Declaration Owner
Prihoda® s.r.o.
Za Radnici 476
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Czech Republic
855.774.4632
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Product Line

Prihoda® tailor-made fabric ducting and diffusers:

- PMSre
- NMSre

Functional Unit

One m^2 of substantial products used to produce the duct surface area of any single duct section of the ductwork, maintained for 25 years.

EPD Number and Period of Validity

SCS-EPD-06235

EPD Valid July 6, 2020 through July 5, 2025

Product Category Rule

Product Category: UN CPC 36950, 42190, 42999 : Air ducts, substantial materials , Version 2.01 (2019). International EPD® System

Program Operator

SCS Global Services
2000 Powell Street, Ste. 600, Emeryville, CA 94608
+1.510.452.8000 | www.SCSglobalServices.com

Declaration Owner:	Prihoda s.r.o.
Address:	Za Radnici 476, 53901 Hlinsko, Czech Republic
Declaration Number:	SCS-EPD-06235
Declaration Validity Period:	July 6, 2020 through July 5, 2025
Program Operator:	SCS Global Services
Declaration URL Link:	https://www.scsglobalservices.com/certified-green-products-guide
LCA Practitioner:	Tess Garvey
LCA Software:	openLCA v1.9 and ecoinvent v3.5 database
Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071	☒ internal ☐ external
LCA Reviewer:	Gerard Mansell, Ph.D., SCS Global Services
Product Category Rule:	Product Category: UN CPC 36950, 42190, 42999 : Air ducts, substantial materials , Version 2.01 (2019). International EPD® System
PCR Review conducted by:	The Technical Committee of the International EPD® System. A full list of members available on www.environdec.com. The review panel may be contacted via info@environdec.com.
Independent verification of the declaration and data, according to ISO 14025 and the PCR	☐ internal ☒ external
EPD Verifier:	Thomas Gloria, Ph.D., Industrial Ecology Consultants
Declaration Contents:	

Disclaimers: *This EPD conforms to ISO 14025[2], 14040[3], and 14044[3].*

Scope of Results Reported: *The PCR requirements limit the scope of the LCA metrics such that the results exclude environmental and social performance benchmarks and thresholds, and exclude impacts from the depletion of natural resources, land use ecological impacts, ocean impacts related to greenhouse gas emissions, risks from hazardous wastes and impacts linked to hazardous chemical emissions.*

Accuracy of Results: *Due to PCR constraints, this EPD provides estimations of potential impacts that are inherently limited in terms of accuracy.*

Comparability: *The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.*

EPDs within the same product category but from different programs may not be comparable.

Liability Statement: *The EPD owner has the sole ownership, liability and responsibility of the EPD.*

ABOUT PRIHODA® S.R.O.

Prihoda® s.r.o. are a medium-sized fully Czech-owned firm that specializes entirely on the production of fabric ducting and diffusers, designed for transport or distribution of air. Since establishing in 1994, Prihoda® s.r.o. has continued to deliver innovative products to customers around the globe and we are the first in the world to use fabric microperforations, negative pressure ducting, adjustable length duct parts and many other components. The specialty of Prihoda® s.r.o lies in providing tailor-made solution rather than producing ducting by meter. All of the ducting and diffusers are made from high quality materials, guaranteeing long term durability.

PRODUCT DESCRIPTION

Prihoda® tailor-made fabric ducting and diffusers are assembled at the manufacturing facility in Hlinsko, Czech Republic. The product is a fabric air duct and diffuser, which is custom-made by the company to suit different industrial operations such as food processing facilities, chemical, textile or electronic industries, supermarkets and large retail stores. Prihoda® products facilitate the supply of air (air transfer) as well as air distribution/diffusion into the occupied zone. The air ducts and diffusers are constructed with 100% recycled polyester fabric and are available in 9 colors with fire resistance and anti-bacterial treatments available on request. The products are primarily sold in the Heating Ventilation and Air Conditioning (HVAC) sector in Germany, Czech Republic and other regions in Europe and North America.

PRODUCT CHARACTERISTICS AND PERFORMANCE

Table 1. *Product characteristics and performance for the Prihoda® air duct and diffusers.*

Characteristic	Nominal Value	Nominal Value	Units
Model Number	Prihoda Recycled, Middleweight NMSre	Prihoda Recycled, Middleweight PMSre	--
Thickness of the component	0.31	0.31	mm
Material density	0.23	0.20	kg/m^2
Reactivity to fire	B s1,d0 acc EN 13501-1:2010 UL/ULC/NFPA90a 25/50		--
Flexural rigidity	Not applicable		--
Tensile Strength	1810 warp / 1090 weft acc. EN ISO 13934-1		--
Operating temperature for fabric	-50 to + 110		^0C
Fibrous material outflow	Clean room quality-non fiber shedding ISO 14644-1: Class 4		
Microbial Growth	Antimicrobial treatment not included in this LCA product scope.		--
Thermal Resistance (for insulated products $[m^2K/W]$	Not applicable		--
Presence of antimicrobial agent	Antimicrobial treatment not included in this LCA product scope, available on request		--
Blowing agent (for foamed materials)	Not applicable		--

MATERIAL COMPOSITION

Table 2. *A summary of the product materials, by mass, for Prihoda® fabric duct and diffuser included in the LCA model.*

Material	Amount in Final Product (kg/m^2)	Percent of Total (%)	Amount in Final Product (kg/m^2)	Percent of Total (%)	Resource type
Product	**NMSre**		**PMSre**		
REPREVE (100% recycled polyester)	0.23	100%	0.20	100%	Recycled content
Total	**0.23**	**100%**	**0.20**	**100%**	**--**
Packaging					
Corrugated cardboard	0.050	100%	0.050	100%	Recycled content
Total	**0.050**	**100%**	**0.050**	**100%**	**--**

No hazardous materials are contained in either of these products.

LIFE CYCLE ASSESSMENT OVERVIEW

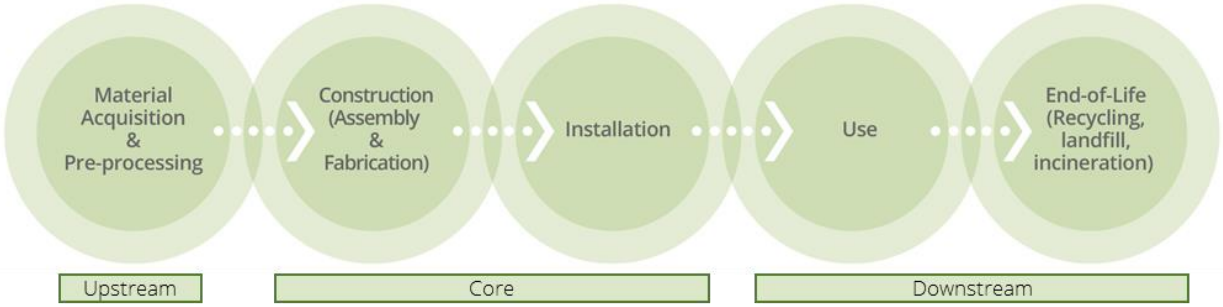
A Life Cycle Assessment (LCA) was conducted to evaluate the environmental performance of the Prihoda® tailor-made fabric ducting and diffusers in accordance with ISO 14044 standard. LCA accounts for the potential environmental impacts of a product over its entire life cycle, from raw material extraction through manufacturing, use, and end-of-life.

FUNCTIONAL UNIT

The functional unit used in the study, as specified in the PCR, is 1 m^2 of substantial product used to produce the duct surface area of any single duct section of the ductwork. The reference flow of the product system is considered to be 200 and 230 grams of fabric that is used to make 1m^2 of the duct for PMSre and NMSre, respectively. The service-life of this product is 25 years including a maximum of 25 wash cycles of the product as part of maintenance.

LIFE CYCLE ASSESSMENT STAGES

A cradle-to-grave life cycle assessment (LCA) was completed for this product in accordance with ISO 14040, ISO 14044, and the Product Category Rule for Environmental Product Declarations: *Air Ducts, Substantial Materials (Non-Construction Product)*.



MODULE DESCRIPTION

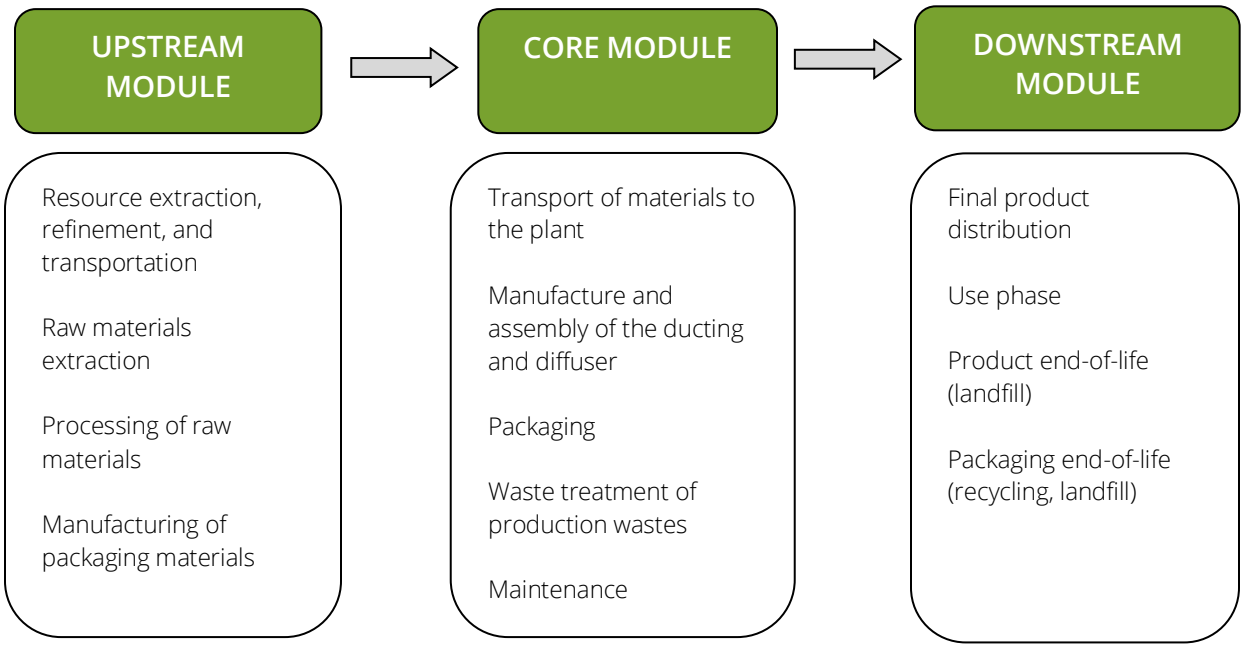


Figure 1. *A general representation of the system boundary including all life cycle stages from cradle-to-grave.*

1. ***Upstream processes (from cradle-to-gate)*:** This stage includes raw material extraction and processing phases and manufacture of fabric air duct and packaging materials.

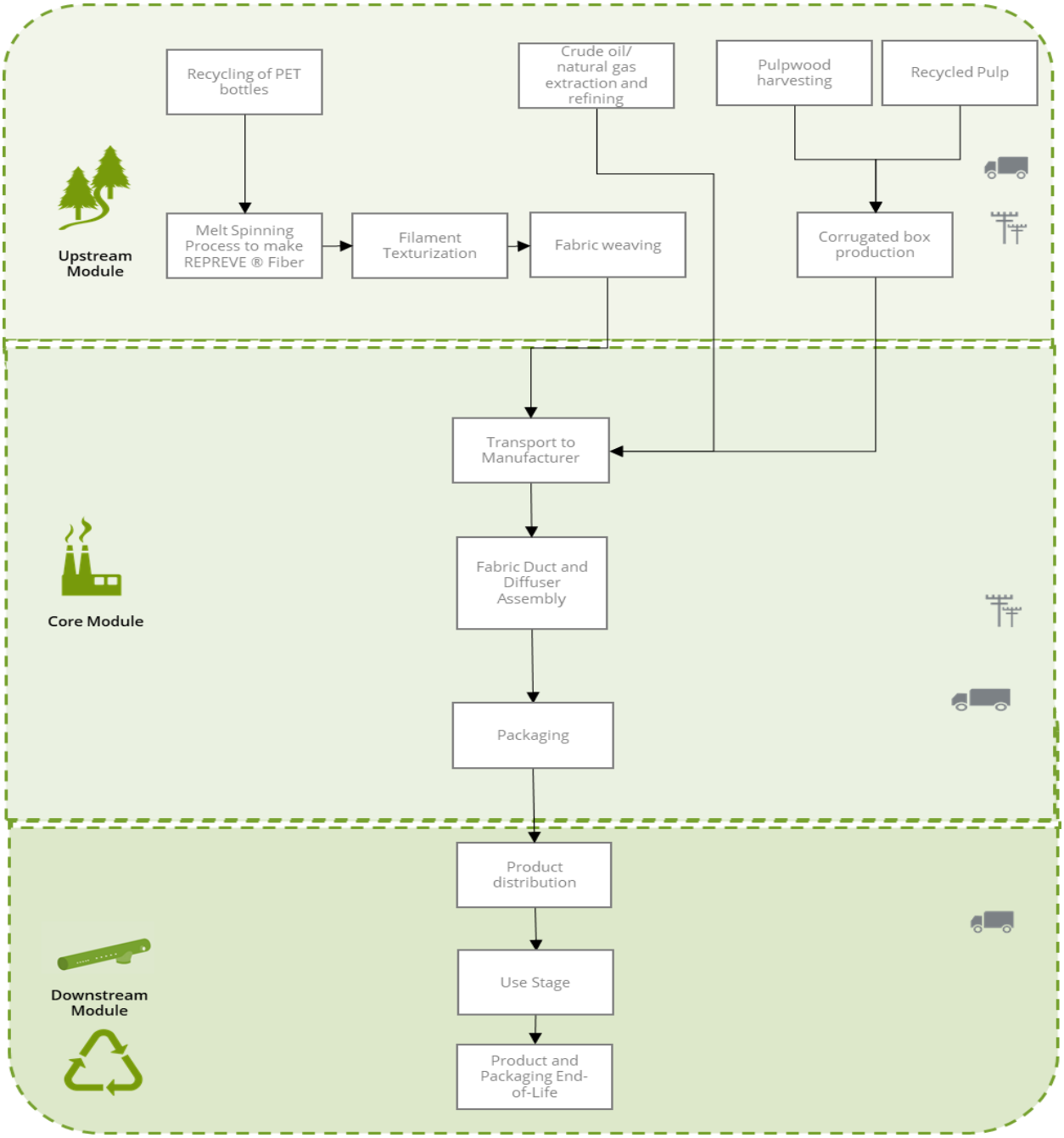
2. ***Core processes (from gate-to-gate)*:** It involves the transport of raw materials to the manufacturing facility followed by product manufacturing, assembly and packaging processes.

3. ***Downstream processes (from gate-to-grave)*:** It includes product distribution from the manufacturing facility, use phase, product end-of-life management and packaging end-of-life management.

Duct accessories such as flanges, hangers, supports, connection devices to diffusers related to the installation of the duct have not been included in the system boundary.

PRODUCT LIFE CYCLE FLOW DIAGRAM

The diagram below is a representation of the most significant contributions to the life cycle of the Prihoda fabric ducts. This includes material acquisition and pre-processing, construction (assembly and fabrication), installation, use, and end-of-life.



LIFE CYCLE INVENTORY

The life cycle inventory (LCI) flows for the EPD are shown in Table in accordance with the requirements of the PCR. Water usage from electricity generation is included. Results are rounded to two significant figures.

Table 3. *Life cycle inventory flows for 1 m^2 of the fabric air duct and diffuser provided and maintained for a period of 25 years.*

Parameter	Units	PMSre	NMSre
Emissions to Air			
Ammonia (NH_3)	kg	1.49 x10^{-4}	1.51 x10^{-4}
Carbon Dioxide (CO_2)	kg	1.840	2.07
Carbon Monoxide (CO)	kg	0.00234	0.00259
Methane (CH_4)	kg	0.00481	0.00551
Nitrous Oxide (N_2O)	kg	6.17 x10^{-5}	6.63 x10^{-5}
Methane, tetrafluoro- (CFC-14)	kg	2.13x10^{-8}	2.40 x10^{-8}
Hydrogen Chloride (HCl)	kg	1.90 x10^{-4}	2.19 x10^{-4}
Hydrogen Fluoride (HFl)	kg	1.91 x10^{-5}	2.19 x10^{-5}
Hydrogen Sulfide (H_2S)	kg	2.36 x10^{-6}	2.62 x10^{-6}
Nitrogen Oxides (NO_x)	kg	0.00574	0.00649
Organic Carbon (OC)	kg	4.40x10^{-9}	5.02x10^{-9}
Sulfur Dioxide (SO_2)	kg	0.00393	0.00446
Sulfur Hexafluoride (SF_6)	kg	1.21 x10^{-7}	1.38 x10^{-7}
Sulfuric Acid (H_2SO_4)	kg	8.09x10^{-9}	9.06x10^{-9}
Particulate Matter < 2.5µm ($PM_{2.5}$)	kg	4.27 x10^{-4}	4.84 x10^{-4}
Particulate Matter < 10µm (PM_{10})	kg	8.60 x10^{-4}	9.74x10^{-4}
Non-methane Volatile Organic Carbons (NMVOCa)	kg	5.73 x10^{-4}	6.34 x10^{-4}
Emissions to water			
Ammonium, ion	kg	8.72 x10^{-5}	9.91 x10^{-5}
BOD5, Biological Oxygen Demand	kg	0.00657	0.00740
COD, Chemical Oxygen Demand	kg	0.0194	0.0220
Nitrogen	kg	1.14 x10^{-4}	1.28 x10^{-4}
Phosphate	kg	0.00213	0.00243
Phosphorus	kg	3.17 x10^{-6}	3.19 x10^{-6}

LIFE CYCLE IMPACT ASSESSMENT

The life cycle impact assessment (LCIA) for the EPD is conducted in accordance with requirements of the PCR. All impact category indicators are estimated using TRACI 2.1[5], with the exception of abiotic depletion elements (elements and fossil fuels), which are estimated using CML-IA[6]. The LCIA results are calculated using openLCA 1.9 software[7]. Results are rounded to three significant figures.

Table 4. *Life Cycle Impact Assessment results by life cycle phase for 1 m^2 of PMSre fabric duct and diffuser using TRACI and CML-IA. The percent of total life-cycle impact by module is also reported. Results are reported with three significant digits.*

Impact Category	Unit	Upstream	Core Module	Downstream Module	Total
TRACI 2.1					
Global warming	kg CO_2 eq	0.703	0.701	0.617	2.02
	%	34.8%	34.7%	30.5%	100%
Ozone depletion	kg CFC-11 eq	$2.39x10^{-8}$	$4.91x10^{-8}$	$1.13x10^{-7}$	$1.86x10^{-7}$
	%	12.9%	26.4%	60.8%	100%
Acidification	kg SO_2 eq	0.00304	0.00290	0.00232	0.00826
	%	36.8%	35.1%	28.1%	100%
Eutrophication	kg N eq	0.00121	0.00243	$4.40x10^{-4}$	0.00408
	%	29.7%	59.6%	10.8%	100%
Smog	kg O_3 eq	$1.40x10^{-4}$	$2.20x10^{-4}$	$9.87x10^{-5}$	$4.59x10^{-4}$
	%	30.5%	48.0%	21.5%	100%
Fossil fuel depletion	MJ eq	$7.31x10^{-7}$	$8.23x10^{-7}$	$1.43x10^{-7}$	$1.70x10^{-6}$
	%	43.1%	48.5%	8.4%	100%
GHG Protocol					
Fossil Carbon Dioxide	kg CO_2 eq	0.678	0.699	0.617	1.99
	%	34.0%	35.1%	31.0%	100%
Biogenic Carbon Dioxide	kg CO_2 eq	0.0680	0.122	0.0142	0.204
	%	33.3%	59.7%	6.95%	100%
Carbon Dioxide, Land transformation and occ.	kg CO_2 eq	$4.80x10^{-4}$	0.141	$5.07x10^{-5}$	0.141
	%	0.340%	99.6%	0.0359%	100%
Total Carbon Dioxide	kg CO_2 eq	0.746	0.961	0.632	2.34
	%	31.9%	41.1%	27.0%	100%
CML-IA					
Global warming	kg CO_2 eq	0.703	0.617	0.701	2.02
	%	34.8%	30.5%	34.7%	100%
Ozone depletion	kg CFC-11 eq	$2.39x10^{-8}$	$4.91x10^{-8}$	$1.13x10^{-7}$	$1.86x10^{-7}$
	%	12.9%	26.4%	60.8%	100%
Acidification	kg SO_2 eq	0.00304	0.00290	0.00232	0.00826
	%	36.8%	35.1%	28.1%	100%
Eutrophication	kg PO_4^{3-} eq	0.00121	0.00243	$4.40x10^{-4}$	0.00367
	%	29.7%	59.6%	10.8%	100%
Photochemical oxidation	kg C_2H_4 eq	$2.20x10^{-4}$	$1.40x10^{-4}$	$9.87x10^{-5}$	$3.79x10^{-4}$
	%	48.0%	30.5%	21.5%	100%
Abiotic depletion-Elements	Kg Sb eq	$7.31x10^{-7}$	$4.53x10^{-7}$	$1.43x10^{-7}$	$1.33x10^{-6}$
	%	55.1%	34.1%	10.8%	100%
Abiotic depletion- FF	MJ	6.61	5.18	8.90	20.7
	%	32.0%	25.0%	43.0%	100%

Table 5. *Life Cycle Impact Assessment results by life cycle phase for 1 m^2 of NMSre fabric duct and diffuser. The percent of total life-cycle impact by module is also reported. Results are reported with three significant digits.*

Impact Category	Unit	Upstream Module	Core Module	Downstream Module	Total
TRACI 2.1					
Global warming	kg CO_2 eq	0.783	0.801	0.690	2.27
	%	34.4%	35.2%	30.3%	100%
Ozone depletion	kg CFC-11 eq	$3.64x10^{-8}$	$6.69x10^{-8}$	$1.69x10^{-7}$	$2.72x10^{-7}$
	%	13.4%	24.6%	62.0%	100%
Acidification	kg SO_2 eq	0.00370	0.00342	0.00301	0.0101
	%	36.5%	33.8%	29.7%	100%
Eutrophication	kg N eq	0.00285	0.00598	$4.90x10^{-4}$	0.00932
	%	30.6%	64.2%	5.26%	100%
Smog	kg O_3 eq	0.0517	0.0436	0.0733	0.169
	%	30.7%	25.9%	43.5%	100%
Fossil fuel depletion	MJ eq	0.409	0.574	1.50	2.48
	%	16.5%	23.2%	60.3%	100%
GHG Protocol					
Fossil Carbon Dioxide	kg CO_2 eq	0.775	0.801	0.691	2.27
	%	34.2%	35.3%	30.5%	100%
Biogenic Carbon Dioxide	kg CO_2 eq	0.0745	0.140	0.0143	0.229
	%	32.5%	61.2%	6.23%	100%
Carbon Dioxide, Land transformation and occ.	kg CO_2 eq	$5.20x10^{-4}$	0.162	$5.68x10^{-5}$	0.162
	%	0.321%	99.6%	0.035%	100%
Total Carbon Dioxide	kg CO_2 eq	0.850	1.10	0.706	2.66
	%	32.0%	41.5%	26.5%	100%
CML-IA					
Global warming	kg CO_2 eq	0.804	0.804	0.691	2.30
	%	35.0%	35.0%	30.1%	100%
Ozone depletion	kg CFC-11 eq	$2.72x10^{-8}$	$5.61x10^{-8}$	$1.27x10^{-7}$	$2.10x10^{-7}$
	%	13.0%	26.7%	60.3%	100%
Acidification	kg SO_2 eq	0.00348	0.00331	0.00260	0.00939
	%	37.1%	35.3%	27.7%	100%
Eutrophication	kg PO_4^{3-} eq	0.00138	0.00279	0.000500	0.00467
	%	29.6%	59.7%	10.7%	100%
Photochemical oxidation	kg C_2H_4 eq	$1.60x10^{-4}$	$2.50x10^{-4}$	$1.10x10^{-4}$	$5.20x10^{-4}$
	%	30.8%	48.1%	21.2%	100%
Abiotic depletion-Elements	Kg Sb eq	$8.32x10^{-7}$	$9.41x10^{-7}$	$1.61x10^{-7}$	$1.93x10^{-6}$
	%	43.0%	48.7%	8.3%	100%
Abiotic depletion- FF	MJ	7.55	6.61	9.97	24.1
	%	31.3%	27.4%	41.3%	100%

Table 6. *Resource use for 1 m² of PMSre fabric ducting. The percent of total life-cycle impact by module is also reported. Results are reported with three significant digits. Results reported in MJ are calculated using lower heating values.*

Impact Category	Unit	Upstream	Core Module	Downstream Module	Total
Use of renewable primary energy excluding the renewable primary energy resources used as raw materials	MJ	0.835	1.88	0.0387	2.75
	%	30.3%	68.3%	1.41%	100%
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA
	%	INA	INA	INA	INA
Use of non-renewable primary energy excluding the non-renewable primary energy resources used as raw materials	MJ	6.95	8.17	8.96	24.1
	%	28.9%	33.9%	37.2%	100%
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA
		INA	INA	INA	INA
Use of secondary materials	kg	0.200	0.0	0.0	0.200
	%	100%	0.0%	0.0%	100%
Use of renewable secondary fuels	MJ	Neg.	Neg.	Neg.	Neg.
Use of non-renewable secondary fuels	MJ	Neg.	Neg.	Neg.	Neg.
Water scarcity	m^3	1.25	6.67	0.125	8.04
	%	15.5%	82.9%	1.56%	100%

INA = Indicator not assessed | Neg. = Negligible

Table 7. *Resource use for 1 m² of NMSre fabric ducting. The percent of total life-cycle impact by module is also reported. Results are reported with three significant digits. Results reported in MJ are calculated using lower heating values.*

Impact Category	Unit	Upstream	Core Module	Downstream Module	Total
Use of renewable primary energy excluding the renewable primary energy resources used as raw materials	MJ	0.91	2.16	0.0433	3.12
	%	29.3%	69.3%	1.39%	100%
Use of renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA
	%	INA	INA	INA	INA
Use of non-renewable primary energy excluding the non-renewable primary energy resources used as raw materials	MJ	7.94	9.36	10.0	27.3
	%	29.0%	34.3%	36.7%	100%
Use of non-renewable primary energy resources used as raw materials	MJ	INA	INA	INA	INA
		INA	INA	INA	INA
Use of secondary materials	kg	0.230	0.0	0.0	0.230
	%	100%	0%	0%	100%
Use of renewable secondary fuels	MJ	Neg.	Neg.	Neg.	Neg.
Use of non-renewable secondary fuels	MJ	Neg.	Neg.	Neg.	Neg.
Fresh water scarcity	m^3	1.43	7.66	0.140	9.23
	%	15.5%	83.0%	1.52%	100%

INA = Indicator not assessed | Neg. = Negligible

Table 8. *Waste and outflows for 1 m^2 of PMSre fabric ducting. The percent of total life-cycle impact by module is also reported. Results are reported with three significant digits.*

Impact Category	Unit	Upstream Module	Core Module	Downstream Module	Total
Hazardous waste	kg	$1.01x10^{-5}$	$7.89x10^{-4}$	$2.96x10^{-6}$	$8.02x10^{-4}$
	%	1.26%	98.4%	0.369%	100%
Nonhazardous waste disposed	kg	0.0954	0.236	0.296	0.628
	%	15.2%	37.6%	47.2%	100%
Radioactive waste	kg	$1.04x10^{-5}$	$3.78x10^{-5}$	$6.34x10^{-5}$	$1.12x10^{-4}$
	%	9.3%	33.9%	56.8%	100.0%
Components for re-use	kg	0.0	0.0	0.0	0.0
	kg	--	--	--	100%
Materials for recycling	kg	0.00	0.00725	0.0982	0.105
Materials for energy recovery	MJ	Neg.	Neg.	Neg.	Neg.
Exported energy, electricity	MJ	Neg.	Neg.	Neg.	Neg.
Exported energy, thermal	MJ	Neg.	Neg.	Neg.	Neg.

Neg. = Negligible

Table 9. *Waste and outflows for 1 m^2 of NMSre fabric ducting. The percent of total life-cycle impact by module is also reported. Results are reported with three significant digits.*

Impact Category	Unit	Upstream Module	Core Module	Downstream Module	Total
Hazardous waste	kg	$1.16x10^{-5}$	$8.98x10^{-4}$	$3.31x10^{-6}$	$9.13x10^{-4}$
	%	1.27%	98.4%	0.363%	100%
Bulk waste	kg	0.109	0.271	0.315	0.695
	%	15.7%	39.0%	45.3%	100%
Radioactive waste	kg	$1.18x10^{-5}$	$4.33x10^{-5}$	$7.10x10^{-5}$	$1.26x10^{-4}$
	%	9.35%	34.3%	56.3%	100%
Components for re-use	kg	0.0	0.0	0.0	0.0
	%	--	--	--	100%
Materials for recycling	kg	0.00	0.00834	0.108	0.117
Materials for energy recovery	MJ	Neg.	Neg.	Neg.	Neg.
Exported energy, electricity	MJ	Neg.	Neg.	Neg.	Neg.
Exported energy, thermal	MJ	Neg.	Neg.	Neg.	Neg.

Neg. = Negligible

ADDITIONAL ENVIRONMENTAL INFORMATION

The recycled polyester fabric used by Prihoda® is certified to the REPREVE® standards, which ensure that the products are made with recycled fiber that is traceable, transparent and certifiably sustainable. Prihoda® s.r.o has achieved Quality Certification ISO 9001 and Environmental certification ISO 14001.

SUPPORTING TECHNICAL INFORMATION

Unit processes are developed with openLCA 1.9 software, drawing upon data from multiple sources. Primary data were provided by the contract production facility for their manufacturing, upstream transport, and distribution processes. The primary sources of secondary LCI data are from Ecoinvent v3.5[8].

Table 10. *LCI datasets and associated databases used to model the air ducts and diffusers.*

Component	Dataset	Data Source	Publication Date
RAW MATERIALS			
REPREVE®/ 100% Recycled PET fabric	Created new dataset in openLCA by modifying existing datasets to incorporate geographic coverage: (i) extrusion of plastic sheets and thermoforming, inline | Cutoff, U - RoW (ii) polyethylene terephthalate production, granulate, bottle grade, recycled | Cutoff, U – RoW (iii) weaving, bast fibre | Cutoff, U - RoW	Ecoinvent v3.5 Literature	2018, 2014
Prihoda® FABRIC AIR DUCTING & DIFFUSER ASSEMBLY			
Fabric air ducting and diffusers	(i) market for electricity, medium voltage | Cutoff, U - CZ (ii) heat and power co-generation, natural gas, 160kW electrical, lambda=1 | Cutoff, U - Europe without Switzerland	Ecoinvent v3.5	2018
PACKAGING			
Corrugated box/ cardboard	corrugated board box production | Cutoff, U - RoW	Ecoinvent v3.5	2018
MANUFACTURING			
Electricity, natural gas, and water use	heat and power co-generation, natural gas, 160kW electrical, lambda=1 | Cutoff, U - Europe without Switzerland tap water production, conventional treatment | Cutoff, U - Europe without Switzerland market for electricity, medium voltage | Cutoff, U - CZ electricity production, solar tower power plant, 20 MW | Cutoff, U - RoW	Ecoinvent v3.5	2018
TRANSPORT			
Truck transport	transport, freight, lorry 16-32 metric ton, EURO4 | Cutoff, U - RoW	Ecoinvent v3.5	2018
Aircraft Freight	transport, freight, aircraft, intercontinental | Cutoff, U - RoW	Ecoinvent v3.5	2018
Oceanic Freighter transport	Transport, transoceanic freight ship/OCE U	Ecoinvent v3.5	2018

Table 11. *Data Quality.*

Data Quality Parameter	Data Quality Discussion
Time-Related Coverage: Age of data and the minimum length of time over which data is collected	The most recent available data are used, based on other considerations such as data quality and similarity to the actual operations. Typically, these data are representative of 2018 or more recent. All of the data used represented an average of at least one year's worth of data collection. Manufacturer-supplied data (primary data) are based on annual production for 2019.
Geographical Coverage: Geographical area from which data for unit processes is collected to satisfy the goal of the study	The data used in the analysis provide the best possible representation available with current data. In the absence of primary data on upstream (supplier) operations, surrogate data was used in the assessment for Chinese operations. Data representative of European operations were used as surrogate for manufacturing operations. Data representing product disposal are based on regional statistics.
Technology Coverage: Specific technology or technology mix	For the most part, data are representative of the actual technologies used for processing, transportation, and manufacturing operations. Representative fabrication datasets, specific to the type of material, are used to represent the actual processes, as appropriate.
Precision: Measure of the variability of the data values for each data expressed	Precision of results are not quantified due to a lack of data. Data collected for operations were typically averaged for one or more years and over multiple operations, which is expected to reduce the variability of results.
Completeness: Percentage of flow that is measured or estimated	The LCA model included all known mass and energy flows for production of the panel products. In some instances, surrogate data used to represent upstream and downstream operations may be missing some data which is propagated in the model. No known processes or activities contributing to more than 1% of the total environmental impact for each indicator are excluded. In total, these missing data represent less than 5% of the mass or energy flows.
Representativeness: Qualitative assessment of the degree to which the data set reflects the true population of interest	Data used in the assessment represent typical or average processes as currently reported from multiple data sources and are therefore generally representative of the range of actual processes and technologies for production of these materials. Considerable deviation may exist among actual processes on a site-specific basis; however, such a determination would require detailed data collection throughout the supply chain back to resource extraction.
Consistency: Qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis	The consistency of the assessment is considered to be high. Data sources of similar quality and age are used with a bias towards Ecoinvent v3.5 data where available. Different portions of the product life cycle are equally considered.
Reproducibility: Qualitative assessment of the extent to which information about the methodology and data values would allow an independent practitioner to reproduce the results reported in the study	Based on the description of data and assumptions used, this assessment would be reproducible by other practitioners. All assumptions, models, and data sources are documented.
Sources of the Data: Description of all primary and secondary data sources	Data representing energy use at the Prihoda Czechia facility represent an annual average and are considered of high quality due to the length of time over which these data are collected, as compared to a snapshot that may not accurately reflect fluctuations in production. The Ecoinvent v3.5 database is used for secondary LCI datasets.
Uncertainty of the Information: Uncertainty related to data, models, and assumptions	Uncertainty related to materials in the panel products and packaging is low. Actual supplier data for upstream operations was not available for suppliers and the study relied upon the use of existing representative datasets. These datasets contained relatively recent data (<10 years) but lacked geographical representativeness. Uncertainty related to the impact assessment methods used in the study are high. The impact assessment method required by the PCR includes impact potentials, which lack characterization of providing and receiving environments or tipping points.

Allocation

The PCR requires the use of mass, or surface criteria (total m^2) to allocate resource use data to the product. Primary data for the annual facility electricity and natural gas usage, water use, waste and total surface area of fabric produced in 2019 were provided by the manufacturer. This process data was allocated to the product system based on the surface criteria (per m^2 of the duct surface).

The fabric ducting and diffuser is composed of 100% post-consumer recycled material, which was allocated using the recycled content allocation method (also known as the 100-0 cut off method).

The downstream transportation distances were weighted based on the importance of the countries. The importance was assigned to the countries by Prihoda® based on the weight of order transported to every country and the associated turnover for that customer in 2019. Impacts from transportation were allocated based on the mass of material and distance transported.

Cut-off criteria

According to the PCR, mass and energy flows that consist of less than 1% may be omitted from the inventory analysis. Cumulative omitted mass or energy flows shall not exceed 5%. In the present study, except as noted, all known materials and processes were included in the life cycle inventory.

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