Environmental Product Declaration

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

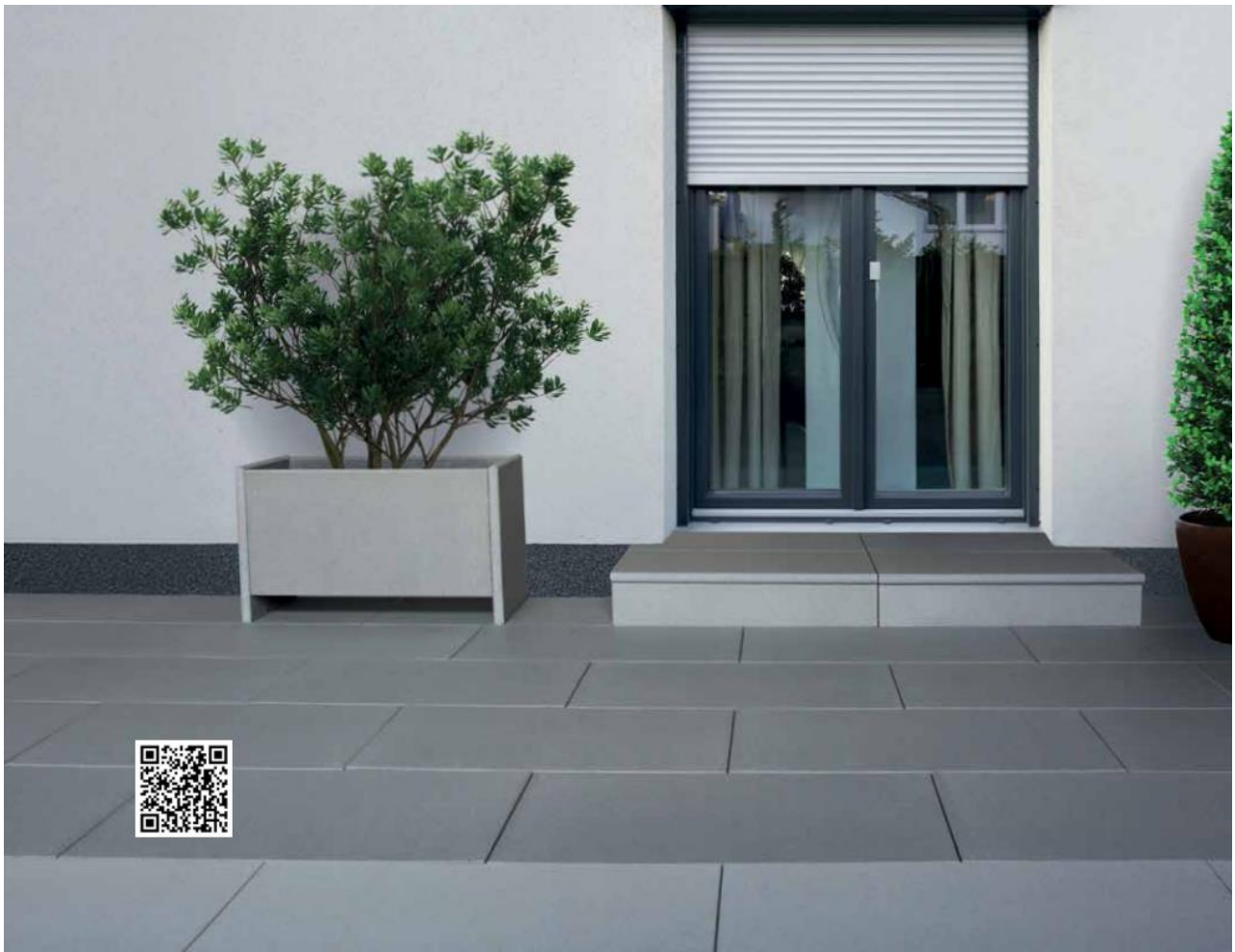
Surface tiles/terazzo tiles

The average product includes three types of surface tiles supplied under protected names - Granex®, Mramora® a Mramorit®

from

TopTeramo s.r.o.

Programme:	"National Environmental Labeling Program" - Czech Republic (NPEZ)
Programme operator:	Ministry of the Environment of the Czech Republic, CENIA, Czech Environmental Information Agency, executive function of the NPEZ Agency
EPD registration number:	**3015-EPD-030066852**
Publication date:	2025-03-15
Valid until:	2030-03-15
	An EPD should provide current information and may be updated if conditions change.



General information

Programme information

Programme:	"National Environmental Labeling Program" - Czech Republic (NPEZ)
Address:	Ministry of the Environment of the Czech Republic Department of Voluntary Instruments 100 10 Praha 10, Vršovická 1442/65
Website:	www.mzp.cz, www.cenia.cz
E-mail:	info@mzp.cz

Accountabilities for PCR, LCA and independent, third-party verification
Product Category Rules (PCR)
CEN standard EN 15804+A2 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): ***EN 16757:2022*** *Sustainability of construction works - Environmental product declarations - Product Category Rules for concrete and concrete elements* >
Life Cycle Assessment (LCA)
LCA accountability: *TopTeramo s.r.o.*
Third-party verification
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via: ☒ EPD verification by accredited certification body Third-party verification: ***Technický a zkušební ústav stavební Praha, s.p.*** is an approved certification body accountable for the third-party verification. 190 00 Praha 9, Prosecká 811/76a, CZ The certification body is accredited by: ***Českým institutem pro akreditaci, o.p.s., Osvědčení č. 456/2024*** Verifier: Ing. Lenka Vrbová
Procedure for follow-up of data during EPD validity involves third party verifier: ☐Ano ☒ne

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: TopTeramo s.r.o.

Vápenná 444, 790 64 Vápenná, Česká republika, IČO: 27789969
www.topteramo.cz
Contact:
Pavel Harazin
pavel.harazin@topteramo.cz, +420 588110077

Description of the organisation:

We are a purely Czech company specializing in the production of flat concrete tiles and dry building materials. Our headquarters is located in the village of Vápenná in the Jeseník district, and with our production program, we connect with a local tradition that is over fifty years old. Under the name TopTeramo, the company has been operating since 2007.

Our products are known for their high quality and unique appearance, which significantly differs from the standard offerings on the market. A significant portion of our production is aimed at foreign markets, so the quality of our products has been successfully tested by customers from Austria, Germany, Slovakia, Poland, Lithuania, Belgium, the Netherlands, and Luxembourg, as well as by Czech customers for many years.

Our production program is fundamentally based on the high quality of raw materials. Its current form consists of a very diverse range of products. Outdoor tiles in various formats with modern and traditionally timeless appearances, industrially treated surfaces for easier maintenance, high slip resistance, and overall high resistance to outdoor influences. Smooth tiles with durable surfaces for interiors, which are predominantly used in industrial, shopping, entertainment, and sports centers. Stair and wall cladding, pool edges, solutions for balconies, roof terraces, and many more.

An important part of our work is the continuous development and modernization of production. This effort is directed not only at creating new high-quality products but also at aligning demanding production with the needs of environmental protection, as we are the ones who create living conditions for the future of our children.

Product-related or management system-related certifications:

The quality of the products is ensured by an effective quality management system according to EN ISO 9001 and is in accordance with the technical regulations regarding the type of product.

The products are supplied in accordance with the harmonized standard **EN 1339/AC:2006** Concrete paving flags - Requirements and test methods. The manufacturer has issued a Declaration of Conformity for the listed products (https://www.topteramo.cz/informace/ke-stazeni/).

Name and location of production site(s):

TopTeramo s.r.o.
Vápenná 444, 790 64 Vápenná, Česká republika,

Product information

Product name: Surface tiles/terazzo tiles

Product identification:

- Granex®
- Granex® XL
- Granex®XXL
- Mramorit®
- Mramorit®XL
- Mramora®

Product description:

Terrazzo tile is produced by hermetic pressing technology from high-quality vibro-pressed concrete, which is characterized by high strength, abrasion resistance and is frost-resistant. In production, quality natural materials are used, such as sharply sorted crushed stone, high-strength cements, color-fast pigments and building chemicals guaranteeing low porosity.

- **The GRANEX® single-layer terrazzo tile** is produced using a unique single-layer pressing technology and consists of a single layer of high-quality raw materials throughout the profile, such as sharply sorted fine aggregates, high-strength cements, color-stable pigments and building chemicals.
- **Two-layer terrazzo tiles MRAMORIT® and MRAMORA®** are produced by two-layer pressing technology and consist of a visible (upper) layer of high-quality materials and a lower core (dry) layer of Portland cement and common crushed stone.

Depending on the purpose of use, we divide tiles into indoor and outdoor.

- **Sanded tiles,** the surface is smooth, they are mainly for indoor use. When using this tile outdoors, we recommend anti-slip treatment. They are used as a final floor treatment in department stores, supermarkets, administrative centers, entrance halls, production halls, storage and handling areas, sidewalks and driving areas (entrances and parking spaces for vehicles up to a total weight of 3.5 t), but also in family houses, basements, garages, etc.
- **Tiles with blasted surface** are intended for outdoor and indoor use. They are used around family houses, in housing estates or in city centers, in gardens, terraces, balconies, around swimming pools and on various other outdoor areas. During the reconstruction of roof terraces and balconies, where a lower load is needed, the thin and light Granex® tile stands out, which can also be laid on top of the existing tiles.

Detailed description of each product https://www.topteramo.cz/produkty/plosna-dlazba/

UN CPC code:

37540 Tiles, bricks and similar articles of cement, concrete or artificial stone

Geographical scope:

The generic data used from the Ecoinvent database are used with validity for the Czech Republic (e.g. energy inputs) and in the event that data for the Czech Republic are not available, data valid for the EU or according to the location of the supplier are used. Based on the evaluation according to EN 15804+A2, Annex E, tab. E.1 the generic data used meet the quality level - medium.

Product packaging:

The tiles are packed by machine, the tiles are stacked into bales connected by high-strength PET tapes and placed horizontally on EURO 1 200 x 800 mm pallets. Fusible polyamide is spot-applied to the back of the tile, which is used as a distance protection against damage during transport. Prevents damage to the visible surface of the tiles during handling and transport. The tiles are further protected by elements such as paper edges, which are applied at the top between the rows of bales and on the shorter side of the pallets. These elements protect the edges of the products, increase the strength of the packaging and improve stackability. The tiles are then covered with a protective film and again fixed with high-strength PET tapes, which maintain the stability of the entire package. The protective film is an important element protecting the tiles from external weather influences

Environment and health during use

As manufacturers specializing in the production of noble terrazzo tiles, we are fully aware of the impact of our activities on the environment, and therefore we strive to do business responsibly and with care for our planet.

It is fascinating to observe that even the economic pressure towards greater efficiency and savings can lead to measures that not only increase efficiency, but also positively affect the reduction of the environmental burden associated with production.

- One of these measures is limiting the proportion of cement in our products. We also invest in cements with slag from thermal power plants, thereby reducing the amount of waste materials and contributing to the reduction of emissions.
- Our most important raw material for tiles comes from a nearby quarry, only 8 km from our plant. In this way, we minimize the emissions associated with the transport of raw materials, which again reduces our ecological footprint.
- Our products are designed to make the most efficient use of input materials. Thanks to the technology of single-layer hermetic pressing, Granex tiles are thinner compared to common production on the market, which reduces the need for raw materials and allows us to place

more products on one pallet. In this way, we achieve more efficient transport and again reduce transport-related emissions.

- We work with companies that strive to achieve operations with zero CO2 emissions, which is a key step towards a more sustainable future for us. For many years, we have been actively involved in a system of joint fulfillment of waste take-back and recycling obligations, thereby effectively reducing our ecological footprint.

During the entire production process, it is not necessary to take any special health protection measures beyond the legally specified industrial protection measures for production employees.

LCA information

Functional unit / declared unit:

The declared unit is 1 t of the average manufactured product – Surface tiles/terazzo tiles.

The average product includes three types of surface tiles supplied under protected names - Granex®, Mramora® a Mramorit®

Designation	Unit	Value
Declared unit	t	1
Conversion factor to 1 kg	kg	1000

Reference service life:
The reference lifetime is not declared. These are construction products with many different application purposes. The service life is limited by the service life of the structures where the product is used.
Time representativeness:
For specific data, the manufacturer's data for the **year 2024** is used. For generic data, data from the Ecoinvent database version 3.9 is used. Based on the evaluation according to EN 15804+A2, Annex E, tab. E.1 the generic data used meet the quality level - very good.
Database(s) and LCA software used:
SimaPro Craft calculation software, version 10.1, Ecoinvent database version 3.9.
GWP-GHG from electricity production: 0.605 kg CO2 eq/kWh (CZ residual mix 2023).

Description of system boundaries:

b) Cradle to gate with options, modules C1–C4, module D and with optional modules (A1–A3 + C + D and additional modules). The additional modules may be one or more selected from A4–A5 and/or B1–B7. Additional modules can be one or more selected from A4–A5 and/or B1–B7;

The production phase includes the following modules:

- **A1** - **extraction and processing of raw materials** and production of packaging from input raw materials
- **A2** - **transport of input raw materials** from the supplier to the manufacturer, waste removal
- **A3 - production of products**, production of auxiliary materials and semi-finished products, energy consumption, including waste processing until reaching a state where it ceases to be waste or after removal of the last material residues during the production phase.
  Results A1-A3 include a "***compensation report***" of biogenic CO_2 from packaging released in module A5, as module A5 is not fully included. According to the "polluter pays" principle, the costs/benefits from further management of this packaging are also included in this module.

The construction phase includes the following modules:

- **A4** - **transport to the construction site**. Transport is carried out by truck with a capacity of 7.5 - 16 t (EURO 6). Transport of the declared product unit over a distance of 1 km is considered.

The end-of-life phase includes modules:

- **C1,** deconstruction, demolition; product from the building, including its dismantling or demolition, including the initial sorting of materials at the construction site. Decomposition and/or dismantling of the product is part of the demolition of the entire building. In this case, it is assumed that the operation of the construction machine during demolition requires 0.045 MJ/kg of diesel.
- **C2,** transport to the waste processing site; transportation of discarded product as part of waste processing, e.g. to a recycling site, and transportation of waste, e.g. to a final disposal site. The transport from the dismantled building is carried out by a truck with a capacity of 7.5 - 16 t (EURO 6) to the inert material dump as a demolition of a mixed building, estimated transport distance: 50 km to the recycling center or to the dump.

- **C3,** waste treatment for reuse, recovery and/or recycling; e.g. collection of fractions of waste from deconstruction, and processing of waste from material flows intended for reuse, recycling and energy use. A scenario is assumed where 10% of the product is deposited in an inert landfill. 90% is considered for the use of the products (together with other concrete products) as recyclable material (crushed into aggregates for various purposes).
- **C4,** waste disposal, including its pre-treatment and management of the disposal site. 10% of the dismantled product is disposed of as mixed construction rubble in an inert material landfill, without taking into account the energy recovery of landfill gas from (minor) organic components.

Benefits and costs beyond the product system boundary are presented in module D.
Module D includes:

- **D,** potential for reuse, recovery and/or recycling, expressed in terms of net impacts or benefits. In the module D scenario, the savings of primary raw material inputs (excluding transport and energy) in another product system (crushed aggregates) are taken into account. The impacts from the crushing and sorting process are included.

Production:
Terrazzo tiles are produced using hermetic pressing technology from high-quality vibropressed concrete, which is characterized by high strength, abrasion resistance and frost resistance. In production, high-quality natural materials are used, such as sharply sorted aggregates, high-strength cements, color-stable pigments and construction chemicals that guarantee low porosity. The product flat tiles/terrazzo tiles is produced on a mixing plant using conventional concrete production technology from a mixture of cement, dyes and special stone aggregates. Terrazzo products are finished by grinding.

More information:
Information module **A5** from the construction phase was not included in the LCA due to the difficult availability of input data and is therefore not declared.
Information modules from the use phase **B1 to B7** are also not declared, as these types of products, assuming correct use, do not require maintenance, repair or replacement during the normal life time in the use phase. They also do not require energy or water consumption during the use phase.
For the study, all operational data related to the consumption of main and auxiliary materials for the production of the product, energy data, diesel consumption and the distribution of annual waste production and emissions according to plant records were taken. In terms of produced waste, only those wastes that are clearly related to production activities were included in the analysis.
The processes required for the installation of production equipment and the construction of infrastructure were not included in the analysis. Also, administrative processes are not included – inputs and outputs are balanced per production phase.

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

	Product stage			Construction process stage		Use stage							End of life stage				Resource recovery stage
	Raw material supply	Transport	Manufacturing	Transport	Construction installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal	Reuse-Recovery-Recycling-potential
Module	**A1**	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
Modules declared	x	x	x	x	ND	ND	ND	ND	ND	ND	ND	ND	x	x	x	x	x
Geography	GLO	GLO, EU	EU, CZ	EU									EU	EU	EU	EU	GLO, EU
Specific data used	> 95 %					-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	< 10 %					-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0 %					-	-	-	-	-	-	-	-	-	-	-	-

The data used to calculate the EPD conforms to the following principles:

Technological point of view: Data corresponding to the current production of individual types of partial products of the plant and corresponding to the current state of the technologies used are used. Based on the evaluation according to EN 15804+A2, Annex E, tab. E.1 the generic data used meet the quality level - very good.

The aspect of completeness and completeness: Most of the input data is based on consumption balances, which are precisely recorded in the manufacturer's information system. The reliability of the source of specific data is determined by the uniformity of the collection methodology of the information system.

Consistency point of view: Uniform points of view are used throughout the report (allocation rules, age of data, technological scope of validity, temporal scope of validity, geographical scope of validity).

Credibility aspect: All important data were checked for adherence to cross-comparison of mass balances.

The GWP-GHG variability between the sub-products included (see Product Description) is less than 10%. Production takes place at only one production site.

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.

Content information

Product components	Weight %	Post-consumer material, weight-%	Biogenic carbon content in kg C/DU
crushed stone	62,7	0	0
cement	20,7	0	0
pigment components	0,1	0	0
impregnation	0,08	0	0
recyclate from own production	16,5	0	0
TOTAL	100	0	0

Packaging materials	Weight %	Weight-% (versus the product)	Biogenic carbon content in kg C/DU
Packaging - wood (spruce)	68,94	3,14E-04	2,04E-04
LD-PE foil	9,58	4,37E-05	0
PP polypropylene tape	4,56	2,08E-05	0
PET tape	4,68	2,13E-05	0
Paper edges	12,23	5,58E-05	0
TOTAL	100	4,56E-04	2,04E-04

Dangerous substances from the candidate list of SVHC for Authorisation	EC No.	CAS No.	Weight-% per functional or declared unit (DU)
They are not	-	-	-

Substances listed on the list of substances of very high concern subject to authorization by the European Chemicals Agency are not contained in the product in declarable quantities.

Results of the environmental performance indicators

Mandatory impact category indicators according to EN 15804:2012+A2:2019/AC:2021 (characterisation factors based on EF 3.1 package)

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-fosil	kg CO_2 ekv.	2,34E+02	2,34E-01	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,40E+01	2,50E-01	3,04E-01	-3,10E+00
GWP-biogenic	kg CO_2 ekv.	9,48E+00	1,83E-03	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,10E-01	3,25E-02	2,36E-03	-4,77E-01
GWP- luluc	kg CO_2 ekv.	7,14E-02	1,07E-04	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	6,44E-03	6,04E-04	1,83E-04	-1,86E-03
GWP - total	kg CO_2 ekv.	2,43E+02	2,35E-01	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,41E+01	2,83E-01	3,06E-01	-3,58E+00
ODP	kg CFC 11 ekv.	1,53E-06	5,10E-09	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,06E-07	4,54E-09	8,80E-09	-5,06E-08
AP	mol H^+ ekv.	6,15E-01	4,82E-04	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,89E-02	1,25E-03	2,29E-03	-2,65E-02
EP-freshwater	kg P ekv.	8,10E-02	1,62E-05	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	9,70E-04	2,21E-04	2,53E-05	-4,99E-04
EP- marine	kg N ekv.	1,70E-01	1,20E-04	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,20E-03	2,25E-04	8,79E-04	-7,98E-03
EP - terrestrial	mol N ekv.	1,77E+00	1,21E-03	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,29E-02	2,01E-03	9,42E-03	-1,08E-01
POCP	kg NMVOC ekv.	5,22E-01	7,54E-04	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,52E-02	6,77E-04	3,28E-03	-2,73E-02
ADP- minerals& metals*	kg Sb ekv.	2,99E-04	7,48E-07	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,49E-05	5,48E-07	4,22E-07	-4,59E-05
ADP-fosil*	MJ	1,74E+03	3,29E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,98E+02	5,62E+00	7,57E+00	-4,43E+01
WDP*	m^3	5,52E+01	1,27E-02	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	7,60E-01	5,87E-02	3,35E-01	-7,84E-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-minerals&metals** = Abiotic depletion potential for non-fossil resources; **ADP-fossil** = Abiotic depletion for fossil resources potential; **WDP** = Water (user) deprivation potential, deprivation-weighted water consumption															

** Disclaimer: 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.*
Disclaimer: If module C is included then when assessing the results of A1-A3, also take into account the results of modules C.

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[1]	kg CO_2 ekv.	2,34E+02	2,34E-01	ND	ND	ND	ND	ND	ND	ND	ND	ND	1,40E+01	2,52E-01	3,04E-01	-3,12E+00
PM	Disease incidence	4,46E-06	1,46E-08	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,78E-07	5,32E-09	5,01E-08	-6,03E-07
IRP	kBq U235 ekv.	2,55E+01	5,33E-03	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	3,20E-01	1,55E-01	4,80E-03	-6,75E-01
ETP- fw	CTUe	3,31E+02	1,44E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	8,67E+01	4,02E-01	3,08E+00	-2,39E+01
HTP-c	CTUh	2,63E-08	4,86E-11	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	2,92E-09	8,37E-11	7,17E-11	-2,94E-09
HTP- nc	CTUh	3,83E-07	7,92E-10	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	4,75E-08	6,36E-10	2,30E-09	-3,36E-08
SQP	dimensionless	9,03E+02	1,69E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	1,01E+02	8,59E-01	1,50E+01	-9,77E+01
Acronyms	**GWP-GHG** = this indicator includes all greenhouse gases except biogenic uptake and emissions of carbon dioxide 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, **PM** = Potential incidence of disease due to PM emissions, **IRP** = Potential Human exposure efficiency relative to U235, **ETP-fw** = Potential Comparative Toxic Unit for ecosystems, **HTP-c** = Potential Comparative Toxic Unit for humans, **HTP-nc** = Potential Comparative Toxic Unit for humans, **SQP** = Potential soil quality index															

[1] *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.*

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	2,00E+02	5,74E-02	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,05E+00	6,34E-02	-1,50E+01
PERM	MJ	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT	MJ	2,00E+02	5,74E-02	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	1,05E+00	6,34E-02	-1,50E+01
PENRE	MJ	2,41E+03	3,50E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,89E+00	8,05E+00	-4,65E+01
PENRM	MJ	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT	MJ	2,41E+03	3,50E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	5,89E+00	8,05E+00	-4,65E+01
SM	kg	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF	MJ	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF	MJ	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW	m^3	1,32E-01	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
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															

Additional environmental information - 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	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-hazardous waste disposed	kg	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	5,00E+01	0,00E+00
Radioactive waste disposed	kg	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Additional environmental information - 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	0,00E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	2,94E-01	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	9,50E+02	0,00E+00	0,00E+00
Materials for energy recovery	kg	8,54E-01	0,00E+00	ND	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	1,18E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	2,44E+00	0,00E+00	ND	ND	ND	ND	ND	ND	ND	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

The result tables shall only contain values or the letters "ND" (Not Declared). It is not possible to specify ND for mandatory indicators. ND shall only be used for voluntary parameters that are not quantified because no data is available.

Other environmental performance indicators

Additional environmental information

Differences versus previous versions

References

EN ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures
EN 15804:2012+A2:2019/AC:2021 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
EN 16757:2022 Sustainability of construction works - Environmental product declarations - Product Category Rules for concrete and concrete elements
EN ISO 14040:2006 Environmental management - Life Cycle Assessment - Principles and Framework
EN ISO 14044:2006 Environmental management - Life Cycle Assessment – Requirements and guidelines
EN ISO 14063:2020 Environmental management - Environmental communication - Guidelines and examples
EN 15643:2021 Sustainability of construction works - Framework for assessment of buildings and civil engineering works
EN 15942:2021 Sustainability of construction works - Environmental product declarations - Communication format business-to-business
EN 17672:2022 Sustainability of construction works - Environmental product declarations - Horizontal rules for business-to-consumer communication
TNI CEN/TR 15941:2012 Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data
EN 16908:2017+A1:2022 Cement and building lime - Environmental product declarations - Product category rules complementary to EN 15804
EN 16449:2014 Wood and wood-based products - Calculation of the biogenic carbon content of wood and conversion to carbon dioxide
ILCD General guide for Life Cycle Assessment (2010) - JRC EU
Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives; CZ - Act No. 541/2020 Coll., as amended (Waste Act)
Decree No. 8/2021 Coll. Waste catalogue – Waste catalogue
Regulation (EC) No 1907/2006 of the European Parliament concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency - REACH (Registration, Evaluation and Authorisation of Chemicals
Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006
SimaPro LCA Package, Pré Consultants, the Netherlands, www.pre-sustainability.com
Ecoinvent Centre, www.Ecoinvent.org
EU PEF (EF reference package) - https://eplca.jrc.ec.europa.eu/LCDN/EN15804.html
Explanatory documents are available from the head of Technical Support of the EPD owner.