Environmental Product Declaration Type III ITB No. 148 /2021

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Polskie Stowarzyszenie Producentów Styropianu

ECO PLATFORM EPD EN 15804 VERIFIED

EPS boards used in construction

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Basic information

This declaration is the type III Environmental Product Declaration (EPD) based on EN 15804 and verified according to ISO 14025 by an external auditor. It contains the information on the impacts of the declared construction materials on the environment. Their aspects were verified by the independent body according to ISO 14025. Basically. a comparison or evaluation of EPD data is possible only if all the compared data were created according to EN 15804 (point 5.3 of the standard).

Life cycle analysis (LCA): A1-A3, C1- C4 and D in accordance with EN 15804 (Cradle to Gate with options)
The year of preparing the EPD: 2021
Product standard: EN 13163
Service Life: 100 years
PCR: ITB-PCR A (PCR based on EN 15804)
Declared unit: Expanded Polystyrene (EPS) with flame retardant, with average density of 15 kg/m³ - 1 m³ and 1 m² with R-value 1
Reasons for performing LCA: B2B
Representativeness: EPS manufactured in Poland

Data for the preparation of the Type III Environmental Declaration of Styrofoam Boards (EPS) - for use in construction, were collected from selected members of the Polish Association of Styrofoam Producers (PSPS). The data relates to the production of approximately one million cubic meters of polystyrene boards. They indicate the general values of environmental impacts resulting from the production and life cycle of EPS products manufactured in Poland.All products covered by this EPD have a declaration of performance in accordance with the EN 13163 standard, and their detailed technical parameters are available on the websites of individual manufacturers and at the PSPS office.The EPD declaration and the data on the environmental impacts of EPS products presented therein can be used for business communication. The EPD is a reliable source of information on the life cycle impacts of EPS products, helping green building designers, architects, construction product manufacturers and other construction stakeholders.

EPS MANUFACTURERS

The Polish Association of Styrofoam Producers, based in Warsaw, has been operating since 2010 and brings together 28 leading manufacturers of polystyrene insulation boards used in construction on the Polish market. The organization co-creates technical standards and legal regulations for the production and application of polystyrene boards for thermal insulation in construction, cooperates with domestic and foreign organizations in the construction industry, scientific and technical institutions, state and local administration bodies for the development of polystyrene products and their applications. It undertakes numerous activities for the quality of polystyrene for the construction industry on the Polish market, supporting and promoting the principles of fair competition and good standards in the construction market. The association is actively involved in ecological initiatives of social importance, emphasizing the importance of building insulation in the pursuit of reducing energy consumption and air pollution, and the role of polystyrene boards in this area as an ecological product. PSPS represents the Polish polystyrene industry in the European EPS Producers Association (EUMEPS).

Figure 1. Companies producing polystyrene boards associated in PSPS

PRODUCT DESCRIPTION

TECHNICAL PROPERTIES

This EPD declaration is valid for Expanded Polystyrene (EPS) boards used in construction. The products are mainly used for thermal and acoustic insulation of buildings. The dimensions of the products may vary depending on the manufacturer and market needs and a specific application. The averaged density of EPS determined for the needs of EPD, based on the data provided by the Manufacturers, is 15 kg / m³. This EPD applies to homogeneous EPS products that do not contain additional materials. Properly installed polystyrene boards are waterproof, durable in terms of insulating, structural and dimensional properties. In addition, they are resistant to biological corrosion

and the effects of microorganisms, and to most chemicals. However, the polystyrene should not come into contact with organic solvents. When used correctly, the service life of EPS insulation is equal to the lifetime of the building, usually without the need for maintenance. The use of insulating material has a positive effect on the energy efficiency of buildings. Nevertheless, the quantification of this impact is only possible in the operational phase of a building's life cycle.

INPUT MATERIALS AND RESOURCES

Information on raw materials used in the production of EPS boards comes from the LCI forms provided by PSPS Members. Polystyrene, which is an intermediate in the polystyrene production process, is produced on the basis of natural raw materials (crude oil). In the commercial form, it is in the form of hard granules with a diameter of 0.2 to 2.5 mm. In the presence of a small amount (about 7%) of pentane as a blowing agent, polymerization occurs and the result is expandable polystyrene. Pentane, the blowing agent, is enclosed in polystyrene particles. Its bulk density is about 650 kg / m^3, the density of the material itself is about 1030 kg / m^3. About 2% of the raw material consists of flame retardants. It is assumed that no other additives are used in production for the purpose of this declaration.

APPLICATIONS

The functional properties of polystyrene products make them suitable for many applications in the construction industry. The range of products covered by this EPD is used in applications such as wall insulation, floor insulation, flat roof insulation, pitched roof insulation, complete thermal insulation systems (ETICS), diaphragm wall insulation, insulation of ceilings and roofs, ground floors, foundations, insulation of building equipment and industrial installations.

INDOOR AIR QUALITY AND HEALTH ASPECTS

EPS polystyrene boards are characterized by low emission of volatile organic compounds VOC (VOC), which makes them friendly for use inside buildings. Laboratory tests carried out by ITB in 2020 did not reveal VOC emissions in concentrations exceeding the recommended health thresholds (EU-LCI). No ozone depleting (ODP) substances such as CFCs, HFCs and HCFCs are used in the production process of EPS. Many producers of polystyrene have certificates confirming the low emission of their products.

LIFE CYCLE ASSESSMENT (LCA) – general rules applied

Declared unit

The reference value (single declared) is 1 m³ of foamed polystyrene. The results of the LCA analysis were also converted into a functional unit of 1 m2 of a product with a thermal resistance R = 1 [m^2K / W].

Allocation

The allocation rules used in this EPD are based on the general guidelines contained in the LCA - ITB PCR A guidance document. The LCA analysis was prepared on the basis of information obtained from PSPS and relates to the production of approximately 1 million m^3 of polystyrene boards produced by PSPS Members in Poland . The process of manufacturing polystyrene products is usually carried out on one production line in a plant. Allocation in the product stage (modules A1-A3) - takes place on the basis of the volume of production expressed in cubic meters. Impacts related to the extraction and processing of raw materials, including the production of polystyrene, n-pentane, flame retardants, packaging materials (foil), energy and water are allocated to module A1 (production of raw materials). About 98% of all impacts from production lines have been inventoried and assigned

to the production of EPS polystyrene boards. The calculations also took into account the disposal of packaging materials. Module A2 (transport) covers the transport of raw materials such as chemicals, additives and auxiliary materials from suppliers to production plants. Municipal and technological waste of factories has been assigned to module A3 (factory production). Energy resources were inventoried for all factories and 100% allocated to the production of EPS products. Factory emissions have been estimated using national conversion factors (KOBIZE - 2019) and assigned to module A3.

System limits

The life cycle analysis of the declared products includes the "Product Stage" A1-A3 and modules related to the end of life cycle C1-C4 and D (the so-called Cradle to factory gates with options) in accordance with EN 15804 + A1 and ITB PCR A. The calculations include input materials and energy consumption, inventoried in representative factories. The assessment took into account all the relevant parameters from the collected production data, i.e. all material used in the recipe, heat energy used, internal fuel and electricity consumption. It is assumed that the sum of omitted processes does not exceed 2% of all impact categories. In accordance with the guidelines of EN 15804, machinery and equipment (capital goods) required for production were excluded from the calculation, as was the transport of workers.

A1 and A2 Modules: Raw materials supply and transport

Polystyrene, which is an intermediate in the production of commercial polystyrene, is in the form of hard, glassy granules with a diameter of 0.2 to 2.5 mm. It is transported to the plants producing polystyrene products in special containers. EPS insulation is a foamed porous plastic and is free from chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs) and hydrofluorocarbons (HCFCs). All components used for LCA calculations come from the LCI questionnaires and the Ecoinvent v 3.7 database. Shipment to the factory takes into account the quantity of deliveries, the type of vehicles, the quantity of delivery, and the distance from manufacturer to factory for all and raw materials.

A3: Production

Thermal insulation polystyrene boards intended for construction applications are made in a multistage process (Figure 2). Pre-foaming is the process of softening raw material granules (polystyrene) using steam at a temperature above 90 ° C. This process takes 2 to 5 minutes. During this time, the polystyrene granules expand, increasing their volume from 15 to 65 times. Directly after foaming, the process of cooling the foamed particles takes place. The resulting particles of expanded polystyrene must undergo the seasoning stage in airy silos before further processing. In this way, by diffusion, air enters their interior, giving them the stability necessary in the following stages. The pellets of pre-expanded polystyrene are poured into large cuboidal forms and foamed again using steam at a temperature of 110 ° C to 120 ° C, under the influence of which they combine to form a closed, foam structure. After cooling, the polystyrene blocks are taken out of the molds and seasoned. Cutting blocks into plates of the desired dimensions is carried out using thermal-mechanical devices. Additional edge profiling is performed by milling. The waste (cuttings) generated during the cutting of blocks into boards are subject to internal recycling and re-used in the production cycle. The block diagram in Figure 2 shows the basic elements of the technological process of an EPS product.

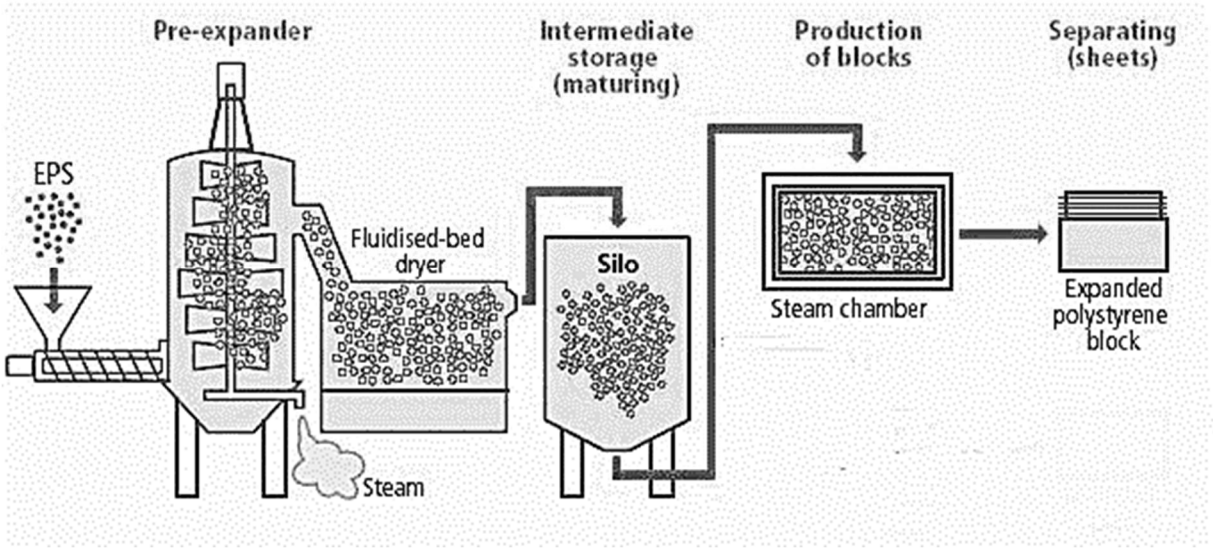

Figure 2. A production process of EPS boards

C1 – C4: End of life

The product (C1) is mechanically dismantled from the building. Decommissioning scenarios include transport to an incineration plant or landfill (C2). The adopted scenarios result from the assumed time of use of EPS in the building.

Table 1. End of life scenario (C modules) for EPS products

Parameter	Contribution
Incineration of EPS –scenario no 1	100%
Landfilling EPS- scenario no 2	100%

D module

Environmental gains occurring outside the product system, included in the adopted calculation model, result from the incineration of waste at the end of its life cycle (alternative fuel replacing conventional fossil fuels).

Data representativeness

The data used for the LCA calculations comes from verified inventory data provided by representative members of the association.

Data collection period

The data for manufacture of the declared products refer to year 2019. The life cycle assessments were prepared for Poland as reference area.

Data input quality

The values determined to calculate the LCA originate from LCI verified inventory data provided by representative Association Members.

Assumptions and estimates

The impacts of the panels were aggregated using volume of production.

Calculation rules

LCA was done in accordance with ITB PCR A document.

Databases

The data for LCA calculations comes from verified databases: Ecoinvent v.3.7 (styrene, chemicals), foils (Plastic Europe), KOBiZE / Tauron (energy carriers: electricity, oil, ON, natural gas and LPG). Specific data quality analysis is part of an external audit based on the ISO 14001 guidelines. The factors that characterize are CML ver. 4.2 on the basis of the EN 15804: 2013 + A1 version (PN-EN 15804 + A1: 2014-04).

LIFE CYCLE ASSESSMENT (LCA) – Results

Declared/functional unit

The reference value is 1 m³ of expanded polystyrene (LCA results in Table 3). Table 4 also shows the LCA results expressed in the functional unit corresponding to 1 m^2 of the EPS board with R = 1 resistance.

Table 2. System boundaries (life's modlues included) for the environmental characteristic of the EPS products

Environmental assessment information (MNA – Module not assessed. MD – Module Declared. INA – Indicator Not Assessed)																
Product stage			Construction process		Use stage							End of life				Benefits and loads beyond the system boundary
Raw material supply	Transport	Manufacturing	Transport to construction site	Construction-installation process	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction 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**
MD	**MD**	**MD**	**MNA**	**MNA**	**MNA**	**MNA**	**MNA**	**MNA**	**MNA**	**MNA**	**MNA**	**MD**	**MD**	**MD**	**MD**	**MD**

Table 3. Environmental product characteristic – 1 m^3 of EPS board

Environmental impacts: (DU) 1 m^3									
Indicator	**Unit**	**A1**	**A2**	**A3**	**C1**	**C2**	**C3[1]**	**C4[2]**	**D**
Global warming potential	kg CO_2 eq.	4.46E+01	7.54E-01	8.08E+00	2.36E+00	2.38E-02	3.52E+01	1.21E-01	-3.19E+01
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	5.19E-07	0.00E+00	1.20E-09	2.60E-08	0.00E+00	3.61E-08	4.26E-08	-2.64E-06
Acidification potential of soil and water	kg SO_2 eq.	1.99E-01	5.52E-03	2.68E-03	2.08E-03	1.73E-05	3.33E-03	9.18E-04	-3.64E-02
Formation potential of tropospheric ozone	kg Ethene eq.	3.61E-03	3.99E-04	8.29E-02	1.08E-02	1.26E-06	0.00E+00	3.14E-05	-3.20E-03
Eutrophication potential	kg $(PO_4)^{3-}$ eq.	5.90E-02	9.73E-04	3.73E-04	8.65E-05	3.06E-06	1.11E-03	1.44E-03	-6.46E-03
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	6.78E-01	0.00E+00	1.20E-05	1.75E-02	0.00E+00	1.11E-03	0.00E+00	-2.73E-01
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	1.31E+03	7.75E+00	6.95E+01	2.70E+01	1.29E+00	3.33E+00	4.14E+00	-5.60E+02
Environmental aspects: (DU) 1 m^3									
Indicator	**Unit**	**A1**	**A2**	**A3**	**C1**	**C2**	**C3**	**C4**	**D**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	2.51E+01	1.55E-01	1.15E+00	4.05E+00	9.2E-02	6.66E-02	2.07E-01	-5.60E+01
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	1.40E+03	8.14E+00	7.30E+01	2.97E+01	1.36E+00	0.00E+00	4.29E+00	5.88E+02
Use of secondary material	kg	3.74E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	4.42E-04	4.07E-01	0.00E+00	0.00E+00	6.78E-02	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	6.39E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m^3	6.88E-02	1.00E-06	1.23E-02	8.53E-03	1.23E-02	1.33E-03	1.18E-02	-1.37E-02
Other environmental information describing waste categories: (DU) 1 m^3									
Indicator	**Unit**	**A1**	**A2**	**A3**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	4.05E-03	4.60E-06	0.00E+00	3.60E-05	2.53E-08	2.33E-05	2.96E-01	-3.50E-04
Non-hazardous waste disposed	kg	2.14E+00	4.27E-03	2.92E-02	3.25E-01	2.35E-05	2.22E-01	2.90E+01	-2.28E-01
Radioactive waste disposed	kg	5.92E-04	0.00E+00	0.00E+00	3.60E-05	0.00E+00	0.00E+00	0.00E+00	-9.10E-05
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	1.25E-04	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

[1] Scenario no 1, 100% Incineration

[2] Scenario no 2, 100% Landfilling

Table 4. Environmental product characteristic – 1 m^2 of EPS with R-value 1

Environmental impacts: (FU) 1 m^2 of EPS with R-value 1									
Indicator	**Unit**	**A1**	**A2**	**A3**	**C1**	**C2**	**C3**	**C4**	**D**
Global warming potential	kg CO_2 eq.	1.56E+00	2.64E-02	2.83E-01	8.26E-02	8.31E-05	1.23E+00	4.25E-03	-1.11E+00
Depletion potential of the stratospheric ozone layer	kg CFC 11 eq.	1.82E-08	0.00E+00	4.20E-11	9.10E-10	0.00E+00	1.26E-09	1.49E-09	-9.24E-08
Acidification potential of soil and water	kg SO_2 eq.	6.95E-03	1.93E-04	9.39E-05	7.26E-05	6.07E-07	1.17E-04	3.21E-05	-1.27E-03
Formation potential of tropospheric ozone	kg Ethene eq.	1.26E-04	1.40E-05	2.90E-03	3.76E-04	4.42E-08	0.00E+00	1.10E-06	-1.12E-04
Eutrophication potential	kg $(PO_4)^{3-}$ eq.	2.07E-03	3.41E-05	1.31E-05	3.03E-06	1.07E-07	3.89E-05	5.03E-05	-2.26E-04
Abiotic depletion potential (ADP-elements) for non-fossil resources	kg Sb eq.	2.37E-02	0.00E+00	4.20E-07	6.13E-04	0.00E+00	3.89E-05	0.00E+00	-9.56E-03
Abiotic depletion potential (ADP-fossil fuels) for fossil resources	MJ	4.58E+01	2.71E-01	2.43E+00	9.45E-01	4.52E-02	1.17E-01	1.45E-01	-1.96E+01
Environmental aspects: (FU) 1 m^2 of EPS with R-value 1									
Indicator	**Unit**	**A1**	**A2**	**A3**	**C1**	**C2**	**C3**	**C4**	**D**
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA
Total use of renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	8.78E-01	5.42E-03	4.03E-02	1.42E-01	#ARG!	2.33E-03	7.25E-03	-1.96E+00
Use of non-renewable primary energy excluding non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA	INA	INA	INA	INA
Total use of non-renewable primary energy resources (primary energy and primary energy resources used as raw materials)	MJ	4.90E+01	2.85E-01	2.55E+00	1.04E+00	4.75E-02	0.00E+00	1.50E-01	-2.06E+01
Use of secondary material	kg	1.31E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Use of renewable secondary fuels	MJ	1.55E-05	1.42E-02	0.00E+00	0.00E+00	2.37E-03	0.00E+00	0.00E+00	0.00E+00
Use of non-renewable secondary fuels	MJ	2.24E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water	m^3	2.41E-03	3.50E-08	4.29E-04	2.99E-04	4.29E-04	4.66E-05	4.14E-04	-4.78E-04
Other environmental information describing waste categories: (FU) 1 m^2 of EPS with R-value 1									
Indicator	**Unit**	**A1**	**A2**	**A3**	**C1**	**C2**	**C3**	**C4**	**D**
Hazardous waste disposed	kg	1.42E-04	1.61E-07	0.00E+00	1.26E-06	8.86E-10	8.16E-07	1.04E-02	-1.23E-05
Non-hazardous waste disposed	kg	7.48E-02	1.49E-04	1.02E-03	1.14E-02	8.23E-07	7.77E-03	1.02E+00	-7.96E-03
Radioactive waste disposed	kg	2.07E-05	0.00E+00	0.00E+00	1.26E-06	0.00E+00	0.00E+00	0.00E+00	-3.19E-06
Components for re-use	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for recycling	kg	0.00E+00	0.00E+00	4.37E-06	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Materials for energy recover	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Results interpretation

Most of the impact categories and environmental aspects of the EPS life cycle are dominated by the input / raw material production impact (mainly EPS granulate mix) in module A1. The PS granulate used in the production process is responsible for most of the environmental loads in the life cycle. The process of foaming the declared polystyrene of the product also has a significant impact on the environmental impact, mainly on the POCP index (photochemical smog). The production of raw materials in module A1 (mainly PS) has the largest share (95%) in the total energy demand and at the level of 82% in the case of carbon dioxide / GWP emissions. Carbon / GWP emissions from the feedstock production stage are related to the use of fossil fuels as fuel and from the production of the foaming agent. The total GWP for the A1-A3 product phase (production - from cradle to factory gate) is 54.3 kg CO_2 / m^3 EPS (1.87 kg CO2 / m^2 EPS for thermal resistance R = 1). The greenhouse potential of GWP in the product phase includes emissions from combustion of fuels used in the EPS production process, and emissions from fuel combustion during foaming, as well as emissions related to the production of electricity used in technological production processes. The emission of pentane during the technological process has the greatest share in the photochemical ozone creation (POCP) potential. The transport of raw materials (A2) has a relatively small impact on all impact categories compared to shares from other life stages, mainly A1. The primary energy demand is essentially determined by the production requirements of the base material (pentane polystyrene pellets). According to the literature, polystyrene is not a troublesome product for disposal, but currently it is mainly stored. Due to the calorific value of the product during a possible combustion process at the end-of-life (C3) stage, in the "incineration" scenario, it may result in environmental benefits (related to heat production - substitute for other fuels). With possible shorter product life cycles in the building than assumed, products made of EPS can be effectively recycled or reused.

Verification

The process of verification of this EPD is in accordance with ISO 14025 and ISO 21930. After verification. this EPD is valid for a 5-year-period. EPD does not have to be recalculated after 5 years. if the underlying data have not changed significantly.

The basis for LCA analysis was EN 15804 and ITB PCR A
Independent verification corresponding to ISO 14025 (subclause 8.1.3.) [x] external [ ] internal
External verification of EPD: Ph.D. Eng. Halina Prejzner LCA. LCI audit and input data verification: Ph.D. D.Sc.Eng. Michał Piasecki. m.piasecki@itb.pl Verification of LCA: Ph.D. Eng. Justyna Tomaszewska. j.tomaszewska@itb.pl

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.

Normative references

- ITB PCR A General Product Category Rules for Construction Products
- ISO 14025:2006. Environmental labels and declarations – Type III environmental declarations – Principles and procedures
- ISO 21930:2017 Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services
- ISO 14044:2006 Environmental management – Life cycle assessment – Requirements and guidelines
- ISO 15686-1:2011 Buildings and constructed assets – Service life planning – Part 1: General principles and framework
- ISO 15686-8:2008 Buildings and constructed assets – Service life planning – Part 8: Reference service life and service-life estimation
- EN 15804:2012+A1:2013 Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products
- PN-EN15942:2012 Sustainability of construction works – Environmental product declarations – Communication format business-to-business
- KOBiZE Wskaźniki emisyjności CO_2. SO_2. NO_x. CO i pyłu całkowitego dla energii elektrycznej. grudzień 2017
- EN 13163 Thermal insulation products for buildings – Factory made products of expanded polystyrene (EPS) – Specification
- EN ISO 14025:2011-10: Environmental labels and declarations — Type III environmental declarations — Principles and procedures

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Thermal Physics, Acoustics and Environment Department
02-656 Warsaw, Ksawerów 21

CERTIFICATE № 148/2021
of TYPE III ENVIRONMENTAL DECLARATION

Products:

Polystyrene boards used in construction

Manufacturer:

Polskie Stowarzyszenie Producentów Styropianu
ul. Puławska 72 lok. 1, 02-603 Warszawa, Poland

confirms the correctness of the data included in the development of
Type III Environmental Declaration and accordance with the requirements of the standard

PN-EN 15804+A1

Sustainability of construction works.
Environmental product declarations.
Core rules for the product category of construction products.

This certificate, issued for the first time on 31st January 2021 is valid for 5 years
or until amendment of mentioned Environmental Declaration

Acting Head of the Thermal Physic, Acoustics and Environment Department
Agnieszka Winkler-Skalna, PhD

INSTYTUT TECHNIKI BUDOWLANEJ

Deputy Director for Research and Innovation
Krzysztof Kuczyński, PhD

Warsaw, January 2021