

# Environmental Product Declaration



In accordance with ISO 14025 and EN 15804 for:

## ***Ceramapanel*** Fibre cement flat sheets



Programme:	The International EPD® System, <a href="http://www.environdec.com">www.environdec.com</a>
Programme operator:	EPD International AB
EPD registration number:	S-P-03995
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**c e r a m a p a n e l**

COMPRESSED FIBRE CEMENT FACADE / MANUFACTURED BY VALCAN

## Programme information

<b>Programme:</b>	<p>The International EPD® System</p> <p>EPD International AB Box 210 60 SE-100 31 Stockholm Sweden</p> <p><a href="http://www.environdec.com">www.environdec.com</a> <a href="mailto:info@environdec.com">info@environdec.com</a></p>
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<p>Product category rules (PCR): PCR 2012:01 Construction products and construction services v.2.3, 2018-11-15 e EN 15804:2013, UN CPC 375</p>
<p>PCR review was conducted by: The Technical Committee of the International EPD® System. Contact via <a href="mailto:info@environdec.com">info@environdec.com</a></p>
<p>Independent third-party verification of the declaration and data, according to ISO 14025:2006:</p> <p><input type="checkbox"/> EPD process certification <input checked="" type="checkbox"/> EPD verification</p>
<p>Third party verifier: Chris Foster, EuGeos Ltd</p> <p>Approved by: The International EPD® System</p>
<p>Procedure for follow-up of data during EPD validity involves third party verifier:</p> <p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>

The EPD owner has the sole ownership, liability, and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

## Company information

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## Description of the organisation:

Valcan is the trading name of Fairview Europe Ltd. Valcan specialises in the design, manufacture and distribution of a range of quality façade products and components throughout the UK – specialising in rainscreen cladding systems. With over 20 years of experience in the façade industry through Fairview's global network, they have established a leading position in the market and are now the preferred company by architects, builders and fabricators. Valcan is the defining standard in A1 and A2 (*fire reaction standards*) rainscreen cladding systems. Their extensive R&D process guarantees the highest quality solution for new build and retrofit projects – providing total assurance matched with the highest levels of safety and integrity.

## Product-related or management system-related certifications:

Valcan is committed towards environmental sustainability, all products sold are declared fully recyclable and the company has the ISO 14001 certified environmental management system and ISO 9001 certified quality management system.

The product has been subjected to the European Technical Assessment (ETA) by **European Organisation for Technical Assessment (EOTA)**.

The panels obtained the *reaction to fire* classification provided by BS EN 13501-01 rated as non-combustible according to the classes: A1 and A2-s1, d0 (s1, d0 are the highest level of performances regarding smoke classification and flaming droplets).

## Location of production site:

The product is fabricated in continental Europe. The manufacturer name is not disclosed due to commercial reasons.

## Product information

**Product name:** Ceramapanel

### Product description:

Ceramapanel is a through coloured compressed fibre cement façade panel. These panels are mainly composed of cement, inert materials, cellulose and pigments. The application of Ceramapanel is as external cladding, these are mechanically implanted on external façade of buildings in order to provide insulation, sound proofing and external embellishment.

The production consists of panels, painted or not painted, with different thickness and weight per square meter:

*Table 1 - Sheet technical details*

Thickness [mm]	Weight [kg/m <sup>2</sup> ]
8 mm	14,4
10 mm	18,0
12 mm	21,6

**Geographical scope:** Europe

## LCA information

### Declared unit:

Data and results are referred to 1 m<sup>2</sup> of surface of the flat sheets, it is then related to different thicknesses. In the present EPD, sheets with thickness 8, 10 and 12 mm are considered. The flat sheets without paint that are assessed have a thickness of 8 and 10 mm, while the ones assessed that are painted have a thickness of 8,10 and 12 mm.

### Time representativeness:

Data for the production phase are related to reference year 2019 and 2021 (A1-A3), while data for logistics (A4) are related to 2020.

### Database(s) and LCA software used:

The study uses the database Ecoinvent version 3.5, on SimaPro 9.1.0.11.

### Technical support for LCA report and EPD:

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**System diagram:**

Table 2 - System boundaries scheme

Product			Construction process		Use						
Raw materials supply	Transport	Manufacturing	Transport	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7
x	x	x	x	MND	MND	MND	MND	MND	MND	MND	MND

End of life				Benefits and loads beyond the system boundaries
De-construction, demolition	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling-potential
C1	C2	C3	C4	D
MND	MND	MND	MND	MND

X = Included in the system, MND = Module Not Declared

The system analysed includes all life cycle phases from raw material production to final customer distribution, as required by the option "cradle to gate with options" of the reference PCR.

The option includes the evaluation of upstream process (module A1), core process (modules A2 and A3) and downstream process (module A4).

**Description of system boundaries:**

The system boundaries of this EPD include modules: A1 to A4, a diagram of the phases and processes included can be seen in Figure 1

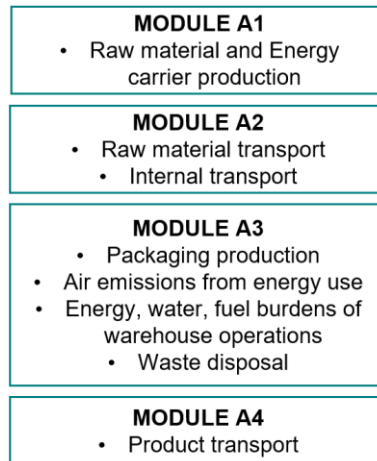


Figure 1 - System boundaries

### Modules A1-A3 – Production phase:

The upstream phase is represented by: **module A1**.

It includes the raw material supply, taking in consideration the extraction and processing of raw material used for the panels: mainly cement, inert material, cellulose. It is also included additives used for the production processes and paint used for the coloured panels.

Moreover it is included in this module the generation of electricity and fuels such as natural gas and diesel. Data collected for this phase are related to 2019.

External transportation to the core process is represented by **module A2**, this module includes raw material transport to the production process and transportation of finished products from the manufacturing plant to Valcan storage facility in the UK.

Data related to the transportation of raw materials are related to 2019, while data related to the transport to the Valcan storage facility is related to 2020.

Information **module A3** includes the environmental aspects related to the product manufacturing such as auxiliaries and packaging production, combustion emission and waste disposal.

Data related to this phase are related to 2019.

It is also included the burden due to the operation carried out in the Valcan facility, from energy, water and fuel use. These data are collected from 2021.

Together A2 and A3 represent the **core** of the whole process.

### Module A4 – Transportation:

Information **module A4** includes product transport from Valcan storage facility to construction sites. It represents the downstream process. Distribution data have been provided by Valcan based on the sales volumes in 2020 across the UK.

### Cut-off criteria and relevant assumptions:

In this EPD some cut-offs have been made, flows related to some raw materials production for painting are not considered that accounted for less than 3% of the total mass of materials specifically used for painting stage.

All the energy used in the manufacturing of the sheets is included in the model.

The requirement of 95% of total inflows of mass and energy is fulfilled.

The distribution of the flat sheet panel from the manufacturer to the distribution facility has been accounted for in module A2, considered as internal transport.

In the warehouse facility no fabrication is carried out, thus the waste produced, accounted for in module A3, comes only from the manufacturing phase.

Data for different modules has been collected from years 2019 to 2021, that have been considered representative of each activity.

## Content declaration

### Product

Table 3 - Product composition

Materials / chemical substances	%
Cement	48
Inert	41
Cellulose	9
Pigments and other	2

The fire-resistant flat sheets represent the new generation of sheet, composed by cement and inert materials, reinforced with cellulose and, if desired, characterized by a coloured layer.

Raw materials used for flat sheets do not include substances listed in the document "Candidate List of SVHC" released by European Chemicals Agency (<http://echa.europa.eu/candidate-list-table>).

### Packaging

For distribution purposes the product is packed in HDPE and LDPE films. For logistic distribution wooden pallets and steel wire are used to secure the product.



## Environmental performance

The following tables show the results of the impact assessment method, for the Functional Unit defined above (1 m<sup>2</sup> of sheet surface), for the sub-phases A1-A2-A3-A4.

### Natural coloured sheet – 8 mm

#### Potential Environmental impact

Table 4 - Environmental impact results natural coloured sheet 8 mm

PARAMETER		UNIT	A1	A2	A3	A4	TOTAL A1-A4
Global warming potential (GWP)	TOTAL	kg CO <sub>2</sub> eq.	1,08E+01	4,35E+00	3,57E+00	4,93E-01	1,92E+01
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	1,36E-06	7,98E-07	3,70E-08	9,08E-08	2,29E-06
Acidification potential (AP)		kg SO <sub>2</sub> eq.	3,52E-02	1,74E-02	2,73E-03	1,76E-03	5,71E-02
Eutrophication potential (EP)		kg PO <sub>4</sub> <sup>3-</sup> eq.	4,77E-03	2,46E-03	4,25E-04	2,63E-04	7,91E-03
Formation potential of tropospheric ozone (POCP)		kg C <sub>2</sub> H <sub>4</sub> eq.	1,60E-03	7,64E-04	1,80E-04	8,04E-05	2,63E-03
Abiotic depletion potential – Elements		kg Sb eq.	1,51E-05	1,27E-05	7,80E-07	1,48E-06	3,01E-05
Abiotic depletion potential – Fossil resources		MJ, net calorific value	1,28E+02	6,56E+01	5,41E+00	7,45E+00	2,07E+02

## Use of resources

Table 5 - Use of resources results natural coloured sheet 8 mm

PARAMETER		UNIT	A1	A2	A3	A4	TOTAL A1-A4
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	6,00E+01	7,23E-01	6,82E+00	8,00E-02	6,76E+01
	Used as raw materials	MJ, net calorific value	2,36E+01	0,00E+00	4,78E+00	0,00E+00	2,84E+01
	TOTAL	MJ, net calorific value	8,36E+01	7,23E-01	1,16E+01	8,00E-02	9,60E+01
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	1,37E+02	6,67E+01	6,36E+00	7,57E+00	2,17E+02
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	3,29E-01	0,00E+00	4,04E-01
	TOTAL	MJ, net calorific value	1,37E+02	6,67E+01	6,69E+00	7,57E+00	2,18E+02
Secondary material	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
Renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
Non-renewable secondary fuels	MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	
Net use of fresh water	m <sup>3</sup>	1,10E-01	1,22E-02	3,81E-01	1,38E-03	5,04E-01	



## Waste production and treatment

Table 6 - Waste and treatment results natural coloured sheet 8 mm

PARAMETER	UNIT	A1	A2	A3	A4	TOTAL A1-A4
Hazardous waste disposed	kg	1,56E-01	4,16E-02	1,84E-02	4,68E-03	2,20E-01
Non-hazardous waste disposed	kg	3,53E-01	3,03E+00	3,75E-02	3,52E-01	3,77E+00
Radioactive waste disposed	kg	2,83E-04	4,51E-04	3,07E-05	5,12E-05	8,15E-04
Material for recycling	kg	0,00E+00	0,00E+00	1,82E-04	0,00E+00	1,82E-04
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00



## Natural coloured sheet – 10 mm

### Potential Environmental impact

Table 7 - Environmental impact results natural coloured sheet 10 mm

PARAMETER		UNIT	A1	A2	A3	A4	TOTAL A1-A4
Global warming potential (GWP)	TOTAL	kg CO <sub>2</sub> eq.	1,35E+01	5,43E+00	4,47E+00	8,44E-01	2,43E+01
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	1,70E-06	9,98E-07	4,63E-08	1,55E-07	2,90E-06
Acidification potential (AP)		kg SO <sub>2</sub> eq.	4,40E-02	2,18E-02	3,42E-03	3,02E-03	7,22E-02
Eutrophication potential (EP)		kg PO <sub>4</sub> <sup>3-</sup> eq.	5,96E-03	3,07E-03	5,31E-04	4,50E-04	1,00E-02
Formation potential of tropospheric ozone (POCP)		kg C <sub>2</sub> H <sub>4</sub> eq.	2,00E-03	9,55E-04	2,24E-04	1,38E-04	3,32E-03
Abiotic depletion potential – Elements		kg Sb eq.	1,89E-05	1,59E-05	9,75E-07	2,53E-06	3,83E-05
Abiotic depletion potential – Fossil resources		MJ, net calorific value	1,61E+02	8,20E+01	6,76E+00	1,28E+01	2,62E+02



## Use of resources

Table 8 – Use of resources results natural coloured sheet 10 mm

PARAMETER		UNIT	A1	A2	A3	A4	TOTAL A1-A4
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	7,50E+01	9,04E-01	8,52E+00	1,37E-01	8,46E+01
	Used as raw materials	MJ, net calorific value	2,95E+01	0,00E+00	5,97E+00	0,00E+00	3,54E+01
	TOTAL	MJ, net calorific value	1,04E+02	9,04E-01	1,45E+01	1,37E-01	1,20E+02
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	1,71E+02	8,33E+01	7,95E+00	1,30E+01	2,75E+02
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	4,11E-01	0,00E+00	5,05E-01
	TOTAL	MJ, net calorific value	1,71E+02	8,33E+01	8,36E+00	1,30E+01	2,76E+02
Secondary material		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m <sup>3</sup>	1,37E-01	1,52E-02	4,76E-01	2,36E-03	6,31E-01

## Waste production and treatment

Table 9 - Waste and treatment results natural coloured sheet 10 mm

PARAMETER	UNIT	A1	A2	A3	A4	TOTAL A1-A4
Hazardous waste disposed	kg	1,94E-01	5,20E-02	2,30E-02	8,02E-03	2,78E-01
Non-hazardous waste disposed	kg	4,41E-01	3,79E+00	4,68E-02	6,03E-01	4,88E+00
Radioactive waste disposed	kg	3,54E-04	5,63E-04	3,83E-05	8,77E-05	1,04E-03
Material for recycling	kg	0,00E+00	0,00E+00	2,28E-04	0,00E+00	2,28E-04
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00



## Painted sheet - 8 mm

### Potential Environmental impact

Table 10 - Environmental impact results painted sheet 8 mm

PARAMETER		UNIT	A1	A2	A3	A4	TOTAL A1-A4
Global warming potential (GWP)	TOTAL	kg CO <sub>2</sub> eq.	1,21E+01	4,35E+00	4,42E+00	4,93E-01	2,14E+01
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	1,77E-06	7,99E-07	3,70E-08	9,08E-08	2,69E-06
Acidification potential (AP)		kg SO <sub>2</sub> eq.	4,31E-02	1,74E-02	2,91E-03	1,76E-03	6,52E-02
Eutrophication potential (EP)		kg PO <sub>4</sub> <sup>3-</sup> eq.	5,48E-03	2,46E-03	4,57E-04	2,63E-04	8,66E-03
Formation potential of tropospheric ozone (POCP)		kg C <sub>2</sub> H <sub>4</sub> eq.	2,01E-03	7,65E-04	1,96E-04	8,04E-05	3,05E-03
Abiotic depletion potential – Elements		kg Sb eq.	2,46E-05	1,27E-05	7,80E-07	1,48E-06	3,96E-05
Abiotic depletion potential – Fossil resources		MJ, net calorific value	1,59E+02	6,57E+01	5,41E+00	7,45E+00	2,37E+02

### Use of resources



Table 11 - Use of resources results painted sheet 8 mm

PARAMETER		UNIT	A1	A2	A3	A4	TOTAL A1-A4
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	6,13E+01	7,24E-01	6,82E+00	8,00E-02	6,89E+01
	Used as raw materials	MJ, net calorific value	2,36E+01	0,00E+00	4,78E+00	0,00E+00	2,84E+01
	TOTAL	MJ, net calorific value	8,49E+01	7,24E-01	1,16E+01	8,00E-02	9,73E+01
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	1,69E+02	6,68E+01	6,36E+00	7,57E+00	2,50E+02
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	3,29E-01	0,00E+00	4,04E-01
	TOTAL	MJ, net calorific value	1,69E+02	6,68E+01	6,69E+00	7,57E+00	2,50E+02
Secondary material		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m <sup>3</sup>	1,28E-01	1,22E-02	3,81E-01	1,38E-03	5,23E-01





## Waste production and treatment

Table 12 - Waste and treatment results painted sheet 8 mm

PARAMETER	UNIT	A1	A2	A3	A4	TOTAL A1-A4
Hazardous waste disposed	kg	2,11E-01	4,16E-02	1,84E-02	4,68E-03	2,75E-01
Non-hazardous waste disposed	kg	4,63E-01	3,03E+00	3,75E-02	3,52E-01	3,89E+00
Radioactive waste disposed	kg	3,29E-04	4,51E-04	3,07E-05	5,12E-05	8,62E-04
Material for recycling	kg	0,00E+00	0,00E+00	1,82E-04	0,00E+00	1,82E-04
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00



## Painted sheet - 10 mm

### Potential Environmental impact

Table 13 - Environmental impact results painted sheet 10 mm

PARAMETER		UNIT	A1	A2	A3	A4	TOTAL A1-A4
Global warming potential (GWP)	TOTAL	kg CO <sub>2</sub> eq.	1,51E+01	5,44E+00	5,53E+00	8,44E-01	2,69E+01
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	2,21E-06	9,99E-07	4,63E-08	1,55E-07	3,41E-06
Acidification potential (AP)		kg SO <sub>2</sub> eq.	5,39E-02	2,18E-02	3,63E-03	3,02E-03	8,24E-02
Eutrophication potential (EP)		kg PO <sub>4</sub> <sup>3-</sup> eq.	6,85E-03	3,08E-03	5,72E-04	4,50E-04	1,09E-02
Formation potential of tropospheric ozone (POCP)		kg C <sub>2</sub> H <sub>4</sub> eq.	2,51E-03	9,56E-04	2,46E-04	1,38E-04	3,85E-03
Abiotic depletion potential – Elements		kg Sb eq.	3,07E-05	1,59E-05	9,75E-07	2,53E-06	5,02E-05
Abiotic depletion potential – Fossil resources		MJ, net calorific value	1,98E+02	8,21E+01	6,76E+00	1,28E+01	3,00E+02



## Use of resources

Table 14 - Use of resources results painted sheet 10 mm

PARAMETER		UNIT	A1	A2	A3	A4	TOTAL A1-A4
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	7,66E+01	9,05E-01	8,52E+00	1,37E-01	8,62E+01
	Used as raw materials	MJ, net calorific value	2,95E+01	0,00E+00	5,97E+00	0,00E+00	3,54E+01
	TOTAL	MJ, net calorific value	1,06E+02	9,05E-01	1,45E+01	1,37E-01	1,22E+02
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	2,11E+02	8,34E+01	7,95E+00	1,30E+01	3,16E+02
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	4,11E-01	0,00E+00	5,05E-01
	TOTAL	MJ, net calorific value	2,11E+02	8,34E+01	8,36E+00	1,30E+01	3,16E+02
Secondary material		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m <sup>3</sup>	1,61E-01	1,52E-02	4,76E-01	2,36E-03	6,54E-01



## Waste production and treatment

Table 15 - Waste and treatment results painted sheet 10 mm

PARAMETER	UNIT	A1	A2	A3	A4	TOTAL A1-A4
Hazardous waste disposed	kg	2,63E-01	5,21E-02	2,30E-02	8,02E-03	3,46E-01
Non-hazardous waste disposed	kg	5,79E-01	3,79E+00	4,68E-02	6,03E-01	5,02E+00
Radioactive waste disposed	kg	4,11E-04	5,64E-04	3,83E-05	8,77E-05	1,10E-03
Material for recycling	kg	0,00E+00	0,00E+00	2,28E-04	0,00E+00	2,28E-04
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00



## Painted sheet - 12 mm

### Potential Environmental impact

Table 16 - Environmental impact results painted sheet 12 mm

PARAMETER		UNIT	A1	A2	A3	A4	TOTAL A1-A4
Global warming potential (GWP)	TOTAL	kg CO <sub>2</sub> eq.	1,81E+01	6,53E+00	6,63E+00	5,64E-01	3,19E+01
Depletion potential of the stratospheric ozone layer (ODP)		kg CFC 11 eq.	2,65E-06	1,20E-06	5,55E-08	1,04E-07	4,01E-06
Acidification potential (AP)		kg SO <sub>2</sub> eq.	6,47E-02	2,62E-02	4,36E-03	2,02E-03	9,72E-02
Eutrophication potential (EP)		kg PO <sub>4</sub> <sup>3-</sup> eq.	8,22E-03	3,69E-03	6,86E-04	3,01E-04	1,29E-02
Formation potential of tropospheric ozone (POCP)		kg C <sub>2</sub> H <sub>4</sub> eq.	3,02E-03	1,15E-03	2,95E-04	9,20E-05	4,55E-03
Abiotic depletion potential – Elements		kg Sb eq.	3,69E-05	1,91E-05	1,17E-06	1,69E-06	5,88E-05
Abiotic depletion potential – Fossil resources		MJ, net calorific value	2,38E+02	9,85E+01	8,12E+00	8,52E+00	3,53E+02



## Use of resources

Table 17 - Use of resources results painted sheet 12 mm

PARAMETER		UNIT	A1	A2	A3	A4	TOTAL A1-A4
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	9,20E+01	1,09E+00	1,02E+01	9,15E-02	1,03E+02
	Used as raw materials	MJ, net calorific value	3,54E+01	0,00E+00	7,17E+00	0,00E+00	4,25E+01
	TOTAL	MJ, net calorific value	1,27E+02	1,09E+00	1,74E+01	9,15E-02	1,46E+02
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	2,54E+02	1,00E+02	9,54E+00	8,66E+00	3,72E+02
	Used as raw materials	MJ, net calorific value	0,00E+00	0,00E+00	4,93E-01	0,00E+00	4,93E-01
	TOTAL	MJ, net calorific value	2,54E+02	1,00E+02	1,00E+01	8,66E+00	3,73E+02
Secondary material		kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Non-renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m <sup>3</sup>	1,93E-01	1,83E-02	5,72E-01	1,57E-03	7,84E-01

## Waste production and treatment

Table 18 - Waste and treatment results painted sheet 12 mm

PARAMETER	UNIT	A1	A2	A3	A4	TOTAL A1-A4
Hazardous waste disposed	kg	3,16E-01	6,25E-02	2,76E-02	5,36E-03	4,11E-01
Non-hazardous waste disposed	kg	6,95E-01	4,55E+00	5,62E-02	4,02E-01	5,70E+00
Radioactive waste disposed	kg	4,94E-04	6,77E-04	4,60E-05	5,86E-05	1,28E-03
Material for recycling	kg	0,00E+00	0,00E+00	2,74E-04	0,00E+00	2,74E-04
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00



## Notes

- EPD of construction products may not be comparable if they do not comply with EN 15804
- Environmental product declarations within the same product category from different programs may not be comparable

## References

General Programme Instructions of the International EPD<sup>®</sup> System. Version 3.0.

PCR 2012:01 Construction products and construction services v.2.3, 2018-11-15 e EN 15804:2013, UN CPC 375

Life Cycle Assessment of Ceramapanel production – Study Report for Environmental Product Declaration



