

# Product Carbon Footprint Study Report

Conducted by Green0meter

**Company:**

ALPHA CZECH s.r.o.

**Product name:**

THRcoating ALPHA Construction

ABAMAL

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## Notice

The product carbon footprint study and its report were carried out in accordance with the ISO 14067:2018 methodology in a manner consistent with international standards for life cycle assessment (ISO 14040 and ISO 14044). This calculation is based on the adequacy and completeness of the data and information provided by the applicant. The user of this study report must critically assess whether the results provided are sufficient for the intended use.



|                               |                                         |
|-------------------------------|-----------------------------------------|
| Product name                  | THRcoating ALPHA Construction<br>ABAMAL |
| Standard                      | ČSN EN ISO 14067                        |
| Limit                         | Cradle to gate<br>(Cradle to gate)      |
| Functional unit/declared unit | 1 kg of product                         |
| Target group(s)               | Internal reporting, potential customers |
| GWP emissions                 | 1.39 kg CO <sub>2</sub> e               |
| Emissions hot spot            | Input raw materials                     |
| Publication date              | 26 February 2024                        |



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# 1. DEFINITION OF OBJECTIVE AND SCOPE

## 1.1 DEFINITION OF OBJECTIVE

The product carbon footprint (CFP) study described above aims to provide comprehensive information on total greenhouse gas (GHG) emissions and the distribution of emissions across the various stages of a product's life cycle. Through such an analysis, it is easy to identify the processes making the largest contribution. The impact is estimated as a climate change (CC) indicator.

## 1.2 SCOPE DEFINITION

### 1.2.1 FUNCTIONAL UNIT

The declared unit for which the study was conducted is 1 kg of THRcoating ALPHA Construction ABAMAL coating.

### 1.2.2 SYSTEM BOUNDARY

The system under investigation comprises the production of the thermal insulation coating from raw materials and its subsequent transport from the production plant to a plant in the Czech Republic. The system boundary is defined as cradle-to-gate, and the calculation includes the following stages:

- Procurement and transport of raw materials
- Production stage + product packaging
- Product transport

THRcoating ALPHA Construction ABAMAL

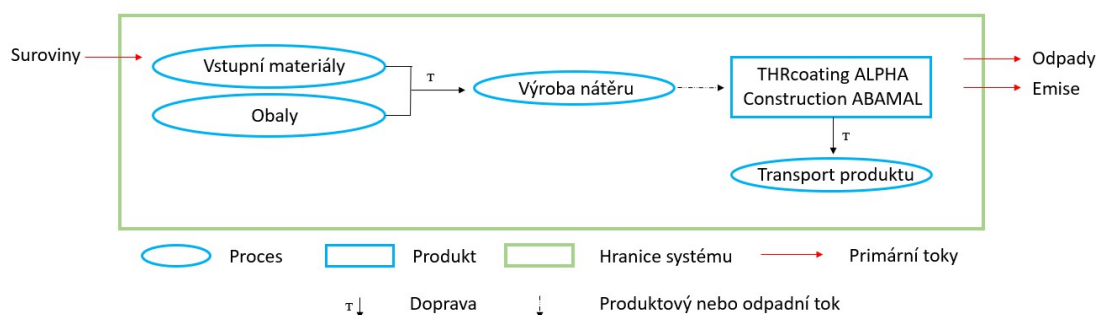


Figure 1: Simplified diagram of the applied cradle-to-gate calculation

## 2. LIFE CYCLE INVENTORY

### 2.1 DATA COLLECTION

#### 2.1.1 MANUFACTURING PROCESS

This phase describes the sourcing and use of raw materials for the production of thermal insulation coating, specifically glass beads, a chemical mixture, and a polypropylene bucket as packaging material, including their transport to the production site. The impact of production processes is generally expressed in terms of their electricity consumption. The impacts of single-use packaging materials have been included in the calculation. The emission factor for electricity generation corresponds to the national energy mix of the Czech Republic. The environmental impacts of administrative and storage areas, as well as production facilities, have been disregarded due to their low significance.

### 2.2 CALCULATION OF PRODUCT CARBON FOOTPRINT DATA

The following primary data were included in the carbon footprint calculation:

- Data provided by the company describing material and energy consumption

The secondary data used in the calculations were sourced from the following datasets:

- ecoinvent v3.10

The environmental impact was assessed using the Environmental Footprint 3.1 impact assessment method introduced by the European Commission, with the CC impact category assessment based on the IPCC model.

## 3. LIFE CYCLE IMPACT ASSESSMENT

Based on the methodology, modelling and assumptions or approximations used, direct greenhouse gas emissions amount to 1.39 kg CO<sub>2</sub>e on a relative global warming potential (GWP100) scale. Figures 2 and 3 show the distribution of greenhouse gas emissions.

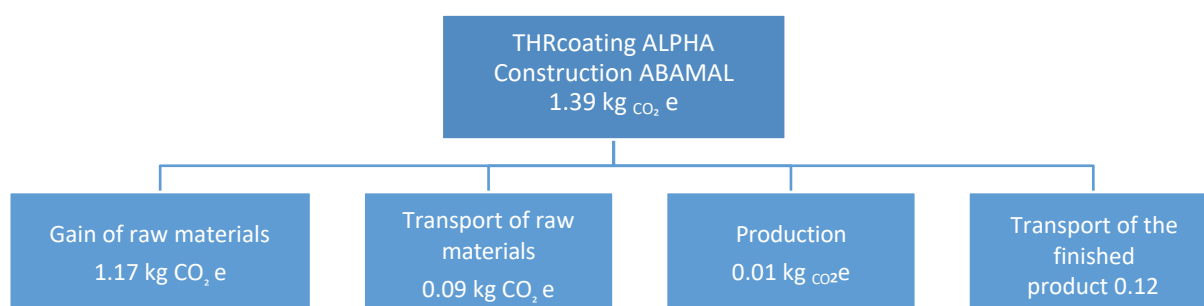


Figure 2: Total distribution of greenhouse gas emissions



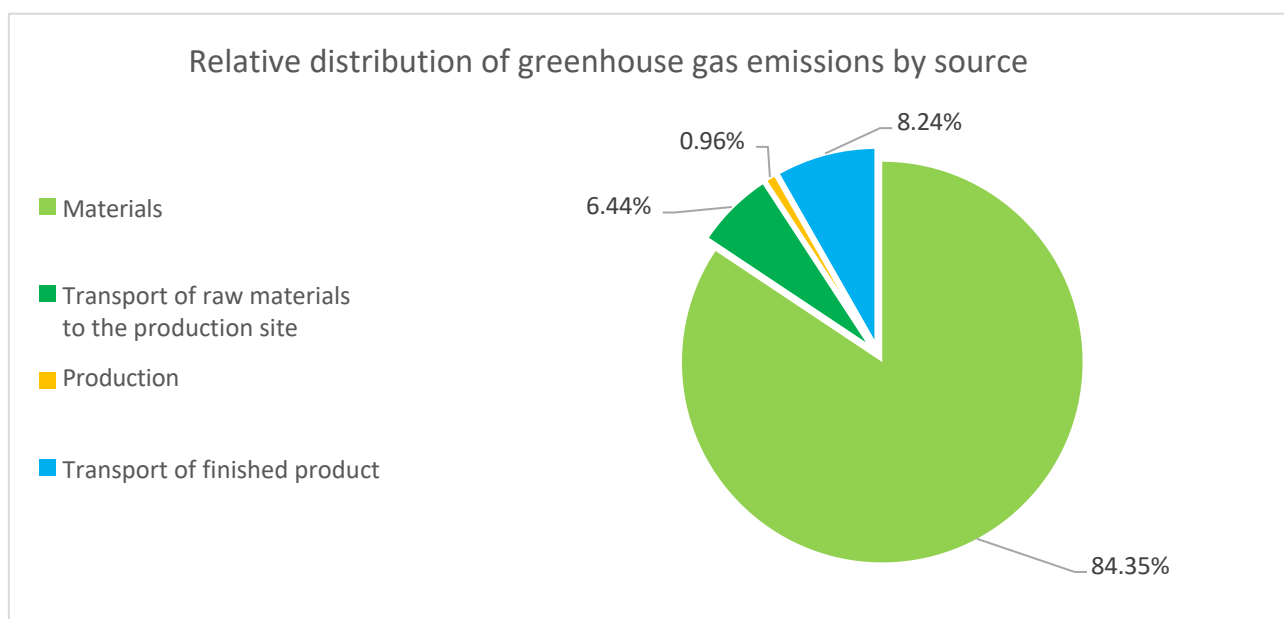


Figure 3: Relative distribution of greenhouse gases by source Table 1:

#### Emissions and sinks of specific greenhouse gases

| Results per functional unit            |                 |                           |
|----------------------------------------|-----------------|---------------------------|
| Indicator                              | Units           |                           |
| Biogenic greenhouse gas emissions      | 8.94E-04        | kg CO <sub>2</sub> e      |
| Fossil greenhouse gas emissions        | 1.39E+00        | kg CO <sub>2</sub> e      |
| Greenhouse gas emissions from land use | 1.07E-03        | kg CO <sub>2</sub> e      |
| Greenhouse gas emissions from aviation | 0.00E+00        | kg CO <sub>2</sub> e      |
| <b>Total greenhouse gas emissions</b>  | <b>1.39E+00</b> | <b>kg CO<sub>2</sub>e</b> |

## 4. LIFE CYCLE ANALYSIS

The main interpretations and conclusions are as follows:

- The largest contribution to the total carbon footprint can be attributed to the extraction of raw materials, specifically the extraction and use of glass beads.
- Manufacturing, expressed in terms of electricity consumption, accounts for a small proportion of the product's total carbon footprint

**Please note** that the calculated carbon footprint may be highly dependent on the available data sets, which may not always be up to date or 100% consistent with the described flow processes. Reducing the impact in the climate change category may result in a higher environmental impact in other categories that are not measurable by greenhouse gas emissions.