ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ČSN ISO 14025:2010
and EN 15804:2021+A2:2019+AC:2021

Organization	**THERMO INDUSTRY, a.s.**
Industry Program Operator	CENIA, Česká informační agentura životního prostředí, výkonná funkce Agentury NPEZ
Author	Technický a zkušební ústav stavební Praha, s.p.
Declaration No.:	3015-EPD-030064832
Publication Date	2023-05-30
Valid until	2028-05-30 dle EN 15804+A2:2019

AERO-THERM® interior

AERO-THERM® exterior

AERO-THERM® floor

AERO-THERM® series of thermoactive screeds

1. General Information Declaration

THERMO INDUSTRY, a.s.	**AERO-THERM® series of thermoactive screeds**
Programme: „National programme of environmental labelling“- CR **Industry operator:** CENIA, Czech Environmental Information Agency, Executive body of the NPEZ Agency, Moskevská 1523/63, Praha 10, 101 00, www.cenia.cz ,	**Name and address of the manufacturer:** **THERMO INDUSTRY, a.s.** Bezručova 88 552 03 Česká Skalice, CZ
EPD registration number: **3015-EPD-030064832**	**Declared unit:** **1 l (liter) of average produced product – AERO-THERM interior, exterior and floor thermoactive squeegees**
Product category rules: EN 15804+A2:2019 as core PCR **Publication Date:** 2023-05-30 **Valid until:** 2028-05-30 in accordance with EN 15804+A2:2019	**Product:** **AERO-THERM® series of thermoactive screeds**

The company THERMO INDUSTRY, a.s. is a manufacturer of thermoactive squeegees of the AERO-THERM® series. The basic product is AERO-THERM® interior, which serves to increase the thermal comfort inside the building, to prevent the penetration of cold through the building structure into the interior space, to prevent the formation of mold on the inner surface of the wall due to the higher surface temperature of the screed, and to eliminate so-called thermal bridges.

All the company's products are certified. The company has a production management system in place and production is subject to annual supervision by TZUS Prague.

With regard to the possibility of comparing products as part of the life cycle assessment of buildings based on their EPD, which is carried out by determining their contribution to the environmental properties of the building, it is necessary that the EPD of the given building products be processed in accordance with the requirements of the standard **EN 15804+A2:2019** *Sustainability of construction works – Environmental product declaration – Core rules for the product category of construction products*.

Thermoactive trowels of the AERO-THERM series are produced according to **EN 15824:2017** *Specifications for external renders and internal plasters based on organic binders.*

1. Product data

1.1.1. Product

Thermoactive trowels of the AERO-THERM series are produced according to **EN 15824:2017** *Specifications for external renders and internal plasters based on organic binders*.

The company's management decided that the following products will be included in the environmental impact assessment:

- AERO-THERM® interior
- AERO-THERM® floor
- AERO-THERM® exterier

1.1.2. Product data sheet

The surface treated with AERO-THERM® thermoactive screed contributes to the creation and maintenance of thermal comfort. This is due to the interplay of properties such as thermal absorption, heat reflection and thermal insulation. The time-proven use of 3M glass microspheres, which form the basic component of the thermoactive screed, and the unique

incorporation of aerogel, the world's best insulator, form an effective thermoactive layer of around 1.00 mm. The purpose of using the thermoactive screed is to influence the radiation temperature of the treated surfaces (ceilings and perimeter structures) or to reduce the amount of condensed air moisture, especially in corners and other places where the surface temperature drops below the dew point.

AERO-THERM® can be applied to any shape and material.

Application thickness is 0.8 mm - 1 mm.

Technical Data:

Informative basic properties

Basic characteristics	Properties/class	Harmonized technical specifications
Water vapor permeability EN ISO 7783-2	V2 medium	EN 15824
Water permeability EN 1062-3	W1 high	EN 15824
Adhesion EN 1542	≥ 0.48 MPa	EN 15824
Durability	NPD	EN 15824
Thermal conductivity λ(W/m K) EN 12667	0,047	EN 15824
Response to fire EN 13501-1+A1	A2 - s1, d0	EN 15824

All values given are based on test reports.

More detailed information about the products can be found at www.aero-therm.cz

Product packaging:

The products are supplied in plastic containers with a volume of 3, 5, 12 and 30 litres.

1.1.3. Rules for use

Use of products

It is a practical and smart alternative to common types of insulation in the range of use:

- Family houses
- Cottages and cottages
- Apartments
- Office premises and buildings
- Production and storage halls

The quality level of the products is guaranteed by a number of certificates.

Environment and health during use

Under normal conditions of use, the products do not create any adverse health effects or release volatile organic compounds into indoor air.

Due to the extremely low dust content and low maintenance requirements, no environmental impacts to water, air or soil are expected.

The manufacturer has a Certificate from the State Health Institute on the possibility of using the products in the interior of buildings and for indirect contact with food. The certificate was also issued based on the measurement of VOC emissions and the products meet the limit requirements for application in the interior of buildings.

Reference lifetime

The reference lifetime for AERO-THERM thermoactive squeegees is not specifically declared. These are construction products with many different application purposes. The service life is limited by the service life of the structures where the product is used and ranges from 15 to 25 years.

1.1.4. Delivery method

According to the requirement of NV No. 163/2002 Coll., as amended, technical specifications and FPC documentation, an audit is carried out annually. The audit to the prescribed extent is carried out by the notified entity TZUS PRAHA, s.p.

The company also owns other certificates issued by the certification company Výzkumný ústav pozemních staveb - Certificační společnost, s.r.o., Prague, Classification of reaction to fire in accordance with ČSN EN 13501-1:2019 issued by the Institute for Testing and Certification, a.s. CSI-Centre of Civil Engineering Division, Prague, research report from the Academy of Sciences of the Czech Republic, Institute of Thermomechanics.

1.1.5. Basic raw materials and auxiliary materials

Glass or polymer beads	20-30%
Dispersion	30-40%
Airgel	2-3%
Cellulose	1%
Aluminum hydroxide	1%
Water	30-40%

Any input packaging used is used in production. They are not reported in wastes.

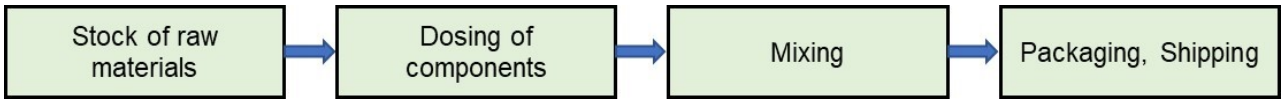
Substances on the List of Substances of Very High Concern subject to authorisation by the European Chemicals Agency are not present in terrazzo products and paving stones in declarable quantities.

1.1.6. Production

The products are made from imported raw materials, where by gradually mixing them, according to the recipe, in a special mixing device with a volume of 300 liters, a trowel material is created. This is then filled into distribution containers of different volumes.

The production process is shown schematically in Fig. 1:

Fig.1: Scheme of the manufacturing process



1.1.7. Waste management

No waste is created during the production process due to the precise dosage of components and their use.

process is collected according to the type and reported in accordance with the regulations.

Possibility to recycle used products (at the end of their service life)

The product cannot be recycled and after the end of its useful life it is necessary to proceed according to Act No. 541/2020 Coll. On waste, as amended, and according to implementing regulations on waste disposal.

1.2. LCA: Calculation rules

1.2.1. Declared unit

The declared unit is 1 l (liter) of the average manufactured product – AERO-THERM interior, exterior and floor thermoactive squeegees.

All inputs and outputs of this report were considered as consumption or production related to the production of 1 l (liter) of the named product. Data processing was based on the recipes of individual products.

as consumption or production related to the production of 1 t of the mentioned product.

Table 1 Declared unit and conversion factors

Identification	Unit	Value
Declared unit	L (liter)	1
Conversion factor from kg	kg	0,392
Average bulk weight	kg/m^3	392

2. System boundary according to the modular approach

The boundary of the product life cycle system is **the information module A1 - A3** "**Production phase**", in accordance with the EN 15804+A2:2019 standard. The project report includes all relevant processes For the "***cradle to gate***" EPD type. In accordance with Article 5.2 EN 15804+A2, end-of-life phases (C, D) are **not considered**.

Information on product system boundaries is shown in Table 2.

Table 2: Information about product system boundaries – information modules

Information about product system boundaries – information modules (**X** = Included, **ND** = module not declared)																
Production stage			**Construction stage**		**Usage stage**							**End-of-life stage**				**Additional information beyond the life cycle**
Supply of mineral resources	Transport	Production	Transport to the construction site	Construction/installation process	Usage	Maintenance	Repair	Replacement	Reconstruction	Operational energy consumption	Operating water consumption	Demolition/deconstruction	Transport	Waste treatment	Removal	Benefits and costs beyond the system. Potential for reuse, recovery, and recycling
A1	**A2**	**A3**	**A4**	**A5**	**B1**	**B2**	**B3**	**B4**	**B5**	**B6**	**B7**	**C1**	**C2**	**C3**	**C4**	**D**
X	**X**	**X**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

The system boundary is set to include both those processes that provide material and energy inputs to the system and subsequent production and transport processes up to the factory gate, and the treatment of all waste resulting from these processes.

The production stage includes the following modules:

- **A1** – extraction and processing of raw materials and production of packaging from input raw materials
- **A2** - transport of input raw materials from supplier to manufacturer, waste collection
- **A3 -** production of products, production of auxiliary materials and semi-finished products, energy consumption, including treatment of waste, up to reaching end-of-waste or after the last material residues have been removed during the production phase.

Data provided by THERMO INDUSTRY, a.s. is used. for the period 2022.

The boundaries of the product system are considered in such a way that they include only production processes, not administrative activities.

2.1. Preconditions and measures taken

Information modules **A4 to A5**, which are intended to provide additional information beyond the production stage, have not been included in the LCA due to the difficult availability of input data and are therefore not declared.

Information modules from the **usage stage B1 to B7** are also not declared because according to EN 16757 these types of products do not require maintenance, repair, or replacement during the normal life in the usage stage, provided that they are used correctly. Also, during the usage stage, they do not require consumption of energy or water.

The **specific reference lifetime** of the products is also not declared, depending on the unavailability of representative data on the operating conditions during the product's use phase. Only the estimated service life is given, depending on the type of substrate, 15-25 years.

For the study, all operational data related to the consumption of main and auxiliary materials for the production of the product, energy data, diesel consumption and the distribution of annual waste and emissions according to the plant records were taken. For all inputs and

outputs considered, transport costs were considered or differences in transport distances were recognised.

Other available data were **used in full**.

For some input data, due to their complexity in obtaining them, alternative methods have been chosen in the form of a qualified calculation based on the available information. Some input data was converted into units that were needed for the selected generic process data in the environmental impact assessment calculation program.

These are:

- Data on **natural gas** consumption in Kwh – were determined by conversion from the consumed quantity to MJ (1 kWh = 3,6 MJ)

2.2. Cut-off criteria

The processes required for the installation of production equipment and the construction of infrastructure were not included in the analysis. Administrative processes are not included either – inputs and outputs are balanced **on the production stage**.

2.3. Sources of environmental data

All inputs and outputs were entered in SI units, namely:

- Material and auxiliary inputs and product outputs in kg, pcs, m^3
- Sources used as energy input (primary energy), in MWh or MJ and GJ, including renewable energy sources (hydropower, wind energy)
- Water consumption in kg or m^3
- Inputs related to transport in km (distance), tkm (material transfer) and in kg (diesel consumption)
- Time was stated in practical units depending on the scale of the assessment: minutes, hours, days, years.

The time range of the required specific data, provided by THERMO INDUSTRY, a.s., for the processing of this report, was set as a representative time period of the calendar **year 2022**. The basic source of the necessary data from the areas of production, purchasing, maintenance, etc. was the information system, or operational records. The manufacturer does not report production waste (individual mixing of individual doses according to exact dosage).

The necessary specific data related to the production phase was determined on the basis of technological recipes for the amount of input materials and outputs - the production of finished products (from the relevant sources of the required data). These data were specified for the production of 1 batch of 300-liter trowel. Subsequently, the data are converted to 1 liter.

Emissions from the production process are not reported or measured.

For the following inputs it was proceeded this way (direct data not available):

- Distances on the transport of inputs and outputs (waste) – data from Google maps were used

For the complete analysis of environmental parameters were used:

- computing software SimaPro, version 9.4 SimaPro Analyst (database Ecoinvent version 3.8)

2.4. Data quality

The data used to calculate the EPD meet the following principles:

Time period: For specific data, manufacturer's data from 2022 have been used. This is due to significant technological changes in the production process. For generic data, the data of the Ecoinvent version database 3.8 have been used. Based on the evaluation in accordance with EN 15804+A2, Annex E, tab. E.1 the generic data used meet the quality level - very good.

Technological aspect: Data corresponding to the current production of individual types of sub-products and corresponding to the current state of new technologies in the plant used have been used.

Based on the evaluation in accordance with EN 15804+A2, Annex E, tab. E.1 the generic data used meet the level of quality - very good.

Completeness and complexness aspect: Most of the input data is based on consumption balances, which are accurately recorded in the information system. The reliability of the source of specific data is determined by the uniformity of the methodology of presenting the technological recipe of individual products.

Geographical aspect: The generic data used from the Ecoinvent database are used with validity for the Czech Republic (e.g., energy inputs) and if data are not available for the Czech Republic, data valid for the EU or according to the supplier's location are used. Based on the evaluation according to EN 15804+A2, Annex E, tab. E.1 used generic data meet the level of quality - medium.

Consistency aspect: Uniform aspects are used throughout the scope of the report (allocation rules, age of data, technological scope of validity, time scope of validity, geographical scope of validity).

Credibility aspect: All important data were checked to ensure cross-comparison of weight balances.

2.5. Period considered

The time range of the required specific data, provided by THERMO INDUSTRY, a.s., for the processing of this report, was set as a representative time period of the calendar **year 2022**.

2.6. Allocation

In the balance of inputs, their direct monitoring per production batch was used, or allocation based on weight was used.

2.7. Comparability

Environmental product declarations from different programmes may not be comparable. Comparison or assessment of EPD data is only possible if all compared data reported in accordance with EN 15804+A2:2019 have been determined according to the same rules.

2.8. Product variability

The resulting data are given for **1 l (liter) of the average manufactured product – AERO-THERM interior, exterior and floor thermoactive squeegees**.

2.9. LCA: Results

Information on environmental impacts is indicated in the following tables. The individual results for the impact categories are presented in Tables 3, 4, 6, 7, 9 and 10. Tables 5, 8 and 11 provide additional environmental information. They are related to the declared unit (DJ) – **1 l (liter) of the average manufactured product – AERO-THERM interior, exterior and floor thermoactive squeegees**.

Tables 12, 13 and 14 describing waste categories, output flows and biogenic carbon content at the gate of the production plant are presented separately, which are the same (zero values) for all types of products.

The impact assessment was carried out using the characterisation factors used in the European Life Cycle Reference Database (ELCD) provided by the European Commission – Directorate-General of the Joint Research Centre – Institute for Environment and Sustainability.

2.9.1. AERO-THERM interior

Table 3: Parameters describing **the basic environmental impacts**

Ultimately LCA – Parameters describing basic environmental impacts (DJ = 1 liter of the product)		
Indicator	**Unit**	**A1-A3**
Global warming potential (**GWP-total**)	kg CO_2 ekv.	1,14E+00
Global warming potential (**GWP-fossil**)	kg CO_2 ekv.	1,14E+00
Global warming potential (**GWP-biogenic)**)	kg CO_2 ekv.	2,21E-03
Global warming potential from land use and land-use change (**GWP-luluc**)	kg CO_2 ekv.	6,02E-04
Stratospheric ozone depletion potential (**ODP**)	kg CFC 11 ekv.	9,01E-08
Acidification potential, Cumulative exceedance (**AP**)	mol H+ ekv.	4,83E-03
Eutrophication potential, proportion of nutrients entering fresh water (**freshwater EP**)	kg P ekv.	2,69E-04
Eutrophication potential, proportion of nutrients entering seawater (**seawater EP**)	kg N ekv.	9,58E-04
Eutrophication potential, Cumulative overshoot (**soil EP**)	mol N ekv.	9,54E-03
Ground-level ozone formation potential (**POCP**)	kg NMVOC ekv.	3,29E-03
Raw material depletion potential for **non-fossil sources (ADP-minerals and metals)**)	kg Sb ekv.	8,32E-06
Raw material depletion potential for fossil resources (**ADP-fossil fuels**)	MJ, calorific value	2,23E+01
Water scarcity potential (for users), water scarcity weighted by water scarcity (**WDP**)	m3 eq. scarcity	4,57E-01

Table 4 Parameters describing **additional environmental impacts**

LCA result – Parameters indicating additional environmental impacts (DJ = 1 liter of the product)		
Indicator	**Unit**	**A1-A3**
Potential occurrence of disease due to particulate matter emissions (**PM**)	Occurrence of the disease	4,51E-08
Potential effect of human exposure to the isotope U235 (**IRP**)	kBq U235 eq.	8,62E-02
Potential comparative toxic unit for ecosystems (**ETP-fw**)	CTUe	2,33E+01
Potential comparative toxic unit for humans (**HTP-c**)	CTUh	2,19E-08
Potential comparative toxic unit for humans (**HTP-nc**)	CTUh	8,23E-09
Potential Soil Quality Index (**SQP**)	dimensionless	2,13E+00

Table 5: Parameters describing **resource consumption**

LCA result – Parameters describing resource consumption (DJ = 1 liter of the product)		
Parametr	**Unit**	**A1-A3**
Consumption of renewable primary energy, excluding energy sources used as raw materials **(PERE)**	MJ	7,51E-01
Consumption of renewable primary energy sources used as raw materials (**PERM**)	MJ	0,00E+00
Total consumption of renewable primary energy sources (primary energy and primary energy sources used as raw materials) (**PERT**)	MJ	7,51E-01
Consumption of non-renewable primary energy, excluding energy sources used as raw materials (**PENRE**)	MJ	1,95E+01
Consumption of non-renewable primary energy sources used as raw materials (**PENRM**)	MJ	0,00E+00
Total consumption of non-renewable primary energy sources (primary energy and primary energy sources used as raw materials) (**PENRT**)	MJ	1,95E+01
Consumption of secondary raw materials (**SM**)	kg	0,00E+00
Consumption of renewable secondary fuels (**RSF**)	MJ	0,00E+00
Consumption of non-renewable secondary fuels (**NRSF**)	MJ	0,00E+00
Net potable water consumption (**FW**)	m^3	1,33E-04

2.9.2. AERO-THERM exterior

Table 6: Parameters describing **the basic environmental impacts**

Ultimately LCA – Parameters describing basic environmental impacts (DJ = 1 liter of the product)		
Indicator	**Unit**	**A1-A3**
Global warming potential (**GWP-total**)	kg CO_2 ekv.	1,14E+00
Global warming potential (**GWP-fossil**)	kg CO_2 ekv.	1,14E+00
Global warming potential (**GWP-biogenic)**)	kg CO_2 ekv.	2,21E-03
Global warming potential from land use and land-use change (**GWP-luluc**)	kg CO_2 ekv.	6,02E-04
Stratospheric ozone depletion potential (**ODP**)	kg CFC 11 ekv.	9,01E-08
Acidification potential, Cumulative exceedance (**AP**)	mol H+ ekv.	4,83E-03
Eutrophication potential, proportion of nutrients entering fresh water (**freshwater EP**)	kg P ekv.	2,69E-04
Eutrophication potential, proportion of nutrients entering seawater (**seawater EP**)	kg N ekv.	9,58E-04
Eutrophication potential, Cumulative overshoot (**soil EP**)	mol N ekv.	9,54E-03
Ground-level ozone formation potential (**POCP**)	kg NMVOC ekv.	3,29E-03
Raw material depletion potential for **non-fossil sources (ADP-minerals and metals)**)	kg Sb ekv.	8,32E-06
Raw material depletion potential for fossil resources (**ADP-fossil fuels**)	MJ, calorific value	2,23E+01
Water scarcity potential (for users), water scarcity weighted by water scarcity (**WDP**)	m3 eq. scarcity	4,57E-01

Table 7 Parameters describing **additional environmental impacts**

LCA result – Parameters indicating additional environmental impacts (DJ = 1 liter of the product)		
Indicator	**Unit**	**A1-A3**
Potential occurrence of disease due to particulate matter emissions (**PM**)	Occurrence of the disease	4,51E-08
Potential effect of human exposure to the isotope U235 (**IRP**)	kBq U235 eq.	8,62E-02
Potential comparative toxic unit for ecosystems (**ETP-fw**)	CTUe	2,33E+01
Potential comparative toxic unit for humans (**HTP-c**)	CTUh	2,19E-08
Potential comparative toxic unit for humans (**HTP-nc**)	CTUh	8,23E-09
Potential Soil Quality Index (**SQP**)	dimensionless	2,13E+00

Table 8: Parameters describing **resource consumption**

LCA result – Parameters describing resource consumption (DJ = 1 liter of the product)		
Parametr	**Unit**	**A1-A3**
Consumption of renewable primary energy, excluding energy sources used as raw materials **(PERE)**	MJ	7,56E-01
Consumption of renewable primary energy sources used as raw materials (**PERM**)	MJ	0,00E+00
Total consumption of renewable primary energy sources (primary energy and primary energy sources used as raw materials) (**PERT**)	MJ	7,56E-01
Consumption of non-renewable primary energy, excluding energy sources used as raw materials (**PENRE**)	MJ	2,41E+01
Consumption of non-renewable primary energy sources used as raw materials (**PENRM**)	MJ	0,00E+00
Total consumption of non-renewable primary energy sources (primary energy and primary energy sources used as raw materials) (**PENRT**)	MJ	2,41E+01
Consumption of secondary raw materials (**SM**)	kg	0,00E+00
Consumption of renewable secondary fuels (**RSF**)	MJ	0,00E+00
Consumption of non-renewable secondary fuels (**NRSF**)	MJ	0,00E+00
Net potable water consumption (**FW**)	m^3	1,33E-04

2.9.3. AERO-THERM floor

Table 9: Parameters describing **the basic environmental impacts**

Ultimately LCA – Parameters describing basic environmental impacts (DJ = 1 liter of the product)		
Indicator	**Unit**	**A1-A3**
Global warming potential (**GWP-total**)	kg CO_2 ekv.	1,02E+00
Global warming potential (**GWP-fossil**)	kg CO_2 ekv.	1,02E+00
Global warming potential (**GWP-biogenic)**)	kg CO_2 ekv.	1,25E-03
Global warming potential from land use and land-use change (**GWP-luluc**)	kg CO_2 ekv.	7,73E-04
Stratospheric ozone depletion potential (**ODP**)	kg CFC 11 ekv.	1,61E-06
Acidification potential, Cumulative exceedance (**AP**)	mol H+ ekv.	4,21E-03
Eutrophication potential, proportion of nutrients entering fresh water (**freshwater EP**)	kg P ekv.	2,80E-04
Eutrophication potential, proportion of nutrients entering seawater (**seawater EP**)	kg N ekv.	8,53E-04
Eutrophication potential, Cumulative overshoot (**soil EP**)	mol N ekv.	8,03E-03
Ground-level ozone formation potential (**POCP**)	kg NMVOC ekv.	3,61E-03
Raw material depletion potential for **non-fossil sources (ADP-minerals and metals)**)	kg Sb ekv.	8,27E-06
Raw material depletion potential for fossil resources (**ADP-fossil fuels**)	MJ, calorific value	2,34E+01
Water scarcity potential (for users), water scarcity weighted by water scarcity (**WDP**)	m3 eq. scarcity	5,88E-01

Table 10 Parameters describing **additional environmental impacts**

LCA result – Parameters indicating additional environmental impacts (DJ = 1 liter of the product)		
Indicator	**Unit**	**A1-A3**
Potential occurrence of disease due to particulate matter emissions (**PM**)	Occurrence of the disease	3,77E-08
Potential effect of human exposure to the isotope U235 (**IRP**)	kBq U235 eq.	8,72E-02
Potential comparative toxic unit for ecosystems (**ETP-fw**)	CTUe	1,41E+01
Potential comparative toxic unit for humans (**HTP-c**)	CTUh	1,23E-08
Potential comparative toxic unit for humans (**HTP-nc**)	CTUh	7,95E-09
Potential Soil Quality Index (**SQP**)	dimensionless	2,54E+00

Table 11: Parameters describing **resource consumption**

LCA result – Parameters describing resource consumption (DJ = 1 liter of the product)		
Parametr	**Unit**	**A1-A3**
Consumption of renewable primary energy, excluding energy sources used as raw materials **(PERE)**	MJ	8,14E-01
Consumption of renewable primary energy sources used as raw materials (**PERM**)	MJ	0,00E+00
Total consumption of renewable primary energy sources (primary energy and primary energy sources used as raw materials) (**PERT**)	MJ	8,14E-01
Consumption of non-renewable primary energy, excluding energy sources used as raw materials (**PENRE**)	MJ	2,52E+01
Consumption of non-renewable primary energy sources used as raw materials (**PENRM**)	MJ	0,00E+00
Total consumption of non-renewable primary energy sources (primary energy and primary energy sources used as raw materials) (**PENRT**)	MJ	2,52E+01
Consumption of secondary raw materials (**SM**)	kg	0,00E+00
Consumption of renewable secondary fuels (**RSF**)	MJ	0,00E+00
Consumption of non-renewable secondary fuels (**NRSF**)	MJ	0,00E+00
Net potable water consumption (**FW**)	m^3	1,33E-04

2.9.4. AERO-THERM - common data

Table 12 Other environmental information **- waste category description -** all types of products

LCA result - Other environmental information - waste category description (DJ = 1 liter of the product)		
Parametr	**Unit**	**A1-A3**
Hazardous waste disposed of (**HWD**)	kg	0,00E+00
Other waste disposed of (**NHWD**)	kg	0,00E+00
Radioactive waste disposed of (**RWD**)	kg	0,00E+00

Table 13 Other environmental information **- description of output flow -** all types of products

LCA result - Other environmental information - description of output flows (DJ = 1 liter of the product)		
Parametr	**Unit**	**A1-A3**
Construction units for reuse (**MFR**)	kg	0,00E+00
Materials for recycling (**MER**)	kg	0,00E+00
Materials for energy recovery (**EEE**)	kg	0,00E+00
Exported energy (**EET**)	MJ per energy carrier	0,00E+00

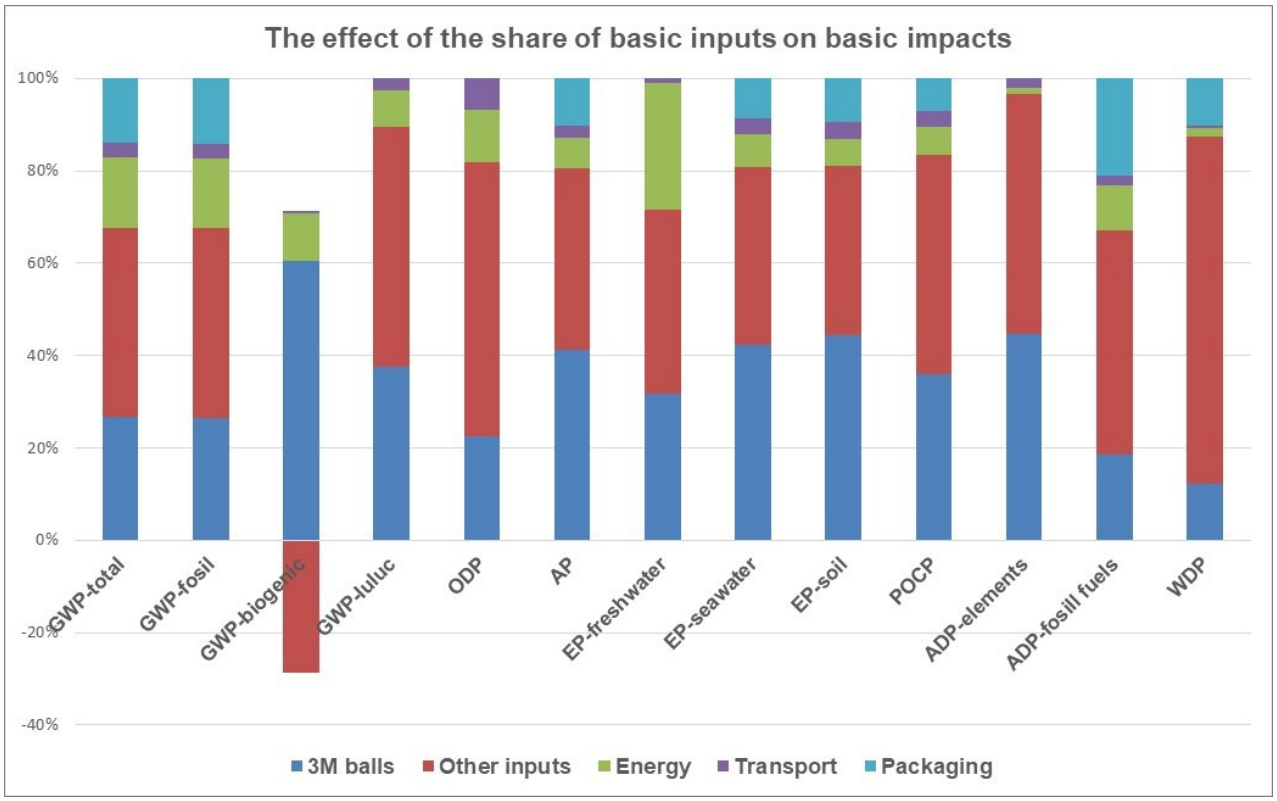
Table 14 Information describing the **biogenic carbon content** of the plant gate - all types of products

LCA result – Information describing the biogenic carbon content at the plant gate (DJ = 1 liter of the product)		
Parameter	**Unit**	**At the plant gate**
Biogenic carbon content of the product	kg C	0
Biogenic carbon content in the appropriate packaging	kg C	0

2.9.5. LCA: Interpretation

The influence of the basic groups of inputs on the basic environmental impacts in the production phase is shown, for example, in Figure 2:

Figure. 2 Influence of the share of basic inputs on basic impacts (A1-A3) – type Interior



It can be seen from the figure that the **consumption of other components** (especially dispersion and additional components - additives) has a very significant influence on environmental impacts. The influence of **balls** (3M and Expancel) is also significant. The influence of **energy** and **transport** is applied only to a lesser extent.

3. LCA: scenarios and other technical information

Information modules A4, A5 and B1-B7, C1-C4 and D were not included in the LCA analysis.

4. LCA: Additional information

EPD does not include additional documentation related to the declaration of supplementary information.

5. References

ISO 14025:2010 Environmental labels and declarations - Type III environmental declarations - Principles and procedures

EN 15804+A2:2020 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products

EN ISO 14040:2006 Environmental management - Life Cycle Assessment - Principles and Framework

EN ISO 14044:2006 Environmental management - Life Cycle Assessment – Requirements and guidelines

ISO 14063:2007 Environmental management - Environmental communication - Guidelines and examples

EN 15643-1:2011 Sustainability of construction works - Sustainability assessment of buildings - Part 1: General framework

EN 15643-2:2011 Sustainability of construction works - Assessment of buildings - Part 2: Framework for the assessment of environmental performance

EN 15942:2013 Sustainability of construction works - Environmental product declarations - Communication format business-to-business

CEN/TR 15941:2012 Sustainability of construction works - Environmental product declarations - Methodology for selection and use of generic data

ILCD handbook - JRC EU, 2011

Zákon č. 541/2020 Sb. v platném znění (Zákon o odpadech) / Act. No. 541/2020 Coll., as amended (Waste Act)

Vyhláška č. 8/2021 Sb. Katalog odpadů – Katalog odpadů / Decree No. 8/2021 Coll. Waste catalogue – Waste catalogue

Nařízení Evropského parlamentu č. 1907/2006 o registraci, hodnocení, povolování a omezování chemických látek a o zřízení Evropské agentury pro chemické látky - REACH (registrace, evaluace a autorizace chemických látek) / Regulation (EC) No 1907/2006 of the European Parliament concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency - REACH (Registration, Evaluation and Authorisation of Chemicals

Nařízení Evropského parlamentu a Rady (ES) č. 1272/2008 o klasifikaci, označování a balení látek a směsí, o změně a zrušení směrnic 67/548/EHS a 1999/45/ES a o změně nařízení (ES) č. 1907/2006 (nařízení CLP) / Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC and amending Regulation (EC) No 1907/2006 (CLP Regulation)

SimaPro LCA Package, Pré Consultants, the Netherlands, www.pre-sustainability.com

Ecoinvent Centre, www.Ecoinvent.org

Explanatory documents are available from the head of Technical Support of THERMO INDUSTRY, a.s

6. EPD verification

CEN standard EN 15804+A2 serves as the core PCR	
Independent verification of the declaration and data, according to EN ISO 14025:2010: ☐ Internal ☒ External	
Third party verifier: Technický a zkušební ústav stavební Praha, s.p. Prosecká 811/76a, Praha 9, 190 00 Czech Republic Certification Body for EPD, accredited by CAI - Czech Accreditation Institute, under No. 95/2023	

THERMO INDUSTRY, a.s.	Organizace **THERMO INDUSTRY, a.s.** Bezručova 88 552 03 Česká Skalice, CZ	Tel: +420 603 290 765 Fax: -- Email: info@thermoindustry.com Web: https://www.thermoindustry.com/
	Oborový provozovatel programu: CENIA, Česká informační agentura životního prostředí, výkonná funkce Agentury NPEZ Moskevská 1523/63 100 10 Praha 10	Tel: +420 267 225 226 Fax: - Email: info@cenia.cz Web: www.cenia.cz
	TZÚS Praha pobočka Ostrava U Studia 14 700 30 Ostrava	Tel. : +420 734 432 137 +420 602 185 785 moler@tzus.cz trinner@tzus.cz