Environmental Product Declaration

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

Icopal Shingles Pro / Kattaolaatta Plano Pro

This is an EPD of multiple products, based on a representative product.

The following products are included:

For the Finnish market:	Plano Pro Luonnonruskea, Plano Pro Hiilenharmaa, Plano Pro Musta antrasiitti, Plano Pro Grafiitinmusta+/ , Plano Pro Tiilenpunainen/Shingel
For the Norwegian market:	Takshingel Pro Kullsort (*the representative product*), Takshingel Pro Teglröd, Takshingel Pro Grå med skygge,Takshingel Pro Skifer, Takshingel Pro Teglrød med skygge
For the Swedish market:	Shingel Plano Pro Grafitsvart, Plano Pro Tegelröd

From

BMI Finland

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	**EPD-IES-0015442**
Publication date:	2024-12-09
Valid until:	2029-12-08

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com.

General information

Programme information

Programme:	The International EPD® System
Address:	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
Website:	www.environdec.com
E-mail:	info@environdec.com

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
Core Product Category Rules (PCR): EN15804+A2
Product level PCR standard: PCR 2019:14 Construction products (1.3.4), c-PCR-032 Flexible sheets waterproofing
Programme operator horizontal PCR: PCR 2019:14 Construction products (EN 15804+A2) (1.3.4)
PCR review was conducted by: The Technical Committee of the International EPD System. See www.environdec.com for a list of members. Review chair: Claudia A. Peña, University of Concepción, Chile. The review panel may be contacted via the Secretariat www.environdec.com/contact
Life Cycle Assessment (LCA)
LCA accountability: Lars Åhsberg, BMI Group, Sweden
LCA/EPD Tool: R<THINK by Nibe, The Netherlands
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by individual verifier Third-party verifier: Pär Lindman, Miljögiraff Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier: ☐ Yes ☒ No

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but registered in different EPD programmes, or not compliant with EN 15804, may not be comparable. For two EPDs to be comparable, they must be based on the same PCR (including the same version number) or be based on fully-aligned PCRs or versions of PCRs; cover products with identical functions, technical performances and use (e.g. identical declared/functional units); have equivalent system boundaries and descriptions of data; apply equivalent data quality requirements, methods of data collection, and allocation methods; apply identical cut-off rules and impact assessment methods (including the same version of characterisation factors); have equivalent content declarations; and be valid at the time of comparison. For further information about comparability, see EN 15804 and ISO 14025.

Company information

Owner of the EPD:

BMI Finland
Jaakonkatu 2
FI-01620 Vantaa
Finland

myyntipalvelu@bmigroup.com
https://www.bmigroup.com/fi/

Contact
Lars Åhsberg, Nordic Environmental Manager, BMI Group
+46 (0)70 604 50 46, lars.ahsberg@bmigroup.com

Description of the organisation:

BMI Finland Oy with 80 years of experience is one of the leading suppliers of roofing and waterproofing solutions in Finland. The company offers a wide range of roofing and waterproofing products, including Icopal bitumen membranes and Ormax tile roofs. Additionally, BMI Finland includes waterproofing professional Icopal Roof Ltd, which complements the company's services in roofing contracts and maintenance. BMI Finland's headquarters and Icopal's bitumen membrane factory are located in Espoo, at Juvanmalmi. BMI Finland employs approximately 300 people.

BMI Finland is part of the BMI Group, which is Europe's largest roofing manufacturer. BMI Group has united some of the most trusted local brands in the industry to become Europe's largest supplier of pitched and flat roofing solutions, offering customers over 280 years of experience and innovation. BMI Group, headquartered in the United Kingdom under Standard Industries, benefits from the global support, reach, and resources of the parent company. With over 120 production sites across Europe, Africa, and Asia and over 9,600 employees worldwide, BMI Group is well positioned to provide unparalleled service to homeowners, designers, contractors, property owners, and developers. from us.

Product-related or management system-related certifications:

BMI Finland's operations are certified in accordance with ISO 9001:2015.

Name and location of production site:

The declared products are produced at BMI Finland Oy, production site in Espoo, Finland.
Address: Läntinen Teollisuuskatu 10, FI-2920 Espoo, Finland

For more information regarding the product or the organisation, see EPD owner’s website:
https://www.bmigroup.com/fi/

Product information

Product name: Icopal Shingles Pro

Product description and identification:

Icopal Shingles Pro is composed of molded, slate-coated bitumen tiles, combining the durability of stone with the flexibility of bitumen. These tiles feature a unique adhesive system, with adhesive surfaces precisely where the next row overlaps the previous one. The product is designed without a release foil, making installation easier and eliminating plastic waste. No additional energy is required for installation, as the tiles bond together seamlessly, forming a secure, joint-free unit.

The product is significantly lighter than many other roofing materials, making it suitable for installation on lighter roof structures. Icopal Shingles Pro feature stone granules on the surface, providing protection against UV radiation during warmer months and minimising the risk of snow sliding off the roof in winter.

This EPD is valid for multiple products, all similar in terms of content and field of use. Additionally, they are all produced in the same BMI manufacturing site in Espoo, Finland.

The results in this EPD are declared for **Takshingel Pro Kullsort** as the representative product. The selection of the representative product is based on the fact that it had the largest production volume among the included products during the last years.

The deviation of the declared GWP-GHG results for the included products for modules A1-A3 is less than 10% compared to the representative product.

Table. Included products, technical data and deviations in GWP-GHG (A1-A3)

Product - local name	Product - global name	Thickness (mm)	Weight (kg/m^2)	Deviation in GWP-GHG (%)
Takshingel Pro Kullsort (NO)	**Type S Roofshingle Black**	3.2	8.1	representative product
Takshingel Pro Teglröd (NO)	Type S Brick red	3.2	8.1	+0.4
Takshingel Pro Skifer (NO)	Type S Slate Antik black/grey	3.2	8.1	+0.3
Takshingel Pro Grå med skygge (NO)	Type S Shaded Grey	3.2	8.5	+2.4
Teglrød med skygge (NO)	Type S Shaded Brick red	3.2	8.5	+2
Plano Pro Grafiitinmusta+ (FIN) / Shingel Plano Pro Grafitsvart (SWE)	Plano Pro Graphite Black+	4	8.3	-8.5
Plano Pro Tiilenpunainen (FIN) / Shingel Plano Pro Tegelröd (SWE)	Plano Pro brick red	4	8.0	+0.4
Plano Pro Luonnonruskea (FIN)	Plano Pro natural brown	4	8.2	+1.4
Plano Pro Hiilenharmaa (FIN)	Plano Pro coal grey	4	8.0	-5.4
Plano Pro Musta antrasiitti (FIN)	Plano Pro black anthracite	4	7.9	+0.4

Manufacturing process

The manufacturing takes place at BMI Finland's production site in Espoo, Finland. The bitumen blend is mixed and pumped to the production line where reinforcement is impregnated and coated with different raw materials. Bitumen glue is applied on the adhesive surfaces and is covered with a plastic foil. The bitumen membrane is cutted into the determined shapes and stacked to packages of 22 pieces. Paper wrapping and shrinkable plastic are applied around every package and finally the packets are stacked on a wooden pallet. For both heating and cooling needed during production, substances are used in closed systems and are thus not consumed during the manufacturing process. The manufacturing process includes the energy- and fuel consumption and emissions on site, production of all packaging materials and treatment of waste generated in the manufacturing process.

UN CPC code:

5453 Roofing and waterproofing services

Geographical scope:

All inventories are modelled with respect to their specific origin when applicable. The installation scenario is modelled for the Nordic countries.

LCA information

Functional unit:

1 m^2 installed layer of bitumen shingles as a waterproofing system, produced by BMI Finland in Espoo. Overlaps and fastening are included according to c-PCR (PCR 2019:14-c-PCR-032 c-PCR-032 Flexible sheets for waterproofing (EN 17388). The weight per 1 m^2 installed roof (including overlap) is 8.1 kg and the conversion factor to 1 kg is 0.123 m^2.

Reference service life:

50 years.

Time representativeness and data quality:

The specific data collected regarding manufacturing, packaging, suppliers and transports refer to the production year 2022. The data collection was performed by the EPD owner. Background data is based on EPD´s and Ecoinvent 3.10. Foreground data is <2 years and background data <10 years.

The quality of the used data for the EPD has been accessed per item in terms of its time, geography and technology representativeness using EN 15804:2012+A2:2019, Annex E, E2. The overall data quality has been accessed by creating a weighted average on the basis of individual quality levels and the GWP-total for modules A1-C4.

Overall data quality:

Geographical representativeness:	Good
Technical representativeness:	Good
Time representativeness:	Very Good

Database(s) and LCA software used:

LCA method R<THiNK:	EN15804+A2:2019
LCA software:	Simapro 9.6 (aligned with EF 3.1)
Characterization method:	EN 15804 +A2 Method v1.0
LCA database profiles:	EcoInvent version 3.10

Description of system boundaries:

The system boundary of the EPD adheres to the modular approach outlined in EN 15804:2012+A2:2019. This EPD shows cradle-to-grave and module D with activities needed for a study period of 50 years for the building. No capital goods or infrastructure are included within the system boundaries.

Allocation used:

Environmental profile / dataset used	Explanation of used allocation method
Bitumen production final LCI - EUROBITUME 2021 System, with infrastructures [Eurobitume]	The allocation between bitumen and other co-products made from crude oil is based on mass balances at the crude oil extraction and the transport stages. At the refining level, the allocation is based on relative economic values. Source = Eurobitume.

Cut-off Criteria:

Product stage (A1-A3):
The production stage consists of the extraction of all raw materials, transportation of the raw materials, processing the raw materials into materials and the production of the product. The required energy for production, external treatments, ancillary materials, packaging material and production emissions are included. No capital goods or infrastructure included within the system boundaries. The total neglected input flows for A1-A3 do not exceed the limit of 5% of energy use and mass.

Construction process stage (A4-A5)
This stage consists of the transport of the product from the production plant to the construction site. It also includes installation waste. The additional needed production, transport and end-of-life of the installation waste is included. For packaging and fastening the end-of-life scenarios are taken from Generic waste scenarios of the Dutch Environmental database indicated with NMD and the Codifab report for pallets. The installation of the product including manufacture, transportation and end-of-life of ancillary materials and any energy or water use required for installation or operation of the construction site are taken into account. The total neglected input flows for A4-A5 do not exceed the limit of 5% of energy use and mass. The included scenarios, according to the LCA Report, are currently in use and represent the most likely alternatives.

Use stage (B1-B7)
There are no environmental impacts caused by the product during its use stage. There are no emissions (B1) and no consumption of raw materials. There is no need for maintenance (B2), repair (B3), replacements (B4) or refurbishments (B5) during the use of the product in standard conditions. The product does not consume energy (B6) or water (B7) during its operational life. The included scenarios, according to the LCA Report, are currently in use and are representative for the most probable alternatives.

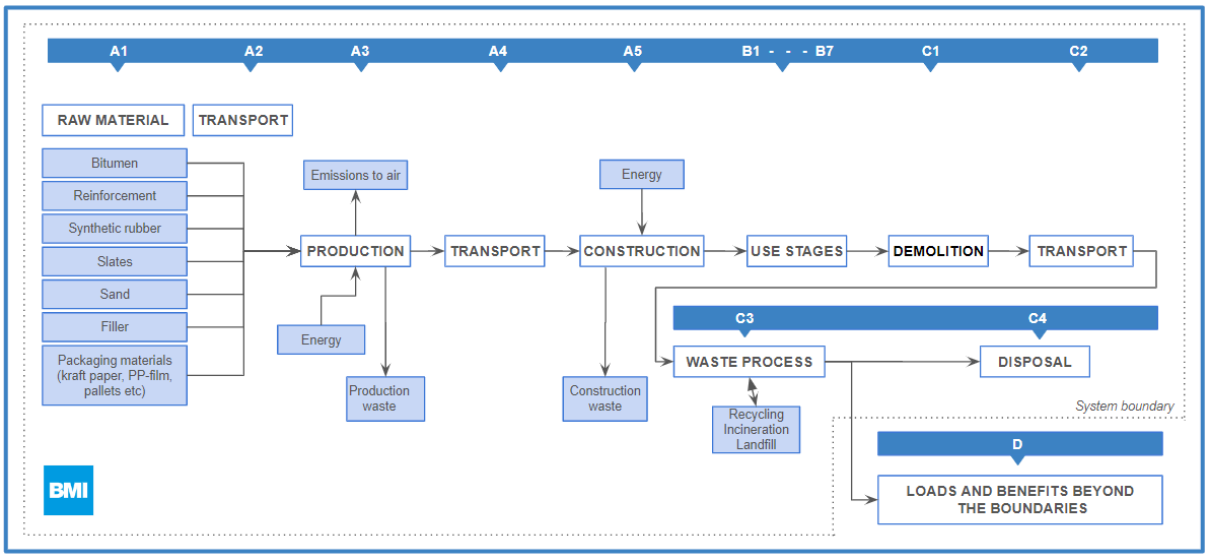
End of life stage (C1-C4)
When the end of the life stage of the building is reached, the de-construction/demolition begins. This EPD includes de-construction/demolition (C1), the necessary transport (C2) from the demolition site to the sorting location and distance to final disposal. The end of life stage includes the final disposal to landfill 40% (C4), incineration 45% (C3) and recycling 15%. Loads and benefits of recycling, re-use and exported energy are part of module D. The total neglected input flows for C1-C4 do not exceed the limit of 5% of energy use and mass. The included scenarios, according to the LCA Report, are currently in use and are representative for the most probable alternatives. For modelling of the End-of-life stage of the product the scenarios as used in the sector EPD of EWA (European Water Proofing Association) "Flexible Bitumen Sheets For Roof Waterproofing– sector EPD (S-P-00414)" are applied.

Benefits and loads beyond the system boundary (D)
This stage contains the potential loads and benefits of recycling and re-use of raw materials/products. The loads contain the needed recycling processes from end-of-waste-point up to the point-of-equivalence of the substituted primary raw material and a load for secondary material that will be lost at the end-of-life stage. The loads and benefits of recycling and reuse are included in this module.

Additional information:

For further information regarding the underlying LCA, contact LCA practitioner Lars Åhsberg: lars.ahsberg@bmigroup.com.

System diagram:



Modules declared, geographical scope, share of specific data (in GWP-GHG results) and data variation (in GWP-GHG results):

	Product stage			Construction stage		Use stage							End of life stage				Benefits and loads beyond the stage system boundaries
	Raw material supply	Transport	Manufacturing	Transport to site	Assembly	Use	Maintenance	Repair	Replacement	Refurnishment	Operational energy use	Operational water use	Deconstruction	Transport	Waste processing	Disposal	Reuse-, recovery-, recycling- potential
Modules	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Geography	FIN	FIN	FIN	FIN, NOR, SWE													
Specific data used	<30%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - products	<10%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation - sites	-			-	-	-	-	-	-	-	-	-	-	-	-	-	-

* X=Modules Assessed, ** The share of primary (specific) data is calculated based on GWP-GHG results. It is a simplified indicator for data quality that do not capture all relevant aspects of data quality. The indicator is not comparable across product categories.

Content information

Raw material and packaging materials

Product components	Weight -%	Variation included products, weight -%	Post-consumer material, weight-%	Biogenic material, weight-%
SBS-bitumen	30-33	<2	0	0
Limestone	33-35	<2	0	0
Reinforcement	2-3	<2	<0.5	0
Slate	27-32	<2	0	0
Sand	2-3	<2	0	0
Packaging materials	**Weight, kg**	**Variation included products, weight -%**	**Weight-% (versus the product)**	**Weight biogenic carbon, kg C/kg**
Kraft paper	0.01	0	0.1	0.45
Plastic (PE)	0.13	0	1.6	0
Wood pallet	0.01	0	0.1	0.5

Origin of electricity

The used electricity in the manufacturing phase (A3) has the following origin: Fossil 70%, Renewables 12% and Nuclear 18%. The GWP-GHG emission factor is 652 g CO_2/kWh (Finish Residual mix low voltage from EI 3.10).

Dangerous substances from the candidate list of SVHC for Authorisation

For construction product EPDs complaint with EN15804, the content declaration shall list substances contained in the products that are listed in the “Candidate List of Substances of Very High Concern for Authorization” when their content exceeds the limits for registration with the European Chemicals Agency: i.e. >0.1 % of the weight of the product. No such substances are used in the production of the products covered in this EPD.

Results* of the environmental performance indicators

Mandatory impact category indicators according to EN 15804

Results per functional or declared unit															
Indicator	**Unit**	**A1-A3 ****	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-total	kg CO_2 eq.	3,25E+00	2,99E-01	8,17E-01	0	0	0	0	0	0	0	0	1,90E-01	6,89E+00	2,73E-01	-1,47E+00
GWP-fossil	kg CO_2 eq.	3,71E+00	2,98E-01	4,70E-01	0	0	0	0	0	0	0	0	1,90E-01	6,89E+00	2,73E-01	-1,47E+00
GWP-biogenic	kg CO_2 eq.	-2,32E-01	0	2,32E-01	0	0	0	0	0	0	0	0	0	0	0	0
GWP-luluc	kg CO_2 eq.	2,26E-03	1,12E-04	2,19E-04	0	0	0	0	0	0	0	0	6,07E-05	2,43E-04	1,72E-05	-9,46E-03
ODP	kg CFC 11 eq.	2,31E-06	7,08E-08	1,53E-08	0	0	0	0	0	0	0	0	3,80E-09	7,19E-09	9,12E-10	-6,43E-08
AP	mol H^+ eq.	1,71E-02	2,56E-03	4,60E-04	0	0	0	0	0	0	0	0	6,29E-04	3,13E-03	3,75E-04	-2,27E-03
EP-freshwater	kg P eq.	9,82E-05	2,16E-06	3,99E-06	0	0	0	0	0	0	0	0	1,44E-06	8,75E-06	3,66E-07	-9,99E-06
EP-marine	kg N eq.	4,17E-03	6,09E-04	1,22E-04	0	0	0	0	0	0	0	0	2,19E-04	8,97E-04	2,36E-04	-6,38E-04
EP-terrestrial	mol N eq.	4,62E-02	6,78E-03	1,31E-03	0	0	0	0	0	0	0	0	2,41E-03	9,50E-03	9,21E-04	-7,08E-03
POCP	kg NMVOC eq.	1,90E-02	2,01E-03	5,21E-04	0	0	0	0	0	0	0	0	9,86E-04	2,89E-03	3,95E-04	-3,65E-03
ADP-mm***	kg Sb eq.	2,67E-05	4,74E-06	1,59E-06	0	0	0	0	0	0	0	0	6,01E-07	1,88E-06	6,11E-08	-2,29E-06
ADP-fossil***	MJ	1,69E+02	4,66E+00	1,64E+00	0	0	0	0	0	0	0	0	2,66E+00	4,83E+00	7,10E-01	-4,89E+01
WDP*	m^3	1,04E+00	1,39E-02	3,60E-02	0	0	0	0	0	0	0	0	1,05E-02	1,48E-01	-2,17E-01	-2,66E-01
Acronyms	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; EP-marine = Eutrophication potential, fraction of nutrients reaching marine end compartment; EP-terrestrial = Eutrophication potential, Accumulated Exceedance; POCP = Formation potential of tropospheric ozone; ADP-mm = Abiotic depletion potential for non-fossil resources; ADP-fossil = Abiotic depletion for fossil resources potential; WDP = Water (user) deprivation potential, deprivation-weighted water consumption														

** The estimated impact results are only relative statements, which do not indicate the endpoints of the impact categories, exceeding threshold values, safety margins and/or risks. ** The use of the results of modules A1-A3 is discouraged without considering the results of module C. *** The results of this environmental impact indicator shall be used with care as the uncertainties of these results are high or as there is limited experience with the indicator.*

Additional mandatory and voluntary impact category indicators

Results per functional or declared unit																
Indicator	**Unit**	**A1-A3 ****	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
GWP-GHG*	kg CO_2 eq.	3,25E+00	2,99E-01	8,17E-01	0	0	0	0	0	0	0	0	1,90E-01	7,69E+00	2,73E-01	-1,34E+00
Particulate matter emissions (PM)	Disease incidence	1,73E-07	2,31E-08	6,68E-09	0	0	0	0	0	0	0	0	1,40E-08	3,03E-08	5,02E-09	-1,91E-08
Ionizing radiation, human health (IRP)	kBq U235 eq.	8,42E-01	2,03E-02	5,52E-03	0	0	0	0	0	0	0	0	1,38E-03	6,69E-03	3,36E-04	-5,01E-01
Eco-toxicity - freshwater (ETP-fw)	CTUe	1,61E+01	3,60E+00	1,83E+00	0	0	0	0	0	0	0	0	6,95E-01	5,17E+00	1,16E-01	-3,09E+00
Human toxicity, cancer effect (HTP-c)	CTUh	1,25E-08	1,07E-10	4,77E-10	0	0	0	0	0	0	0	0	1,17E-09	4,73E-09	1,61E-10	-3,09E-09
Human toxicity, non-cancer effects (HTP-nc)	CTUh	3,36E-08	3,81E-09	2,61E-09	0	0	0	0	0	0	0	0	1,62E-09	1,23E-08	4,69E-10	1,36E-09
Land use related impacts/Soil quality (SQP)	dimensionless	5,61E+01	4,62E+00	6,11E-01	0	0	0	0	0	0	0	0	1,51E+00	3,24E+00	1,60E+00	-8,97E+00

** This indicator accounts for all greenhouse gases except biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. As such, the indicator is identical to GWP-total except that the CF for biogenic CO_2 is set to zero. ** The use of the results of modules A1-A3 is discouraged without considering the results of module C*

Resource use indicators

Results per functional or declared unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
PERE	MJ	3,94E+00	5,45E-02	5,28E-02	0	0	0	0	0	0	0	0	4,85E-02	2,72E-01	1,12E-02	-8,09E+00
PERM	MJ	2,30E+00	0	1,15E-02	0	0	0	0	0	0	0	0	0	0	0	0
0PERT	MJ	6,23E+00	5,45E-02	6,43E-02	0	0	0	0	0	0	0	0	4,85E-02	2,72E-01	1,12E-02	-8,09E+00
PENRE	MJ	5,48E+01	4,94E+00	1,10E+00	0	0	0	0	0	0	0	0	2,66E+00	4,83E+00	7,10E-01	-3,34E+01
PENRM	MJ	1,15E+02	0	5,73E-01	0	0	0	0	0	0	0	0	0	0	0	-1,55E+01
PENRT	MJ	1,69E+02	4,94E+00	1,68E+00	0	0	0	0	0	0	0	0	2,66E+00	4,83E+00	7,10E-01	-4,89E+01
SM	kg	1,97E-02	0	4,05E-03	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m^3	3,62E-02	4,87E-04	9,32E-04	0	0	0	0	0	0	0	0	3,74E-04	5,84E-03	-5,02E-03	-1,75E-02
Acronyms	PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy re-sources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water															

Waste indicators

Results per functional or declared unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	5,58E-04	1,02E-05	9,00E-06	0	0	0	0	0	0	0	0	1,78E-05	7,45E-05	4,78E-06	-1,25E-04
Non-hazardous waste disposed	kg	9,81E-01	3,46E-01	2,75E-01	0	0	0	0	0	0	0	0	1,19E-01	3,86E+00	3,23E+00	-5,60E-02
Radioactive waste disposed	kg	1,29E-03	3,19E-05	7,84E-06	0	0	0	0	0	0	0	0	9,88E-07	5,20E-06	2,39E-07	-3,52E-04

Output flow indicators

Results per functional or declared unit															
Indicator	**Unit**	**A1-A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Components for re-use	kg	0	0	0		0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	3,42E-02	0	1,07E-01	0	0	0	0	0	0	0	0	0	1,21E+00	0	00
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-9,19E+00
Exported energy, thermal	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1,58E+01

References

- General Programme Instructions of the International EPD® System. Version 5.0.
- PCR 2019:14 Construction products (EN 15804+A2:2019 core PCR) (1.3.4)
- EN 15804+A2 EN 15804+A2: 2019: Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products
- prEN 17388-1:2023 - Flexible sheets for waterproofing - Environmental product declaration - Product Category Rules for reinforced bitumen, plastic and rubber flexible sheets for (roof) waterproofing
- ISO 14040 ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework;
- EN ISO 14040:2006 ISO 14044 ISO 14044:2006-10, Environmental management - Life cycle assessment - Requirements and guidelines;
- EN ISO 14040:2006 ISO 14025 ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures
- EWA EPD “Flexible Bitumen Sheets For Roof Waterproofing– sector EPD (S-P-00414)”, International EPD System
- Forfaitaire waarden voor verwerking-scenario’s einde leven behorende bij: Bepalingsmethode Milieuprestatie Bouwwerken, May 2024, Stichting NMD.
- Åhsberg, L (2024). Life Cycle Assessment – LCA background reports, Icopal Shingles Pro, BMI Finland

www.environdec.com EPD®

www.environdec.com