TUBE SOLUTIONS

Heléns

IMPACT SUMMARY

Life cycle assessment steel cores

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INTRODUCTION

The present study is conducted by consultants from WSP and is commissioned by Heléns Rör AB. The purpose of the study is to extract the flow of the steel cores used in Heléns Rör's products and calculate the correlating emissions. This study is based on an older EPD that has been conducted according to the requirements of ISO 14044:2006, EN 15804:2012+A2:2019, ISO 14025:2006 and PCR 2019:14 Construction products, version 1.11. Opposed to the previous study, this LCA only reports the modules **A1-A3** and not A4, C1-C4 and D.

GOAL AND SCOPE

GOAL OF THE STUDY

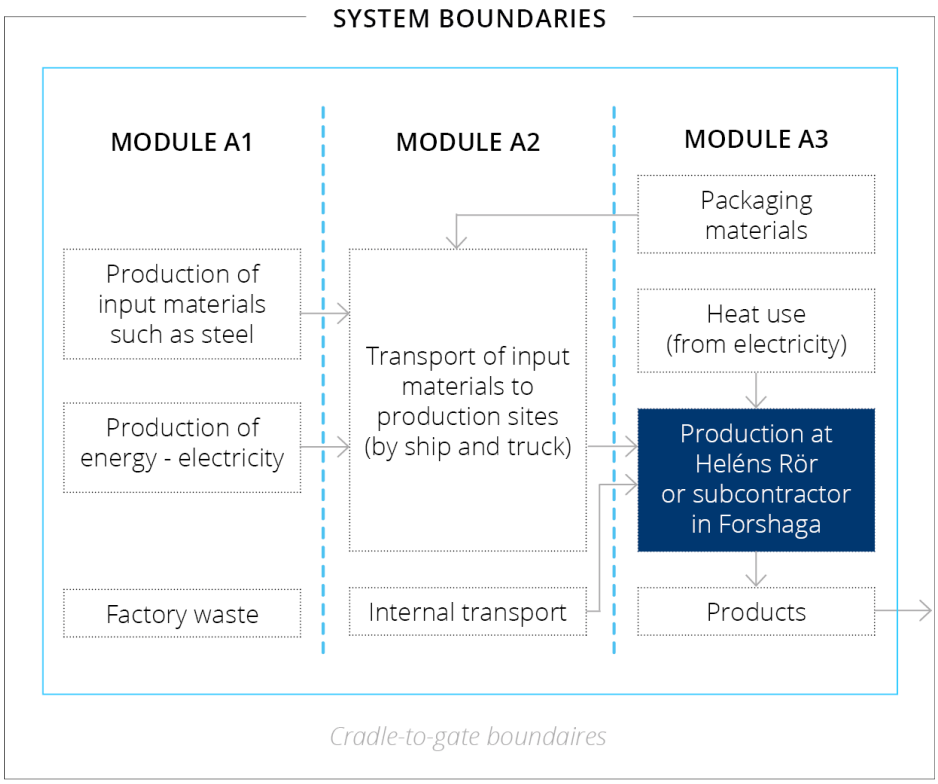
The goal of the study is to provide results that can be utilized in sales and procurement. This LCA report will *not* be made publicly available. It is Heléns Rör's decision whether they want to use it in discussions with B2B clients or not.

DECLARED UNIT

The declared unit of this study is 1 metric tonne (1000 kg) of steel cores.

SYSTEM BOUNDARIES

The system boundaries of this LCA are defined as Cradle-to-gate with modules A1-A3 reported. The study starts with the extraction of natural resources, covers transport from suppliers to the manufacturing site or processing at subcontractors in Forshaga. No secondary materials or recovered energy are used in production. All known materials and processes within the system boundaries have been included in the assessment.



Technical flowchart

Cut-off criteria for initial inclusion of inputs and outputs

All major materials, production energy use and waste are included. None of the products or materials contain dangerous substances (SVHC), as defined by the European Chemical Agency, that account for more than 0.1 % of the product weight.

GEOGRAPHICAL AND TEMPORAL SYSTEM BOUNDARIES AND TECHNOLOGY COVERAGE

This report covers steel cores produced from Heléns Rör supplier located in Europe, shipped to Sweden where they are processed at the production sites in Forshaga or Halmstad.

The reference year for the calculations is 2020 and production data have been collected by representatives at the production sites. Background data is gathered from Ecoinvent 3.8.

European mean values/technology mixes have been taken from Ecoinvent 3.8 to represent the environmental impact from supplied materials. The materials are supplied from Italy.

LIFE CYCLE INVENTORY ANALYSIS

DATA COLLECTION PROCEDURE AND VALIDATION OF DATA

Same data for material composition, process related energy and electricity use, waste and transports have been derived from the previous LCA. Representatives at Heléns Rör and Forshaga provided the specific data used for both studies. Furthermore, the emissions from A1 for steel cores was provided from the Italian provider ABS as an estimated value.

The data validation is referred to section 3.3 in the other LCA, where it is described that the data quality of the study is deemed good. Since the underlying data for input goods etc. is less than six years old, the time representation remains good.

LIFE CYCLE IMPACT ASSESSMENT

The environmental impact is calculated using SimaPro Analyst 9.3.0.3 program with the calculation method EN 15804:2012+A2:2019 EF3.0. The result from the calculation is presented in the impact category *Global warming potential – Greenhouse gasses* (*GWP-GHG*).

INDICATOR	UNIT	A1	A2	A3	A1-A3
GWP-GHG Forshaga	kg CO_2 eq	9.64E+02	1.67E+02	5.31E+00	**1.18E+03**
GWP-GHG Halmstad	kg CO_2 eq	9.64E+02	1.02E+02	2.32E+02	**1.30E+03**

INTERPRETATION OF RESULTS

The main impact stem from the production of steel cores in ABS' production in Italy. The two key reasons for the difference between steel cores finished in Forshaga and Halmstad are the transport distances, and the waste generated in the production facilities. The steel cores are freighted from Udine in northern Italy to Halmstad via train and lorry. After reaching Halmstad, some of the steel cores are freighted to Forshaga for production while the rest remain in Halmstad, therefore the emissions in A2 are higher for the products produced in Forshaga because of the additional transport. Furthermore, there is a difference in A3 between the two production facilities due to production in Halmstad having larger amounts of reported waste.

REFERENCES

- PCR 2019:14 Construction products, version 1.11
- EN 15804:2012 + A2:2019 Sustainability of construction works - Environmental product declarations - Core rules for the product category of construction products
- EPD-IES-0007227:001 (S-P-07227)
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