

# Environmental Product Declaration



EPD of multiple products, based on a representative product  
In accordance with ISO 14025:2006 and EN 15804:2012+A2:2019/AC:2021 for:

## Ceramin floor and wall covering

From



Programme:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
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*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](http://www.environdec.com)*



## General information

### Programme information

<b>Programme:</b>	The International EPD® System
<b>Address:</b>	EPD International AB Box 210 60 SE-100 31 Stockholm Sweden
<b>Website:</b>	<a href="http://www.environdec.com">www.environdec.com</a>
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<b>Accountabilities for PCR, LCA and independent, third-party verification</b>
<b>Product Category Rules (PCR)</b>
CEN standard EN 15804 serves as the Core Product Category Rules (PCR)
Product Category Rules (PCR): PCR 2019:14 - Construction Products (version 1.3.1; 2023-08-07) C-PCR-004 Resilient, Textile and Laminate Floor Coverings (version 2019-12-20)
PCR review was conducted by: The Technical Committee of the International EPD® System. The review panel may be contacted via <a href="mailto:info@environdec.com">info@environdec.com</a> .
<b>Life Cycle Assessment (LCA)</b>
LCA accountability: Sphera Solutions GmbH, 70771 Leinfelden-Echterdingen, Germany, <a href="http://www.sphera.com">www.sphera.com</a>
<b>Third-party verification</b>
Independent third-party verification of the declaration and data, according to ISO 14025:2006, via:  <input checked="" type="checkbox"/> EPD verification by individual verifier  Third-party verifier: Matthias Schulz, Schulz Sustainability Consulting   Approved by: The International EPD® System
Procedure for follow-up of data during EPD validity involves third party verifier:  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> 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: W. Classen GmbH & Co.KG, Werner-von-Siemens-Straße 18-20, D-56759 Kaisersesch, Germany.

Contact: Bernhard Porkert, +49 2653 980-0

Description of the organisation: The CLASSEN Group is a leading manufacturer of laminate flooring and PVC-free recyclable polymer flooring. As a medium-sized family business, CLASSEN thinks in closed cycles; the sustainable and responsible use of resources is a matter for the entire company. This attitude gave rise to the material CERAMIN®. As part of the CLASSEN Group, Akzenta Paneele + Profile GmbH has been producing CERAMIN since 2012.

Product-related or management system-related certifications: ISO 50001, Blue Angel, eco-Institut Label, M 1

Name and location of production site(s): Akzenta Paneele + Profile GmbH, Werner-von-Siemens-Straße 18-20, D-56759 Kaisersesch, Germany

## Product information

Product name: Ceramin

Product identification: Floor and wall covering acc. to EN 16511 Modular mechanical locked floor covering, EN 14565 Resilient Floor covering based upon synthetic thermoplastic polymers, ISO 19322 Resilient Floor coverings-Specification for floor coverings based on thermoplastic polymers

Product description: Use classes acc. ISO 10874 Classification of resilient, textile and laminate floor coverings. 23, 33, 42.

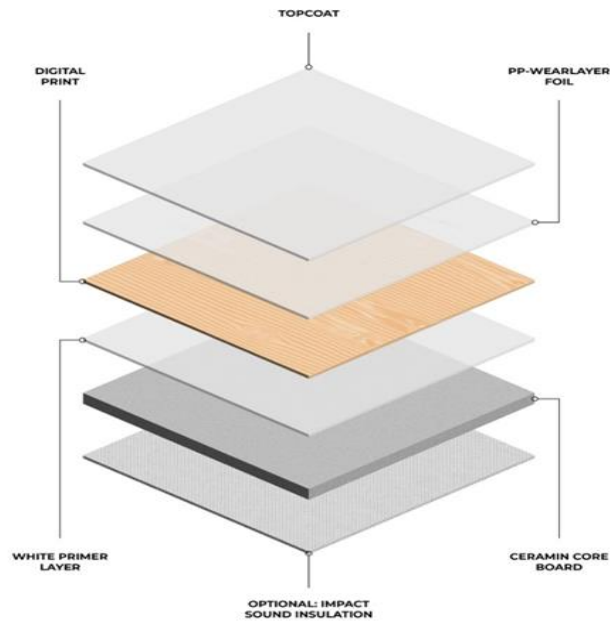


The floorings are intended to be installed floating (4.0 and 4.5 mm) or glued to the subfloor (2.5 and 3.2 mm) inside domestic, commercial or industrial premises. Detailed installation and maintenance instructions can be found at the packaging or at [www.classengroup.com](http://www.classengroup.com). In high traffic areas more cleaning will be needed compared to areas where traffic is low. Product properties with regards to health, safety and energy saving according to EN 14041 and EN 15102.

Offcuts can be disposed as municipal waste (commercial European waste code 170203) or collected as > PP - MD 60 < in the PVC free hard plastics fraction.

UN CPC code: 54750

Product built up:



Further technical characteristics of the representative product:

Thickness of the element: 4.5 mm  
 Thickness of core: 4.3 mm  
 Formats: Planks / Tiles  
 Density: 1485 kg/m<sup>3</sup>

Other technical data can be found on the homepage of the manufacturer: [www.classengroup.com](http://www.classengroup.com).

**LCA information:**

Functional unit / declared unit:

1 m<sup>2</sup> of Ceramin floor covering

Conversion factor to 1 kg of floor covering is 1/6,68 for the representative product.

Reference service life:

The service life for floor coverings is defined as 1 year according to EN16810.

Geographical scope:

Modules A1-A3, A4: DE

Modules A5, B2, C1-C4, D: EU

Time representativeness:

2022

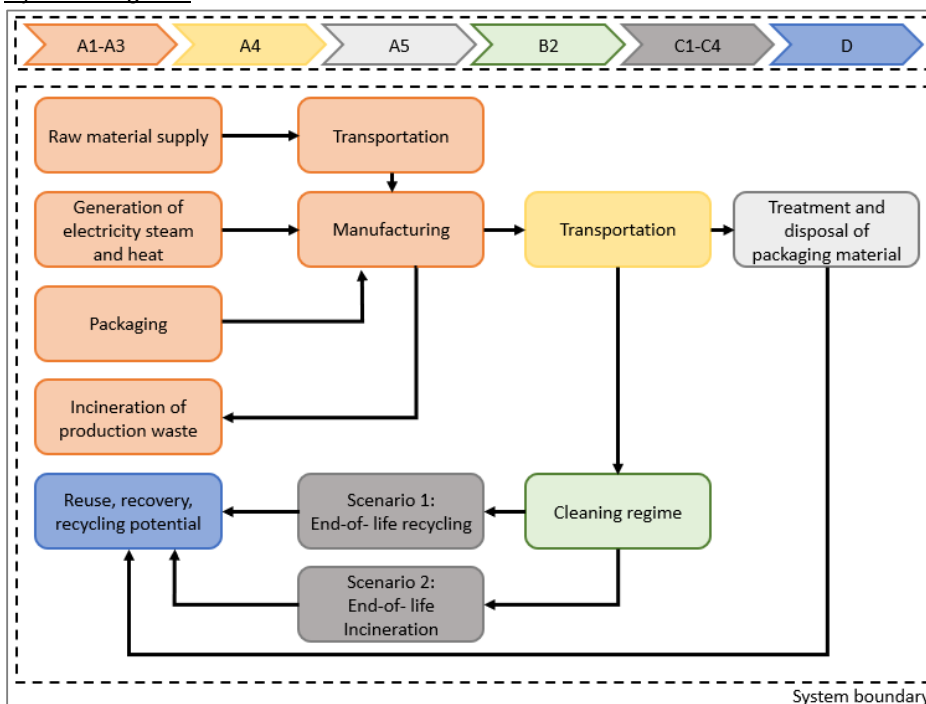
Databases and LCA software used:

Sphera's MLC databases version 2023.1 and LCA fE software (f.k.a. GaBi);

Description of system boundaries:

Cradle to gate with modules C1–C4, module D and optional modules A4, A5 and B2 (according C-PCR-004)

System diagram:



More information:

More information on the product can be found under [www.classengroup.com](http://www.classengroup.com)

Name and contact information of LCA practitioner:

Sphera Solutions GmbH, 70771 Leinfelden-Echterdingen, Germany, [www.sphera.com](http://www.sphera.com)

Information on electricity used in the manufacturing process:

In accordance with the PCR, the country-specific residual grid mix is used for the LCA-calculations. The emission factor (with regards to the GWP-GHG indicator) accounts for: 0,67 kg CO<sub>2</sub> eq./kWh

Information about declared modules:

**Modules A1-A3** include processes that provide materials (incl. packaging) and energy input for the system, manufacturing and transport processes up to the factory gate, as well as waste processing. A1-A3 considers all burdens related to the production and supply of secondary PP that is obtained from post-consumer household wastes.

**Module A4** considers 100 km truck transport to the point of installation (diesel driven, 20-26 tons total load, 55% utilization).

**Module A5** includes packaging waste processing during the construction process. A waste treatment in a waste incineration plant is assumed. Benefits from energy substitution are declared in module D.

Installation efforts incl. Cutting losses and auxiliaries are not declared in the EPD. The amount of installation waste varies and is therefore not declared. For the calculation of the environmental impact of 1m<sup>2</sup> flooring including a certain amount of installation waste the values for the production stage (A1-A3), delivery (A4), packaging treatment (A5) and end of life (C, D) have to be multiplied with the amount of waste (e.g. 3% installation waste, factor 1.03).

**Module B2** includes the cleaning of the floor covering. Provision of water, cleaning agent and electricity for the cleaning of the floor covering is considered, incl. waste water treatment. The LCA results in this EPD are declared for a one-year usage.

**Module C1:** It is assumed, that the de-installation is of the product is done manually. No environmental impacts are therefore assigned to module C1.

**Module C2** considers 50 km truck transport to the site of waste treatment/ disposal (diesel driven, 20-26 tons total load, 55% utilization).

#### **Recycling Scenario:**

**Module C3/1, C4/1, D/1** consider a recycling process at the products end-of-life with a collection rate of 95%. The remaining 5% is assumed to be incinerated. As burdens from the production of secondary PP from post-consumer waste of other product systems is considered within module A1-A3, module C3/1 does not contain any burdens from recycling processes. With this approach, waste is treated consistently and double counting of recycling processes is avoided.

Module C4/1 is load-free as in this recycling-scenario it is expected, that no material needs to be disposed.

Module D/1 includes benefits from incineration of packaging in module A5 and incineration of waste collection losses in module C3/1. Module D/1 additionally includes recycling potentials of secondary polypropylene, which is expected to substitute virgin polypropylene and mineral filler as the main materials of the floor-covering (only benefits from net-waste flows). Burdens and material losses from mechanical recycling processes (grinding, washing and pelletizing) are included in module D/1.

#### **Incineration Scenario:**

**Module C3/2, C4/2, D/2** consider the incineration of the product at the products end-of-life. As the product contains inert material, some fractions of the product are considered as material that needs to be disposed. In this scenario 100% of the product is incinerated and only the remaining ash/inert material goes to landfill in module C4/2.

Module D/2 includes benefits from incineration of packaging in module A5 and from the products incineration in module C3/2, potential benefits related to secondary raw materials are not considered (only benefits from net-waste flows).

**Excluded data and flows from the LCA calculation:**

Infrastructure and capital goods are not considered within the EPD-study.

Following flows are excluded from the LCA calculation as their amounts are considered as neglectable:

Ink (as part of the product); aggregated mass-% below 0.1% of the product

Various packaging materials; aggregated mass-% below 0.2% of the product

Auxiliaries (recycling process); aggregated mass-% below 0.1% of the product

Module C3/1: Treatment of residues in collection losses without a calorific value

(mineral filler); aggregated mass-% between 2% and 3% of the product

**Allocation principles for secondary material:**

All burdens from the production of secondary polypropylene from post-consumer plastic waste that enters the product system in modules A1-A3 are considered.

In the recycling end-of-life scenario (C3/1), environmental impacts of recycling plastic waste to secondary polypropylene are allocated to module D/1. As the production of secondary PP from post-consumer waste from other product systems is considered within module A1-A3, module C3/1 does not contain any burdens from recycling processes. With this approach consistency within the LCA-model is assured and double counting of recycling processes is avoided.

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

Variation of products (in GWP-GHG results and other indicators) is displayed on page 14 in this document. Other information on the modules, scope and share of specific data is displayed in the table below.

	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	X	ND	X	ND	ND	ND	ND	ND	X	X	X	X	X
Geography	DE	DE	DE	DE	EU		EU						EU	EU	EU	EU	EU
Specific data used	59%			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – products	see page 14 in this document			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Variation – sites	0			-	-	-	-	-	-	-	-	-	-	-	-	-	-

## Content information

Product components	Weight, kg/m <sup>2</sup>	Post-consumer material, weight-%	Biogenic material, weight-% and kg C/kg
Polypropylene including mineral filler	3.00 – 6.31	27 – 28	0
Topcoat, Impact sound insulation, Adhesives, Others	0.37 – 0.38	0	0
TOTAL	3.38 – 6.68	24 – 26	0
Packaging materials	Weight, kg/m <sup>2</sup>	Weight-% (versus the product)	Weight biogenic carbon, kg C/kg
Wooden pallets	0.06	0.9 – 2.0	0.41
Cardboard packaging	0.10	1.5 – 3.0	0.43
HDF board	0.02	0.3 – 0.6	0.42
TOTAL	0.18	2.7 – 5.3	-

The product does not contain dangerous substances from the candidate list of SVHC for Authorisation.

## Scenario information

### Module A4:

The following table displays technical information used in module A4 (transportation by truck to the building site)

Parameter	Unit	Amount
Diesel consumption	l/100 km (per kg of transported good)	0.0033
Distance	km	100
Capacity utilization (including empty returns)	%	55%
Bulk density of transported products	kg/m <sup>3</sup>	1485
Volume capacity utilization factor	-	1

### Module A5:

The following table displays technical information regarding the installation in the building (treatment of packaging waste). Note: Installation offcuts or installation efforts and related auxiliary materials are not considered in this study and therefore not listed,

Parameter	Unit	Amount
Waste materials on the building site before waste processing (packaging)	kg/ declared unit	0.187



### Module B2

The following table displays the LCI-data used for the cleaning efforts in module B2 based on the annual efforts for 1 m<sup>2</sup> of floor covering. The cleaning methods considered include damp mopping, dry mopping and vacuum cleaning.

Parameter	Unit	Amount
Cleaning and maintenance cycle (frequency)	Number cycles (per year)	120
Net fresh water consumption	m <sup>3</sup> (per year)	0.0068
Auxiliary (detergent)	kg (per year)	0.051
Energy input (electricity)	kWh (per year)	0.074

### End-of-life (C-modules)

The following table displays the waste flows at the products end of life (for the representative product). The amounts listed represent gross quantities including secondary material.

Parameter	Unit	Amount
Waste, collected separately	kg	6.68
EoL Scenario 1 (Recycling) Waste materials for recycling	kg	6.35
EoL Scenario 1 (Recycling) Collection losses for energy recovery	kg	0.33
EoL Scenario 2 (Incineration) Waste materials for energy recovery	kg	6.68
EoL Scenario 2 (Incineration) Waste materials for final deposition after incineration process	kg	3.9

## Results of the environmental performance indicators

Note: results for module B2 represent 1 year of usage.

Disclaimer: It is discouraged to use the results of modules A1-A3 without considering the results of module C. 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.

### Mandatory impact category indicators according to EN 15804+A2 (EF 3.0)

Indicator	Unit	Results per declared unit													
		A1-A3	A4	A5	B2	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2		
GWP-total	kg CO <sub>2</sub> eq.	9.65E+00	6.70E-02	2.75E-01	6.56E-02	0	3.26E-02	4.18E-01	9.40E+00	0	5.94E-02	-1.74E+00	-1.78E+00		
GWP-fossil	kg CO <sub>2</sub> eq.	9.91E+00	6.63E-02	5.76E-03	6.14E-02	0	3.23E-02	4.18E-01	9.40E+00	0	5.92E-02	-1.72E+00	-1.77E+00		
GWP-biogenic	kg CO <sub>2</sub> eq.	-2.64E-01	2.42E-04	2.70E-01	4.20E-03	0	1.18E-04	1.43E-05	3.20E-04	0	4.22E-07	-9.98E-03	-1.01E-02		
GWP-luluc	kg CO <sub>2</sub> eq.	7.06E-03	3.98E-04	1.25E-06	7.27E-06	0	1.94E-04	4.13E-07	9.28E-06	0	1.84E-04	-1.85E-03	-1.14E-04		
ODP	kg CFC 11 eq.	4.81E-11	1.64E-14	3.07E-14	6.46E-13	0	7.99E-15	1.98E-14	4.45E-13	0	1.51E-13	-5.77E-12	-1.39E-11		
AP	mol H <sup>+</sup> eq.	1.72E-02	1.11E-04	7.24E-05	1.00E-04	0	5.40E-05	4.13E-05	9.27E-04	0	4.20E-04	-6.61E-03	-2.20E-03		
EP-freshwater	kg P eq.	3.23E-05	1.57E-07	9.14E-09	4.53E-06	0	7.64E-08	4.70E-09	1.06E-07	0	1.19E-07	-1.79E-06	-2.86E-06		
EP-marine	kg N eq.	5.73E-03	4.58E-05	2.70E-05	4.33E-05	0	2.23E-05	8.65E-06	1.94E-04	0	1.08E-04	-1.95E-03	-6.41E-04		
EP-terrestrial	mol N eq.	6.03E-02	5.23E-04	3.39E-04	2.84E-04	0	2.54E-04	1.94E-04	4.37E-03	0	1.19E-03	-2.09E-02	-6.86E-03		
POCP	kg NMVOC eq.	1.59E-02	1.00E-04	7.14E-05	1.39E-04	0	4.89E-05	2.57E-05	5.78E-04	0	3.27E-04	-7.90E-03	-1.79E-03		
ADP-minerals&metals*	kg Sb eq.	5.50E-07	4.80E-09	2.84E-10	5.71E-08	0	2.33E-09	1.85E-10	4.15E-09	0	2.73E-09	-1.34E-07	-1.27E-07		
ADP-fossil*	MJ	2.00E+02	9.05E-01	8.00E-02	1.44E+00	0	4.40E-01	4.97E-02	1.12E+00	0	7.88E-01	-1.19E+02	-3.23E+01		
WDP*	m <sup>3</sup>	8.38E-01	3.50E-04	3.20E-02	8.69E-03	0	1.70E-04	3.86E-02	8.67E-01	0	6.50E-03	-4.24E-01	-1.68E-01		

\* 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.

### Additional mandatory impact category indicators

Indicator	Unit	Results per declared unit											
		A1-A3	A4	A5	B2	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
GWP-GHG <sup>1</sup>	kg CO <sub>2</sub> eq.	9.93E+00	6.65E-02	5.73E-03	6.28E-02	0	3.23E-02	4.18E-01	9.40E+00	0	5.90E-02	-1.73E+00	-1.78E+00

### Resource use indicators

The calculation of the resource use indicators follows option B from Annex 3 in PCR 2019:14 - Construction Products. PENRM values in modules C3/1 and C3/2 only consider energy losses from net waste flows

Indicator	Unit	Results per declared unit											
		A1-A3	A4	A5	B2	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
PERE	MJ	4.18E+01	6.07E-02	2.95E+00	4.05E-01	0	2.95E-02	1.27E-02	2.85E-01	0	1.28E-01	-4.58E+00	-9.47E+00
PERM	MJ	2.93E+00	0	-1.10E+00	0	0	0	0	0	0	0	0	0
PERT	MJ	4.47E+01	6.07E-02	1.85E+00	4.05E-01	0	2.95E-02	1.27E-02	2.85E-01	0	1.28E-01	-4.58E+00	-9.47E+00
PENRE	MJ	6.64E+01	9.07E-01	1.13E-01	1.44E+00	0	4.41E-01	4.98E-02	1.12E+00	0	7.89E-01	-1.19E+02	-3.23E+01
PENRM	MJ	1.34E+02	0	0	0	0	0	-7.56E+01	-2.21E+01	0	0	0	0
PENRT	MJ	2.00E+02	9.07E-01	1.13E-01	1.44E+00	0	4.41E-01	-7.56E+01	-2.10E+01	0	7.89E-01	-1.19E+02	-3.23E+01
SM	kg	1.81E+00	0	0	0	0	0	0	0	0	0	3.89E+00	0
RSF	MJ	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
FW	m <sup>3</sup>	4.89E-02	5.40E-05	7.54E-04	4.70E-04	0	2.63E-05	9.04E-04	2.03E-02	0	1.99E-04	-1.28E-02	-7.67E-03
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 resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water											

<sup>1</sup> 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<sub>2</sub> is set to zero.

### Waste indicators

Indicator	Unit	Results per declared unit											
		A1-A3	A4	A5	B2	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
Hazardous waste disposed	kg	3.42E-08	1.53E-12	2.67E-12	5.78E-11	0	7.44E-13	1.12E-12	2.51E-11	0	1.72E-11	-5.28E-09	-1.69E-09
Non-hazardous waste disposed	kg	2.67E-01	1.36E-04	6.69E-03	7.41E-03	0	6.60E-05	1.66E-03	3.73E-02	0	3.94E+00	1.18E-01	-1.60E-02
Radioactive waste disposed	kg	1.16E-02	1.19E-06	4.27E-06	9.28E-05	0	5.81E-07	3.00E-06	6.73E-05	0	8.99E-06	-1.74E-03	-2.51E-03

### Output flow indicators

Indicator	Unit	Results per declared unit											
		A1-A3	A4	A5	B2	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0
Material for recycling	kg	0	0	0	0	0	0	6.34E+00	0	0	0	0	0
Materials for energy recovery	kg	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy, electricity	MJ	0	0	3.92E-01	0	0	0	8.93E-01	7.97E+00	0	0	0	0
Exported energy, thermal	MJ	0	0	7.08E-01	0	0	0	1.59E+00	1.42E+01	0	0	0	0

### Optional impact category indicators according to EN 15804+A2 (EF 3.0)

Indicator	Unit	Results per declared unit													
		A1-A3	A4	A5	B2	C1	C2	C3/1	C3/2	C4/1	C4/2	D/1	D/2		
Particulate matter	Diseases incidences	1.84E-07	1.40E-09	3.74E-10	8.25E-10	0	6.82E-10	2.42E-10	5.43E-09	0	5.16E-09	-5.70E-08	-1.86E-08		
Ionising radiation, human health *	kBq U235 eq.	1.54E+00	1.28E-04	6.80E-04	1.49E-02	0	6.22E-05	4.84E-04	1.09E-02	0	1.04E-03	-4.04E-01	-4.18E-01		
Ecotoxicity, freshwater **	CTUe	7.44E+01	6.54E-01	3.66E-02	1.10E+00	0	3.18E-01	2.29E-02	5.14E-01	0	4.30E-01	-6.15E+01	-7.12E+00		
Human toxicity, cancer **	CTUh	2.18E-09	1.32E-11	2.46E-12	3.69E-11	0	6.41E-12	2.72E-12	6.11E-11	0	6.62E-11	-1.34E-09	-3.58E-10		
Human toxicity, non-cancer **	CTUh	9.59E-08	6.93E-10	1.25E-10	2.69E-09	0	3.37E-10	8.11E-11	1.82E-09	0	7.28E-09	-5.29E-08	-1.11E-08		
Land Use **	Pt	1.22E+02	3.22E-01	2.32E-02	2.72E-01	0	1.57E-01	1.57E-02	3.52E-01	0	1.91E-01	-3.50E+00	-6.22E+00		

\* Disclaimer: 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.

\*\* Disclaimer: The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

Further information on the assumptions made in the LCA calculation and the interpretation of the results can be provided upon request.

### Multiplication factors for different product variations

The LCA results declared in this EPD refer to a floor covering with a thickness of 4,5 mm which is considered as a representative product of the product group (most relevant variation in terms of market share). In order to enable the user of the EPD to estimate the results for product variations with different thicknesses, the factors in the following two tables can be used.

For A1-A3, A4, C and D the LCA results of the declared product (thickness 4,5 mm) have to be multiplied with the corresponding factors to calculate LCA-results for product variation 2 (4,0 mm), variation 3 (3,2 mm) and variation 4 (2,5 mm).

Multiplication factors for resource use indicators and optional indicators from EN15804 can be provided upon request.

Factors to calculate the results for modules A1-A3 for different product variations			
Product	Product Variation 2	Product Variation 3	Product Variation 4
Thickness	4.0 mm (+ impact sound insulation)	3.2 mm	2.5 mm
Specific weight	5.94 kg/m <sup>2</sup>	4.75 kg/m <sup>2</sup>	3.38 kg/m <sup>2</sup>
Conversion factor (to 1 kg)	1 / 5.94	1 / 4.75	1 / 3.38
EPD-Modules	A1-A3		
GWP-total	0.91	0.72	0.54
GWP-fossil	0.91	0.73	0.55
GWP-biogenic	1.01	1.05	1.07
GWP-luluc	0.90	0.72	0.52
ODP	0.91	0.70	0.52
AP	0.91	0.73	0.55
EP-freshwater	0.90	0.74	0.56
EP-marine	0.91	0.73	0.55
EP-terrestrial	0.91	0.73	0.55
POCP	0.92	0.73	0.56
ADP-minerals & metals	0.91	0.72	0.55
ADP-fossil	0.92	0.73	0.58
WDP*	0.95	0.82	0.74
GWP-GHG	0.91	0.73	0.55

Factors to calculate the results of all other modules for different product variations			
Product	Product Variation 2	Product Variation 3	Product Variation 4
Thickness	4.0 mm (+ impact sound insulation)	3.2 mm	2.5 mm
Specific weight	5.94 kg/m <sup>2</sup>	4.75 kg/m <sup>2</sup>	3.38 kg/m <sup>2</sup>
Conversion factor (to 1 kg)	1 / 5.94	1 / 4.75	1 / 3.38
EPD-Modules	A4, C2, C3/1, C3/2, C4/1, C4/2, D/1, D/2		
All mandatory impact category indicators according to EN 15804 and GWP-GHG	0.96	0.75	0.66

Multiplication factors for EPD-modules A5, B2 and C1 are 1 for all product variations.

## Additional environmental, social and economic information

See most recent sustainability report [www.classengroup.com](http://www.classengroup.com)

### References

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