6,74E-03	1,73E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,01E-04	9,14E-05	0,00E+00	-2,48E-03

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, 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
Particulate matter	Incidence	6,65E-08	3,37E-09	2,29E-09	7,22E-08	8,55E-09	1,86E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,35E-10	3,55E-12	0,00E+00	2,72E-10
Ionizing radiation[6)]	kBq U235e	3,38E-02	5,63E-04	2,29E-02	5,73E-02	1,59E-03	1,31E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,18E-04	9,68E-05	0,00E+00	3,31E-03
Ecotoxicity (freshwater)	CTUe	7,94E+00	6,36E-02	1,91E-01	8,19E+00	1,55E-01	2,08E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,15E-02	3,96E-04	0,00E+00	3,52E-02
Human toxicity, cancer	CTUh	3,93E-10	5,69E-12	5,98E-11	4,59E-10	1,46E-11	1,24E-11	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,09E-12	5,71E-14	0,00E+00	3,30E-12
Human tox. non-cancer	CTUh	9,09E-08	3,29E-10	6,17E-10	9,18E-08	8,51E-10	1,99E-09	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,32E-11	2,67E-12	0,00E+00	1,52E-10
SQP[7)]	-	3,88E+00	5,13E-01	4,06E+00	8,45E+00	1,33E+00	2,37E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,85E-02	6,14E-04	0,00E+00	2,26E-02

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	1,04E+00	7,89E-03	4,57E-01	1,50E+00	2,14E-02	-3,40E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,59E-03	8,13E-04	0,00E+00	-6,68E-03
Renew. PER as material	MJ	3,87E-02	0,00E+00	4,08E-01	4,47E-01	0,00E+00	-4,09E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-3,72E-02	-6,82E-04	-1,00E-02
Total use of renew. PER	MJ	1,08E+00	7,89E-03	8,65E-01	1,95E+00	2,14E-02	-7,49E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,59E-03	-3,64E-02	-6,82E-04	-1,67E-02
Non-re. PER as energy	MJ	1,23E+01	5,09E-01	1,95E-01	1,30E+01	1,32E+00	-1,26E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,78E-02	3,57E-03	0,00E+00	5,89E-01
Non-re. PER as material	MJ	3,10E+00	0,00E+00	1,50E+00	4,59E+00	0,00E+00	-1,56E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	-2,98E+00	-5,47E-02	-3,03E-01
Total use of non-re. PER	MJ	1,54E+01	5,09E-01	1,69E+00	1,76E+01	1,32E+00	-2,81E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,78E-02	-2,98E+00	-5,47E-02	2,86E-01
Secondary materials	kg	1,48E-01	2,19E-04	2,10E-02	1,69E-01	5,70E-04	3,46E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,23E-05	2,20E-06	0,00E+00	-7,39E-03
Renew. secondary fuels	MJ	2,27E-04	2,77E-06	1,42E-02	1,45E-02	7,18E-06	2,90E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	5,34E-07	2,39E-09	0,00E+00	7,91E-08
Non-ren. secondary fuels	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Use of net fresh water	m^3	2,19E-02	7,52E-05	9,74E-04	2,29E-02	1,94E-04	4,64E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,44E-05	2,92E-06	0,00E+00	-3,06E-06

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	1,23E-01	7,75E-04	2,99E-03	1,27E-01	1,91E-03	3,15E-03	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,42E-04	9,65E-06	0,00E+00	6,69E-04
Non-hazardous waste	kg	3,08E+00	1,51E-02	4,68E-01	3,56E+00	3,81E-02	5,70E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,83E-03	6,59E-04	0,00E+00	1,64E-01
Radioactive waste	kg	1,51E-05	1,39E-07	5,25E-06	2,05E-05	3,93E-07	4,52E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,92E-08	2,49E-08	0,00E+00	8,55E-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	ND	ND	ND	ND	ND	ND	ND	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	2,21E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	6,30E-01	0,00E+00	0,00E+00
Materials for energy rec	kg	0,00E+00	0,00E+00	1,98E-02	1,98E-02	0,00E+00	1,98E-02	ND	ND	ND	ND	ND	ND	ND	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	2,49E-01	ND	ND	ND	ND	ND	ND	ND	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	1,06E-01	ND	ND	ND	ND	ND	ND	ND	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	1,43E-01	ND	ND	ND	ND	ND	ND	ND	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	9,61E-01	3,40E-02	6,50E-02	1,06E+00	8,71E-02	6,86E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,47E-03	1,56E-04	0,00E+00	1,87E-02
Ozone depletion Pot.	kg $CFC_{-11}e$	1,31E-08	5,18E-10	1,96E-09	1,56E-08	1,46E-09	3,76E-10	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,08E-10	2,14E-12	0,00E+00	6,55E-10
Acidification	kg SO_2e	6,69E-03	7,18E-05	1,91E-04	6,96E-03	1,64E-04	1,55E-04	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,22E-05	6,63E-07	0,00E+00	6,10E-05
Eutrophication	kg PO_4^3e	2,75E-03	1,78E-05	4,35E-04	3,20E-03	4,10E-05	7,35E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,04E-06	9,20E-08	0,00E+00	2,40E-05
POCP (“smog”)	kg C_2H_4e	6,03E-04	6,97E-06	2,55E-05	6,36E-04	1,67E-05	1,43E-05	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,24E-06	3,98E-08	0,00E+00	6,46E-06
ADP-elements	kg Sbe	1,22E-05	9,49E-08	5,12E-07	1,28E-05	2,45E-07	2,75E-07	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,82E-08	3,72E-10	0,00E+00	1,08E-07
ADP-fossil	MJ	1,46E+01	5,00E-01	1,56E+00	1,67E+01	1,29E+00	3,93E-01	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,59E-02	1,86E-03	0,00E+00	5,30E-01

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	1,00E+00	3,43E-02	6,52E-02	1,10E+00	8,77E-02	6,89E-02	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,52E-03	1,56E-04	0,00E+00	1,91E-02

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.

SCENARIO DOCUMENTATION

DATA SOURCES

Manufacturing energy scenario documentation

1. Electricity, Finland, residual mix, 2024, Finland, One Click LCA, 0.55 kgCO2e/kWh

Transport scenario documentation - A4 (Transport resources)

1. Market for transport, freight, lorry >32 metric ton, EURO6, 800 km

Transport scenario documentation A4

Scenario parameter	Value
Capacity utilization (including empty return) %	50
Bulk density of transported products	1,11E+03
Volume capacity utilization factor	1

Installation at the building site (A5) - Scenario documentation

Scenario parameter	Value
Energy: type and consumption (MJ or kWh)	The energy consumption for installation (A5) is based on a representative scenario for professional high-pressure spray application. The electricity consumption is estimated at 0.02 kWh per 1 kg of wet coating. This reflects the average power demand of typical electric-powered pumping equipment used for this product type.
Water use (m^3)	The water use in the installation stage (A5) consists of tap water used for cleaning the application equipment (high-pressure spray-gun) after use. The estimated consumption is 0.01 kg of tap water per 1 kg of wet coating. The resulting wastewater is assumed to be discharged into the municipal sewer system for treatment.
Ancillary materials: type and mass (kg)	The amount of ancillary materials (such as protective tapes and films) used during the installation is considered negligible (<1% of total mass) and is excluded from the life cycle assessment according to the cut-off criteria of the PCR. No additional chemicals or primers are included as part of this declared unit's installation stage.
Waste materials: type and mass (kg)	The waste generated during the installation stage (A5) includes the disposal of packaging materials, application losses, and wastewater from equipment cleaning: - Packaging waste: HDPE barrels and wooden pallets used for the delivery of 1 kg of wet coating are collected for treatment (recycling/energy recovery) in A5. - Installation loss: A material loss of 2% (0.02 kg) of the wet coating is assumed during spray application and is treated as construction waste. - Wastewater: The cleaning water (0.01 kg) used for tool maintenance is discharged as municipal wastewater. All installation-related waste is assumed to be transported 50 km to the nearest waste treatment facility.

Waste materials: output routes	The waste materials generated during installation are processed according to the following output routes: - Packaging waste (HDPE and wood): Approximately 40% of the plastic packaging is collected for recycling, 37% for energy recovery (incineration), and 23% is directed to landfill, following average EU waste scenarios. Wooden pallets are assumed to be directed to energy recovery. - Installation loss (2%): The material lost during spray application is collected as mixed construction waste and transported 50 km to the nearest treatment facility for final disposal/recovery. - Wastewater: The cleaning water (0.01 kg) is discharged into the municipal sewer system for biological and chemical treatment.
Direct emissions (kg)	The product contains approximately 37 % water, which evaporates during the installation phase (A5). This evaporation is modeled as a direct emission to air (0.37 kg of water per 1 kg of wet coating). No other direct emissions to air, soil, or water occur during the application process. Other potential volatile emissions (VOCs) are considered negligible (<1% of total mass) and are excluded based on the cut-off criteria of the PCR.

End of life (C1-C4) - Scenario documentation

Scenario information	Value
Collection process: collected separately (kg)	-
Collection process: Mixed waste (kg)	C1: Deconstruction The product (0.63 kg per declared unit) is a surface treatment applied to bitumen roofing. At the end-of-life, it is inseparable from the substrate. The energy required for demolition (C1) is attributed to the primary roofing material, and the specific impact of the 0.63 kg coating is considered negligible (<1% of the total deconstruction energy), as per EN 15804+A2 (Section 6.3.4.5). C2: Transport to waste processing the 0.63 kg of waste is assumed to be transported 100 km to a construction waste processing facility using a lorry >32 metric ton, EURO 6. C3: Waste processing for reuse/recovery/recycling In Finland, bitumen-based construction waste is 100% collected and crushed for use as a secondary raw material in asphalt production (Official Statistics of Finland: Waste Statistics, 2022). Therefore, 100% of the 0.63 kg is modeled as material for recycling. C4: Disposal As the material is fully recycled into asphalt, the impact for final disposal (landfill) is zero.
Recovery: re-use (kg)	0
Recovery: recycling (kg)	0,63
Recovery: energy recovery (kg)	0
Disposal (kg)	0
Scenario assumptions e.g. transportation (mode, km) & other	100 km

THIRD-PARTY VERIFICATION STATEMENT

EPD Hub declares that this EPD is verified in accordance with ISO 14025 by an independent, third-party verifier. The project report on the Life Cycle Assessment and the report(s) on features of environmental relevance is filed at EPD Hub. EPD Hub PCR and ECO Platform verification checklist are used.

EPD Hub cannot identify any unjustified deviations from the PCR and EN 15804+A2 in the Environmental Product Declaration and its project report.

EPD Hub maintains its independence as a third-party body; it was not involved in the execution of the LCA or in the development of the declaration and has no conflicts of interest regarding this verification.

The company-specific data and upstream and downstream data have been examined as regards plausibility and consistency. The publisher is responsible for ensuring the factual integrity and legal compliance of this declaration.

The software used in creation of this LCA and EPD is verified by EPD Hub to conform to the procedural and methodological requirements outlined in ISO 14025:2010, ISO 14040/14044, EN 15804+A2, and EPD Hub Core Product Category Rules and General Program Instructions.

Verified tools

Tool verifier: Magaly Gonzalez Vazquez
Tool verification validity: 27 March 2025 - 26 March 2028

Sarah Curpen as an authorized verifier for EPD Hub Limited 16.04.2026