Product Carbon Footprint Study Report

Carried out by Green0meter

Company:	ALPHA CZECH s.r.o.
Product Name:	THRcoating ALPHA Construction ABAMAL
Release Date:	28-02-2024

Notice

The Product Carbon Footprint study and its report was performed in accordance with the ISO 14067:2018 methodology in a manner consistent with the International Standards on life cycle assessment (ISO 14040 and ISO 14044). This computation relies on the adequacy and completeness of data and information provided by the applicant. User of this study report shall critically evaluate whether provided results are sufficient for intended use.

Product Name	THRcoating ALPHA Construction ABAMAL
Standard	EN ISO 14067
Boundary	Cradle to gate
Functional unit/declared unit	1 kg of product
Target Audience(s)	Internal reporting, potential customers
GWP emissions	1.39 kg CO2e
Emission Hot Spot	Raw material extraction and production
Date of Issue	26-02-2024

CONTENT

1. GOAL AND SCOPE DEFINITION

1.1 GOAL DEFINITION

The Product Carbon Footprint (CFP) study described above aims to provide comprehensive information on the total greenhouse gas (GHG) emissions as well as the distribution of emissions at different stages of the product's lifecycle. Through such analysis, the processes with the greatest contribution can be easily determined. The impact is estimated as a median indicator of climate change (CC).

1.2 SCOPE DEFINITION

1.2.1 FUNCTIONAL UNIT

The declared unit for which the study was carried out is 1 kg of thermal insulation coating.

1.2.2 SYSTEM BOUNDARY

The investigated system includes the production of the thermal insulation coating from virgin materials and the transport of the finished product. The system boundary is determined as from cradle to gate, and the calculation includes the following stages:

- Raw material extraction and production
- Production Stage + Product Packaging
- Transport of product

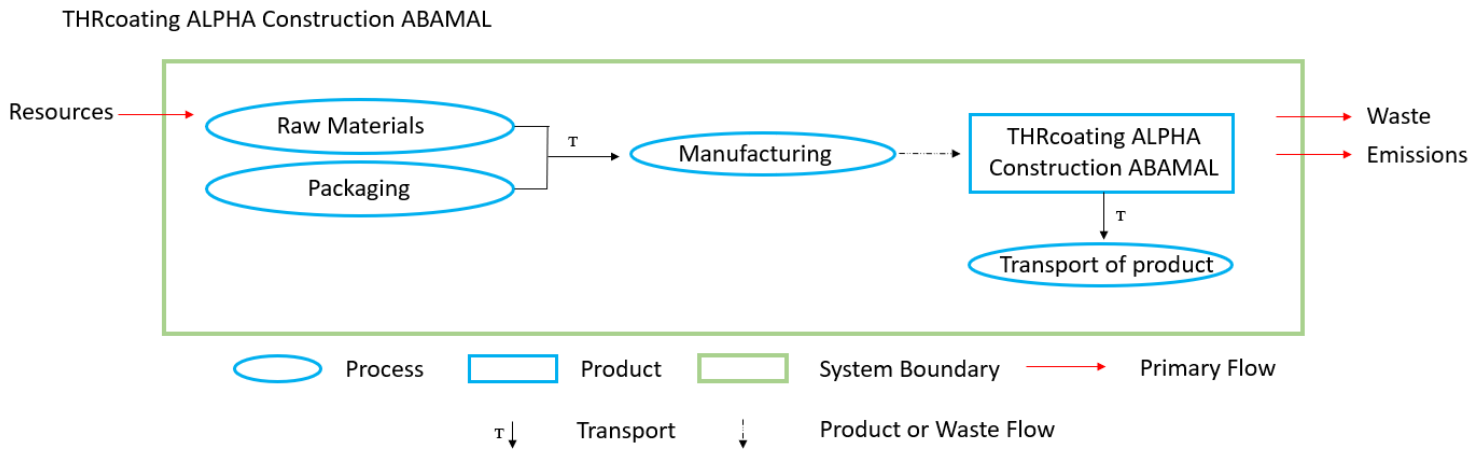

Figure 1: Simplified scheme of applied Cradle-to-Gate calculation

2. LIFE CYCLE INVENTORY

2.1 DATA COLLECTION

2.1.1 MANUFACTURING PHASE

This phase describes the acquisition of raw materials used for the production of the thermal insulation coating, specifically the glass microspheres, the chemical mixture and the polypropylene bucket as the packaging material, including their transport to the production site. The impact of production processes is expressed in terms of their electricity consumption. The impacts of single-use packaging materials were included in the calculation. The emission factor for electricity production corresponds to the national mix of the Czech Republic. The environmental impacts of administrative and storage areas, as well as production facilities, were neglected due to their low importance.

2.2 PRODUCT CARBON FOOTPRINT DATA CALCULATION

The following primary data have been included in the calculation of the carbon footprint:

- Company-provided data describing the consumption of materials and energy

Secondary data used in the calculations were provided from the following data sets:

- 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 on the relative scale of global warming potential (GWP100) amount to 1.39 kg CO2e. Figures 2 and 3 show the distribution of greenhouse gas emissions.

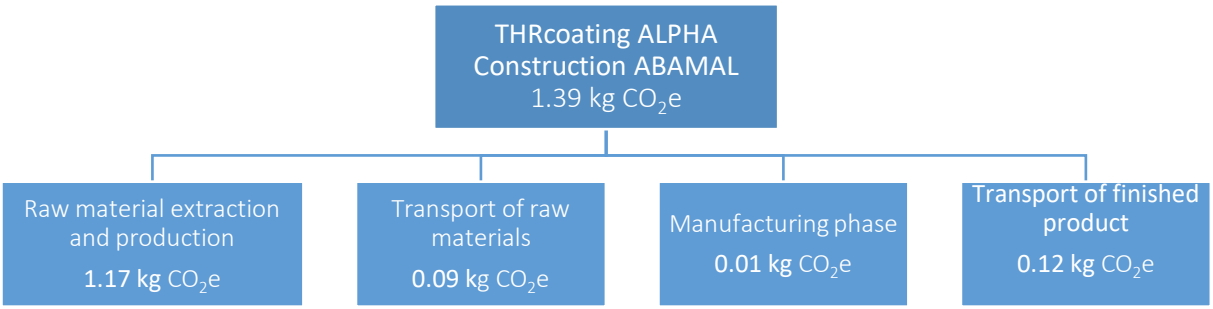

Figure 2: Overall distribution of greenhouse gas emissions

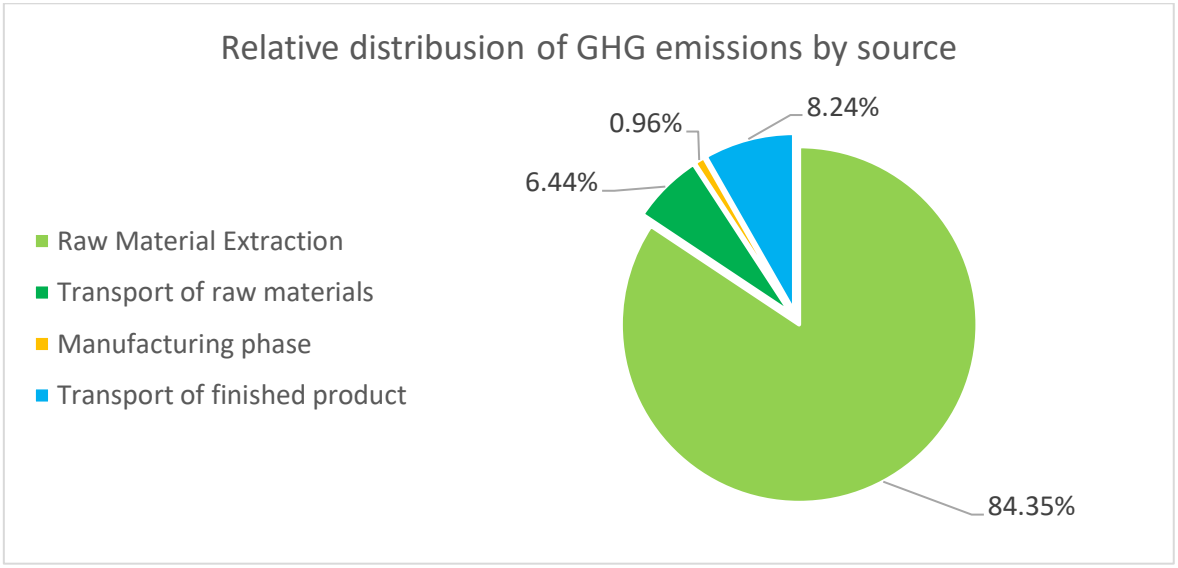

Figure 3: Relative distribution of greenhouse gases by source

Table 1: Emissions and removals of specific greenhouse gases

Results per functional unit		
Indicator		**Units**
Biogenic greenhouse gas emissions	8.94E-04	kg CO2e
Fossil greenhouse gas emissions	1.39E+00	kg CO2e
Greenhouse gas emissions from land use	1.07E-03	kg CO2e
Greenhouse gas emissions from aviation	0,00E+00	kg CO2e
Total greenhouse gas emissions	**1.39E+00**	**kg CO2e**

4. LIFE CYCLE INTERPRETATION

The important findings are as follows:

- The highest share of the total carbon footprint can be attributed to the sourcing of raw materials, specifically the acquisition of the glass beads.
- The manufacturing phase, expressed as power consumption, has a very small impact on the total carbon footprint of the product.

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