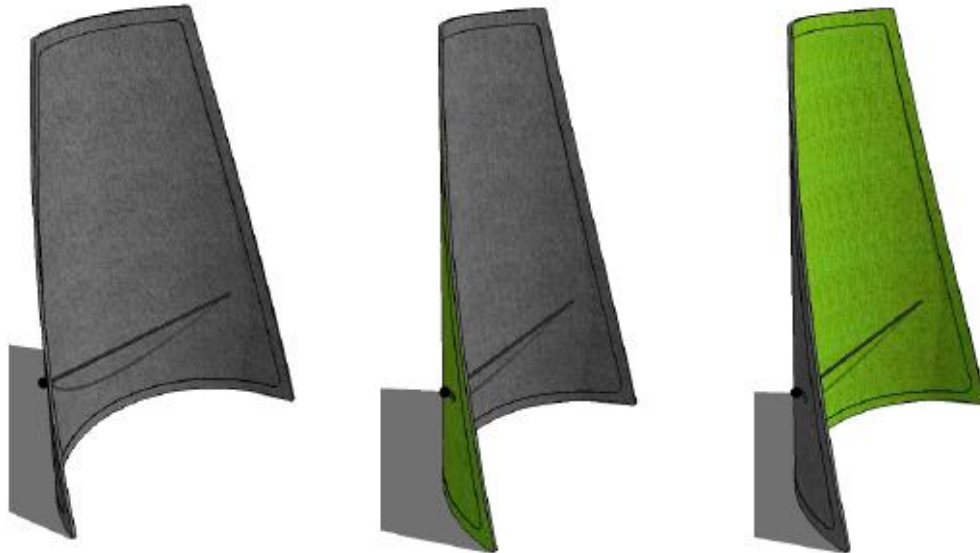


Environmental impact assessment

Tiipii



- 1 Description and assessment of the Materials used in the Product
- 2 Description and assessment of the Production process
- 3 Description and assessment of the Surface Treatment Methods
- 4 Description and assessment of the Packing practices
- 5 The product structures:

- 739R/FT14

1 Description and assessment of the Materials used in the Product

Materials are assessed according to energy consumption and burdening of the environment when the Product reaches the end of its life cycle, their physical characteristics and feasibility for recycling.

- **Plastic**

Energy contents: 70 MJ/kg *recycled: 10 MJ/kg*

Plastic takes little energy to produce. Most synthetics are suitable for recycling, although their mechanical characteristics deteriorate each time. Because of its relatively low price, the demand for recycled plastics is minnow, and further the infrastructure for recycling plastics is not well organized. Due to these factors, plastics are burned most of the time → energy production.

2 Description and assessment of the Production process

The production processes are assessed according to energy consumption, emissions during the process and residual waste.

- **Heat forming**

During heat forming, the processed material (PES felt in this case) is heated and placed between mould half's and tool is closed with considerable force. When the material is cooling, it achieves the final shape. When the tool is opened preformed part is ready. Normally cutting/trimming is needed in order to finalize part to final geometry.

Heating and pressing of materials takes place electrically. Waste and rejects are delivered to energy production. During the process, no substances that burden the environment are released.

- **Cutting by water jet**

In water jet cutting the preformed parts are cut with a jet of water at high velocity and pressure, (or a mixture of water and an abrasive substance). Water jet is considered as a "green" technology since jets produce no hazardous waste. Water jets use very little water, and the water that is used can be recycled using a closed-looped system. Waste water usually is clean enough to filter and dispose down a drain.

3 Description and assessment of the Surface Treatment Methods

No separate surface treatment process is involved in the production process; naturally fibres used are coloured → white, grey and green.

4 Description and assessment of the Packing practices

Finished product

For the packing of finished product, plastic bags (LDPE) are used. Since Martela takes care of its own transport, we are able to take back our packing material and have it recycled or disposed of in a responsible manner.

Plastic bags (PE)

A plastic bag is often needed for proper scratch-resistant and dust-proof packing. Natural PE is the most environmentally friendly plastic for this. Since the bags are very thin (=0.05mm), they require only very little material. Moreover, the plastic bags can be used several times. Hardly any hazardous substances are released when processed in a waste incinerator.

5 The product structure

- **Environment-related issues**

Dismantling

The Product can be dismantled entirely, since all materials can be separated.

- **Materials and weights**

The product is made entirely out of plastic materials → suitable for recycling.

739R/FT5



	Kg	%
Plastic	3.661	100
Total	3.661	100

The total energy content is 256.30 MJ

- **The structure of the product**

- **Tiipii 739R/FT5**

Panel:

Material C-PET 2kg/m², forming by heat pressing, weight 3.60 kg (→ 252 MJ)

Rope:

PE rope; Polaris 500, weight 32 g, both ends threaded

Ball:

K30M10S, material ASB, weight 29g