



ENVIRONMENTAL PRODUCT DECLARATION

In accordance with ISO 14025 for:


**WEATHERPRO®
LUMBER WRAP
STANDARD II AND SELECT**



Programme: The International EPD® System, www.environdec.com
Programme operator: EPD International AB
EPD registration number: S-P-02059
Publication date: 2020-08-17
Valid until: 2025-07-24

An EPD should provide current information, and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com.

PROGRAMME INFORMATION

Programme:	The International EPD® System EPD International AB Box 210 60 SE-100 31 Stockholm, Sweden www.environdec.com info@environdec.com	
Product category rules (PCR):	Packaging, 2019:13, version 1.0, CPC code 31923	
PCR review was conducted by:	The Technical Committee of the International EPD® System. The review panel may be contacted via info@environdec.com . Chair of the PCR Review: Maurizio Fieschi	
Independent third-party verification of the declaration and data, according to ISO 14025:2006:	<input type="checkbox"/> EPD process certification	<input checked="" type="checkbox"/> EPD verification
Third party verifier:	Angela Fisher, Aspire Sustainability Approved by: The International EPD® System	
Procedure for follow-up of data during EPD validity involves third party verifier:	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Disclaimer	<p>The EPD owner has the sole ownership, liability, and responsibility for the EPD.</p> <p>EPDs within the same product category but from different programmes may not be comparable.</p> <p>The environmental impacts of different EPDs can be compared only taking into account all the technical information supporting the declared/functional unit definition as requested by the PCR.</p>	

COMPANY INFORMATION

Owner of the EPD

Owens Corning
1 Owens Corning Pkwy, Toledo, OH 43659, USA

For more information about this EPD or its contents, contact
sustainability@owenscorning.com

Description of the organisation

Owens Corning is a global building and industrial materials leader that manufactures and delivers a broad range of high-quality insulation, roofing, and fiberglass composite materials. Our insulation products conserve energy and improve acoustics, fire resistance, and air quality in the spaces where people live, work, and play. Our roofing products and systems enhance curb appeal of people's homes and protect homes and commercial buildings alike. Our fiberglass composites make thousands of products lighter, stronger, and more durable. In short, the company provides innovative products and solutions that deliver a material difference to its customers and, ultimately, make the world a better place.

Owens Corning is comprised of three integrated businesses – Insulation, Roofing, and Composites – that leverage commercial strength, material science innovation, manufacturing technologies, and a global footprint and scale, as well as safety and sustainability expertise across the enterprise. We aim to capitalize on our market-leading positions and innovative technologies to deliver substantial free cash flow and sustainable shareholder value. The business is global in scope, with operations in 33 countries, and human in scale, with over 19,000 employees and long-standing, local relationships with its customers and communities. Based in Toledo, Ohio, Owens Corning posted 2019 net sales of \$7.2 billion. It has been a Fortune 500® company for 65 consecutive years.



sustainability.owenscorning.com

Product-related or management system-related certifications

Certifications for the Novia, China facility include ISO 9001:2015, ISO 14001:2015 and BS OHSAS 18001:2007. The facility in Dapada, India is certified ISO 9001:2015. The facility in Sayli, India is certified ISO 14001:2015 and OHSAS 18001:2007.

Name and location of production site

Dapada, India, Sayli, India and Novia, China

PRODUCT INFORMATION

WEATHERPRO® LUMBER WRAP STANDARD II AND SELECT

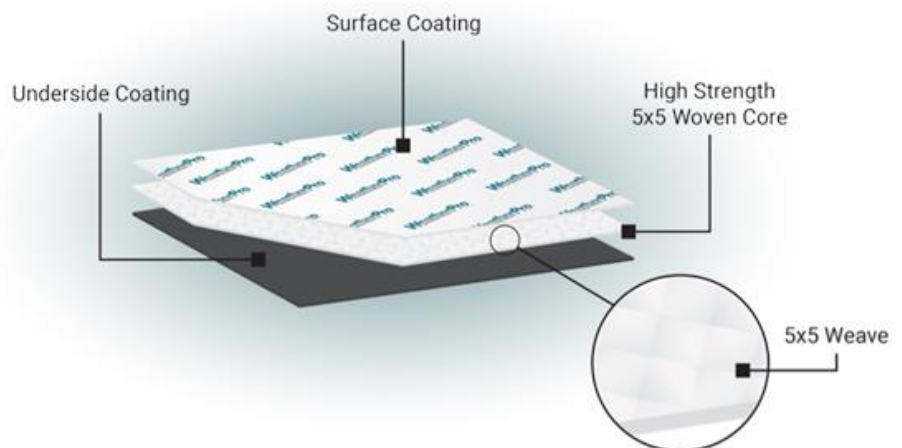


Product identification

WeatherPro® Lumber Wrap Standard II and WeatherPro® Select are 5 x 5 reinforcing polypropylene scrim products, coated on both sides with a uniquely engineered polypropylene blend.

Product Description

The polypropylene transit wrap is used for packaging solid sawn lumber, I-joists & beams, structural panels or other building products to maintain product integrity through transportation, inspection and storage.



Product Features

- Coated woven strength superior to blown film for transit
- Vibrant graphics maintained over long periods of time due to specially formulated coatings and inks
- UV stabilizers included in all three layers
- Engineered for exporting beams, structural panels, and solid sawn lumber and other products
- Includes optional clear end panels for visibility
- Made from 100% Recyclable Material

Both products are constructed as shown above. WeatherPro® Lumber Wrap Select has a thicker core than WeatherPro® Lumber Wrap Standard II. Product is supplied in rolled format or as a sewn bag which covers the top and sides of the lumber.

UN CPC Code

31923

Hamonized Schedule HS 2007

4602

Additional Information

Additional product information is available from the company website:

<https://www.owenscorning.com/en-eu/protective-packaging/wood-packaging>

Geographical Scope

Europe and United States



LCA INFORMATION

Functional unit / declared unit

The declared unit for the study is 1 m² of packaging wrap. This unit was chosen because there is not a single standard unit of final wrapped lumber product.

Product	g/m2
Standard II	75.6
Select	85.7

Reference service life

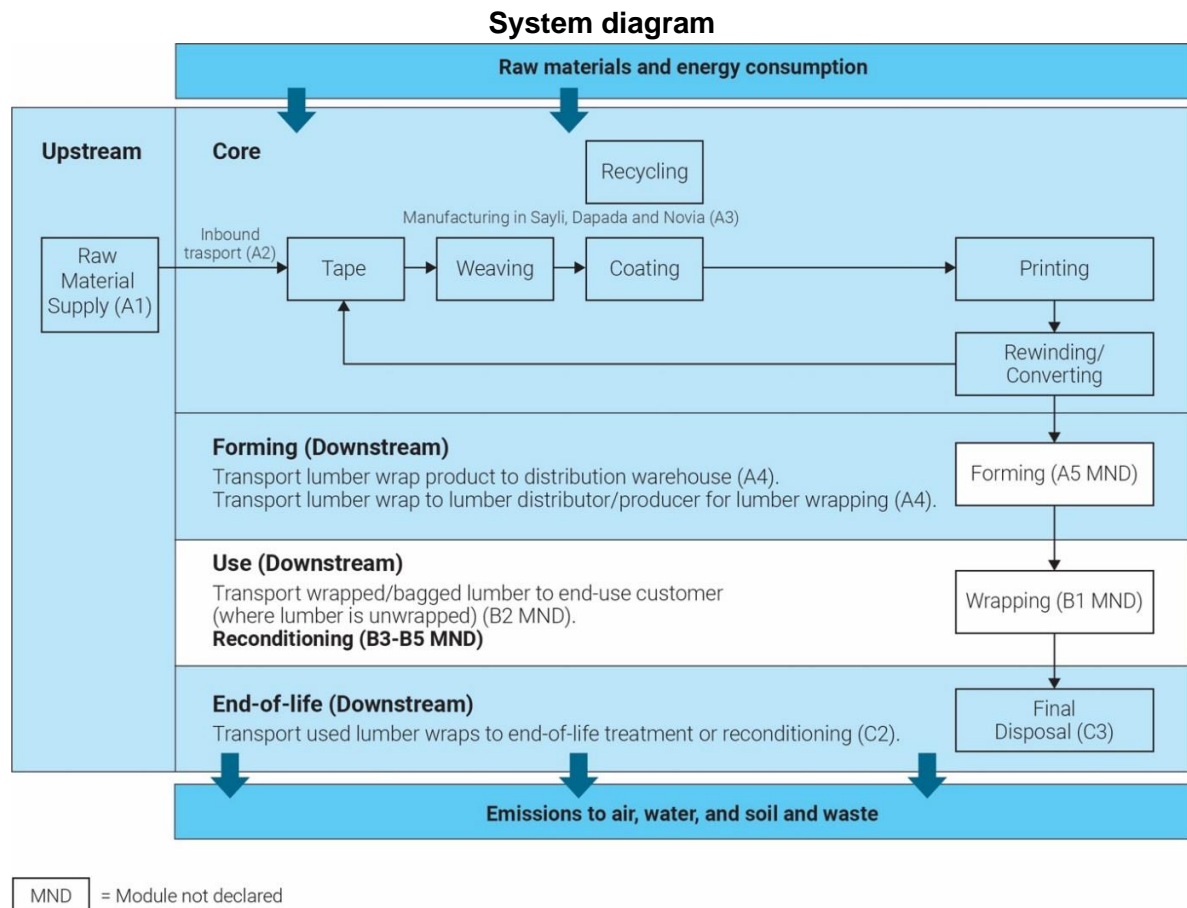
Packaging is typically single use.

Time representativeness

Primary manufacturing and distribution data was collected for calendar year 2019. Secondary data in the SimaPro software implementation of the Ecoinvent 3.5 database are used for upstream processes as available and most appropriate for the regions. Ecoinvent 3.5 was released 23 August 2018 with time period coverage through 2018. Since these data were the most recent available at the time of the study, they are appropriate to use with the 2019 primary data.

Database(s) and LCA software used

The LCA model was completed in the SimaPro software version 9.0.0.49 with the Ecoinvent 3.5 databases. The method used to assess environmental impacts was CML v3.05 and AWARE v1.02 for water scarcity potential. Cumulative Energy Demand (LHV) v1.0 was used for primary energy resources and Recipe 2016 Midpoint (H) v1.1 for fresh water usage.



Description of system boundaries

A cradle-to-gate with options LCA has been conducted in accordance with the The International EPD System Packaging PCR. Raw material supply (A1) includes the acquisition of raw materials used to manufacture the product and packaging used to ship the final product. All raw materials are transported from the supplier to Owens Corning facilities by rail, sea or truck (A2). Manufacturing includes all process steps carried out at Owens Corning sites to produce the final product, including energy and utilities used and waste produced (A3). During the manufacturing process, the polypropylene is formed into tape which is woven into scrim. A uniquely engineered polypropylene blend is applied to both sides of the scrim before being printed and rewound onto a core or converted to bags. Electricity mix applied to core processes is the medium voltage datasets from Ecoinvent 3.5 for the specific countries encountered. This data is reported to represent 2015-2018. The product is distributed to both the European and North American markets by sea, rail and truck (A4). The end-of-life transport and final disposal (C2-C3) of the product are modelled for the European and North American markets based on products distributed to each area and includes emissions from recycling, incineration and landfill disposal. It is assumed that the product is transported 160 kilometers (100 miles) to the end-of-life. The UL – Product Category Rules for Building-Related Products and Services. Part A: Life Cycle Assessment Calculation Rules and Report Requirements Version 3.2 were used for assumptions related to end-of-life disposal. For plastic packaging materials in Europe, the recycling rate is 40.3%, the landfill rate is 28.7% and the incineration rate is 31% per. In North America (US), it is a 15% recycling rate, 68% landfill rate, and 17% incineration rate for plastic packaging disposal.

	UPSTREAM	CORE		DOWNSTREAM									
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	C1	C2	C3
	RAW MATERIAL SUPPLY	TRANSPORT	MANUFACTURING	TRANSPORT TO FORMING OR FILLING	FORMING	FILLING OPERATION	DISTRIBUTION OF FILLED PACKAGING	TRANSPORT TO RECONDITIONING	RECONDITIONING	TRANSPORT TO RE- FILLING POINT	DISASSEMBLING / SORTING	TRANSPORT TO RECOVERY / DISPOSAL	FINAL DISPOSAL
EPD	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	X	X

MND = Module not declared

Excluded lifecycle stages

Forming (A5) was excluded since the product is primarily used in the manufactured roll form. Some product is sewn into bags for use, but impacts from the thread and sewing process are negligible and below the cut-off. The filling (lumber wrapping) operation (A5) is primarily a manual process, and human labor was excluded from the study. Other impacts fall below the cut-off. Due to lack of available data, the use phase (B1-B5) is not declared. C1 (disassembly/sorting) is also a manual process and below the cut-off.

Estimates and Assumptions

Plant specific data was gathered for the raw materials (A1), transport (A2) and core manufacturing (A3) processes and represents 2019 production volumes. 2019 distribution data (A4) was gathered from the India plants (Sayli and Dapada) for North American and European markets. Product distribution (A4) data from Novia, China to North America for 2019 was calculated using assumptions based on data from the other plants. It is assumed that the product is transported 160 kilometers (100 miles) to the end-of-life. Disposal scenarios were based on the packaging disposal assumptions detailed in UL PCR for building-related products since this product is used as a packaging material for lumber building products.

Data Quality

Primary data was based on measured and calculated data from the Owens Corning plants which produced all of the product in calendar year 2019. It meets requirements for completeness along with temporal, geographical and technological representativeness. Background data was taken from the Ecoinvent 3.5 database corresponding to the appropriate locations. Efforts have been made to ensure that the data provided are reasonable and accurate. Data have been assessed qualitatively against the requirements for data quality in ISO 14044:2006 and the Packaging PCR and are considered to be representative, up to date and valid.

Cut-off criteria

This LCA is in compliance with the cut-off criteria specified in the PCR. Due to the long lifetime of equipment, capital goods and infrastructure flows were excluded as having a negligible impact on the conclusions of the LCA. Data for elementary flows to and from the product system contributing to a minimum of 99% of the declared environmental impacts have been included.

Allocation

The polluter pays principle (PPP) (cut-off approach) to end-of-life allocation was used. Mass allocation has been applied to raw materials and manufacturing data to allocate the environmental burden between Select and Standard II. Distribution data (A4) was received for North American and European distribution of both products from the India plants as a whole and was allocated to the Dapada or Sayli plants based on total wrap production mass for the respective facility.

LCA Preparation

The LCA was prepared for Owens Corning by Environmental Resources Management Limited, London, United Kingdom.



CONTENT DECLARATION

The table below reports the product composition for Select and Standard II.

MATERIALS / CHEMICAL SUBSTANCES	%
Polypropylene	83%
Polyethylene	7%
Masterbatch	10%

The products do not contain Substances of Very High Concern (SVHC) as defined by article 59 (10) of Regulation (CE) 1907/2006, also known as the REACH candidate list, at a concentration at or above 0.1% in weight.

PACKAGING

Product which is supplied in rolled format is wrapped on a reprocessed polypropylene or HDPE core. Rolls are stacked on wooden pallets which are wrapped with film. Product which is supplied as a sewn bag is compressed on a wooden pallet and secured with straps.

Recycled material

The products currently only use internally recycled scrap material which will not be reported here per the PCR guidance.

ENVIRONMENTAL PERFORMANCE

POTENTIAL ENVIRONMENTAL IMPACTS

The characterization model used was CML version 3.05 and AWARE version 1.02.

Potential environmental impact – Standard II

The results are presented per a declared unit of 1 m².

PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	1.37E-01	8.66E-02	7.18E-02	2.95E-01
	Biogenic	kg CO ₂ eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Land use and land transformation	kg CO ₂ eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TOTAL	kg CO ₂ eq.	1.37E-01	8.66E-02	7.18E-02	2.95E-01
Acidification potential (AP)		kg SO ₂ eq.	4.24E-04	3.53E-04	2.79E-04	1.06E-03
Eutrophication potential (EP)		kg PO ₄ ³⁻ eq.	3.83E-05	4.61E-05	3.10E-05	1.15E-04
Formation potential of tropospheric ozone (POCP)		kg C ₂ H ₄ eq.	2.85E-05	1.31E-05	8.64E-06	5.03E-05
Abiotic depletion potential – Elements		kg Sb eq.	4.18E-09	5.63E-10	2.69E-10	5.01E-09
Abiotic depletion potential – Fossil resources		MJ, net calorific value	4.24E+00	1.03E+00	2.56E-01	5.53E+00
Water scarcity potential		m ³ eq.	4.67E-02	7.86E-03	4.24E-03	5.88E-02

Potential environmental impact – Select

The results are presented per a declared unit of 1 m².

PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	1.57E-01	1.09E-01	6.43E-02	3.31E-01
	Biogenic	kg CO ₂ eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	Land use and land transformation	kg CO ₂ eq.	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TOTAL	kg CO ₂ eq.	1.57E-01	1.09E-01	6.43E-02	3.31E-01
Acidification potential (AP)		kg SO ₂ eq.	4.88E-04	4.56E-04	4.75E-04	1.42E-03
Eutrophication potential (EP)		kg PO ₄ ³⁻ eq.	4.44E-05	5.88E-05	4.87E-05	1.52E-04
Formation potential of tropospheric ozone (POCP)		kg C ₂ H ₄ eq.	3.30E-05	1.68E-05	1.48E-05	6.46E-05
Abiotic depletion potential – Elements		kg Sb eq.	4.74E-09	7.55E-10	2.15E-10	5.71E-09
Abiotic depletion potential – Fossil resources		MJ, net calorific value	4.89E+00	1.27E+00	4.00E-01	6.56E+00
Water scarcity potential		m ³ eq.	5.35E-02	1.09E-02	3.81E-03	6.82E-02

USE OF RESOURCES

The characterization model used was Cumulative Energy Demand (LHV) version 1.00 and Recipe Midpoint H (2016), version 1.1.

Use of resources – Standard II

The use of resources results are presented per a declared unit of 1 m².

PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	3.87E-02	3.93E-02	8.78E-04	7.88E-02
	Used as raw materials	MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
	TOTAL	MJ, net calorific value	3.87E-02	3.93E-02	8.78E-04	7.88E-02
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	9.37E-01	1.06E+00	2.57E-01	2.25E+00
	Used as raw materials	MJ, net calorific value	3.59E+00	0.00E+00	0.00E+00	3.59E+00
	TOTAL	MJ, net calorific value	4.52E+00	1.06E+00	2.57E-01	5.84E+00
Secondary material		kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable secondary fuels		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable secondary fuels		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water		m ³	1.07E-03	2.06E-04	1.03E-04	1.38E-03

Use of resources – Select

The use of resources results are presented per a declared unit of 1 m².

PARAMETER		UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Primary energy resources – Renewable	Use as energy carrier	MJ, net calorific value	1.44E-02	1.31E+00	4.02E-01	1.72E+00
	Used as raw materials	MJ, net calorific value	4.00E-02	0.00E+00	0.00E+00	4.00E-02
	TOTAL	MJ, net calorific value	5.44E-02	1.31E+00	4.02E-01	1.76E+00
Primary energy resources – Non-renewable	Use as energy carrier	MJ, net calorific value	1.77E+00	0.00E+00	0.00E+00	1.77E+00
	Used as raw materials	MJ, net calorific value	3.44E+00	0.00E+00	0.00E+00	3.44E+00
	TOTAL	MJ, net calorific value	5.21E+00	0.00E+00	0.00E+00	5.21E+00
Secondary material		kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Renewable secondary fuels		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Non-renewable secondary fuels		MJ, net calorific value	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Net use of fresh water		m ³	5.35E-02	2.79E-04	9.33E-05	5.39E-02

WASTE PRODUCTION AND OUTPUT FLOWS

Waste production – Standard II

The waste production results are presented per a declared unit of 1 m².

PARAMETER	UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Hazardous waste disposed	kg	0.00E+00	1.96E-05	0.00E+00	1.96E-05
Non-hazardous waste disposed	kg	0.00E+00	2.10E-03	7.46E-02	7.67E-02
Radioactive waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Waste production – Select

The waste production results are presented per a declared unit of 1 m².

PARAMETER	UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Hazardous waste disposed	kg	0.00E+00	2.26E-05	0.00E+00	2.26E-05
Non-hazardous waste disposed	kg	0.00E+00	2.40E-03	8.57E-02	8.81E-02
Radioactive waste disposed	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Output flows – Standard II

The output flow results are presented per a declared unit of 1 m².

PARAMETER	UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	2.15E-03	4.06E-02	4.27E-02
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

Output flows – Select

The output flow results are presented per a declared unit of 1 m².

PARAMETER	UNIT	UPSTREAM	CORE	DOWNSTREAM	TOTAL
Components for reuse	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Material for recycling	kg	0.00E+00	2.40E-03	1.84E-02	2.08E-02
Materials for energy recovery	kg	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, electricity	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00
Exported energy, thermal	MJ	0.00E+00	0.00E+00	0.00E+00	0.00E+00

ADDITIONAL INFORMATION

Additional information may be found at www.owenscorning.com.

REFERENCES

General Programme Instructions of the International EPD® System. Version 3.01, 2019-09-18.

The International EPD® System PCR 2019:13. Packaging, Version 1.0, 2019-11-08

UL Environment. Product Category Rules for Building-Related Products and Services. Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 3.2, 2018.

Streamlined LCA of InterWrap WeatherPro® Lumber Wrap, prepared by Courtney Grant, ERM for Owens Corning, 15 July 2020.

Cumulative Energy Demand (LHV), Lower Heating Values, created by Pré Consultants based on data published by ecoinvent in SimaPro v9.0.

CML (version 3.05), <https://www.universiteitleiden.nl/en/research/research-output/science/cml-ia-characterisation-factors>, 2016, as implemented in SimaPro. v9.0

AWARE, Available WAter Remaining, v1.02, WULCA, <http://www.wulca-waterlca.org/aware.html>, 2016, as implemented in SimaPro v9.0

Recipe Midpoint (H) 2016, v1.1, RIVM, Radboud University, Norwegian University of Science and Technology and Pré Consultants as implemented in SimaPro v9.0

Ecoinvent, version 3.5, as implemented in SimaPro v9.0: Wernet, G., Bauer, C., Steubing, B., Reinhard, J., Moreno-Ruiz, E., and Weidema, B., 2016. The ecoinvent database version 3 (part I): overview and methodology. The International Journal of Life Cycle Assessment, [online] 21(9), pp.1218–1230.

SimaPro, version 9.0, developed by PRé Consultants.



INTERWRAP CORP.
ONE OWENS CORNING PARKWAY
TOLEDO, OHIO, USA 43659
1-800-438-7465 (1-800-GET-PINK®)
www.owenscorning.com

Pub. No. 10024341

The color PINK is a registered trademark of Owens Corning.

© 2020 Owens Corning. All Rights Reserved.