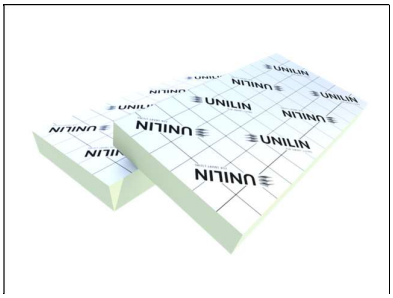
ENVIRONMENTAL PRODUCT DECLARATION

B-EPD .BE

026.0009.007- 01.00.00

UNILIN

PIR INSULATION BOARD “UTHERM” WITH MULTILAYER FACER – FIRE CLASS E



ISSUED 6.07.2026
VALID UNTIL 6.07.2031

THIRD PARTY VERIFIED
Conform to EN 15804+A2 and B-EPD PCR

FUNCTIONAL UNIT AND DECLARED MODULES

1 m² of a PIR insulation board of 100 mm faced on both sides with a multilayer facing – Fire Class E to be used for thermal insulation of residential and commercial buildings for 60 years, with a R_D-value of 4,5 m²K/W.

cradle-to-gate with options C1-C4 & D

A123	A4	A5	B2 B4 B6	C	D
√	√	√	√	√	√

The Environmental Product Declaration (EPD) is used to communicate scientifically based environmental information for construction products, in order to assess the environmental performance of buildings. A B-EPD is only recognised after it has been validated and registered on www.b-epd.be. FPS Public Health is not responsible for the information provided by the EPD owner.

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1 PRODUCT DESCRIPTION

1.1 Product name

Utherm Wall LE; Utherm Roof LE; Utherm Roof LE Pro; Utherm Floor LE; Utherm Premium LE; Utherm Roof LE pro tapered;

1.2 Product description and intended use

Product description:
"Utherm » with multilayer facer- Fire Class E is a factory-made rigid insulation board of polyisocyanurate (PIR) according to EN 13165 :2012+A2 :2016.

Product type:
The product is available in variable thicknesses from 20 mm up to 200 mm.
This EPD covers the thickness of 100 mm with a R_d-value of 4,5 m²K/W (or 5,0 m²K/W for the premium product).
The results presented in this EPD can be recalculated to other thicknesses and r_d-values using an equation.



Specificity:
The B-EPD is specific for the PIR insulation board "Utherm" with multilayer facer – Fire Class E which is manufactured by a single manufacturer in one production site (Feluy).

Intended use(s):
"Utherm" with multilayer facer – Fire Class E is used as thermal insulation of buildings (for walls, floors, flat roofs).

1.3 Functional unit

Functional unit:
The functional unit is 1 m² thermal insulation board with a r_d-value of 4,5 m²K/W or 5,0 m²K/W for the premium product.

The RSL of the PIR insulation board with a multilayer facer – Fire Class E is estimated at 60 years.

Packaging is included.
The weight per reference flow is 3,13 kg.
The density of the product is 31,3 kg/m³.

1.4 Installation

The product is as produced.

Materials for fixing and installation are not included. In the context of the installation, this EPD only includes the environmental impact related to the product itself and end-of-life treatment of packaging.

The following scenarios are possible for the installation of the product: use of as adhesives or screws. This may lead to additional products and materials being required, for which the impact is not included in this EPD and which shall be taken into account at building level.
You will find detailed information on how to implement a correct scenario at building level in "Chapter 14. Technical information for scenario development".



1.5 Composition and content

Components	Composition/content/ingredients	Quantity
Product	multilayer facer (alu/kraft/PE) PIR core (MDI, polyester derived polyol, others)	7,3 % 92,7 %
Fixing materials	-	
Jointing materials	-	
Treatments	-	
Packaging	LDPE packaging film with recycled content PU blocks	3.96E-2 kg/m² 2,57E-02 kg/m²

The product does not contain materials listed in the “Candidate list of Substances of Very High Concern for authorisation”

1.6 Reference service life

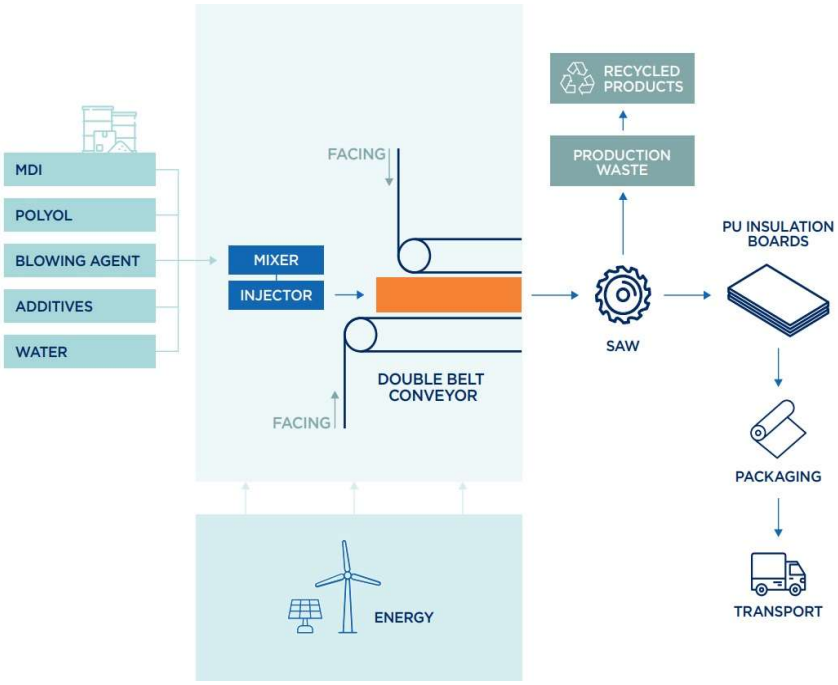
The reference service life is estimated at 60 years.
The RSL is based on “Environmental profile of building_update 2023 - paragraph 2.2.2. Service Life” (Totem-building.be).
The conditions under which this RSL is valid, are as follows: Insulation materials are in general not replaced during the life span of the building.

1.7 Description of geographical representativeness

This B-EPD is representative of the Belgian market.

1.8 Description of the production process and technology

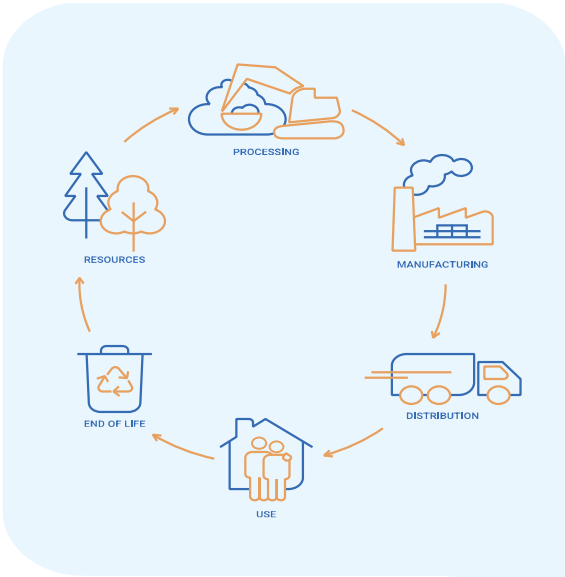
PIR insulation boards with multilayer facings - Fire Class E are manufactured in a continuous process on a double belt conveyor. This manufacturing process involves the reaction mixture flowing from a mixing head to a lower facing made of flexible material where it foams up to, and adheres to a top facing applied from above within the pressure zone of the laminator. The foam boards are cut to the required sizes after passing through the double belt conveyor.



2 TECHNICAL DATA/PHYSICAL CHARACTERISTICS

Technical property	Standard	Value	Unit	Note
Thickness	EN 13165:2021+A2:2016	100	mm	
Thermal conductivity	EN 13165:2021+A2:2016	0.022	W/m.K	
Thermal conductivity Premium	EN 13165:2021+A2:2016	0.020	W/m.K	
R_d-value	EN 13165:2021+A2:2016	4,5	m²K/W	
R_d-value	EN 13165:2021+A2:2016	5,0	m²K/W	

3 LIFE CYCLE ASSESSMENT (LCA)



3.1 LCA date

April 2026

3.2 Software

For the calculation of the LCA results, the software program Simpro 10.3.0.1 has been used.

3.3 Information on allocation

Allocation of the inputs and outputs (emissions and waste) to primary and secondary PIR has been done based on physical properties, the m² of primary PIR and secondary PIR produced. Also the materials inputs necessary to produce scrap and cutting losses are allocated to primary and secondary PIR using physical properties (m² of primary and secondary PIR produced).

3.4 Information on cut-off

The following processes are considered below cut-off: transport to end-of-life treatment of packaging materials (A3 and A5); electricity use during installation. Possible energy recovery from packaging materials in module D. Each neglected input flow meets the three EN 15804+A2 criteria. Moreover, the total cumulative exclusion does not exceed the 5% threshold.

3.5 Information on excluded processes

The following processes were excluded for the inventory:

- Transport to end-of-life treatment of packaging materials (A3 and A5).
- Electricity use during installation.
- Possible energy recovery from packaging materials and facing in module D.
- Losses during transport are considered to be below cut-off because breakage during transport only rarely occurs.
- Environmental impacts caused by the personnel of the production plants are not included in the LCA, e.g. waste from the cafeteria and sanitary installations, accidental pollution caused by human mistakes, or environmental effects caused by commuter traffic. Heating or cooling of the plants in order to ensure a comfortable indoor climate for the personnel for example is also neglected.

3.6 Information on biogenic carbon modelling

The product and packaging does not contain biogenic carbon.

3.7 Information on carbon offsetting

Carbon offsetting is not allowed under EN 15804+02 and is therefore not taken into account in the calculations.

3.8 Additional or deviating characterisation factors

For EN 15804+A2, characterisation factors based on the most recent version of the EC-JRC website EF 3.1 package (2022-2023) have been applied. No additional or deviating characterisation factors were used.

3.9 Specificity

The data used for the LCA are specific for this product which is manufactured by a single manufacturer in one production site (Feluy). The life cycle inventory is based on the data from Feluy.

3.10 Description of the variability

There is only a small difference in the composition between the base product and the premimium product, with limited effects on the overall results. Therefore, it was considered to report the same composition for all products.

3.11 Period of data collection

Manufacturer-specific data have been collected for the year 2023.

3.12 Information on data collection

The company specific data from the production site Feluy have been collected by UNILIN. The LCI data for the production stage have been checked by the EPD verifier.
For all background processes such as the production of electricity, transport by means of trucks, … publicly available data have been used.

3.13 Database used for background data

The LCI sources used in this study are the Ecoinvent V3.11 database (Werner et al, 2016).

3.14 Energy mix

The Belgian electricity mix (consumption mix + import) and Belgian windmill electricity has been used to model electricity use, the used record is the Ecoinvent record 'Electricity, low voltage {BE}| market for | Cut-off, U' and 'Electricity, low voltage {BE}| and Electricity, medium voltage {BE}| electricity voltage transformation from high to medium voltage | Cut-off, U (Werner et al., 2016).
For the gas use, the Belgian natural gas mix (consumption mix + import) was used, the record is de Ecoinvent record 'Heat, district or industrial, natural gas [BE]| heat production, natural gas, at industrial furnace low-NOx >100kW | Cut-off, U' (Werner et al., 2016).

4 PRODUCTION SITE(S)

UNILIN, division insulation Feluy (Feluy, Belgium)

5 SYSTEM BOUNDARIES

Product stage			Construction installation stage		Use stage							End-of-life stage					Beyond the system boundaries
Raw materials	Transport	Manufacturing	Transport	Construction installation stage	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction demolition	Transport	Waste processing	Disposal		Reuse-Recovery- Recycling-potential
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4		D
☒	☒	☒	☒	☒	☐	☒	☐	☒	☐	☒	☐	☒	☒	☒	☒		☐

X = included in the EPD
☐ = module not declared

6 POTENTIAL ENVIRONMENTAL IMPACTS PER REFERENCE FLOW

The LCA results are provided for an insulation panel with a thickness of 100 mm. The LCA results are declared separately for the PIR core and multilayer facer. LCA results PIR insulation plates with another thickness can be calculated using the below equation: LCA results PIR aluminium insulation with new thickness = (LCA result PIR core 100 mm * new thickness (mm) / 100 mm) + LCA result facer The equation can be applied to products with a thickness between 20 mm and 200 mm. The density of the products and the composition of the PIR core remain the same.

Environmental profile of the PIR core of a PIR insulation board "Utherm" with multilayer facer – Fire Class E per declared unit

	Production			Construction process stage		Use stage							End-of-life stage				
	A1 Raw material	A2 Transport	A3 manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
GWP total (kg CO2 eq./FU)	8,46E+00	6,93E-01	2,19E-01	5,74E-02	9,92E-01	ND	0,00	ND	0,00	ND	0,00	ND	0,00	7,04E-02	7,53E+00	0,00	-2,86E+00
Fossil GWP (kg CO2 eq./FU)	8,43E+00	6,93E-01	2,19E-01	5,73E-02	9,90E-01	ND	0,00	ND	0,00	ND	0,00	ND	0,00	7,03E-02	7,53E+00	0,00	-2,85E+00
Biogenic GWP (kg CO2 eq./FU)	2,81E-02	1,56E-04	1,96E-04	1,23E-05	1,46E-03	ND	0,00	ND	0,00	ND	0,00	ND	0,00	1,48E-05	6,25E-04	0,00	-2,74E-03
PRG LULUC (kg CO2 eq./FU)	5,15E-03	2,54E-04	2,21E-04	1,95E-05	2,89E-04	ND	0,00	ND	0,00	ND	0,00	ND	0,00	2,35E-05	9,20E-05	0,00	-4,06E-03
ODP (kg CFC 11 eq./FU)	2,55E-08	1,46E-08	6,15E-09	1,25E-09	2,91E-09	ND	0,00	ND	0,00	ND	0,00	ND	0,00	1,53E-09	7,70E-09	0,00	-1,00E-07
AP (mol H+ eq./FU)	1,45E-02	3,21E-03	7,06E-04	1,85E-04	1,35E-03	ND	0,00	ND	0,00	ND	0,00	ND	0,00	2,26E-04	6,96E-03	0,00	-4,10E-03
EP – fresh water (kg P eq./FU)	6,20E-05	5,26E-06	5,61E-06	4,23E-07	3,93E-06	ND	0,00	ND	0,00	ND	0,00	ND	0,00	5,15E-07	4,04E-06	0,00	-4,33E-05
EP – marine (kg N eq./FU)	4,35E-03	9,98E-04	1,44E-04	6,17E-05	5,12E-04	ND	0,00	ND	0,00	ND	0,00	ND	0,00	7,52E-05	3,90E-03	0,00	-1,24E-03
EP – land (mol N eq./FU)	4,38E-02	1,10E-02	1,55E-03	6,79E-04	5,10E-03	ND	0,00	ND	0,00	ND	0,00	ND	0,00	8,27E-04	3,71E-02	0,00	-1,38E-02
POCP (kg NMVOC eq./FU)	1,55E-02	4,07E-03	3,12E-03	2,83E-04	1,71E-03	ND	0,00	ND	0,00	ND	0,00	ND	0,00	3,42E-04	9,21E-03	0,00	-5,28E-03
ADP Components (kg Sb eq./FU)	1,43E-05	2,30E-06	2,89E-06	1,91E-07	1,05E-06	ND	0,00	ND	0,00	ND	0,00	ND	0,00	2,43E-07	8,73E-07	0,00	-4,64E-06
ADP fossil fuels (MJ/FU)	2,24E+02	9,73E+00	5,08E+00	8,18E-01	1,23E+01	ND	0,00	ND	0,00	ND	0,00	ND	0,00	9,97E-01	5,11E+00	0,00	-1,03E+02
WDP (m^3 water eq. deprived/FU)	2,35E+00	3,87E-02	8,58E-02	3,33E-03	1,42E-01	ND	0,00	ND	0,00	ND	0,00	ND	0,00	3,92E-03	3,00E-01	0,00	-7,52E-01

Environmental profile of the facing of a PIR insulation board "Utherm" with multilayer facer – Fire Class E per declared unit

	Production			Construction process stage		Use stage							End-of-life stage				
	A1 Raw material	A2 Transport	A3 manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
GWP total (kg CO2 equiv/FU)	6,04E-01	4,32E-02	0,00E+00	4,51E-03	3,29E-02	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	5,53E-03	9,97E-05	0,00E+00	0,00E+00
GWP fossil (kg CO2 equiv/FU)	6,02E-01	4,32E-02	0,00E+00	4,51E-03	3,28E-02	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	5,53E-03	9,93E-05	0,00E+00	0,00E+00
GWP biogenic (kg CO2 equiv/FU)	1,38E-03	9,09E-06	0,00E+00	9,66E-07	6,97E-05	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,17E-06	1,69E-07	0,00E+00	0,00E+00
GWP luluc (kg CO2 equiv/FU)	1,28E-03	1,44E-05	0,00E+00	1,53E-06	6,51E-05	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,85E-06	2,29E-07	0,00E+00	0,00E+00
ODP (kg CFC 11 equiv/FU)	1,04E-08	9,42E-10	0,00E+00	9,84E-11	5,76E-10	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,21E-10	2,97E-12	0,00E+00	0,00E+00
AP (mol H+ eq/FU)	3,08E-03	1,39E-04	0,00E+00	1,45E-05	1,63E-04	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,78E-05	3,92E-07	0,00E+00	0,00E+00
EP - freshwater (kg P- equiv/FU)	2,46E-05	3,16E-07	0,00E+00	3,32E-08	1,25E-06	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	4,05E-08	3,33E-09	0,00E+00	0,00E+00
EP - marine (kg N- equiv/FU)	6,19E-04	4,61E-05	0,00E+00	4,85E-06	3,38E-05	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	5,91E-06	7,47E-08	0,00E+00	0,00E+00
EP - terrestrial (mol N- equiv/FU)	6,71E-03	5,07E-04	0,00E+00	5,34E-05	3,67E-04	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	6,50E-05	8,65E-07	0,00E+00	0,00E+00
POCP (kg Ethene equiv/FU)	2,61E-03	2,10E-04	0,00E+00	2,23E-05	1,43E-04	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,43E-04	2,69E-05	0,00E+00	0,00E+00
ADP Elements (kg Sb equiv/FU)	5,10E-06	1,49E-07	0,00E+00	1,50E-08	2,64E-07	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	2,64E-07	1,91E-08	0,00E+00	0,00E+00
ADP fossil fuels (MJ/FU)	1,04E+01	6,12E-01	0,00E+00	6,43E-02	5,56E-01	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	5,56E-01	7,84E-02	0,00E+00	0,00E+00
WDP (m^3 water eq deprived /FU)	2,55E-01	2,41E-03	0,00E+00	2,62E-04	1,29E-02	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,29E-02	3,08E-04	0,00E+00	0,00E+00

GWP TOTAL = TOTAL GLOBAL WARMING POTENTIAL (CLIMATE CHANGE); GWP-LULUC = GLOBAL WARMING POTENTIAL (CLIMATE CHANGE) LAND USE AND LAND USE CHANGE; ODP = OZONE DEPLETION POTENTIAL; AP = ACIDIFICATION POTENTIAL FOR SOIL AND WATER; EP = EUTROPHICATION POTENTIAL; POCP = PHOTOCHEMICAL OZONE CREATION; ADPE = ABIOTIC DEPLETION POTENTIAL – ELEMENTS; ADPF = ABIOTIC DEPLETION POTENTIAL – FOSSIL FUELS; WDP = WATER USE (WATER (USER) DEPRIVATION POTENTIAL, DEPRIVATION-WEIGHTED WATER CONSUMPTION)

7 RESOURCE USE

Parameters describing resource use for the PIR core of a PIR insulation board "Utherm" with multilayer facer – Fire Class E per declared unit

	Production			Construction process stage		Use stage							End-of-life stage				
	A1 Raw material	A2 Transport	A3 manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
PERE (MJ/FU, net calorific value)	1,27E+01	1,64E-01	2,32E+00	1,32E-02	7,65E-01	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,62E-02	1,02E-01	0,00E+00	-8,34E+00
PERM (MJ/FU, net calorific value)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT (MJ/FU, net calorific value)	1,27E+01	1,64E-01	2,32E+00	1,32E-02	7,65E-01	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,62E-02	1,02E-01	0,00E+00	-8,34E+00
PENRE (MJ/FU, net calorific value)	2,24E+02	9,73E+00	5,08E+00	8,18E-01	1,23E+01	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	9,97E-01	5,11E+00	0,00E+00	-1,03E+02
PENRM (MJ/FU, net calorific value)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT (MJ/FU, net calorific value)	2,24E+02	9,73E+00	5,08E+00	8,18E-01	1,23E+01	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	9,97E-01	5,11E+00	0,00E+00	-1,03E+02
SM (kg/FU)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF (MJ/FU, net calorific value)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF (MJ/FU, net calorific value)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW (m^3 water eq./FU)	5,51E-02	1,23E-03	2,14E-03	1,05E-04	3,55E-03	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,24E-04	1,03E-02	0,00E+00	-2,13E-02

Parameters describing resource use for the facing of a PIR insulation board "Utherm" with multilayer facer – Fire Class E per declared unit

	Production			Construction process stage		Use stage							End-of-life stage				
	A1 Raw material	A2 Transport	A3 manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
PERE (MJ/FU, net calorific value)	4,58E+00	9,96E-03	0,00E+00	1,04E-03	2,29E-01	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,28E-03	6,71E-04	0,00E+00	0,00E+00
PERM (MJ/FU, net calorific value)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PERT (MJ/FU, net calorific value)	4,58E+00	9,96E-03	0,00E+00	1,04E-03	2,29E-01	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,28E-03	6,71E-04	0,00E+00	0,00E+00
PENRE (MJ/FU, net calorific value)	1,04E+01	6,12E-01	0,00E+00	6,43E-02	5,56E-01	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	7,84E-02	4,50E-03	0,00E+00	0,00E+00
PENRM (MJ/FU, net calorific value)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
PENRT (MJ/FU, net calorific value)	1,04E+01	6,12E-01	0,00E+00	6,43E-02	5,56E-01	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	7,84E-02	4,50E-03	0,00E+00	0,00E+00
SM (kg/FU)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
RSF (MJ/FU, net calorific value)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
NRSF (MJ/FU, net calorific value)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
FW (m^3 water eq/FU)	7,03E-03	7,64E-05	0,00E+00	8,23E-06	3,56E-04	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	9,79E-06	1,36E-06	0,00E+00	0,00E+00

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 = NET USE OF FRESH WATER

8 WASTE CATEGORIES & OUTPUT FLOWS

Parameters describing different waste categories and output flows for a PIR insulation board "Utherm" with multilayer facer– Fire Class E declared unit

	Production			Construction process stage		Use stage							End-of-life stage				
	A1 Raw material	A2 Transport	A3 manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Hazardous waste disposed (kg/FU)	4,88E-04	2,92E-04	6,65E-04	2,57E-05	7,40E-03	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	3,07E-05	1,11E-01	0,00E+00	-1,06E-03
Non-hazardous waste disposed (kg/FU)	3,03E-01	5,47E-01	1,51E-01	5,47E-02	7,99E-02	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	5,86E-02	3,65E-01	0,00E+00	-4,22E-01
Radioactive waste disposed (kg/FU)	3,65E-06	2,90E-06	1,81E-05	2,39E-07	1,35E-06	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	2,93E-07	1,62E-06	0,00E+00	-8,36E-04
Components for re-use (kg/FU)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling (kg/FU)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery (kg/FU)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy (MJ/FU)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Parameters describing different waste categories and output flows for the facing of a PIR insulation board "Utherm" with multilayer facer– Fire Class E per declared unit

	Production			Construction process stage		Use stage							End-of-life stage				
	A1 Raw material	A2 Transport	A3 manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
Hazardous waste disposed (kg/FU)	1,26E-03	1,89E-05	0,00E+00	2,02E-06	6,44E-05	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	2,42E-06	1,38E-07	0,00E+00	0,00E+00
Non-hazardous waste disposed (kg/FU)	4,93E-01	3,60E-02	0,00E+00	4,30E-03	2,69E-02	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	4,61E-03	9,37E-05	0,00E+00	0,00E+00
Radioactive waste disposed (kg/FU)	9,85E-06	1,80E-07	0,00E+00	1,88E-08	5,06E-07	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	2,31E-08	4,46E-08	0,00E+00	0,00E+00
Components for re-use (kg/FU)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for recycling (kg/FU)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Materials for energy recovery (kg/FU)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Exported energy (MJ/FU)	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00

9 POTENTIAL ADDITIONAL ENVIRONMENTAL IMPACT

Additional indicators for the PIR core of a PIR insulation board "Utherm" with multilayer facer– Fire Class E per declared unit

		Production			Construction process stage		Use stage							End-of-life stage				
		A1 Raw material	A2 Transport	A3 manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	PM (disease incidence)	1,41E-07	5,46E-08	6,25E-09	4,80E-09	1,27E-08	ND	0,00	ND	0,00	ND	0,00	ND	0,00	5,60E-09	3,69E-08	0,00	-2,27E-08
	IRHH (kg U235 eq./FU)	2,57E-01	4,29E-03	2,19E-02	3,52E-04	1,43E-02	ND	0,00	ND	0,00	ND	0,00	ND	0,00	4,31E-04	2,27E-03	0,00	-9,91E-01
	ETF (CTUe/FU)	8,13E+01	1,29E+00	8,99E-01	1,06E-01	5,27E+00	ND	0,00	ND	0,00	ND	0,00	ND	0,00	1,32E-01	1,84E+01	0,00	-2,40E+00
	HTCE (CTUh/FU)	1,71E-09	1,20E-10	6,55E-11	9,63E-12	1,36E-10	ND	0,00	ND	0,00	ND	0,00	ND	0,00	1,19E-11	6,45E-10	0,00	-3,90E-10
	HTnCE (CTUh/FU)	1,00E-07	5,88E-09	2,78E-09	5,13E-10	6,91E-09	ND	0,00	ND	0,00	ND	0,00	ND	0,00	6,22E-10	2,23E-08	0,00	-8,11E-09
	Land Use Related effects (dimensionless)	2,33E+01	5,55E+00	9,33E-01	5,56E-01	1,59E+00	ND	0,00	ND	0,00	ND	0,00	ND	0,00	5,90E-01	7,63E-01	0,00	-8,88E+00

Additional indicators for the facing of a PIR insulation board "Utherm" with multilayer facer– Fire Class E per declared unit

		Production			Construction process stage		Use stage							End-of-life stage				
		A1 Raw material	A2 Transport	A3 manufacturing	A4 Transport	A5 Installation	B1 Use	B2 Maintenance	B3 Repair	B4 Replacement	B5 Refurbishment	B6 Operational energy use	B7 Operational water use	C1 Deconstruction / demolition	C2 Transport	C3 Waste processing	C4 Disposal	D Reuse, recovery, recycling
	PM (disease incidence)	5,35E-08	3,43E-09	0,00E+00	3,77E-10	2,89E-09	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	2,89E-09	4,40E-10	0,00E+00	0,00E+00
	IRHH (kg U235 eq/FU)	1,36E-02	2,64E-04	0,00E+00	2,77E-05	6,98E-04	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	6,98E-04	3,39E-05	0,00E+00	0,00E+00
	ETF (CTUe/FU)	3,21E+00	8,11E-02	0,00E+00	8,34E-03	1,65E-01	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,65E-01	1,04E-02	0,00E+00	0,00E+00
	HTCE (CTUh/FU)	2,70E-10	7,32E-12	0,00E+00	7,57E-13	1,39E-11	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,39E-11	9,38E-13	0,00E+00	0,00E+00
	HTnCE (CTUh/FU)	5,06E-09	3,81E-10	0,00E+00	4,03E-11	2,76E-10	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	2,76E-10	4,89E-11	0,00E+00	0,00E+00
	Land Use Related impacts (dimensionless)	2,52E+01	3,62E-01	0,00E+00	4,37E-02	1,28E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	ND	0,00E+00	1,28E+00	4,64E-02	0,00E+00	0,00E+00

HTCE = Human Toxicity – cancer effects; HTnCE = Human Toxicity – non cancer effects; ETF = Ecotoxicity – freshwater; (potential comparative toxic unit)
PM = Particulate Matter (Potential incidence of disease due to PM emissions);
IRHH = Ionizing Radiation – human health effects (Potential Human exposure efficiency relative to U235);

Focus on environmental impact categories



Global Warming Potential

The global warming potential of a gas refers to the total contribution to global warming resulting from the emission of one unit of that gas relative to one unit of the reference gas, carbon dioxide, which is assigned a value of 1.

It is split up in 4:

- Global Warming Potential total (GWP-total) which is the sum of GWP-fossil, GWP-biogenic and GWP-LULUC
- Global Warming Potential fossil fuels (GWP-fossil): The global warming potential related to greenhouse gas (GHG) emissions to any media originating from the oxidation and/or reduction of fossil fuels by means of their transformation or degradation (e.g. combustion, digestion, landfilling).
- Global Warming Potential biogenic (GWP-biogenic) : The global warming potential related to carbon emissions to air (CO_2, CO and CH_4) originating from the oxidation and/or reduction of aboveground biomass by means of its transformation or degradation (e.g. combustion, digestion, composting, landfilling) and CO_2 uptake from the atmosphere through photosynthesis during biomass growth – i.e. corresponding to the carbon content of products, biofuels or above ground plant residues such as litter and dead wood.[1]
- Global Warming Potential land use and land use change (GWP-LULUC): The global warming potential related to carbon uptakes and emissions (CO_2, CO and CH_4) originating from carbon stock changes caused by land use change and land use. This sub-category includes biogenic carbon exchanges from deforestation, road construction or other soil activities (including soil carbon emissions).



Ozone Depletion

Destruction of the stratospheric ozone layer which shields the earth from ultraviolet radiation harmful to life. This destruction of ozone is caused by the breakdown of certain chlorine and/or bromine containing compounds (chlorofluorocarbonsor halons), Which break down when they reach the stratosphere and then catalytically destroy ozone molecules.



Acidification potential

Acid depositions have negative impacts on natural ecosystems and the man-made environment incl. buildings. The main sources for emissions of acidifying substances are agriculture and fossil fuel combustion used for electricity production, heating and transport.



Eutrophication potential

The potential to cause over-fertilization of water and soil, which can result in increased growth of biomass and following adverse effects.

It is split up in 3:
Eutrophication potential – freshwater: The potential to cause over-fertilization of freshwater, which can result in increased growth of biomass and following adverse effects.
Eutrophication potential – marine: The potential to cause over-fertilization of marine water, which can result in increased growth of biomass and following adverse effects.
Eutrophication potential – terrestrial: The potential to cause over-fertilization of soil, which can result in increased growth of biomass and following adverse effects.



Photochemical ozone creation

Chemical reactions brought about by the light energy of the sun creating photochemical smog. The reaction of nitrogen oxides with hydrocarbons in the presence of sunlight to form ozone is an example of a photochemical reaction.



Abiotic depletion potential for non-fossil resources

Consumption of non-renewable resources, thereby lowering their availability for future generations. Expressed in comparison to Antimonium (Sb).

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



Abiotic depletion potential for fossil resources

Measure for the depletion of fossil fuels such as oil, natural gas, and coal. The stock of the fossil fuels is formed by the total amount of fossil fuels, expressed in Megajoules (MJ).

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

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1 Carbon exchanges from native forests shall be modelled under GWP - LULUC (including connected soil emissions, derived products or residues), while their CO_2 uptake is excluded.

 Ecotoxicity for aquatic fresh water	The impacts of chemical substances on ecosystems (freshwater). The results of this environmental impact indicator must be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.
 Human toxicity (carcinogenic effects)	The impacts of chemical substances on human health via three parts of the environment: air, soil and water. The results of this environmental impact indicator must be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.
 Human toxicity (non-carcinogenic effects)	The results of this environmental impact indicator must be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.
 Particulate Matter	Accounts for the adverse health effects on human health caused by emissions of Particulate Matter (PM) and its precursors (NOx, SOx, NH3)
 Resource depletion (water)	Accounts for water use related to local scarcity of water as freshwater is a scarce resource in some regions, while in others it is not. The results of this environmental impact indicator must be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.
 Ionizing radiation - human health effects	This impact category deals mainly with the eventual impact on human health of low dose ionizing radiation 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.
 Land use related impacts	The indicator is the “soil quality index” which is the result of an aggregation of following four aspects: -Biotic production -Erosion resistance -Mechanical filtration -Groundwater The aggregation is done based on a JRC model. The four aspects are quantified through the LANCA model for land use. The results of this environmental impact indicator must be used with care as the uncertainties on these results are high or as there is limited experienced with the indicator.

10 DETAILS OF THE UNDERLYING SCENARIOS USED TO CALCULATE THE IMPACTS

10.1 A1 – Raw material supply

This module takes into account the extraction and processing of all raw materials and energy which occur upstream to the manufacturing process studied.

10.2 A2 – Transport to the manufacturer

The raw materials are transported to the manufacturing site.

10.3 A3 – Production

This module takes into account the production process.

10.4 A4 – Transport to the building site

VEHICLE TYPE, FUEL TYPE AND CONSUMPTION OF VEHICLE USED FOR TRANSPORT	Truck >-32 ton 0,208 l diesel / km	Truck 16-32 ton 0,256 l diesel / km	Truck 7,5-16 ton 0,185 l diesel / km
DISTANCE	100 km	135 km	35 km
CAPACITY UTILISATION (INCLUDING EMPTY RETURNS)	Default ecoinvent	Default ecoinvent	Default ecoinvent
DEPARTURE	Feluy	Feluy	Feluy
PERCENTAGE OF FREIGHT BY MEANS OF TRANSPORT	40%	51%	9%
DESTINATION	Construction site	Supplier to construction site	Supplier to construction site
BULK DENSITY OF TRANSPORTED PRODUCTS	31,9 kg/m³	31,9 kg/m³	31,9 kg/m³
VOLUME CAPACITY UTILISATION FACTOR	Default ecoinvent	Default ecoinvent	Default ecoinvent

10.5 A5 – Installation in the building

At the construction site, packaging waste is generated. In addition, 5% of material losses have been taken into account. This scenario is relevant for installation where no fixing or jointing is necessary (e.g. floor, cavity wall, ballasted roof). For some applications fixating products such as adhesives or screws are necessary.

Parts of the installation	Quantity	Description
Material losses	5%	THE QUANTITY OF MATERIAL LOST DUE TO CUTTING IT TO THE RIGHT SHAPE
Packaging	3,96E-2 kg/m² 2,57E-02 kg/m²	LDPE PACKAGING FILM PU BLOCKS

Ancillary materials for installation (specified by material)	Information
Water use	-
Other resource use	-
Quantitative description of energy type (regional mix) and consumption during the installation process	-
Waste materials on the building site before waste processing, generated by the product's installation (specified by type)	5% material losses (PIR + facer) PE Foil 3,96E-2 kg/m² PU Blocks 2,57E-02 kg/m²
Output materials (specified by type) as result of waste processing at the building site e.g. of collection for recycling, for energy recovery, disposal (specified by route)	-
Direct emissions to ambient air, soil and water	-
Distance	-

10.6 B – Use stage (excluding potential savings)

The PIR insulation boards with multilayer facer – Fire Class E are to be used for thermal insulation of residential and commercial buildings The average life span of buildings is generally longer than 60 years, but it is assumed that after 60 years the building will most likely be renovated so thoroughly that, apart from the structure, relatively few of the original materials will be present. The insulation boards doesn't need any maintenance or doesn't consume any energy or water during its use.

B1: Module not declared.
B2: : PIR insulation board doesn't need any specific maintenance or cleaning.
B3: Module not declared.
B4: No replacement is needed.
B5: Module not declared.
B6: No operational energy use needed.

10.7 C – End of life

C1: The demolition of 3,13 kg insulation board
C2-C4: The default scenario for synthetic isolation materials in the "B-EPD - construction product category rules complementary to NBN EN 15804+A2 version 18.10.2022 states 5% of the waste treatment consists of landfilling and the other 95% consists of incineration and/or energetic valorisation. This default scenario was selected for this EPD

Module C2 – Transport to waste processing	
Vehicle type (truck/boat/etc)	Truck 16-32 ton
Fuel consumption (litres/km)	0,256 l diesel/km
Distance (km)	30+50+100
Capacity utilization (%)	100%
Density of products (kg/m³)	31,3
Asumptions	Ecoinvent scenario

End-of-life modules – C3 and C4	
Parameter	Value (kg)
Waste collected separately	
Waste collected as mixed construction waste	3.13 kg
Waste for re-use	
Waste for recycling	
Waste for energy recovery	2,97kg
Waste for final disposal	0,16 kg

10.8 D – Benefits and loads beyond the system boundaries

The benefits beyond the system boundaries include the heat and electricity production originating from the 95% incineration of the insulation board (= 3,13 kg).

QUANTITATIVE DESCRIPTION OF THE COSTS BEYOND THE SYSTEM BOUNDARIES	
QUANTITATIVE DESCRIPTION OF THE ADVANTAGES BEYOND THE SYSTEM BOUNDARIES	Avoided production of 19.1MJ of heat using natural gas Avoided production of 9.8MJ of Belgian electricity mix

11 DISCHARGE OF HAZARDOUS SUBSTANCES DURING THE USE STAGE

11.1 Indoor air

No emissions to indoor are expected

11.2 Water and soil

No dangerous substances from construction products are released.

12 VERIFICATION

PCR documents used as a basis for the verification: -EN 15804+A2 and -B-EPD PCR (18.10.2022)

Independent external verification of the environmental declaration and data according to standard EN ISO 14025:2010.

Third-party verifier:
Vinçotte
Evert Vermaut
Jan Olieslagerslaan 35
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13 INTERPRETING THE LCA

Most of the environmental impact is determined by the raw materials supply in A1.
The impacts in C3 and D are largely caused by the incineration of the PIR core in the end-of-life phase which not only causes emissions, but also allows energy recovery and replacement of fossil based energy.

14 TECHNICAL INFORMATION FOR SCENARIO DEVELOPMENT

NO SPECIFIC SCENARIO WAS USED.

15 APPLICATION UNIT

Core (PIR insulation board "UTHERM" with multilayer facer Fire Class E // part 01 of 02 :: core)	Facer (PIR insulation board "UTHERM" with multilayer facer – Fire Class E // part 02 of 02 :: facer)	Application	Ratio to the declared unit of 1 m² (based on standard thickness)
PIR insulation board "UTHERM" with multilayer facer – Fire Class E - PIR - 600 x 1200 mm - λ 0,022 W/m.K	PIR insulation board "UTHERM" with multilayer facer – Fire Class E - PIR - 600 x 1200 mm - λ 0,022 W/m.K	Cavity wall insulation, floor insulation, insulation for ballasted roofs	1

This paragraph gives information on the PIR insulation board and how the reference flow and table with impacts relate to their use in different applications. The table below gives an overview of the ratio to the declared unit of 1 m² for different applications. The LCA results in section 6 are provided for an insulation panel with a thickness of 100 mm. The LCA results are declared separately for the PIR core and multilayer facer. LCA results PIR insulation plates with another thickness can be calculated using the below equation: LCA results PIR insulation board with new thickness = (LCA result PIR core 100 mm * new thickness (mm) / 100 mm) + LCA result facer. The equation can be applied to products with a thickness between 20 mm and 200 mm. The density of the products and the composition of the PIR core remains the same.

16 ADDITIONAL INFORMATION ON REVERSIBILITY

Description	Fixing method	Level of reversibility	Ease of disassembly	Speed of disassembly	Ease of handling (size and weight)	Robustness of material (material's resistance to disassembly)	Damage to other components	Comments
Ballasted floor insulation	Tongue and groove (T&G)	Reversible fixing	simple – no specific dismantling tools required	Very speedy disassembly	Easy to manipulate (by hand (small size and limited weight): one worker should be sufficient	Disassembly is possible but should be done carefully in order not to generate any damage	disassembly does not cause any damage to the component	
Ballasted flat roof insulation	Tongue and groove (T&G)	Reversible fixing	simple – no specific dismantling tools required	Very speedy disassembly	Easy to manipulate (by hand (small size and limited weight): one worker should be sufficient	Disassembly is possible but should be done carefully in order not to generate any damage	disassembly does not cause any damage to the component	
Mechanically fixed pitched roof insulation	Insulation plug	Reversible with light repairable damage	Simple – requires the use of specific though common tools	Speedy disassembly	Easy to manipulate (by hand (small size and limited weight): one worker should be sufficient	Disassembly is possible but should be done carefully in order not to generate any damage	disassembly does not cause any damage to the component	
Mechanically fixed wall insulation	Insulation plug	Reversible with light repairable damage	Simple – requires the use of specific though common tools	Speedy disassembly	Easy to manipulate (by hand (small size and limited weight): one worker should be sufficient	Disassembly is possible but should be done carefully in order not to generate any damage	disassembly does not cause any damage to the component	
Mechanically fixed flat roof insulation	Insulation plug	Reversible with light repairable damage	Simple – requires the use of specific though common tools	Speedy disassembly	Easy to manipulate (by hand (small size and limited weight): one worker should be sufficient	Disassembly is possible but should be done carefully in order not to generate any damage	disassembly does not cause any damage to the component	
Glued flat roof insulation	Glue	Non reversible fixing	Simple – requires the use of specific though common tools	Rather slow disassembly	Easy to manipulate (by hand (small size and limited weight): one worker should be sufficient	n/a, the element is not reversible	n/a: the component is not reversible	

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- ISO 14025:2010: Environmental labels and declarations - General principles.
- ISO 14040:2006/Amd 1:2020: Environmental management – Life cycle assessment – Principles and framework.
- ISO 14044:2006/Amd 2:2020: Environmental management – Life cycle assessment – Requirements and guidelines.

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General information

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Verification

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Date of verification: 22.05.2026
External independent verification of the declaration and data according to EN ISO 14025 and relevant PCR documents

It is impossible to compare EPDs unless they are compliant with the same PCR and take into account the building context.
The program operator cannot be held responsible for the information provided by the owner of the EPD nor the author of the LCA.

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