tecnofoam HFO
CLOSED CELL POLYURETHANE FOAMS

ENVIRONMENTAL PRODUCT DECLARATION

dapcons®

Tecnopol®

DAPcons®.NTe.131

DECLARACIÓN AMBIENTAL DE PRODUCTO
ENVIRONMENTAL PRODUCT DECLARATION

According to the standards:
ISO 14025 y EN 15804 + A2:2020

cateb Arquitectura Tècnica Barcelona

ECO PLATFORM EPD VERIFIED

dapcons®

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GENERAL INFORMATION

Product

GAS-BASED TECNOFOAM

Company

Product description

TECNOFOAM is a range of polyurethane foams specially designed for thermal insulation by projection and injection in residential, commercial and industrial building projects. The range of available densities is designed to cover all your specific requirements.

This document covers TECNOPOL's TECNOFOAM gas-based polyurethane foam systems for thermoacoustic insulation, including:

- TECNOFOAM G-2035 HFO with applied density ±35 kg/m3
- TECNOFOAM G-2040 HFO with applied density ±40 kg/m3
- TECNOFOAM G-2060 HFO with applied density ±60 kg/m3

Reference RCP

UNE-EN 16783 Thermal insulation products. Product Category Rules (PCR) for products manufactured and formed in-situ, intended for the preparation of environmental product declarations.

Production plant

C/ Finlàndia, 33 · 08520 Les Franqueses de Vallès (Barcelona)

Validity

From: 19/12/2022 Until: 19/12/2027

The validity of DAPcons®.NTe.131 is subject to the conditions of the regulation DAPcons®. The current edition of this DAPcons® is the one that appears in the registry maintained by Cateb; for informational purposes, it is included on the Program website www.csostenible.net

EXECUTIVE SUMMARY

GAS-BASED TECNOFOAM

	DAPconstruction® PROGRAMME Environmental Product Declarations in the Construction sector www.csostenible.net
	Programme Manager Colegio de la Arquitectura Técnica de Barcelona (Cateb) Bon Pastor, 5 · 08021 Barcelona www.apabcn.cat
	Declaration Holder TECNOPOL SISTEMAS S.L.U. CL DE FINLANDIA 33 08520 - BARCELONA (1)
	Statement made by: CIA ESPAÑOLA DE AISLAMIENTOS SA CALLE COBALTO 95, 08907 - BARCELONA, España

Declared product

GAS-BASED TECNOFOAM

Geographic representation

Global

Variability between different products

In this document the results of each of the products are declared individually.

Declaration number

DAPcons®.NTe.131

Registration date

30/09/2022

Validity

This verified declaration authorizes its holder to carry the logo of the operator of the ecolabelling program DAPconstruction®. The declaration is applicable exclusively to the mentioned product and for five years from the date of registration. The information contained in this statement was provided under the responsibility of: **TECNOPOL SISTEMAS S.L.U.**

Programme Administrator Signature

Celestí Ventura Cisternas. President of Cateb

36548201M CELESTINO VENTURA (R: Q0875009C) 36548201M CELESTINO VENTURA (R: Q0875009C) 19.12.2022 12:06:34 +0100

Programme Verifier Signature

Roger González Corsellas. Verifier accredited by the administrator of the DAPcons® Programme

Roger González I Corsellas Roger González I Corsellas 19.12.2022 12:06:20 +0100

ENVIRONMENTAL PRODUCT DECLARATION

1. DESCRIPTION OF THE PRODUCT AND ITS USE

The TECNOFOAM range of gas-based polyurethane foam systems for thermal insulation includes:

- TECNOFOAM G-2035 HFO with applied density ±35 kg/m3
- TECNOFOAM G-2040 HFO with applied density ±40 kg/m3
- TECNOFOAM G-2060 HFO with applied density ±60 kg/m3

TECNOFOAM G-2035 HFO, G-2060 HFO and G-2040 HFO polyurethane thermal insulation system is specifically formulated for the application and formation of applied medium density polyurethane foam ±34~38 kg/m3, ±40~46 kg/m3 and ±52~62 kg/m3, respectively. Its application is carried out using dosing equipment that mixes the two components TECNOFOAM G-2035 HFO, G-2040 HFO or G-2060 HFO (polyol part) and TECNOFOAM G-2049.I (isocyanate part). The gas used as blowing agent is HFO.

The blowing agent is HCFO-1233zd(E). Does not contain HCFCs, HFCs, in accordance with EU regulations.

TECNOFOAM polyurethane foam systems can be used for thermal insulation in construction, industry, livestock or agricultural facilities and, in addition:

- G-2035 HFO: in applications inside ceilings, interior chambers of facades, ventilated facades, partition walls in general.
- G-2040 HFO: in applications on walkable roofs (with protection against water seepage through waterproofing systems)
- G-2060 HFO: in applications on walkable roofs, interior pavements since it has great resistance to compression; and as a thermal insulating roof covering, with the application of TECNOCOAT P-2049 on the outside, preventing the appearance of bubbles or other pathologies.

2. DESCRIPTION OF THE STAGES OF THE LIFE CYCLE

2.1. Manufacturing (A1, A2 y A3)

Raw Materials (A1 y A2)

This module takes into account the extraction and processing of raw materials and the energy that is produced prior to the manufacturing process under study.

The main materials used for the polyol part are polyols, Mannich base, as well as water and other additives; for the isocyanate part are diphenylmethane diisocyanates and isomers and homologues. For each of the material, the origin of the raw materials, the energy consumption during the manufacture of the product, as well as the packaging are considered.

This module includes transportation of different raw materials from the supplier to the factory where the final product is made. The distance and type of specific truck for each raw material have been introduced.

Manufacturing (A3)

This module includes the consumption of energy and packaging materials used during the manufacturing process. At the same time, factory emissions not originating from the combustion of fossil fuels (non-existent in this case) as well as the transport and management of waste generated by production are analyzed.

The electricity mix used in the manufacturing plant is 100% from renewable sources according to information from the electricity supplier.

2.2. Building (A4 y A5)

Transport of the product to the work (A4)

A4 Transport module includes the transport of finished products from the factory gate to the construction site for subsequent installation. The parameters used are based on sales information during 2021.

Table 1. Scenarios applied for the transport of the product to the place of installation

Destinations	Type of transport	Percentage	Average km
Spain	Medium truck 16-32 tn EURO5	84.67	384.79
Europe	Medium truck 16-32 tn EURO5	15.33	827.00
		Total 100%	

Product installation process and construction (A5)

For the formation of the mix, it is necessary to mix the two initial liquid components, isocyanates and polyols, using the TC2049 dosing equipment with an average yield of 300 m2 of product applied for a total electrical consumption (including motor power, heating and hose transformer) of 20 kW. For this study, it is assumed that the mixture of the 2 components is in equal parts, although in reality it may vary depending on the conditions of each climatic zone, weather situation or according to the specifications of the projection equipment. The recommended minimum thickness also varies between 3 mm and 5 mm depending on the product.

At this stage, a 1% loss is considered.

It is considered that the packaging materials are sent to a local manager within a radius of 100 km for their subsequent recovery (pallet for reuse and steel drum for recycling), accounting only for their transport.

2.3. Product use (B1-B7)

Use (B1)

This module includes the environmental aspects and impacts in the normal use of the products, not including the consumption of water and energy. Being a passive material in construction, the value of this module is 0.

Maintenance (B2)

The products studied does not require any type of maintenance during their useful life.

Repair (B3)

Do not require any type of repair during their useful life.

Substitution (B4)

No replacement of the products is required given the horizon established for this study (25 years).

Rehabilitation (B5)

Do not require any type of rehabilitation during their useful life.

Operational energy use (B6)

Do not require any energy consumption during their useful life.

Operational water use (B7)

Do not require any water consumption during their useful life.

2.4. End of life (C1-C4)

Deconstruction and demolition (C1)

Demolition without separation of materials and that the impact of the demolition of applied gas-based Tecnofoam is negligible compared to the impact of the demolition of the building as a whole.

Transportation (C2)

The transport of the waste generated at the end of life to the waste manager is considered to be within a radius of 100 km.

Waste management for reuse, recovery and recycling (C3)

Recycling and/or reuse of end-of-life materials, if any. In this case, it is considered that there is no recycling or reuse during the product's end of life, because in the demolition of buildings a selective separation of materials is not carried out in the vast majority of cases.

Ultimate elimination (C4)

Although Tecnofoam products are recyclable indefinitely and are partially recycled at the end of their useful life, there is still no established collection system in all member countries. Therefore, the assumption chosen in this study is 100% landfill (C4), being the most conservative approach.

2.5. Potential environmental benefits and burdens beyond the system boundary (D)

Although module D has been considered, there are no benefits of recycling since the most conservative approach of 100% final disposal in a sanitary landfill has been considered.

3. LIFE CYCLE ANALYSIS

This EPD considers the scope from the cradle to the grave + module D, covering the stages of extraction of raw materials, transportation to the production plant, manufacturing and packaging, distribution, assembly on site, use, end of life and the benefits more beyond the system thanks to recovery, reuse and recycling.

3.1. Functional Unit

The functional unit defines the way in which the functions identified by the behavioral characteristics (performance) of the product are quantified. This is a reference by which material flows, LCA results, and other information are normalized. This allows comparison with any other product system that has been evaluated against the same functional unit.

According to the EN 15804:A2 standard, in the case of a construction product, it must be specified: the application of the product, the magnitude (quantity) of reference, the key properties quantified under the defined conditions, and a specified period of time .

In this case, the manufacturing, distribution, installation, use and end of life of one square meter (1 m2) of TECNOFOAM polyurethane insulation system with the main function of thermal insulation for a useful life of 25 years has been chosen as the functional unit. This functional unit corresponds to a minimum application thickness:

- G-2035 HFO: 3cm
- G-2040 HFO: 5cm
- G-2060 HFO: 5cm

3.2. System limits

Table 2. Declared modules

Product stage			Construction Process Stage		Use stage							End of life stage				Benefits and loads beyond the system boundaries
Raw materials supply	Transport	Manufacturing	Transport	Construction - Installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	De-construction	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	x	x	x	x	x	x	x	x	x	x	x	x	x

X = Declared module **MND** = Undeclared module

3.3. Life cycle analysis data (ACV)

Table 3. Parameters of environmental impact

Parameter	Unit	Life cycle stage																Module D
		Product stage			Construction Process Stage		Use stage							End of life stage				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Climate change - total (GWP-total)	kg CO2 eq	1,94E+00	5,61E-02	3,39E-02	2,09E-02	9,65E-03	0	0	0	0	0	0	0	0	2,75E-03	0	1,00E-03	0
Climate change - fossil (GWP-fossil)	kg CO2 eq	1,94E+00	5,61E-02	4,73E-02	2,09E-02	9,32E-03	0	0	0	0	0	0	0	0	2,75E-03	0	1,00E-03	0
Climate change - biogenic (GWP-biogenic)	kg CO2 eq	-1,01E-02	1,79E-05	-1,35E-02	6,87E-06	3,13E-04	0	0	0	0	0	0	0	0	9,01E-07	0	5,77E-07	0
Climate change - land use and changes in land use (GWP-luluc)	kg CO2 eq	1,09E-02	5,04E-07	8,18E-05	1,69E-07	2,14E-05	0	0	0	0	0	0	0	0	2,22E-08	0	3,41E-08	0
Ozone layer depletion (ODP)	kg CFC 11 eq	1,92E-05	1,31E-08	2,92E-09	4,97E-09	5,05E-10	0	0	0	0	0	0	0	0	6,51E-10	0	2,08E-10	0
Acidification (AP)	mol H+ eq	1,05E-02	3,89E-04	2,10E-04	7,27E-05	4,96E-05	0	0	0	0	0	0	0	0	9,53E-06	0	1,03E-05	0
Eutrophication of fresh water (EP-freshwater)	kg P eq	2,50E-03	4,13E-05	2,60E-05	9,60E-06	5,55E-06	0	0	0	0	0	0	0	0	1,26E-06	0	1,58E-06	0
Eutrophication of sea water (EP-marine)	kg N eq.	3,11E-03	1,08E-04	5,01E-05	2,33E-05	6,77E-06	0	0	0	0	0	0	0	0	3,05E-06	0	4,49E-06	0
Terrestrial eutrophication (EP-terrestrial)	mol N eq.	1,95E-02	1,20E-03	5,17E-04	2,56E-04	7,71E-05	0	0	0	0	0	0	0	0	3,36E-05	0	4,92E-05	0
Photochemical ozone formation (POCP)	kg NMVOC eq	7,37E-03	3,16E-04	2,16E-04	6,98E-05	2,09E-05	0	0	0	0	0	0	0	0	9,15E-06	0	1,37E-05	0
Depletion of abiotic resources - minerals and metals (ADP-minerals&metals)	kg Sb eq	3,00E-06	2,23E-09	3,87E-07	9,09E-10	5,11E-10	0	0	0	0	0	0	0	0	1,19E-10	0	4,83E-11	0
Depletion of abiotic resources - fossil fuels (ADP-fossil)	MJ, net calorific value	3,69E+01	7,86E-01	5,39E-01	2,97E-01	2,00E-01	0	0	0	0	0	0	0	0	3,89E-02	0	1,34E-02	0
Water consumption (WDP)	m3 worldwide eq. private	1,69E+00	-1,33E-04	2,05E-02	-4,96E-05	2,11E-03	0	0	0	0	0	0	0	0	-6,50E-06	0	5,40E-06	0
The Indicador includes all greenhouse gases included in GWP-total but excludes biogenic carbon dioxide uptake and emissions and biogenic carbon stored in the product. This Indicador is thus equal to the GWP Indicador originally defined in EN 15804:2012+A1:2013. Can be obtained from IPCC characterization factors.																		
Global Warming Potential (GHG)	kg CO2 eq	1,85E+00	5,57E-02	4,56E-02	2,08E-02	9,24E-03	0	0	0	0	0	0	0	0	2,73E-03	0	9,84E-04	0

A1 Supply of raw materials.**A2** Transportation. **A3** Manufacturing. **A4** Transportation. **A5** Installation and construction processes.**B1** Use. **B2** Maintenance. **B3** Repair. **B4** Substitution. **B5** Rehabilitation. **B6** Operational energy use.**B7** Operational water use.**C1** Deconstruction and demolition.**C2** Transportation. **C3** Waste management for reuse, recovery and recycling.**C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary.**MND** Undeclared module.

Table 4. Parameters for the use of resources, waste and output material flows

Parameter	Unit	Life cycle stage																Module D
		Product stage			Construction Process Stage		Use stage							End of life stage				
		A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	
Use of renewable primary energy excluding renewable primary energy resources used as feedstock	MJ, net calorific value	2,83E+00	1,19E-03	2,92E-01	4,55E-04	4,05E-02	0	0	0	0	0	0	0	0	5,96E-05	0	5,59E-05	0
Use of renewable primary energy used as raw material	MJ, net calorific value	0	0	1,15E-01	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	2,83E+00	1,19E-03	4,07E-01	4,55E-04	4,05E-02	0	0	0	0	0	0	0	0	5,96E-05	0	5,59E-05	0
Non-renewable primary energy use, excluding non-renewable primary energy resources used as feedstock	MJ, net calorific value	3,96E+01	8,35E-01	5,72E-01	3,15E-01	2,10E-01	0	0	0	0	0	0	0	0	4,13E-02	0	1,42E-02	0
Use of non-renewable primary energy used as raw material	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total use of non-renewable primary energy (primary energy and renewable primary energy resources used as feedstock)	MJ, net calorific value	3,96E+01	8,35E-01	5,72E-01	3,15E-01	2,10E-01	0	0	0	0	0	0	0	0	4,13E-02	0	1,42E-02	0
Use of secondary materials	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Use of non-renewable secondary fuels	MJ, net calorific value	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Net use of freshwater resources	m3	4,78E-02	2,25E-06	5,92E-04	8,14E-07	1,67E-04	0	0	0	0	0	0	0	0	1,07E-07	0	2,86E-07	0
Hazardous waste removed	kg	1,86E-05	1,90E-06	2,68E-06	7,80E-07	6,68E-08	0	0	0	0	0	0	0	0	1,02E-07	0	3,37E-08	0
Non-hazardous waste eliminated	kg	9,34E-02	3,29E-05	1,78E-02	1,22E-05	2,77E-04	0	0	0	0	0	0	0	0	1,60E-06	0	3,97E-01	0
Radioactive waste disposed of	kg	6,97E-05	5,63E-06	1,42E-06	2,12E-06	1,49E-06	0	0	0	0	0	0	0	0	2,78E-07	0	9,22E-08	0
Components for reuse	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	2,72E-02	0	0	0	0	0	0	0	0	0	0	0	0
Materials for energy recovery (energy recovery)	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exported energy	MJ by energy vector	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

A1 Supply of raw materials.**A2** Transportation. **A3** Manufacturing. **A4** Transportation. **A5** Installation and construction processes.**B1** Use. **B2** Maintenance. **B3** Repair. **B4** Substitution. **B5** Rehabilitation. **B6** Operational energy use.**B7** Operational water use.**C1** Deconstruction and demolition.**C2** Transportation. **C3** Waste management for reuse, recovery and recycling.**C4** Fine removal. **D** Environmental benefits and burdens beyond the system boundary.**MND** Undeclared module.

Table 5. Kg of biogenic carbon

Packaging	3,55E-03
Product	1,07E-02

3.4. Recommendations of this DAP

The results shown in Section 3.3 is valid for 1 m2 of the average product with a thickness of 1 cm. To obtain the potential environmental impacts of each product reference, it is neccesary to multiply these results with their corresponding factor of thickness, as stated in Section 3.1:
- G-2035 HFO: 3cm
- G-2040 HFO: 5cm
- G-2060 HFO: 5cm

3.5. Cutting rules

All inputs and outputs of a (unit) process for which data are available are included in the calculation. Missing data can be replaced by conservative mean or generic data assumptions. Any hypotheses related to these elections are reported in this document.

When the input data is insufficient or missing data for a unit process, the cut-off criteria will be 1% of the renewable and non-renewable primary energy use and 1% of the total input mass in that unit process. The total of the input flows not considered per module, for example, for modules A1-A3, A4-A5, will be a maximum of 5% of the use of energy and mass.

In accordance with the provisions of the PCR 2019:14, 99% of all inputs and outputs of mass and energy from the central system have been included, identified in the life cycle inventory included in this report. Those inputs and outputs, for which data are not available, which together represent less than 5% of the mass, such as packaging waste from auxiliary materials, have not been considered.

3.6. Additional environmental information

• The electricity used in the manufacturing plant is an adaptation of the national renewable mix, based on Ecoinvent 3.8. The energy sources in this mix are the following: wind 53%, hydro 38%, solar 5%, biogas & wood chips 3%.
• Allocation procedure: whenever possible, allocation has been avoided, but for waste production an allocation has had to be made based on physical considerations of mass.
• Based on the limits of the system indicated in the reference regulation PCR Construction products and construction services, the following processes have not been taken into account:
o The manufacture of capital goods with an expected life of more than three years, buildings and other capital goods.
o Maintenance activities of the production plant.
o Research and development activities.
o The transport carried out by the workers on the home-factory-home route.
o Long-term issue.
• The scenarios included are currently in use and are representative of one of the most likely alternatives

regarding the analyzed products.

3.7. Other data

CE marking based on a Declaration of Performance (DoP) prepared in accordance with the European standard EN-14315-1:2013.

4. ADDITIONAL TECHNICAL INFORMATION AND SCENARIOS

4.1. Transportation from the factory to the construction site (A4)

Parameter	Parameter expressed per functional unit
Type and fuel consumption, type of vehicle used for transportation	Medium truck 16-32 tons EURO5. Diesel consumption: 0.037 kg/tkm
Distance	Average: 394,0 km
Capacity utilization (including empty return)	% assumption from Ecoinvent 3.8 database
Apparent density of transported product	1,05-1, kg/l
Useful capacity factor (1, <1 or >1 for products that are packed compressed or nested)	< 1

4.2. Installation processes (A5)

Parameter	Parameter expressed per functional unit
Auxiliary materials for construction (specifying each material)	None
Water use	0
Use of other resources	0
Quantitative description of the type of energy (regional mix) and consumption during the installation process	Electrical mix of EU without Switzerland, low voltage. Consumption: 0,096 kWh
Waste of materials in the work before the treatment of waste, generated by the installation of the product (specify by type)	1% of the product
Material outputs (specified by type) as a result of waste treatment on the building site. For example: collection for recycling, energy recovery, disposal (specified by route)	Packaging materials for recycling: • Steel: 0.,0727 kg • Wood: 0,0017 kg

Parameter	Parameter expressed per functional unit
Direct emissions to air, soil and water	0

4.3. Reference life (B1)

Parameter	Parameter expressed per functional unit
Reference Lifetime (RSL)	25 years
Characteristics and properties of the product	1. G-2035 HFO - Applied density (kg/m^3): ±34~38 - Free density in glass (kg/m^3): ±28~32 - Initial thermal conductivity coefficient (W/m K): 0.022 - Aged thermal conductivity coefficient EN-12667 (W/m K): 0.028 - Content in closed cell (CCC4): > 95% - Fire classification EN-13501: Euroclass E - Mix ratio (volume): 100/100 - Application method: dosing equipment 2. G-2040 HFO - Applied density (kg/m^3): ±40~46 - Free density in glass (kg/m^3): ±32~36 - Initial thermal conductivity coefficient (W/m K): 0.022 - Aged thermal conductivity coefficient EN-12667 (W/m K): 0.028 - Closed cell content (CCC4): > 95% 95~98% - Fire classification EN-13501: Euroclass E - Mix ratio (volume): 100/100 - Application method: dosing equipment 3. G-2060 HFO - Applied density (kg/m^3): ±52~62 - Free density in glass (kg/m^3): ±40~50 - Initial thermal conductivity coefficient (W/m K): 0.022 - Aged thermal conductivity coefficient EN-12667 (W/m K): 0.028 - Content in closed cell (CCC4): 95~98% - Fire classification EN-13501: Euroclass E - Mix ratio (volume): 100/100 - Application method: dosing equipment
Requirements (conditions of use, frequency of maintenance, repair, etc.)	None

4.4. Maintenance (B2), Repair (B3), Substitution (B4), or Rehabilitation (B5)

Maintenance (B2)

Parameter	Parameter expressed per functional unit
Maintenance process, for example; cleaning agent, surfactant type	Not applicable

Parameter	Parameter expressed per functional unit
Maintenance cycle	Not applicable
Auxiliary materials for the maintenance process (specifying each material)	None
Energy inputs for the maintenance process (quantity and type of energy vector)	None
Net consumption of fresh water during maintenance or repair	0
Material waste during maintenance (specifying the type)	Not applicable

Repair (B3)

Parameter	Parameter expressed per functional unit
Repair process	Not applicable
Proceso de inspección	Not applicable
Repair cycle	Not applicable
Auxiliary materials (specifying each material], for example lubricant	None
Interchange of parts during the product life cycle	None
Energy inputs during maintenance, type of energy, example: electricity, and quantity	None
Energy input during the repair, renovation, replacement process if applicable and relevant (quantity and type of energy vector)	None
Material waste during repair (specifying each material)	Not applicable
Consumo neto de agua dulce	None

Substitution (B4)

Parameter	Parameter expressed per functional unit
Energy input during substitution, for example for the use of cranes (quantity and energy vector)	None
Change of worn parts in the product life cycle (specifying each material)	Not applicable
Net freshwater consumption	None

Rehabilitation (B5)

Parameter	Parameter expressed per functional unit
Rehabilitation process	Not applicable
Rehabilitation cycle	Not applicable
Energy input during rehabilitation, for example for the use of cranes (quantity and energy vector)	None
Input material for rehabilitation, including auxiliary materials (specifying by material)	None
Waste of material during rehabilitation (specifying each material)	None
Other scenario development assumptions	None

4.5. Reference life

Parameter	Parameter expressed per functional unit
Reference life	25 years
Declared properties of the product, finishes, etc.	Gas-based polyurethane thermal insulation system
Application design parameters (manufacturer's instructions)	Minimum application thickness (cm) for the functional unit: G-2035 HFO: 3cm G-2040 HFO: 5cm G-2060 HFO: 5cm
Estimation of the quality of execution, when installed according to the manufacturer's instructions	Product consumption corresponding to the functional unit: G-2035 HFO: 0.885 kg/m2 G-2040 HFO: 1,575 kg/m2 G-2060 HFO: 2,100 kg/m2

Parameter	Parameter expressed per functional unit
Outdoor environment for outdoor applications. For example, weather, pollutants, UV radiation, temperature, etc.	Support or ambient temperature range: 5 ~ 40oC Maximum ambient relative humidity: 90%
Indoor environment for indoor applications. For example, temperature, humidity, chemical exposure	Support or ambient temperature range: 5 ~ 40oC Maximum ambient relative humidity: 90%
Terms of use. For example, frequency of use, mechanical exposure, etc.	According to manufacturer's specifications
Maintenance. For example, the required frequency, etc.	None

4.6. Use of energy (B6) and water (B7) in service

Parameter	Parameter expressed per functional unit
Auxiliary materials (specified by material)	None
Type of energy vector. For example, electricity, natural gas, district heating	Not applicable
Equipment output power	Not applicable
Net freshwater consumption	None
Characteristic features (energy efficiency, emissions, etc.)	Energy savings associated with the use of the product
Other scenario development assumptions. For example, transportation	Not applicable

4.7. End of life (C1-C4)

	Process		
	Collection processes (specified by types)	Recovery systems (specified by type)	Elimination
	kg collected with mixed construction waste	kg	kg for final disposal
	0.28	0	0.28
Assumptions for scenario development	The most conservative scenario.		

5. ADDITIONAL INFORMATION

Technical support for the implementation of the EPD: ISOLANA AHORRO ENERGETICO SL.

6. RCP AND VERIFICATION

This statement is based on Document

UNE-EN 16783 Thermal insulation products. Product Category Rules (PCR) for products manufactured and formed in-situ, intended for the preparation of environmental product declarations. Thermal insulation

Independent verification of the declaration and data, in accordance with ISO 14025 and IN UNE-EN 16783

☑ External

Third party Verifier

Roger González Corsellas
Accredited by the administrator of the DAPcons® Programme

Verificació VEDAP-001-10

Verification date:

19/12/2022

References

• General rules of the DAP®construction program.
• ISO 14040:2006 Environmental management - Life cycle assessment - Principles and reference framework.
• ISO 14044:2006 Environmental management - Life cycle assessment - Requirements and guidelines.
• UNE-EN 15804:2012+A1:2014 Sustainability in construction. Environmental product declarations. Basic product category rules for construction products.
• ISO 14025:2006 Environmental labels and declarations - Type III environmental declarations - Principles and procedures.
• UNE-EN 16783:2017 Thermal insulation products. Product Category Rules (RCP) for products manufactured and formed in-situ, intended for the preparation of environmental product declarations.
• Tecnofoam LCA report. Barcelona. Sep 2022

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