

Environmental Product Declaration



This is an Environmental Product Declaration (EPD), which is based on a comprehensive life cycle assessment (LCA). The LCA follows the requirements of ISO 14044, except that no external critical review has been performed. The LCA is carried out for KE Fibertec by 2.-0 LCA consultants.

The product and its specifications

The product is a 10 meters ventilation duct made of polyester. The ventilation duct weighs 11.53 kg and the most dominant materials are polyester and aluminum. The diameter is 50 centimeters and the capacity is 5,000 m3 air per hour. The ventilation duct includes a mounting equipment used for fastening the ventilation duct to the ceiling.

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General information

Manufacturer

KE Fibertec
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Developer of EPD and LCA background report

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Detailed documentation

The LCA background report can be obtained through Managing Director Carsten Jespersen, cj@ke-fibertec.dk or 75 36 42 00.

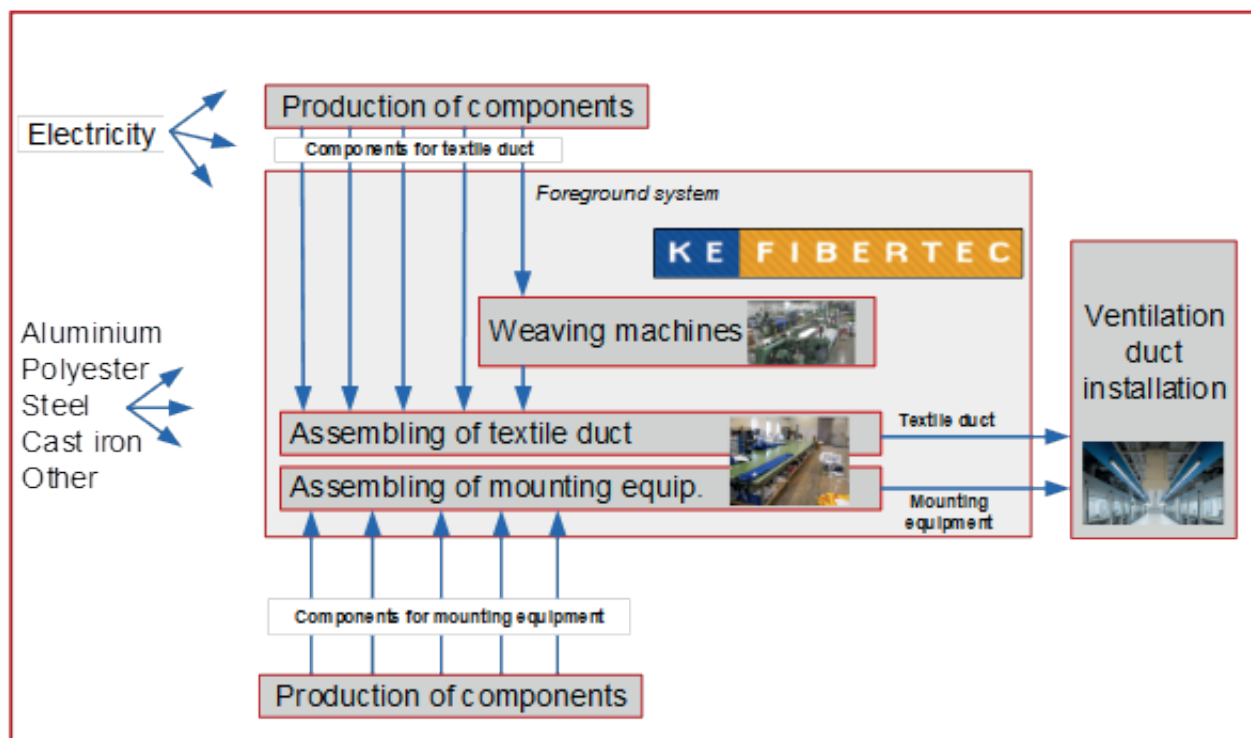
Functional unit

The functional unit is 10 meters of ventilation duct applicable for air ventilation. Transport to customer is included. A cradle-to-grave approach is used and the end of life of the included materials are therefore included in the modelling.



System boundaries and applied data

The system boundaries are presented below. Data from the foreground system are specific, whereas data from the background system are from ecoinvent Centre (www.ecoinvent.com). Capital goods (e.g. machinery, buildings, infrastructure) and services (e.g. retail, accounting, marketing, consultancy) are included in the modelling.



Time and geography

All data from KE Fibertec (foreground data) are representing the year 2013. Background data from ecoinvent Centre (2013) are older, and the electricity data are representing the year 2012. The textile ventilation duct is produced in Denmark.

Comparability

The results may not be comparable to results based on a different standard.

Environmental profile

The environmental impact per functional unit is presented in the table to the right. The functional unit equals 10 meters of ventilation duct.

Environmental impact categories	Unit	Value
Global warming	kg CO ₂ -eq	116
Human toxicity, carcinogens	kg C ₂ H ₃ Cl-eq	4.53
Human toxicity, non-carc.	kg C ₂ H ₃ Cl-eq	7.41
Respiratory inorganics	kg PM _{2.5} -eq	0.0724
Ionizing radiation	Bq C-14-eq	20.5
Ozone layer depletion	g CFC-11-eq	4.70E-06
Ecotoxicity, aquatic	kg TEG-eq w	4,251
Ecotoxicity, terrestrial	kg TEG-eq s	2,308
Nature occupation	m ² -years agr	6.72
Acidification	m ² UES	13.2
Eutrophication, aquatic	kg NO ₃ -eq	0.572
Eutrophication, terrestrial	m ² UES	10.6
Respiratory organics	pers*ppm*h	0.084
Photochemical ozone, vegetat.	m ² *ppm*hours	867
Non-renewable energy	MJ primary	1,238
Mineral extraction	MJ extra	52.2

Explanation of impact categories

Global warming: Greenhouse gas emissions result in increased temperature.

Human toxicity: Human toxicity includes various effects on human health in terms of exposure of substances that are toxic to humans. A distinction is made between carcinogens and non-carcinogens substances.

Respiratory inorganics: Inorganic substances (e.g. particles) that damage the human respiratory system.

Ionizing radiation: Ionizing radiation is high-frequency radiation that has enough energy to remove an electron from (ionize) an atom or molecule. Ionizing radiation has enough energy to damage the DNA in cells, which in turn may lead to cancer.

Ozone layer depletion: Ozone layer depletion is caused by emission of substances, e.g. CFCs, which have long life times in the atmosphere and are ozone degradable.

Ecotoxicity: Toxic substances impact the ecosystems. A distinction is made between aquatic and terrestrial ecosystems.

Nature occupation: 'Nature occupation' covers the displacement of nature due to human land use. The category indicator is 'm²-equivalents arable land', representing the impact from the occupation of one m² of arable land during one year.

Acidification: Acidification is caused by acids and compounds which can be converted into acids that contributes to death of fish and forests, damage on buildings etc.

Eutrophication: Eutrophication also called nutrient enrichment causes algal bloom in inlets and springs causing oxygen depletion and death of fish.

Respiratory organics: Organic substances that damage the human respiratory system.

Photochemical ozone, vegetation: Ozone is formed in the troposphere under the influence of sunlight when nitrogen oxides are present. It causes damage to vegetation.

Non-renewable energy: Total use of primary non-renewable energy resources measured in MJ.

Mineral extraction: Mineral extraction measures the difference between the current energy requirement for extraction and an estimated future energy requirement for extraction from lower grade ores.

Additional environmental information

In 2012 KE Fibertec got a Cradle to Cradle certificate for CradleVent® to document that we take responsibility for the product life cycle.

All electricity consumed by KE Fibertec and our weaving mill (KE Fibertec Væveri) comes from wind turbines.

