

# LCA-Screening of 1m<sup>2</sup> TEXTile carpet

*Stellar quality*

*With CarpetCare Service*

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***For Fletco Carpets A/S***

***Verified and Reported by:***

Leonor Berger Cabral, MSc, Material Science - MÅLBAR

***Not a 3<sup>rd</sup> party verification***

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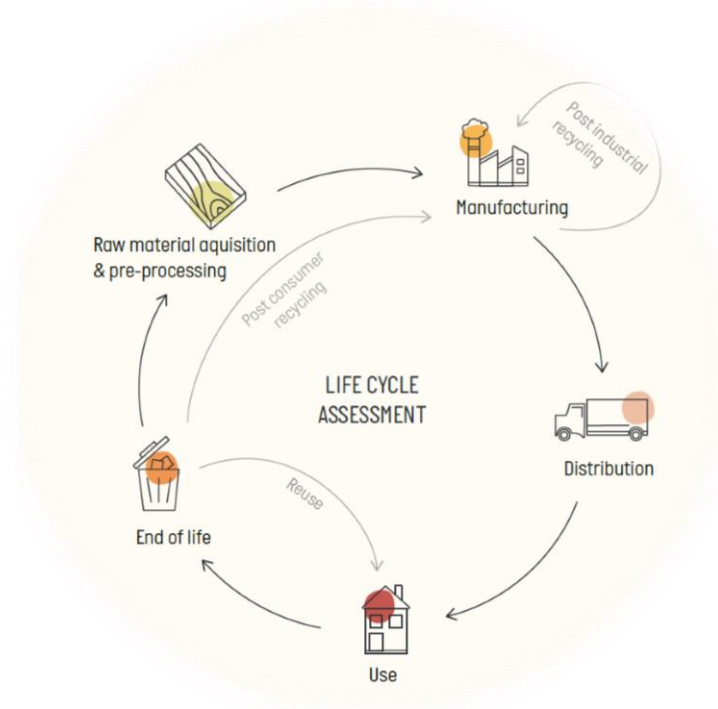
# 1. INTRODUCTION

**Fletco Carpets A/S** is a Danish company specialised in carpets for offices and homes providing tailored solutions based on 30 carpet qualities in several colours.

They offer broadloom carpets and carpet tiles made of polyamide and polypropylene. The carpets are either woven or tufted and have different kind of backings. Within this report, only carpets for commercial use are considered.

A Life Cycle Assessment (LCA) is performed from cradle-to-grave for 1 m<sup>2</sup> of carpet including all main Life Cycle Stages. It covers the extraction and processing of raw materials, transportation of raw materials to the production facility, manufacturing processes, management of production waste, final packaging of the product, storage at the production facility, the distribution to the end-consumer, the use-phase and the End-of-Life (EoL) of the carpet. The use-phase includes professional cleaning performed by CarpetCare. This report presents the results of the LCA of carpets for the **Stellar** quality.

It aims to provide relevant information for decision making and external communication with respect to 1 m<sup>2</sup> of the carpet quality with the respective backing. The focus of this study is the environmental impact on climate change measured in CO<sub>2</sub>-equivalents (CO<sub>2</sub>e).



## 2. GOAL AND SCOPE

### General Information:

Carpet Quality:	Stellar
Company producing the product:	Fletco Carpets A/S
Products:	

1. Stellar TEXTiles

### Goal:

The main objectives of this study are the following:

- A. To analyse the climate impact of the carpets listed above by means of LCA-screenings, with the currently used materials and their current production processes.
- B. To show the hotspots of climate emissions within Life Cycle Stages, Materials, and Transportation.
- C. To provide a comparison with relatable goods or activates.

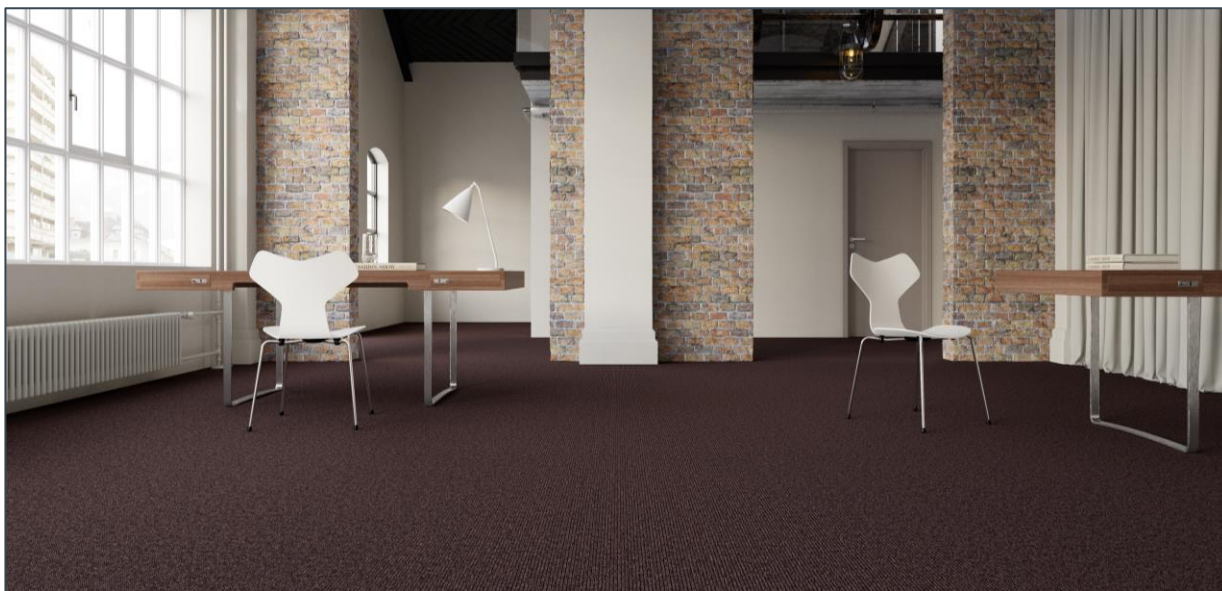
The results are intended to be used for decision making, internal and external communication (B2B only).

### Scope:

The climate impact refers to the production, use, and disposal of 1 m<sup>2</sup> carpet. The carpet is produced and stored in Denmark. Afterwards it is distributed to different end-customers in and outside of Europe. The carpet is therefore used and disposed in different countries around the world. For the use-phase, professional cleaning by CarpetCare every 18 months on average is assumed additionally to a regular vacuum cleaning. Thereby, the warranty of the carpet is prolonged by 7 years compared to a carpet only cleaned by a vacuum cleaner. Consequentially, the lifetime and warranty are 12 years with CarpetCare's service for carpets for commercial use. It is a hard-wearing wall-to-wall carpet for commercial use with high levels of daily traffic. It fulfils all qualities and standards of a carpet.

The data for the calculations were collected in the years 2021 and 2022. Data on energy and water consumption are from year 2021. Information about the raw materials and product specification were collected in year 2022.

### 3. PRODUCT DESCRIPTION AND ASSUMPTIONS



#### Product Description:

Flat woven TEXTiles carpets with 100% polyamide 6.0 econyl as the pile material, continuous dyeing method and TEXTiles backing, with recycled PET. The maximum total pile mass weight is 575 g/m<sup>2</sup>.

#### Study specific assumptions:

Almost all raw materials are modelled except a few components in the glue and dyes that are not available in the databases used. Their accumulated mass contributes to less than 0.5% of the total weight of the carpet and therefore the cut-off criteria is applied. The manufacturing energy at Fletco and Foamtex are certified as 100% wind power energy from Ørsted and modelled according to the electricity production from off-shore wind power in Denmark. The thermal energy is produced from natural gas and modelled for Denmark's gas system with a heating value of 44.21 MJ for 1 m<sup>3</sup> of natural gas according to Ecoinvent 3.7.1. The carpet is not produced for storage but send out within the same week of production (according to the supply chain manager). A storage of 1 week is therefore assumed for allocating electricity requirements for the warehouse.

An average distribution distance to the end-customer is assumed based on the weighted average distances of Fletco's customers. The lifetime of the carpet is assumed to be the same as the warranty. Through the professional cleaning by CarpetCare, the warranty is prolonged by 7 years and the total lifetime results in 12 years. The calculations of the use-phase are based on the defined lifetime. It is assumed that the carpet is vacuum cleaned on a regular basis and profoundly cleaned every 18 months by CarpetCare with two cleaning methods. The two methods are used in an allocation of 87% (Moppemetoden) and 13% (Ekstraktionsmetoden). Average data is used for the End-of-Life of the carpet due to the several countries where the carpet will be disposed.

## 4. DISCLAIMER

### Standard for calculation

The climate footprints are calculated according to EUs rules for Product Environmental Footprint (PEF). When data was not available from the brand owner, conservative estimates has been applied. All phases of the product lifecycle are included in the calculation. For the phases after factory-gate, use-phase and Disposal, conservative estimates are applied, build from the PEF rules. The use-phase is extended with company specific data from CarpetCare, cleaning the carpet every 18 months on average with two different methods. The Disposal part is calculated based on an EU average. Målbar only report on Climate Impact.

The data sources behind these calculations are **EcoInvent 3.8** and **EF 3.0 PEF** data as well as **PEF-compliant LCA data**. (read more here: [www.maalbar.dk/transparency/](http://www.maalbar.dk/transparency/))

### Method of data application

The report results are generated using the MÅLBAR Climate Analysis Tool, where is imputed data provided by the brand owner through questionnaires used and information gleaned from additional questions asked during the data quality assessment. Furthermore, manual calculations are made based on questionnaires and information provided by Fletco.

### Communication of results

The results in this report are not intended for communication towards the private consumer but only for Professional customers. As of today date, we are awaiting clear instructions from the Consumer Protection Authorities within Europe, until these are clarified Målbar does not recommend for this report be used for communication with the private customer.

### Responsibility of data

It is the sole responsibility of the Brand Owner concerning all Input data (including Material weights, Packaging weight, and dimensions, Origins of production, origins of the material, Transport information, and Warehouse and Retail information). With the verification of this report, Målbar has manually controlled these data towards the normal field of data for this product type and questioned the Brand Owner for outliers before completing it. The verification for the Resistant Desktop is still in progress. All the rest of the services and spare parts as well as the full product of Q20 are verified by Målbar.

### Validity of report

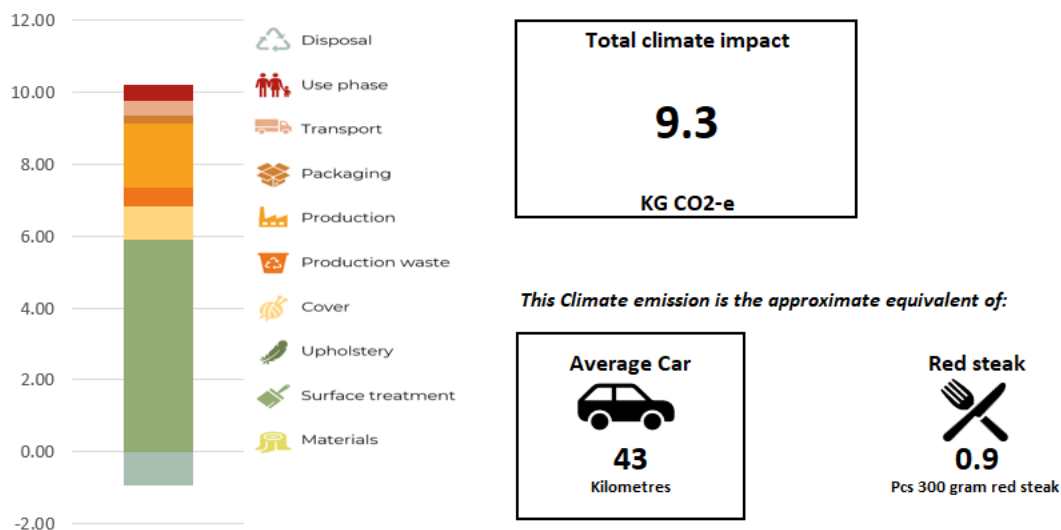
The results of this report are valid for 1 year from the verification date.

### Software version

v. 2.9612

## 5. Climate emissions of Stellar TEXTiles– incl. CarpetCare

The complete LCA-screening (cradle-to-grave) of 1m2 carpet can be seen below. All life-cycle-stages have been presented individually and their contribution can be seen in the column. Furthermore, a comparison of relatable goods or activates have been presented correlating with the total climate emission of the product.

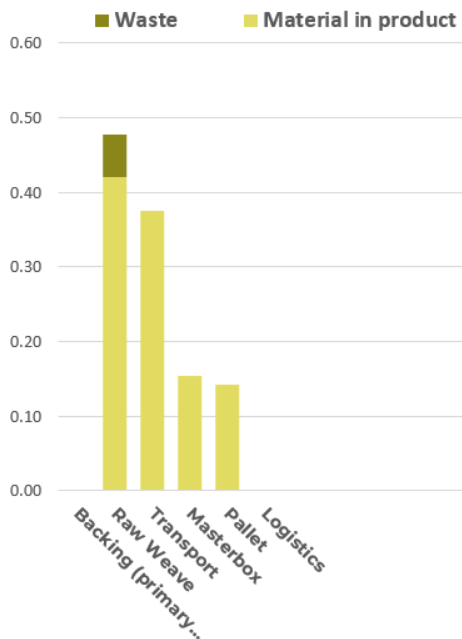


Category	Surface treatment (Backing)	Cover (Raw weave)	Production Waste	Production	Packaging	Transport	Use-Phase	Disposal
CO2e in kg	5.89	0.93	0.52	1.8	0.24	0.38	0.45	-0.92

### Detailed element emissions

Below is an overview of the emission of the most emitting elements in the product. Each element is visually divided between the emission from the amount of material in the product and it's associated waste emission. Included are the material and production waste with production processes, transportation and disposal scenarios. This gives an overview of each specific material versus waste.

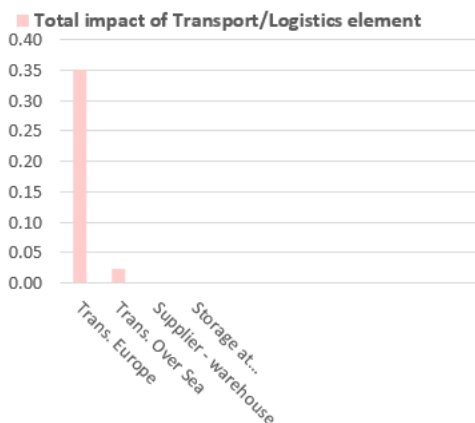
Element	Total impact
Backing (primary backing + precoat + glass fiber + felt backing)	<b>7.68 kg CO2-e</b>
Raw Weave	<b>0.48 kg CO2-e</b>
Transport	<b>0.38 kg CO2-e</b>
Masterbox	<b>0.15 kg CO2-e</b>
Pallet	<b>0.14 kg CO2-e</b>
Logistics	<b>0.00 kg CO2-e</b>



### Transport emissions of final product

Product transportation can be seen below, divided into the different transport legs, correlating with the route of the final product.

Element	Total impact
Trans. Europe	<b>0.35 kg CO2-e</b>
Trans. Over Sea	<b>0.02 kg CO2-e</b>
Supplier - warehouse	<b>0.00 kg CO2-e</b>
Storage at Warehouse	<b>0.00 kg CO2-e</b>



### Yearly emissions of 1m2 carpet

To be able to compare the climate footprint of the carpet with other products having a different lifetime, the total emission can be divided by the lifetime. Thereby, average yearly emissions are determined. Especially, the impact of the use-phase can differ depending on the lifetime. Here, the assumed lifetime are 12 years based on the warranty. The yearly emissions of the total product as well as of the use-phase are shown below.

**Total yearly climate impact**

**0.78**  
KG CO2-e

**Total yearly climate impact**  
**– Use Phase**

**0.038**  
KG CO2-e



# MÅLBAR



Nørre voldgade 6, 2.  
1358 København K