# ENVIRONMENTAL PRODUCT DECLARATION

as per *ISO 14025* and *EN 15804+A2*

| | |
|---|---|
| Owner of the Declaration | Stiferite |
| Publisher | Institut Bauen und Umwelt e.V. (IBU) |
| Programme holder | Institut Bauen und Umwelt e.V. (IBU) |
| Declaration number | EPD-STF-20220335-CBC3-EN |
| Issue date | 16.02.2023 |
| Valid to | 15.02.2028 |

## Stiferite Isocanale Ai8 average thick panel

## Stiferite

Institut Bauen und Umwelt e.V.

ECO PLATFORM EPD VERIFIED

**www.ibu-epd.com | https://epd-online.com**

## General Information

### Stiferite

**Programme holder**

IBU – Institut Bauen und Umwelt e.V.
Hegelplatz 1
10117 Berlin
Germany

**Declaration number**

EPD-STF-20220335-CBC3-EN

**This declaration is based on the product category rules:**

Insulating materials made of foam plastics, 01.08.2021
(PCR checked and approved by the SVR)

**Issue date**

16.02.2023

**Valid to**

15.02.2028

Dipl.-Ing. Hans Peters
(Chairman of Institut Bauen und Umwelt e.V.)

Florian Pronold
(Managing Director Institut Bauen und Umwelt e.V.)

### Stiferite Isocanale Ai8 average thick panel

**Owner of the declaration**

Stiferite
Viale Navigazione Interna 54
35129 Padova
Italy

**Declared product / declared unit**

Stiferite Isocanale Ai8 expanded rigid polyurethane foam, covered on both sides by embossed aluminium of 80 my thickness, and produced by Stiferite. The EPD applies to 1 $m^2$ of 20.0 mm thick PUR sandwich board, i.e. 0.0200 $m^3$, with an average density between foam and facing of 47.6 $kg/m^3$.

**Scope:**

Stiferite produces Stiferite Isocanale AI8 that is a high-performance insulation board manufactured from closed cell expanded rigid polyurethane foam, covered on both sides by embossed aluminium of 80 my thickness. The data have been provided by the only Stiferite factory that is located in Padova (Italy) for the year 2021 and sold worldwide. The owner of the declaration shall be liable for the underlying information and evidence; the IBU shall not be liable with respect to manufacturer information, life cycle assessment data and evidences.

The EPD was created according to the specifications of EN 15804+A2. In the following, the standard will be simplified as *EN 15804*.

**Verification**

| |
|---|
| The standard EN 15804 serves as the core PCR |
| Independent verification of the declaration and data according to ISO 14025:2011 |
| ☐ internally ☒ externally |

Prof. Dr. Birgit Grahl,
(Independent verifier)

# Product

### Product description/Product definition

Stiferite's thermal insulation panels are mainly used in the building/construction sector and in industrial insulation.
The panels are made of thermo-setting closed cells polyurethane foam (PU) supplied with various types of flexible facers on both sides of the panel. The nature/type of facer is a function of the type of panel and its application.
Expanded rigid polyurethane foam is distinguished by its thermal insulation performance, mechanical resistance, workability, lightness, and durability.
The performance of Stiferite'spanels is determined based on the European norm *EN 14308:2009+A1:2013 - Thermal insulation products for building equipment and industrial installations - Factory made rigid polyurethane foam (PUR) and polyisocyanurate foam (PIR) products - Specification*.
This EPD refers to Stiferite's Isocanale Ai8 average thick panel, made of an insulation component in polyurethane foam using blowing agent Pentane-based, covered on both sides by embossed aluminium of 80 my thickness. The panel is produced in standard dimensions of 1200 x 4000 mm and straight finish borders.
Upon request and for minimum quantities, the panels may be produced in various dimensions, and the borders may be rabbeted along the sides. The surface of the panel may be evened out with sandpaper in order to allow installation on uneven surfaces. Stiferite Isocanale Ai8 panel is produced by a certified company with systems:*ISO 9001, ISO 45001, ISO 14001* in its entire line of products.

### Application

The Stiferite Isocanale Ai8 panel is suited for the construction of pre-insulated heating and ventilation ducts.

### Technical Data

In this Life Cycle Assessment, a PU insulation board with the following properties has been regarded:

**Constructional data**

| Name | Value | Unit |
|---|---|---|
| Gross density | 47.6 | kg/m$^3$ |
| Declared Average Thermal conductivity λi acc. to EN 14308 | 0.021 | W/mK |
| Water absorption by total immersion acc. to EN 12087 | <1 | Vol.-% |
| Water absorption by partial immersion acc. to EN 1609 | < 0.1 | kg/m² |
| Water vapour diffusion resistance factor μ acc. to EN 12086 | Endless | |
| Euroclass reaction to fire Stiferite Duct acc. to EN 13823 | B-s1,d0 | |

This provides a thermal resistance R = 0.91 m² k/W.

Product according to the *CPR* based on a *hEN/:14308:2009+A1:2013* For the placing on the market of the product in the European Union/European Free Trade Association (EU/EFTA) (with the exception of Switzerland) Regulation (EU) No.305/2011 (*CPR*) applies. The product needs a Declaration of Performance taking into consideration *EN 14308:2009+A1:2013* - Thermal insulation products for building equipment and industrial installations - Factory made rigid polyurethane foam (PUR) and polyisocyanurate foam (PIR) products - Specification and the CE-marking. For the application and use the respective national provisions apply.

### Base materials/Ancillary materials

**Core material** (about 83.9 % of the weight of the declared unit):

Closed-cell Polyiso (PIR) rigid foam made from MDI (50-65 %), polyols (25-35 %), pentane (4-6 %) and additives (4-7 %).

**Facing** (about 16.1 % of the weight of the declared unit): consisting of aluminium (95-99 %) and lacquer (5-1 %).
The PU board for insulation:

- This product/article/at least one partial article contains substances listed in the candidate list (date: 17.01.2022) exceeding 0.1 percentage by mass: no
- This product/article/at least one partial article doesn't contain other carcinogenic, mutagenic, reprotoxic (CMR) substances in categories 1A or 1B which are not on the candidate list, exceeding 0.1 percentage by mass: no
- Biocide products were added to this construction product or it has been treated with biocide products (this then concerns a treated product as defined by the (EU) *Ordinance on Biocide Products No.528/2012*): no

Additional declaration according to quoted law: The product is compliant with all requirements indicated in chapter 2.4.7 Isolanti termici ed acustici' DM of the 24th November 2025 (CAM EDILIZIA):

- Any blowing agent with Ozone depletion potential >0 is not used in production
- Any substances of Very High Concern-SVHC in concentration of more than 0,1 %w are not used in production (REACH n. 1907/2006). Any specific authorizations for use are eserved provided for by the same Regulation for the substances included in Annex XIV and specifications restrictions set out in Annex XVII of the Regulation.
- Catalysts lead-based are not used in production
- Flame retardants used in production (belonging to the Organophosphorus class) are not banned by any national or European regulation
- According to the raw materials declarations of suppliers, the minimum amount of recycled raw materials based on the insulation board (PU foam and facers) weight is 3 $\%_w$ and the minimum amount of recycled raw materials based on the PU insulation foam weight is 4 $\%_w$ in compliance with REMADE in Italy type 1 certification (note: this information is not explicitly considered in the LCA and not included in the EPD tables that only refer to recycling content in the foreground system).

### Reference service life

The durability of insulation panels is normally at least as long as the lifetime of the building in which it is used. The experimental data show that the reference life is greater than 50 years.

# LCA: Calculation rules

### Declared Unit

The declared unit is 1 m² with a thickness of 20.0 mm, e. g. 0.020 m³.
Corresponding conversion factors are listed in the table below.

### Declared unit

| Name | Value | Unit |
|---|---|---|
| Declared unit | 1 | $m^2$ |
| Gross density | 47.6 | $kg/m^3$ |
| Grammage | 1 | $kg/m^2$ |
| Layer thickness | 0.02 | m |
| Declared average thermal conductivity λi | 0.021 | W/mK |

This provides a thermal resistance R = 0.91 m² /W.

### System boundary

Type of the EPD: cradle to gate - with options This life cycle assessment for the production of the polyurethane insulation board considers the life cycle from the supply of raw materials to the manufacturer´s gate (cradle-to-gate with options). It also includes the transport to the construction site and the end-of-life stage of the used PU thermal insulation board. The life cycle is split into the following individual phases:

A1 - Raw material formulation
A2 - Raw material transport
A3 - Production of the insulation board and packaging material
A4 - Transport to the construction site
C1 - demolition and deconstruction
C2 - Transport to end of life
C3 - End-of-Life: waste management (thermal recovery)
C4 - End-of-Life: waste management (landfill)
D - Benefits and loads beyond system boundary

### Geographic Representativeness

Land or region, in which the declared product system is manufactured, used or handled at the end of the product´s lifespan: Italy

### Comparability

Basically, a comparison or an evaluation of EPD data is only possible if all the data sets to be compared were created according to *EN 15804* and the building context, respectively the product-specific characteristics of performance, are taken into account. The background database used is *GaBi 2022* database (v. 2022.1)

## LCA: Scenarios and additional technical information

### Characteristic product properties of biogenic carbon

### Information on describing the biogenic Carbon Content at factory gate

| Name | Value | Unit |
|---|---|---|
| Biogenic carbon content in product | - | kg C |
| Biogenic carbon content in accompanying packaging | 0.068 | kg C |

### Transport to the building site (A4)

| Name | Value | Unit |
|---|---|---|
| Truck with a capacity of 17.3 tons | 695 | km |
| Ferry with a capacity of 1200-10000 dwt payload capacity | 255 | km |
| Ship with a capacity of 27500 dwt payload capacity tons | 89,6 | km |
| Plane with a capacity of 22 ton | 0 | km |

### Type and amount of packaging included in module A3

| Name | Value | Unit |
|---|---|---|
| Cardboard | 0.15142 | kg |
| EPS stock | 0.00578 | kg |
| EPS stock - glue | 0.00041 | kg |
| Paper labels | 0.00014 | kg |
| PE film | 0.01549 | kg |
| PP tape | 0.00005 | kg |
| PUR stucks | 0 | kg |
| SBR labels | 0.00001 | kg |
| TOTAL PACKAGING | 0.17372 | kg |

### End of life (C1-C4)

| Name | Value | Unit |
|---|---|---|
| Scenario No 1: Material Incineration | 100 | % |
| Scenario No 2: Landfill | 100 | % |

C1 – Deconstruction and demolition (0.2 MJ/kg as electrical consumption assumed)

C2 – Panel is transported from the building site to a treatment plant by truck and an average distance of 100 km is considered.

C3/C4- Disposal scenarios used are divided into 2 sub-scenarios:
1) Incineration 100 % (C3/1)
2) Landfilling 100 % (C4/2)

### Reuse, recovery and/or recycling potentials (D), relevant scenario information

D: Benefits and loads beyond system boundary are divided into 2 sub-scenarios:

| Name | Value | Unit |
|---|---|---|
| Scenario No 1: Material Incineration | 100 | % |
| Scenario No 2: Landfill | 100 | % |

## LCA: Results

The tables below show the results of the LCA. Basic information on all declared modules provides chapter 4.
There are two scenarios for the end-of-life (C2, C4 and D) analyzed: Scenario 1 considers 100 % incineration, Scenario 2 considers 100 % landfill disposal.
For SM, RSF, NRSF, CRU indicators only the foreground system is considered.

**DESCRIPTION OF THE SYSTEM BOUNDARY (X = INCLUDED IN LCA; ND = MODULE OR INDICATOR NOT DECLARED; MNR = MODULE NOT RELEVANT)**

| Product stage | | | Construction process stage | | Use stage | | | | | | | End-of-life stage | | | | Benefits and loads beyond the system boundaries |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Raw material supply | Transport | Manufacturing | Transport from the gate to the site | Assembly | 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 | X | X | X | MND | MND | MND | MNR | MNR | MNR | MND | MND | X | X | X | X | X |

**RESULTS OF THE LCA - ENVIRONMENTAL IMPACT according to EN 15804+A2: 1 m2 Isocanale Ai8**

| Parameter | Unit | A1-A3 | A4 | C1 | C2 | C3/1 | C3/2 | C4/1 | C4/2 | D/1 | D/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| GWP-total | kg $CO_2$ eq | 3.76E+00 | 7.39E-02 | 2.17E-02 | 5.74E-03 | 1.77E+00 | 0 | 0 | 1.43E-02 | -8.34E-01 | 0 |
| GWP-fossil | kg $CO_2$ eq | 4.06E+00 | 7.32E-02 | 2.16E-02 | 5.68E-03 | 1.77E+00 | 0 | 0 | 1.42E-02 | -8.33E-01 | 0 |
| GWP-biogenic | kg $CO_2$ eq | -3.08E-01 | 2.13E-04 | 1.28E-05 | 1.84E-05 | 1.44E-04 | 0 | 0 | 4.41E-05 | -7.48E-04 | 0 |
| GWP-luluc | kg $CO_2$ eq | 1.94E-03 | 4.06E-04 | 1.4E-06 | 3.82E-05 | 1.07E-05 | 0 | 0 | 2.6E-05 | -4.51E-05 | 0 |
| ODP | kg CFC11 eq | 5.98E-12 | 6.72E-15 | 2.14E-13 | 5.57E-16 | 2.17E-13 | 0 | 0 | 3.33E-14 | -6.13E-12 | 0 |
| AP | mol $H^+$ eq | 1.07E-02 | 4.84E-04 | 3.18E-05 | 1.89E-05 | 1.07E-03 | 0 | 0 | 1E-04 | -1.03E-03 | 0 |
| EP-freshwater | kg P eq | 1.03E-05 | 2.18E-07 | 9.71E-09 | 2.02E-08 | 8.21E-08 | 0 | 0 | 5.15E-08 | -2.91E-07 | 0 |
| EP-marine | kg N eq | 2.22E-03 | 2.23E-04 | 8.69E-06 | 8.66E-06 | 5.14E-04 | 0 | 0 | 2.56E-05 | -3E-04 | 0 |
| EP-terrestrial | mol N eq | 2.32E-02 | 2.47E-03 | 9.28E-05 | 9.7E-05 | 5.91E-03 | 0 | 0 | 2.81E-04 | -3.23E-03 | 0 |
| POCP | kg NMVOC eq | 9.66E-03 | 5.29E-04 | 2.45E-05 | 1.7E-05 | 1.32E-03 | 0 | 0 | 7.78E-05 | -8.55E-04 | 0 |
| ADPE | kg Sb eq | 8.5E-07 | 6.61E-09 | 2.57E-09 | 5.71E-10 | 5.33E-09 | 0 | 0 | 1.45E-09 | -8.37E-08 | 0 |
| ADPF | MJ | 7.9E+01 | 9.66E-01 | 4.59E-01 | 7.44E-02 | 7.33E-01 | 0 | 0 | 1.86E-01 | -1.66E+01 | 0 |
| WDP | $m^3$ world eq deprived | 7.21E-01 | 6.99E-04 | 1.62E-03 | 6.34E-05 | 1.91E-01 | 0 | 0 | 1.54E-03 | -4.68E-02 | 0 |

GWP = Global warming potential; ODP = Depletion potential of the stratospheric ozone layer; AP = Acidification potential of land and water; EP = Eutrophication potential; POCP = Formation potential of tropospheric ozone photochemical oxidants; ADPE = Abiotic depletion potential for non-fossil resources; ADPF = Abiotic depletion potential for fossil resources; WDP = Water (user) deprivation potential)

**RESULTS OF THE LCA - INDICATORS TO DESCRIBE RESOURCE USE according to EN 15804+A2: 1 m2 Isocanale Ai8**

| Parameter | Unit | A1-A3 | A4 | C1 | C2 | C3/1 | C3/2 | C4/1 | C4/2 | D/1 | D/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PERE | MJ | 9.15E+00 | 5.55E-02 | 6.63E-02 | 5.16E-03 | 1.17E-01 | 0 | 0 | 2.78E-02 | -1.91E+00 | 0 |
| PERM | MJ | 2.67E+00 | ND | ND | ND | ND | 0 | 0 | ND | ND | 0 |
| PERT | MJ | 1.18E+01 | 5.55E-02 | 6.63E-02 | 5.16E-03 | 1.17E-01 | 0 | 0 | 2.78E-02 | -1.91E+00 | 0 |
| PENRE | MJ | 5.66E+01 | 9.7E-01 | 4.59E-01 | 7.47E-02 | 2.22E+01 | 0 | 0 | 2.16E+01 | -1.66E+01 | 0 |
| PENRM | MJ | 2.25E+01 | ND | ND | ND | -2.14E+01 | 0 | 0 | -2.14E+01 | ND | 0 |
| PENRT | MJ | 7.91E+01 | 9.7E-01 | 4.59E-01 | 7.47E-02 | 7.34E-01 | 0 | 0 | 1.87E-01 | -1.66E+01 | 0 |
| SM | kg | 2.77E-01 | ND | ND | ND | ND | 0 | 0 | ND | ND | 0 |
| RSF | MJ | ND | ND | ND | ND | ND | 0 | 0 | ND | ND | 0 |
| NRSF | MJ | ND | ND | ND | ND | ND | 0 | 0 | ND | ND | 0 |
| FW | $m^3$ | 3.63E-02 | 6.44E-05 | 1E-04 | 5.96E-06 | 4.5E-03 | 0 | 0 | 4.68E-05 | -2.9E-03 | 0 |

PERE = Use of renewable primary energy excluding renewable primary energy resources used as raw materials; PERM = Use of renewable primary energy resources used as raw materials; PERT = Total use of renewable primary energy resources; PENRE = Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials; PENRM = Use of non-renewable primary energy resources used as raw materials; PENRT = Total use of non-renewable primary energy resources; SM = Use of secondary material; RSF = Use of renewable secondary fuels; NRSF = Use of non-renewable secondary fuels; FW = Use of net fresh water

**RESULTS OF THE LCA – WASTE CATEGORIES AND OUTPUT FLOWS according to EN 15804+A2: 1 m2 Isocanale Ai8**

| Parameter | Unit | A1-A3 | A4 | C1 | C2 | C3/1 | C3/2 | C4/1 | C4/2 | D/1 | D/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| HWD | kg | 1.7E-08 | 4.8E-12 | 3.28E-11 | 3.95E-13 | 8.99E-11 | 0 | 0 | 9.8E-12 | -1.56E-09 | 0 |
| NHWD | kg | 4.68E-01 | 1.46E-04 | 9.75E-05 | 1.22E-05 | 7.73E-02 | 0 | 0 | 9.45E-01 | -3.68E-03 | 0 |
| RWD | kg | 1.87E-03 | 1.67E-06 | 7.63E-05 | 1.39E-07 | 4.26E-05 | 0 | 0 | 2.08E-06 | -2.18E-03 | 0 |
| CRU | kg | ND | ND | ND | ND | ND | 0 | 0 | ND | ND | 0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MFR | kg | ND | ND | ND | ND | ND | 0 | 0 | ND | ND | 0 |
| MER | kg | ND | ND | ND | ND | ND | 0 | 0 | ND | ND | 0 |
| EEE | MJ | ND | ND | ND | ND | 5.41E+00 | 0 | 0 | ND | ND | 0 |
| EET | MJ | ND | ND | ND | ND | 3.04E+00 | 0 | 0 | ND | ND | 0 |

HWD = Hazardous waste disposed; NHWD = Non-hazardous waste disposed; RWD = Radioactive waste disposed; CRU = Components for re-use; MFR = Materials for recycling; MER = Materials for energy recovery; EEE = Exported electrical energy; EET = Exported thermal energy

**RESULTS OF THE LCA – additional impact categories according to EN 15804+A2-optional: 1 m2 Isocanale Ai8**

| Parameter | Unit | A1-A3 | A4 | C1 | C2 | C3/1 | C3/2 | C4/1 | C4/2 | D/1 | D/2 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| PM | Disease incidence | 1.04E-07 | 5.79E-09 | 2.84E-10 | 1.08E-10 | 3.61E-09 | 0 | 0 | 1.23E-09 | -9.12E-09 | 0 |
| IR | kBq U235 eq | 3.15E-01 | 2.51E-04 | 1.12E-02 | 2.09E-05 | 6.52E-03 | 0 | 0 | 2.33E-04 | -3.2E-01 | 0 |
| ETP-fw | CTUe | 3.09E+01 | 6.83E-01 | 1.41E-01 | 5.27E-02 | 2.57E-01 | 0 | 0 | 3.36E+00 | -4.05E+00 | 0 |
| HTP-c | CTUh | 2.48E-09 | 1.38E-11 | 2.59E-12 | 1.09E-12 | 1.52E-11 | 0 | 0 | 1.58E-11 | -1E-10 | 0 |
| HTP-nc | CTUh | 1.73E-07 | 8.23E-10 | 1.32E-10 | 6.66E-11 | 6.7E-10 | 0 | 0 | 1.75E-09 | -4.85E-09 | 0 |
| SQP | SQP | 9.5E+00 | 3.35E-01 | 4.21E-02 | 3.15E-02 | 1.33E-01 | 0 | 0 | 3.85E-02 | -1.21E+00 | 0 |

PM = Potential incidence of disease due to PM emissions; IR = Potential Human exposure efficiency relative to U235; ETP-fw = Potential comparative Toxic Unit for ecosystems; HTP-c = Potential comparative Toxic Unit for humans (cancerogenic); HTP-nc = Potential comparative Toxic Unit for humans (not cancerogenic); SQP = Potential soil quality index

Disclaimer 1 – for the indicator “Potential Human exposure efficiency relative to U235”. This impact category deals mainly with the eventual impact of low-dose ionizing radiation on human health of the nuclear fuel cycle. It does not consider effects due to possible nuclear accidents, occupational exposure or radioactive waste disposal in underground facilities. Potential ionizing radiation from the soil, radon and from some construction materials is also not measured by this indicator.

Disclaimer 2 – for the indicators “abiotic depletion potential for non-fossil resources”, “abiotic depletion potential for fossil resources”, “water (user) deprivation potential, deprivation-weighted water consumption”, “potential comparative toxic unit for ecosystems”, “potential comparative toxic unit for humans – cancerogenic”, “Potential comparative toxic unit for humans - not cancerogenic”, “potential soil quality index”. The results of this environmental impact indicator shall be used with care as the uncertainties on these results are high as there is limited experience with the indicator.

## References


**Standards CPR**
Regulation (EU) No.305/2011 laying down harmonised conditions for the marketing of construction products and repealing Council Directive 89/106/EEC

**EN 1609**
EN 1609: Thermal insulating products for building applications. Determination of short term water absorption by partial immersion.

**EN 13823**
EN 13823:2020 Reaction to fire tests for building products - Building products excluding floorings exposed to the thermal attack by a single burning item

**EN 12086**
EN 12086: 2013 Thermal insulating products for building applications. Determination of water vapour transmission properties.

**EN 12087**
EN 12087:2013 Thermal insulating products for building applications. Determination of long term water absorption by immersion.

**EN 14308**
EN 14308:2009+A1:2013 - Thermal insulation products for building equipment and industrial installations - Factory made rigid polyurethane foam (PUR) and polyisocyanurate foam (PIR) products - Specification

**EN 15804**
EN 15804:2012+A2:2019+AC:2021 Sustainability of construction works — Environmental Product Declarations — Core rules for the product category of construction products.

**ISO 9001**
ISO 9001:2015 Quality management

**ISO 14001**
ISO 14001: 2015 Environmental management systems

**ISO 14025**
EN ISO 14025:2011 Environmental labels and declarations — Type III environmental declarations - Principles and procedures.

**ISO 45001**
ISO 45001: 2018 Occupational health and safety management systems

**GaBi 2022**
GaBi 10 and DB 2022.1: Documentation of GaBi 10: Software-System and Database for Life Cycle Engineering. Copyright, TM. Stuttgart, Leinfelden-Echterdingen, 1992-2022 http://www.gabi-software.com

**IBU 2021**
Institut Bauen und Umwelt e.V.: General Instructions for the EPD programme of Institut Bauen und Umwelt e.V., Version 2.0, Berlin: Institut Bauen und Umwelt e.V., 2021 www.ibu-epd.com

**IBU PCR Part A**
Product Category Rules for Building-Related Products and Services. Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report according to EN 15804+A2:2019; V1.2, 11/2021

**IBU PCR Part B**
PCR Guidance-Texts for Building-Related Products and Services; Part B: Requirements on the EPD for Insulating materials made of foam plastics; Institute Construction and Environment e.V. (IBU). Version 01.2019 https://epd-online.com

**PANGPP 2023**
Piano d' Azione Nazionale sul Green Public Procurement (PANGPP) – Decreto Ministeriale del 24-11-2025 Gazzetta Ufficiale della Repubblica Italiana, Serie Generale n.281 del 03-12-2025 https://www.mase.gov.it/portale/cam-vigenti

**REACH**
REACH Registration, Evaluation, Authorization and Restriction of Chemical, 2007

**Ordinance on Biocide Products**
Regulation (eu) n. 528/2012 of the European Parliament and of the Council of 22 May 2012 concerning the making available on the market and use of biocidal products Text with EEA relevance

**REMADE IN ITALY**
Certificate No.1245/001 for Stiferite Rev. n. 0 18 November 2021

**STIFERITE LCA tool background report v 2.3 (03-06-2022)**

**Publisher**

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