Environmental Product Declaration

In accordance with ISO 14025 and EN 15804 for:

EUROSYSTEM A+/SUPER FR A+
EUROSYSTEM A+ V/SUPER FR A+ V
45 - 70 - 95 mm

from

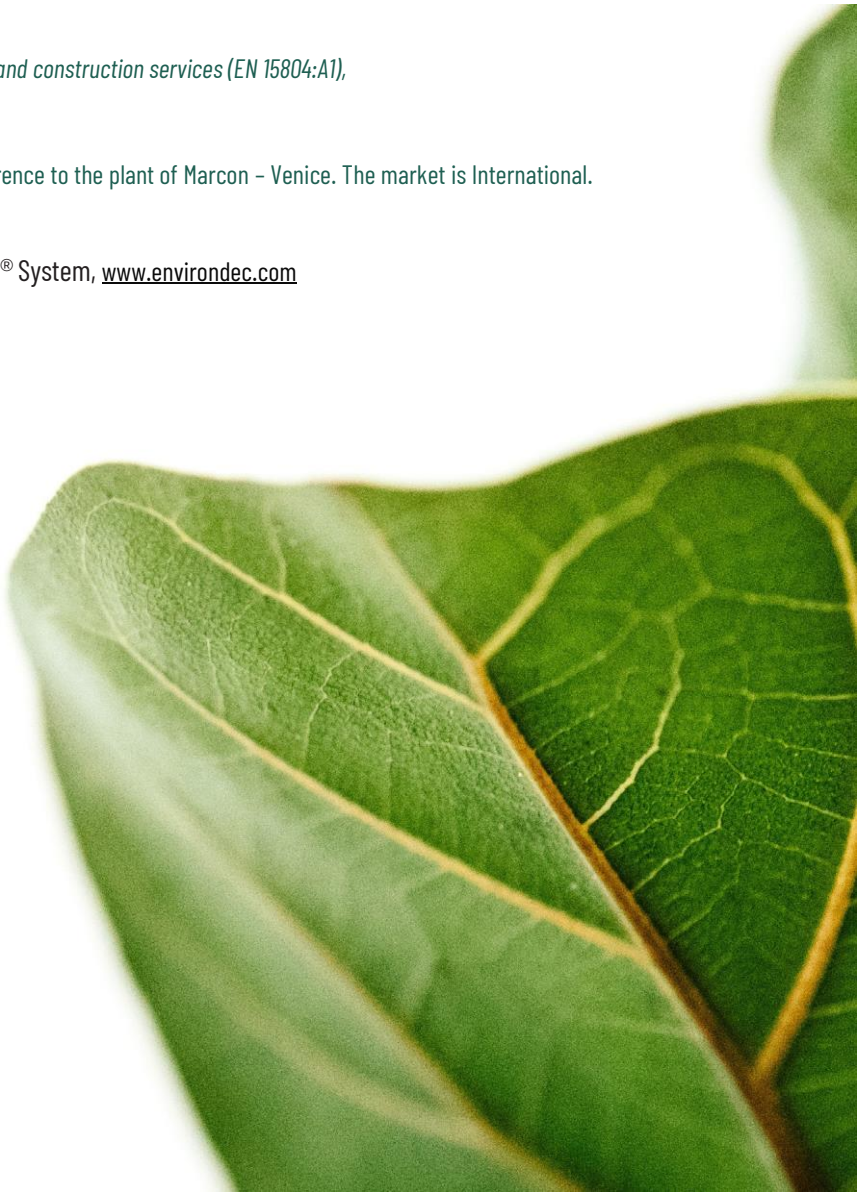
EUROFIBRE SPA – VENEZIA

Product category rules (PCR): *PCR 2012:01 Construction products and construction services (EN 15804:A1),*

Sub-PCR-I Thermal insulation products (EN 16783)

Geographical scope: The performances are calculated with reference to the plant of Marcon – Venice. The market is International.

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-01857
Publication date:	2020-01-22
Valid until:	2024-12-09



Programme Informations

Programme:

The International EPD® System

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Product category rules (PCR): PCR 2012:01 Construction products and construction services (EN 15804:A1), Sub-PCR-I Thermal insulation products (EN 16783)

Independent third-party verification of the declaration and data, according to ISO 14025:2006:

___ EPD process certification _X_ EPD verification

Third party verifier: *CSQA Certificazioni srl, Via San Gaetano 74, Thiene (VI)*

In case of accredited certification bodies:

Accredited by: *ACCREDIA*

Approved by: The International EPD® System

Procedure for follow-up of data during EPD validity involves third party verifier:

_X_ Yes ___No

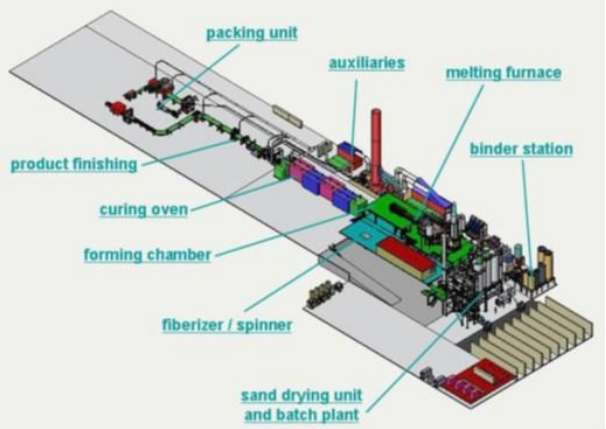
The EPD owner has the sole ownership, liability and responsibility for the EPD. EPDs within the same product category but from different programmes may not be comparable. EPDs of construction products may not be comparable if they do not comply with EN 15804.

Company

EPD Owner:
EUROFIBRE SPA – via Venier 41 – Marcon Venezia
Representative:
Cristina Fregolent - tecnico.commerciale@eurofibre.it
Technical support:
C.U.R.A. Consorzio Universitario di Ricerca Applicata,
Via Marzolo 9, Padova

Description of the organization:
Since its foundation in 1981, in the Marcon Venezia plant, Eurofibre has constantly implemented its own technology necessary to produce glass wool insulations to meet the increasingly complex and stringent needs of the building and industrial market.
Eurofibre is synonymous of innovation, production and commercial flexibility for high-tech solutions offered in multiple segments of thermal, acoustic and fire insulation market.
To date, Eurofibre has developed different types of glass wool, distinguished by traditional brands TERMOVER® and EUROVER®, and from innovatives EUROVER EVO®, EUROVER 2000®, TERMOVER AG, TERMOVER NG and TERMOVER A+.
The productions are structured on a wide range of thicknesses (from 6 to 250 mm) and a variety of customized coverings and packaging, according to the customers' needs.
The set of industrial activities, facilitated by the strategic geographical position, has allowed Eurofibre to develop a constant presence in the European market as well as in the national one.
The need to meet the quality standards of the different national and international markets, in addition to the need to constantly demonstrate compliance with the regulations relating to environmental and safety aspects related to industrial production, made it necessary to implement an Integrated Quality System (ISO 9001), Environment (ISO 14001) and Safety (OHSAS 18001).
Using Eurofibre's thermo-acoustic insulation solutions do not mean buying products in the catalog but designing technical solutions, taking advantage of a complete service that allows us to identify and satisfy the customers' needs, thanks to the help of competent technical and commercial staff.

The goal of Eurofibre has always been customer satisfaction through a personalized business relationship, based on correct advice and a mutual desire for success and growth on the market.



Name and location of plant:
EUROFIBRE SPA – via Venier 41 – Marcon Venezia

Product informations

Product name:

EUROSYSTEM A⁺/SUPER FR A⁺
EUROSYSTEM A⁺ V/SUPER FR A⁺ V
45-70-95 mm

Product description:

EUROSYSTEM A⁺/SUPER FR A⁺:

Roll in Termover® glass wool with organic binder based on acrilic resin, unfaced, with density 12 kg/m^3, thermal conductivity 0,039 W/(mK). Depending on the thickness, the weight and resistance values are as follows:
- **thickness 45 mm**: weight 0,54 kg/m^2, R = 1,15 m^{2}K/W
- **thickness 70 mm**: weight 0,84 kg/m^2, R = 1,79 m^{2}K/W
- **thickness 95 mm**: weight 1,14 kg/m^2, R = 2,43 m^{2}K/W

EUROSYSTEM A⁺ V/SUPER FR A⁺ V:

Roll in Termover® glass wool with organic binder based on acrilic resin, faced with a glass tissue (V), with density 12 kg/m^3, thermal conductivity 0,039 W/(mK). Depending on the thickness, the weight and resistance values are as follows:
- **thickness 45 mm**: weight 0,54 kg/m^2, R = 1,15 m^{2}K/W
- **thickness 70 mm**: weight 0,84 kg/m^2, R = 1,79 m^{2}K/W
- **thickness 95 mm**: weight 1,14 kg/m^2, R = 2,43 m^{2}K/W

The Eurofibre's glass wool is compliant with the Note Q of (CE) Regulation n. 1272/2008 of the European Parliament and of the Council concerning the classification, labeling and packaging of substances and blends.

UN CPC Code:
371

Geographical scope:
Italy

The performances were calculated with reference to the Marcon - Venice plant. The reference market is international.

LCA informations

Declared unit:
1 m^2 of thermal insulation product with specific R_D value ready for market distribution and usable according to the applications provided in Annex A of the Standard EN 16783:2017.
Resistance: different for each thickness

Applications EUROSYSTEM: WTR WZ

Applications SUPER FR: WR DZ AD

Time representativeness:
The primary data cover the period January 2018 - December 2018

Database and software used:
Database Ecoinvent 3.4; Software SimaPro 8.5.2.0 version

System boundaries and process units excluded:
The system boundaries include the mandatory modules A1, A2 and A3 provided by the Standard EN 15804 (CEN, 2013), as shown in the following table according to an application of type "from cradle to gate". It is emphasized that the construction, maintenance and disposal of the infrastructures, intended as building, and the occupation of industrial land were not considered, since it is considered that their contribution to the environmental impact relative to the declared unit is negligible. Consumption of oils for machine maintenance and water treatment are included. It should also be noted that the distribution, use and disposal phases of the product after use are not included in the study.

The parameter chosen for the initial inclusion of input and output elements is based on the definition of a cut-off level of 1%, in terms of mass, energy and environmental relevance. This means that a process has been neglected if it is responsible for less than 1% of the total mass, primary energy and total impact. However all the processes for which the data are available have been taken into consideration, even if with a contribution of less than 1%.
The method chosen to assess the potential environmental impacts of the product covered by this study is the CML-IA baseline method (version 3.05, November 2017 update).

Product stage			Construction stage		Use Stage							End of the Stage				Benefits beyond system boundaries
Raw Materials Supply	Transport	Manufacturing	Transport to Site	On Site Processes	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water Use	Deconstruction / Demolition	Transport	Waste Processing	Disposal	Reuse Recovery Recycling
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
√	√	√	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA	MNA

MNA=Module non accounted

Content declaration

The product does not contain substances included in the "Candidate list of substances of very high concern (SVHC) for authorization" in percentage higher than 0,1%[1].

Packaging

Distribution: The product is packed with havana paper, glue, polyethylene, polyethylene per multi-pack, adhesive labels, stretch film, caps and loaded on pallet to be sent to customers. Polyethylene is composed of 70% recycled material and multi-pack polyethylene from 54% recycled material.

Recycled material

Origin of the recycled material (pre-consumer or post-consumer) in the product:

The batch materials, the binders and the oils used do not contain recycled material.

[1] http://echa.europa.eu/chem_data/authorisation_process/candidate_list_table_en.asp

Environmental performances
Potential environmental impact

EUROSYSTEM A+/SUPER FR A+ 45 mm - EUROSYSTEM A+ V/SUPER FR A+ V 45 mm:

The values for EUROSYSTEM/SUPER FR A+ V 45 mm are shown, which are also representative for EUROSYSTEM/SUPER FR A+ 45 mm as they are within a range of ± 10%.

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Global warming (GW)	kg CO_2 eq.	7,11E-01	1,42E-01	1,66E-01	1,02E+00
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC 11 eq.	1,61E-07	2,54E-08	7,67E-09	1,94E-07
Acidification potential (AP)	kg SO_2 eq.	4,65E-03	5,08E-04	1,11E-03	6,27E-03
Eutrophication potential (EP)	kg PO_4^{3-} eq.	1,54E-03	1,10E-04	3,07E-04	1,96E-03
Formation potential of tropospheric ozone (POCP)	kg C_2H_4 eq.	2,49E-04	2,50E-05	5,37E-05	3,27E-04
Abiotic depletion potential – Elements	kg Sb eq.	2,16E-06	3,81E-07	2,93E-07	2,84E-06
Abiotic depletion potential – Fossil resources	MJ, net calorific value	1,55E+01	2,19E+00	1,35E+00	1,90E+01

For the **Global warming** impact category, a value of 1,02E+00 kg CO_2 eq. is obtained. This impact is mainly due to the electricity consumption (27%), methane (12%) and to the binder and oil group (16%), in this case mainly caused by the consumption of acrylic resin. The impact of the acrylic resin is mainly due to the carbon dioxide emissions that occur during its life cycle. The glass tissue representing the 7% of the total impact.

For the **Ozone layer depletion** impact category, a value of 1,94E-07 kg CFC 11 eq. is obtained. This impact is mainly associated to the electricity consumption (16%) and methane (51%). At the acrylic resin consumption is associated the 8% of the impact. The glass tissue impacs 4%.

For the **Acidification** impact category, a value of 6,27E-03 kg SO_2 eq. is obtained. This impact is mainly associated to the electricity consumption (27%) and to the binder and oil group (28%), also in this case caused by the acrylic resin, is due to the consumption of electricity for the processing of binders, oils and clinker consumption for the construction of the electricity network. The glass tissue representing the 9% of the total. The most emitted substances are sulfur oxides (62% of the total) and nitrogen oxides (27% of the total) in the atmosphere.

For the **Eutrophication** impact category, a value of 1,96E-03 kg PO_4^{3-} eq. is obtained. This impact is mainly associated with the waste disposal and packaging that accompany incoming materials (31%) and is due to the consumption and emissions of the plants which treat these residues. The glass tissue representing the 5% of the total. The most emitted substance is phosphate in water (53%).

For the **Formation potential of tropospheric ozone** impact category, a value of 3,27E-04 kg C_2H_4 eq. is obtained. This impact is mainly associated with the binders and oil group (34%), or with the consumption of acrylic resin and with the electricity consumption (17%). The main emitted substances are sulfur dioxide (48%) and carbon monoxide (16%).

For the **Abiotic Depletion** impact category, a value of 2,84E-06 kg Sb eq. is obtained. This impact is mainly due to the binder and oil group (49%), in particular to the consumption of acrylic resin representing the 49% of the total impact, both used as facing and as glue. Another contribution is given by glass tissue representing the 18% of the total. Another contribution is given by electricity consumption (4%). The impacts of this category are due to the consumption of metals used in the life cycle of sodium silicate and the production of electricity during the distribution network construction process.

For the **Abiotic Depletion (Fossil Fuels)** impact category, a value of 1,90E+01 MJ is obtained. This impact is mainly due to the consumption of methane to generate heat (42%) and electricity consumption (16%). The acrylic resin impacts 13%, while the glass tissue impacs 15%.

Use of resources

PARAMETER		UNIT	A1	A2	A3	TOTAL A1-A3
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1,14E+00	2,62E-02	1,27E-01	1,29E+00
	Used as raw materials	MJ, net calorific value	4,12E-01	3,26E-02	6,54E-01	1,10E+00
	TOTAL	MJ, net calorific value	1,55E+00	5,88E-02	7,81E-01	2,39E+00
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	1,73E+01	2,40E+00	9,70E-01	2,07E+01
	Used as raw materials	MJ, net calorific value	1,21E+00	0,00E+00	6,81E-01	1,89E+00
	TOTAL	MJ, net calorific value	1,85E+01	2,40E+00	1,65E+00	2,26E+01
Secondary material		kg	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
Non-renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m^3	1,55E+01	4,83E+00	1,57E-01	5,00E-01

Waste produced and outflows

Waste produced

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Hazardous waste disposed	kg	0,00E+00	0,00E+00	4,24E-03	4,24E-03
Non-hazardous waste disposed	kg	0,00E+00	0,00E+00	1,28E-01	1,28E-01
Radioactive waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Outflows

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	2,42E-02	2,42E-02
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Environmental performances
Potential environmental impact

EUROSYSTEM A⁺/SUPER FR A⁺ 70 mm - EUROSYSTEM A⁺ V/SUPER FR A⁺ V 70 mm:

The values for EUROSYSTEM/SUPER FR A⁺ V 70 mm are shown, which are also representative for EUROSYSTEM/SUPER FR A⁺ 70 mm as they are within a range of ± 10%.

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Global warming (GW)	kg CO_2 eq.	1,11E+00	2,60E-01	2,53E-01	1,62E+00
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC 11 eq.	2,49E-07	4,65E-08	9,98E-09	3,05E-07
Acidification potential (AP)	kg SO_2 eq.	7,02E-03	9,33E-04	1,71E-03	9,66E-03
Eutrophication potential (EP)	kg PO_4^{3-} eq.	2,38E-03	2,03E-04	4,75E-04	3,06E-03
Formation potential of tropospheric ozone (POCP)	kg C_2H_4 eq.	3,87E-04	4,44E-05	8,42E-05	5,16E-04
Abiotic depletion potential – Elements	kg Sb eq.	3,21E-06	7,03E-07	4,28E-07	4,34E-06
Abiotic depletion potential – Fossil resources	MJ, net calorific value	2,44E+01	4,04E+00	2,02E+00	3,04E+01

For the **Global warming** impact category, a value of 1,62E+00 kg CO_2 eq. is obtained. This impact is mainly due to the electricity consumption (26%), methane (12%) and to the binder and oil group (16%), also in this case mainly caused by the consumption of acrylic resin. The impact of the acrylic resin is mainly due to the carbon dioxide emissions that occur during its life cycle. The glass tissue representing the 8% of the total impact.

For the **Ozone layer depletion** impact category, a value of 3,05E-07 kg CFC 11 eq. is obtained. This impact is mainly associated to the electricity consumption (16%) and methane (51%). The acrylic resin consumption is associated the 8% of the impact. The glass tissue impacs 4%.

For the **Acidification** impact category, a value of 9,66E-03 kg SO_2 eq. is obtained. This impact is mainly associated to the electricity consumption (27%) and to the binder and oil group (28%), also in this case caused by the acrylic resin, is due to the consumption of electricity for the processing of binders, oils and clinker consumption for the construction of the electricity network. The glass tissue representing the 7% of the total. The most emitted substances are sulfur oxides (62% of the total) and nitrogen oxides (28% of the total) in the atmosphere.

For the **Eutrophication** impact category, a value of 3,06E-03 kg PO_4^{3-} eq. is obtained. This impact is mainly associated with the waste disposal and packaging that accompany incoming materials (31%) and is due to the consumption and emissions of the plants which treat these residues. The glass tissue representing the 5% of the total. The most emitted substance is phosphate in water (53%).

For the **Formation potential of tropospheric ozone** impact category, a value of 5,16E-04 kg C_2H_4 eq. is obtained. This impact is mainly associated with the binders and oil group (33%), or with the consumption of acrylic resin, and with the electricity consumption (17%). The main emitted substances are sulfur dioxide (46%) and carbon monoxide (16%).

For the **Abiotic Depletion** impact category, a value of 4,34E-06 kg Sb eq. is obtained. This impact is mainly due to the binder and oil group (50%), in particular to the consumption of acrylic resin representing the 50% of the total impact, both used as facing and as glue. Another contribution is given by glass tissue representing the 16% of the total. Another contribution is given by electricity consumption (4%). The impacts of this category are due to the consumption of metals used in the life cycle of sodium silicate and the production of electricity during the distribution network construction process.

For the **Abiotic Depletion (Fossil Fuels)** impact category, a value of 3,04E+01 MJ is obtained. This impact is mainly due to the consumption of methane to generate heat (42%) and electricity consumption (16%). The acrylic resin impacts 13%, while the glass tissue impacs 6%.

Use of resources

PARAMETER		UNIT	A1	A2	A3	TOTAL A1-A3
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1,77E+00	4,60E-02	2,01E-01	2,01E+00
	Used as raw materials	MJ, net calorific value	6,27E-01	2,56E-02	1,16E+00	1,82E+00
	TOTAL	MJ, net calorific value	2,39E+00	7,16E-02	1,36E+00	3,83E+00
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	2,70E+01	4,43E+00	1,56E+00	3,30E+01
	Used as raw materials	MJ, net calorific value	2,04E+00	0,00E+00	9,36E-01	2,97E+00
	TOTAL	MJ, net calorific value	2,91E+01	4,43E+00	2,50E+00	3,60E+01
Secondary material		kg	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
Non-renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m^3	1,55E+01	7,47E+00	2,77E-01	7,84E-01

Waste produced and outflows

Waste produced

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Hazardous waste disposed	kg	0,00E+00	0,00E+00	6,52E-03	6,52E-03
Non-hazardous waste disposed	kg	0,00E+00	0,00E+00	1,98E-01	1,98E-01
Radioactive waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Outflows

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	3,47E-02	3,47E-02
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Environmental performances
Potential environmental impact

EUROSYSTEM A+/SUPER FR A+ 95 mm - EUROSYSTEM A+ V/SUPER FR A+ V 95 mm:

The values for EUROSYSTEM/SUPER FR A+ V 95 mm are shown, which are also representative for EUROSYSTEM/SUPER FR A+ 95 mm as they are within a range of ± 10%.

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Global warming (GW)	kg CO_2 eq.	1,50E+00	3,83E-01	3,77E-01	2,26E+00
Depletion potential of the stratospheric ozone layer (ODP)	kg CFC 11 eq.	3,42E-07	7,10E-08	1,44E-08	4,28E-07
Acidification potential (AP)	kg SO_2 eq.	9,50E-03	1,38E-03	2,47E-03	1,34E-02
Eutrophication potential (EP)	kg PO_4^{3-} eq.	3,26E-03	3,01E-04	6,79E-04	4,24E-03
Formation potential of tropospheric ozone (POCP)	kg C_2H_4 eq.	5,21E-04	6,64E-05	1,21E-04	7,08E-04
Abiotic depletion potential – Elements	kg Sb eq.	4,21E-06	1,07E-06	6,04E-07	5,89E-06
Abiotic depletion potential – Fossil resources	MJ, net calorific value	3,33E+01	5,80E+00	3,41E+00	4,25E+01

For the **Global warming** impact category, a value of 2,26E+00 kg CO_2 eq. is obtained. This impact is mainly due to the electricity consumption (26%), methane (12%) and to the binder and oil group (16%), in this case mainly caused by the consumption of acrylic resin. The impact of the acrylic resin is mainly due to the carbon dioxide emissions that occur during its life cycle. The glass tissue representing the 6% of the total impact.

For the **Ozone layer depletion** impact category, a value of 4,28E-07 kg CFC 11 eq. is obtained. This impact is mainly associated to the electricity consumption (16%) and methane (51%). The acrylic resin consumption is associated the 8% of the impact. The glass tissue impacs 3%.

For the **Acidification** impact category, a value of 1,34E-02 kg SO_2 eq. is obtained. This impact is mainly associated to the electricity consumption (28%) and to the binder and oil group (28%), also in this case caused by the acrylic resin, is due to the consumption of electricity for the processing of binders, oils and clinker consumption for the construction of the electricity network. The glass tissue representing the 6% of the total. The most emitted substances are sulfur oxides (61% of the total) and nitrogen oxides (28% of the total) in the atmosphere.

For the **Eutrophication** impact category, a value of 4,24E-03 kg PO_4^{3-} eq. is obtained. This impact is mainly associated with the waste disposal and packaging that accompany incoming materials (31%) and is due to the consumption and emissions of the plants which treat these residues. The glass tissue representing the 4% of the total. The most emitted substance is phosphate in water (53%).

For the **Formation potential of tropospheric ozone** impact category, a value of 7,10E-04 kg C_2H_4 eq. is obtained. This impact is mainly associated with the binders and oil group (34%), or with the consumption of acrylic resin, and with the electricity consumption (17%). The main emitted substances are sulfur dioxide (46%) and carbon monoxide (16%).

For the **Abiotic Depletion** impact category, a value of 5,89E-06 kg Sb eq. is obtained. This impact is mainly due to the binder and oil group (52%), in particular to the consumption of acrylic resin representing the 50% of the total impact, both used as facing and as glue. Another contribution is given by glass tissue representing the 12% of the total. Another contribution is given by electricity consumption (4%). The impacts of this category are due to the consumption of metals used in the life cycle of sodium silicate and the production of electricity during the distribution network construction process.

For the **Abiotic Depletion (Fossil Fuels)** impact category, a value of 4,25E+01 MJ is obtained. This impact is mainly due to the consumption of methane to generate heat (42%) and electricity consumption (16%). The acrylic resin impacts 13%, while the glass tissue impacs 5%.

Use of resources

PARAMETER		UNIT	A1	A2	A3	TOTAL A1-A3
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	2,42E+00	6,03E-02	2,94E-01	2,77E+00
	Used as raw materials	MJ, net calorific value	8,42E-01	6,96E-02	1,71E+00	2,62E+00
	TOTAL	MJ, net calorific value	3,26E+00	1,30E-01	2,00E+00	5,39E+00
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	3,70E+01	6,30E+00	2,57E+00	4,59E+01
	Used as raw materials	MJ, net calorific value	2,60E+00	0,00E+00	1,63E+00	4,23E+00
	TOTAL	MJ, net calorific value	3,96E+01	6,30E+00	4,20E+00	5,01E+01
Secondary material		kg	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
Non-renewable secondary fuels		MJ, net calorific value	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Net use of fresh water		m^3	1,55E+01	1,01E+01	3,93E-01	1,14E+00

Waste production and outflows

Waste production

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Hazardous waste disposed	kg	0,00E+00	0,00E+00	8,53E-03	8,53E-03
Non-hazardous waste disposed	kg	0,00E+00	0,00E+00	2,87E-01	2,87E-01
Radioactive waste disposed	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Outflows

PARAMETER	UNIT	A1	A2	A3	TOTAL A1-A3
Components for reuse	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Material for recycling	kg	0,00E+00	0,00E+00	5,05E-02	5,05E-02
Materials for energy recovery	kg	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, electricity	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy, thermal	MJ	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Additional informations

The Embodied energy, defined as the quantity of energy required to produce and transport the raw materials, is equal to to 1,95E+01 MJ for EUROSYSTEM/SUPER FR A+ V 45 mm, 3,14E+01 MJ for EUROSYSTEM/SUPER FR A+ V 70 mm and 4,38E+01 MJ for EUROSYSTEM/SUPER FR A+ V 95 mm.

Type and source

Choosing the data to be used for the LCA study, primary data collected from Eurofibre were endorsed through a measurement campaign carried out between May 2019 and December 2019 in the Marcon (Ve) plant. The primary data cover the period January 2018 - December 2018 and relate to:

- the transport of incoming materials for the production, as well as the auxiliary materials as e.g. the oxygen (distance covered, type of fuel, Euroclass of the vehicles, payload, percentage of vehicle load)
- waste produced (quantity and type) and raw materials used (quantity and type)
- the production process of insulation at Eurofibre (mass balance and energy consumption)
- internal transport and operating machines used at Eurofibre
- the transport of the waste produced to the destination plant (distance covered, type of fuel, Euro class of the vehicles, vehicle load, percentage of vehicle load)
- diesel and methane consumption for heating
- lighting and compressed air consumption

In the event that primary data or models are not available for the calculation of such data, secondary data obtained by consulting internationally recognized databases have been used, favoring the use of the most up-to-date ones where possible. The secondary data in particular concern:

- the combustion processes of the vehicles: emissions, maintenance, use of the road network, fuel consumption (Ecoinvent data sets 3.4 version)
- operating machines: emissions (Ecoinvent 3.4 data sets)
- electricity: energy mix, distribution network, sulfur hexafloride emissions, losses (Ecoinvent data set 3.4)
- the production of the materials used (Ecoinvent 3.4 data sets)

The proxy data are less than 10% as required by the program rules.

Reference

- General Programme Instructions of the International EPD® System. Version 2.5
- Construction Products and construction services 2012:01 version 2.3 valid until 2020-03-03
- Sub-PCR to PCR 2012:01 date 2018-11-16 thermal insulation products (EN 16783:2017)

Standard

- CEN, 2013, EN 15804:2012+A1:2013 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products, European Committee for Standardization (CEN), Brussels
- CEN, 2016, PD CEN7TR 16970:2016 Sustainability of construction works – Guidance for the implementation of EN 15804. European Committee for Standardization (CEN), Brussels
- CEN, 2017, EN 16783:2017 Thermal insulation products – Product Category Rules (PCR) for factory made and in-situ formed products for preparing environmental product declarations, European Committee for Standardization (CEN), Brussels
- ISO, 2006, ISO 14040:2006 Environmental Management Life cycle assessment – Principles and framework, International Organization for Standardisation (ISO), Ginevra
- ISO 2017, ISO 14044:2017 Environmental management – Life cycle assessment – Requirements and guidelines, International Organization for Standardisation (ISO), Ginevra.

Internal documents

- Eurofibre, 2019. Building products catalog (internal document)
- Eurofibre, 2019. Solutions for an eco-friendly building, totally formaldheyde-free (internal document)
- Eurofibre 2019. Management research, acquisition and updating of information in LCA and EPD (internal procedure P08-11)
- Eurofibre, 2019. Life Cycle Assessment study of six building insulations Third Party Report rev.6 09/12/2019

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