

ENVIRONMENTAL PRODUCT DECLARATION

Rx SYMPHONY[®] m and SYMPHONY[®] m

CERTAINTEED

PERFORMA[®] RX SYMPHONY[®] m AND SYMPHONY[®] m MINERAL FIBER CEILING PANELS



Performa[®] Symphony family of products have a clean monolithic appearance with a balanced mix of acoustical, performance and environmental properties to meet your needs in office, healthcare and education buildings. Performa[®] Rx Symphony[®] m adds to CertainTeed's broad portfolio of healthcare products, providing outstanding acoustics, light reflectance, washability and impact and scratch resistance.



CertainTeed Corporation, a subsidiary of Saint-Gobain, is a leading North American manufacturer of interior building materials including gypsum, ceilings, and insulation as well as exterior building materials which include roofing, vinyl and fiber cement siding, trim, fence, railing, decking, foundations, and pipe products. CertainTeed respects the environment through the responsible development of sustainable building products and systems.

Architects, contractors and manufacturers continue to look for ways to reduce our industry's impact on the environment while meeting customer demand for products that deliver beauty, comfort, and performance. CertainTeed Ceilings' respect for the environment is reflected in our ongoing emphasis on sustainable building products and systems. Open sharing of the data we gather on these effects - as embodied in Environmental Product Declarations - is central to the process, and sets CertainTeed Ceilings apart.

For more information visit
<http://www.certainteed.com/ceilings>



ENVIRONMENTAL PRODUCT DECLARATION



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According to ISO 14025

This declaration is an environmental product declaration in accordance with ISO 14025 that describes the environmental characteristics of the aforementioned product. It promotes the development of sustainable products. Environmental declarations from different programs may not be comparable. Type III environmental declarations not based on an LCA covering all life cycle stages, or based on different PCR, are examples of declarations that have limited comparability. This is a certified declaration and all relevant environmental information is disclosed.



PROGRAM OPERATOR	UL Environment
DECLARATION HOLDER	CertainTeed Ceilings
DECLARATION NUMBER	12CA16994.104.1
DECLARED PRODUCT	Rx Symphony® m and Symphony® m Mineral Fiber Ceiling Panels
REFERENCE PCR	Institut Bauen und Umwelt e.V. PCR for Ceiling panels for suspended ceiling systems
DATE OF ISSUE	July 10, 2012
PERIOD OF VALIDITY	5 years

CONTENTS OF THE DECLARATION	Product definition and information about building physics Information about basic material and the material's origin Description of the product's manufacture Indication of product processing Information about the in-use conditions Life cycle assessment results Testing results and verifications
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The PCR review was conducted by:	Institut Bauen und Umwelt e.V.
	PCR confirmed by SVA Rheinufer 108 D-53639 Königswinter Germany Tel.: +49 (0)2223 296679-0 Fax: +49 (0)2223 296679-1 Email: info@bau-umwelt.com
This declaration was independently verified by Underwriters Laboratories in accordance with ISO 14025 <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	 Loretta Tam
	 Eva Schmincke
This life cycle assessment was independently verified by in accordance with ISO 14044 and the reference PCR	 Eva Schmincke





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Product Definition

Product Description

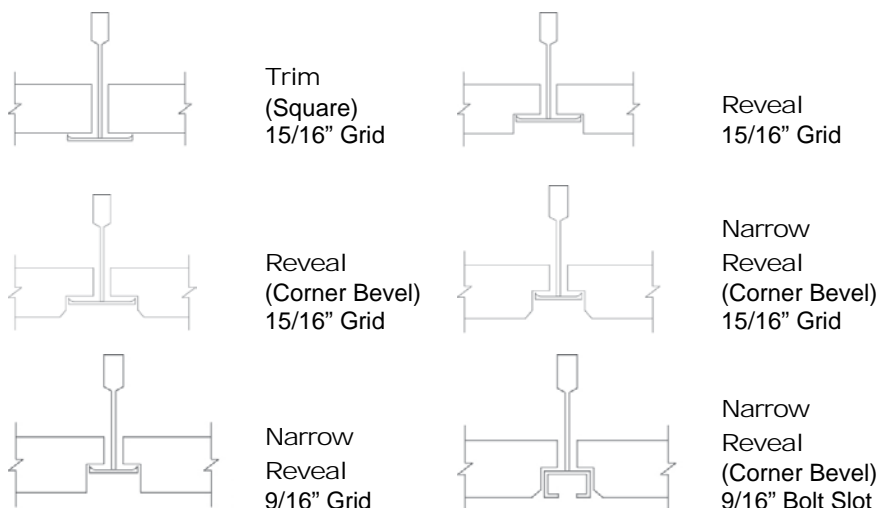
The Rx Symphony® m and Symphony® m product is produced in L'Anse, Michigan using mineral fibers with pre-consumer and post-consumer recycled content and finished in Plymouth, WI. This product has a standard mineral fiber core panel with a reinforced mat and finish coatings. This Environmental Product Declaration (EPD) examines the Symphony m (3/4" thickness) product. The coatings modeled include the back, prime, edge and top coatings that are specific for the Symphony m product line.

The Rx Symphony® m and Symphony® m product contains a minimum of 63% recycled content (59% Pre-Consumer, 4% Post-Consumer). The core is manufactured in the L'Anse, Michigan manufacturing facility that is a model of industrial ecology and product stewardship. L'Anse receives renewable electricity from the nearby Warden Electric Biomass power plant, which generates its electricity from waste wood. Excess steam from that same plant is also channeled to the ceiling manufacturing facility, reducing its overall natural gas use. The result is a manufacturing facility that obtains a large portion of its energy from renewable sources and generates almost zero waste. Symphony m is then shipped to Plymouth, WI for finishing. This EPD is developed for the ceiling panels only and does not include ceiling grid.

Visual and Installed Cost

- Overtone finish provides a clean, monolithic appearance
- Installed cost are \$\$\$\$

Available Edge Profiles and Grid Interface



Suitable for commercial interior installations:

- Private Offices
- Classrooms
- Patient Rooms
- Emergency Rooms
- Treatment Rooms
- Kitchen/Food Prep Areas
- Semi-Restricted Surgical Areas

Features and Benefits

- Excellent sound absorption (NRC 0.70)
- Exceptional surface durability: scratch /sag / and mold resistant
- Superior stain resistance and water repellency
- Cleanable with most sanitizing chemicals and wash- tested to 5,000+ cycles
- Reduces excess noise to help create a more productive work / learning / healing environment
- High light reflectancy (LR 0.90)
- Rx Symphony exceeds FGI Guidelines for cleanability and acoustic performance in most healthcare applications
- Rx Symphony satisfies USDA/FSIS guidelines for sanitary applications (commercial kitchens)
- Rx Symphony is approved for use in federally registered Canadian food establishments Meets LEED 2009 and v4 VOC compliance guidelines
- Suitable for Clean Room applications





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Application

Modular installation of suspended ceilings in commercial buildings.

Codes of Practice

- ASTM E1264- Classification For Acoustic Ceilings
- ASTM E84- Surface Burning Characteristics: pursuant to test certificate
- ASTM C423 - sound absorption: coefficient data of product and surface
- ASTM E1414 - sound insulation: product and system related data of sound insulation
- ASTM C518-10- Thermal conductivity: [ft²·°F·h/Btu]

Quality Assurance

- ISO 9001 Quality Management System
- GreenCircle Certified (<http://www.greencirclecertified.com/>)
- Certificate of Compliance for VOC Emissions: Berkeley Analytical



Delivery Condition

Relative shipping distances for the base raw materials are shown below in Table 3. Final product is typically sold within the continental United States and transported by truck.

Characteristics		
Type of Manufacture	Mineral Fiber Ceiling Panel	
Product Specifications	Thickness – 3/4 ", Density – 16 pcf	
Core Type	Mineral Wool with recycled content	
	Material	Weight Percent
Base Material Composition	Mineral Wool	< 90%
	Perlite	< 10%
	Newspaper	< 10%
	Starch	<20%
	Fiberglass Mat	< 5%
Auxiliary Substances - Coatings and Finishes	Back Coating	<1%
	Prime Coating	<1%
	Top and Edge Coating	<1%

Table 1. Specification of product construction





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Technical Data

Fire

ASTM E1264- Class A
ASTM E84- Flame spread of 25 or less, Smoke developed of 50 or less

Water Damage

This product is subject to water damage. No water or water vapor from sources including, but not limited to, condensation, leaking pipes and/or ducts, or steam should be allowed to come in contact with the ceiling panels.

Mechanical Damage

This product is intended for commercial applications. Use and Practice information can be found in “Acoustical Ceilings: Use and Practice” published by Ceilings & Interior Systems Construction Association (CISCA). The product should be installed according to CertainTeed Ceilings installation instructions.

Base Materials



Material Definitions

Prime and Finish Coatings consist of prime coat, top coat, and edge coat. Coatings are applied to the surface of the panel.

Mineral Fiber Core consists of 4 raw materials including: Mineral Wool, Perlite, Newspaper, and Starch. A mixture of those raw materials with the same ratio called “Dry Broke” is recovered within the manufacturing process.

Mineral Wool is a pre-consumer material produced from slag, a by-product of smelting iron ore. Slag is a secondary material that is modeled as being produced without environmental burden. Raw materials in mineral wool include 10% rock, 12% coke, and 78% slag.

Perlite is an abundant, naturally occurring mineral.

Newspaper is a post-consumer raw material. Newspaper is a renewable resource, as it is plant-based.





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Starch is a rapidly renewable resource made from the corn refining process.

Back Coating consists of Backsize coating applied to the back of the product.

Reinforced Mat facing comprised of fiberglass, which is derived from silica and a formaldehyde binder.

Layer	Component	Material	Availability	Origin
Mineral Fiber Core Composition	Ceiling Panel Core	Mineral Wool	Recycled Mineral Resource Non Renewable, Abundant	US
		Perlite	Mineral Resource Non Renewable, Abundant	US
		Newspaper	Recycled Material Abundant	US
		Starch	Renewable Resource Abundant	US
Reinforced Mat	Fiberglass Mat	Fiberglass	Mineral Resource Non Renewable, Abundant	Netherlands
Back Coating	Paints/Primer	Backsize	Fossil Resource Limited	US and Canada
Prime Coating		Prime Coat	Fossil Resource Limited	US and Canada
Top and Edge Coatings		Finish Coatings	Fossil Resource Limited	US and Canada

Table 2: Material Content of the Symphony m Final Product

Raw Material Extraction and Origin

Mineral Wool (pre-consumer)

Most mineral wool produced in the United States today is produced from slag, or a mixture of slag, and rock. Most of the slag used by the industry is generated by integrated iron and steel plants as a blast furnace byproduct from pig iron production. Other sources of slag include the copper, lead, and phosphate industries. The slag in this analysis is assumed to come from iron production only. The mineral wool production process has 3 primary components--molten mineral generation in the cupola, fiber formation and collection, and final product formation. The mineral wool used in this product is sourced within the United States.

Perlite

A naturally occurring abundant mineral that is mined and then expanded during the ceiling panel manufacturing process. The perlite used in this product is sourced within the United States.

Newspaper (post-consumer)

The recovered newspaper is collected, bundled, and transported directly to the L'Anse manufacturing plant for use in the production of mineral fiber ceiling panels. The recovered newspaper is mixed with water on-site to create a wet pulp mixture. The newspaper used in this product is sourced within the United States.

Starch

A rapidly renewable agricultural product made from corn. The starch used in this product is sourced within the United States.

Fiberglass mat

A fiberglass filament mat made from silica. The mat used in this product is sourced from the Netherlands



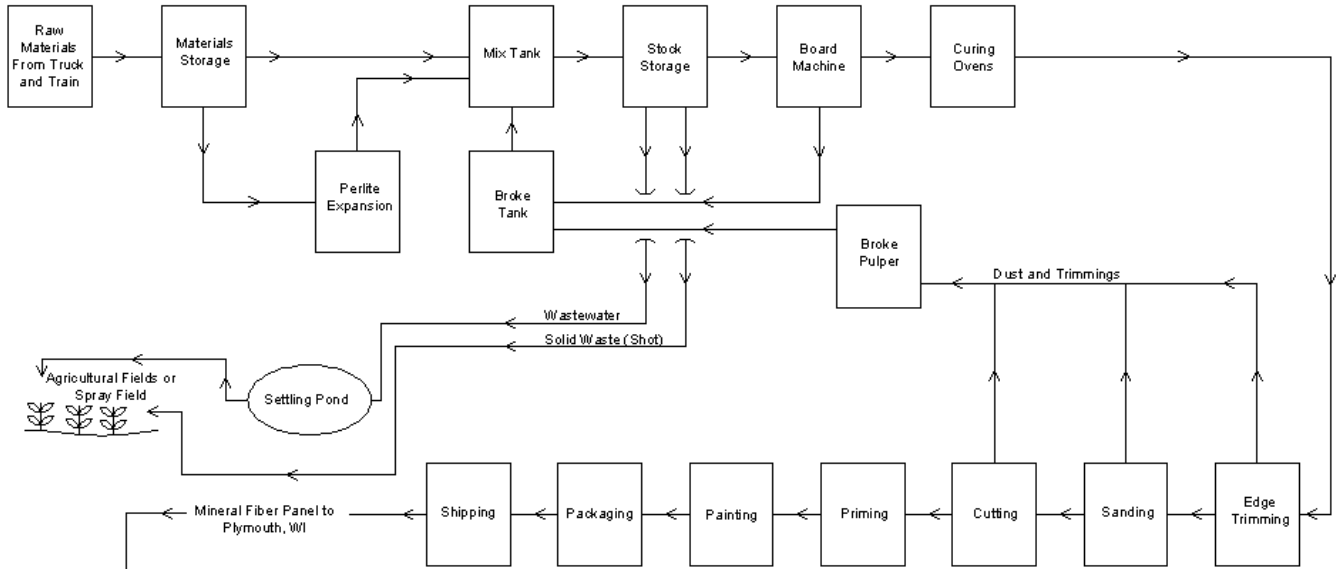


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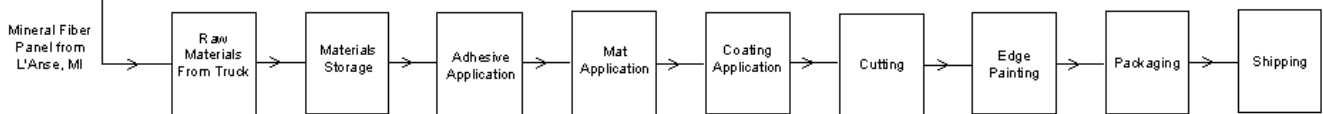
According to ISO 14025

Production Process

L'Anse, Michigan (USA)



Plymouth, Wisconsin (USA)



Health, Safety, and Environmental Aspects during Production

CertainTeed has well-established Environmental, Health, and Safety, (EHS) and product stewardship programs, which help to enforce proper evaluation and monitoring of chemicals that are chosen to manufacture products. These programs ensure that all environmental and OSHA requirements are met or exceeded to ensure the health and safety of all employees and contractors. In addition, the L'Anse facility is zero discharge to Publicly Owned Treatment Works (POTWs). The water system utilizes a settling pond on-site and discharges the remaining water to a spray field rather than a sewer system.





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Installation of Ceiling Panels



Installation Recommendations

The ceiling panels must be installed in accordance with all applicable CertainTeed installation guidelines applicable at the time of installation. Approved installation procedures described in the Ceiling Systems Handbook published by the Ceilings & Interior Systems Construction Association must be followed.

Installation of CertainTeed products is accomplished by manual labor and typically does not require any coating or finishing. Cutting is accomplished by hand using hand held cutting tools. This EPD covers the ceiling panels only and does not include grid.

Health, Safety, and Environmental Aspects during Installation

There are no apparent risks involved with the installation of ceiling panels since no coating or finishing is required. The installer should wear safety glasses while installing the panels to avoid debris from falling into eyes as well as approved gloves.

Residual Material

Waste is minimized by the modular aspect of the ceiling panels, and this analysis assumes a 5% installation scrap rate, which is modeled as landfilled. The Symphony m product was modeled as being disposed of in a landfill at the end of its life. However, CertainTeed Ceilings has developed a ceiling panel take back and recycling program which allows recovery of ceiling panels from construction sites. The ceiling panels are then used to manufacture new ceiling panels. As this program expands, it has the opportunity to significantly reduce environmental impacts associated with raw materials extraction and processing by offsetting virgin raw material demand.

Packaging

Ceiling panels are packaged using sleeves made from recycled cardboard and plastic shrink wrap. These packaging materials are recommended to be recycled if recycling infrastructure exists. The packaging was modeled and is included in the life cycle impacts of the EPD.

Use Stage

Cleaning and maintenance

Once installed, ceiling panels typically require no cleaning or maintenance. Maintenance personnel should wear white, clean cotton gloves when handling panels so oils and dirt from the hands do not transfer to panels.





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Prevention of Structural Damage

To ensure longevity of the product, make sure panels are not exposed to high humidity or high temperatures. Criteria can be found in the CertainTeed Ceilings Warranty information for each specific product. Please visit www.certainteed.com/products/ceilings for more information.

Effects on the Environment and Health

This ceiling panel is stationary during typical use and does not emit harmful emissions.

Broken or damaged panels should be picked up and placed in a container. Dust generated from making modifications of the panel should be cleaned by wet wiping or filtered vacuuming. Do not dry sweep or use compressed air to remove dust.

Useful Life

The product is warranted for a service life of 1-10 years of use (and up to 15 if used in conjunction with CertainTeed Ceiling Grid System). However, the useful life of ceiling panels can be as long as the buildings' useful life if properly installed and maintained. The useful life of these panels is considered to be 50 years.

End-of-Life

Recycling or Reuse

The preferred method for unfaced ceiling panels is to be recycled through the CertainTeed's Ceiling Recycling Program; however, current operations cannot recycle faced products such as Symphony m panels. Information on this program can be found at the link below.

Please visit www.certainteed.com/products/ceilings for more information.

Disposal

Disposal of Symphony m ceiling panels in municipal landfill or commercial incineration facilities is permissible and should be done in accordance with local, state, and federal regulations.

Life Cycle Assessment

Product System and Modeling of the Life Cycle

Functional Unit

One square foot (3/4"x12"x12") ceiling panel for use of 50 years. The use stage is considered for 50 years of service life, though based on typical operational data, this product does not require any inputs during the Use Phase. The reference flow is one square foot (3/4"x12"x12") of modular ceiling panel.





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Life Cycle Stages Assessed

1. Production
2. Interplant Shipping
3. Final Product Shipping
4. Installation and Use
5. End-of-Life

System Boundaries

The life cycle analysis for the production of ceiling panels comprises the life cycle phases from cradle to grave. It begins with the consideration of the ceiling panel production (extraction of raw materials and product manufacturing), final product shipping, installation and use, and end-of-life stages, as shown in Figure 6 to the right. Manufacturing overhead (heating & lighting) was excluded from the system boundary.

Assumptions

There are no specific assumptions to list.

Cut-off Criteria

Processes whose total contribution to the final result, with respect to their mass and in relation to all considered impact categories, is less than 1% can be neglected.

The sum of the neglected processes may not exceed 5% by mass of the considered impact categories. For that a documented assumption is admissible.

For Hazardous Substances, as defined by the U.S. Occupational Health and Safety Act, the following requirements apply:

- The Life Cycle Inventory (LCI) of hazardous substances will be included, if the inventory is available.
- If the LCI for a hazardous substance is not available, the substance will appear as an input in the LCI of the product, if its mass represents more than 0.1% of the product composition.
- If the LCI of a hazardous substance is approximated by modelling another substance, documentation will be provided.

This EPD is in compliance with the cut-off criteria. No processes were neglected or excluded. Capital items for the production processes (machines, buildings, etc.) were not taken into consideration.

Transportation

Relative shipping distances for the base raw materials are shown in Table 3 to the right. Final product is typically sold within the continental United States and transported by truck.

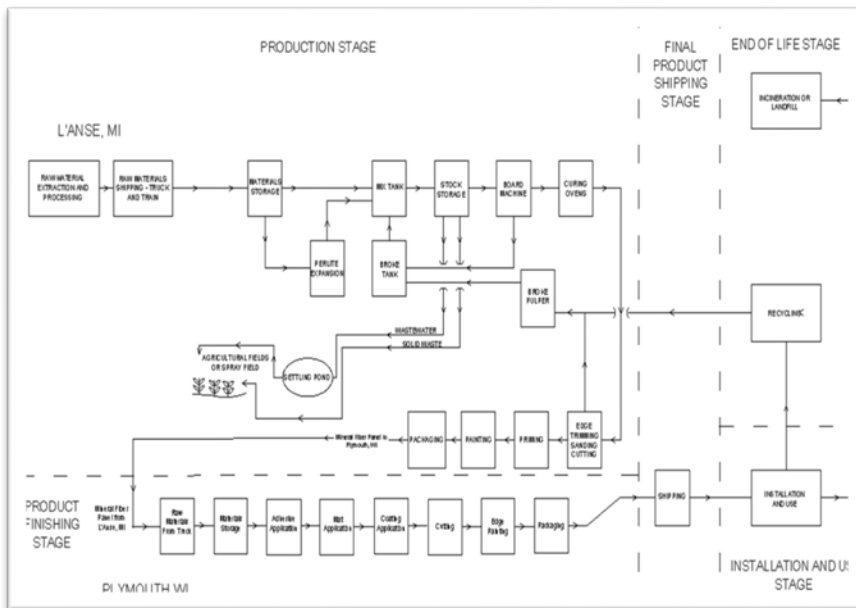


Figure 6: Life System Stage Diagram for Mineral Fibre Ceiling Panels

Raw Material	Distance (mi)	Mode of Transportation
Mineral Wool	< 750	Truck
Perlite	< 2,000	Train
Newspaper	< 500	Truck
Starch	< 1,000	Train
Coatings	< 1000	Truck
Interplant Shipping	< 250	Truck
Reinforced Mat Facing	< 5,000	Ship & Truck





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Period under Consideration

The data used refer to the production processes of the calendar year 2011. The quantities of raw materials, energies, auxiliary materials, and supplies used have been ascertained as average annual values. The LCA was created for the reference area “United States”.

Background Data

For life cycle modeling the SimaPro v7.3 Software System for Life Cycle Engineering, a recognized LCA modeling software program, was used. All background data sets relevant for production and disposal were taken from this software except for the mineral wool model. This model was created based on discussions and data provided by industry experts and AP-42, Compilation of Air Pollutant Emission Factors.

Data Quality

For the data used in this LCA, the data quality is considered to be “good to high” quality. The definition of this quality range stems from the following descriptions. The data and data sets cover all relevant process steps and technologies over the supply chain of the represented ceiling products. The LCIs are from the SimaPro v7.3 database and wherever secondary data is used, the study adopts critically reviewed data where ever possible for consistency, precision, and reproducibility to limit uncertainty. The data source is complete and representative of North America in terms of the geographic and technological coverage and is of a recent vintage, i.e. less than ten years old.

Allocation

The LCI data was collected from the L’Anse, Michigan and Plymouth, WI facilities for the production year 2011. The L’Anse plant produces 100% of CertainTeed mineral wool ceiling panels and Plymouth is the finishing facility that applies the facing for the Symphony m product. The manufacturing process for all products made at these facilities have similar energy, waste, and water input requirements. Allocation was done on a mass basis. This manufacturing flow data was combined with resource extraction, processing, transportation, installation, use, and disposition data to construct the cradle-to-grave LCI for CertainTeed mineral wool ceiling panels.

Notes on the Use Stage

The product is warranted for a service life of 1-10 years of use (and up to 15 if used in conjunction with CertainTeed Ceiling Grid System), however, ceiling panels can last the full life of a building. The ceiling panel is mainly used for acoustics and aesthetics throughout its useful life. No direct maintenance or cleaning is required during the panel useful life. The useful life of these panels is considered to be 50 years.

End-of-Life Scenario

The ceiling panel was modeled as being disposed of in a landfill.

Assessment Results and Analysis

Water and Waste

Water and waste for each of the Life Cycle Stages per Square Foot of Symphony m produced is reported in the table below. (Based on functional unit – Symphony m ¾”x12”x12”)

	Production	Product Shipping	Installation and Use	End of Life	Total	Unit
Water Use	2.79	0.00	0.15	0.12	3.06	liters/sf
Non-hazardous Waste¹	0.07	0.00	0.05	0.97	1.09	lbs/sf

¹No significant amount of additional waste types were generated during the Life Cycle of this product.





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Primary Energy

Tables and Figures below are based on functional unit – Symphony m (¾”x12”x12”).

	Unit	Production	Interplant Shipping	Final Product Shipping	Installation & Use	End of Life	Total
Total Energy Use	MJ	13.477	0.316	1.063	0.748	0.112	15.716

Table 4: Total Primary Energy Use by Life Cycle Stage per Square Foot Produced

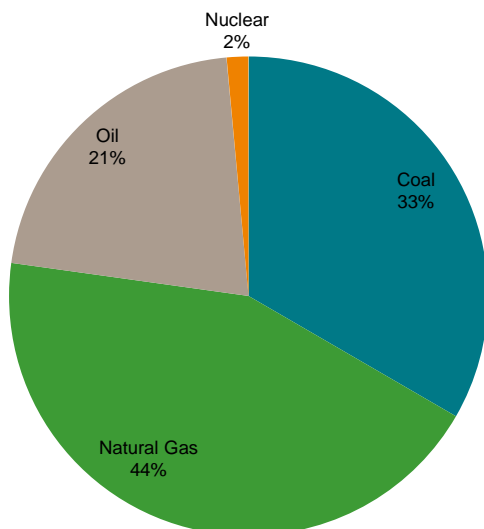
Type	Unit	Production	Interplant Shipping	Product Shipping	Installation and Use	End of Life	Total
Coal	MJ	4.405	0.010	0.032	0.223	0.003	4.673
Natural Gas	MJ	5.769	0.016	0.053	0.292	0.010	6.139
Oil	MJ	1.483	0.291	0.976	0.142	0.095	2.986
Nuclear	MJ	0.191	0.000	0.001	0.010	0.004	0.206
Total	MJ	11.848	0.316	1.062	0.667	0.112	14.003

Table 5. Primary Non-renewable Energy of All Life Cycle Stages by Source per Square Foot Produced

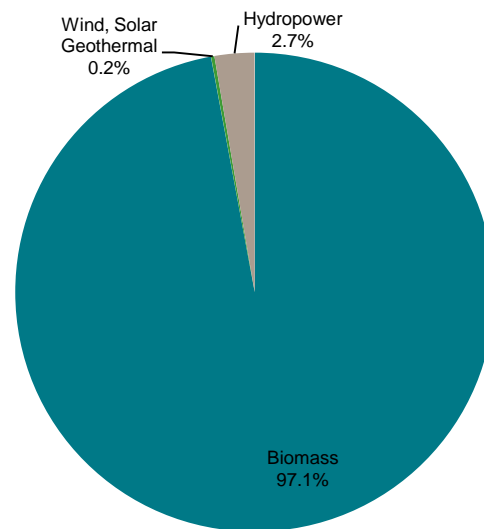
Type	Unit	Production	Interplant Shipping	Product Shipping	Installation and Use	End of Life	Total
Hydropower	MJ	0.042	0.000	0.001	0.003	0.000	0.046
Wind, Solar Geothermal	MJ	0.004	0.000	0.000	0.000	0.000	0.004
Biomass	MJ	1.584	0.000	0.000	0.079	0.000	1.663
Total	MJ	1.630	0.000	0.001	0.082	0.000	1.713

Table 6. Primary Renewable Energy of All Life Cycle Stages by Source per Square Foot Produced

Figure 7: Relative Primary Energy Use



Renewable Energy Use



Non- Renewable Energy Use





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Life Cycle Impact Assessment

The environmental impacts listed below were assessed throughout Symphony m’s lifecycle – including raw material extraction, transportation, manufacturing, packaging, use, and disposal at end of life.

ATMOSPHERE			WATER		EARTH	
Global Warming Potential refers to long-term changes in global weather patterns – including temperature and precipitation – that are caused by increased concentrations of greenhouse gases in the atmosphere.	Ozone Depletion Potential is the destruction of the stratospheric ozone layer, which shields the earth from ultraviolet radiation that’s harmful to life, caused by human-made air pollution.	Photochemical Ozone Creation Potential happens when sunlight reacts with hydrocarbons, nitrogen oxides, and volatile organic compounds, to produce a type of air pollution known as smog.	Acidification Potential is the result of human-made emissions and refers to the decrease in pH and increase in acidity of oceans, lakes, rivers, and streams – a phenomenon that pollutes groundwater and harms aquatic life.	Eutrophication Potential occurs when excessive nutrients cause increased algae growth in lakes, blocking the underwater penetration of sunlight needed to produce oxygen and resulting in the loss of aquatic life.	Depletion of Abiotic Resources (Elements) refers to the reduction of available non-renewable resources, such as metals and gases, that are found on the periodic table of elements, due to human activity.	Depletion of Abiotic Resources (Fossil Fuels) refers to the decreasing availability of non-renewable carbon-based compounds, such as oil and coal, due to human activity.

Impact Assessment Method: TRACI 2 V4.00		
PCR Impact Category	Impact	Units
Global warming	0.845	kg CO2 eq
Acidification	0.590	mol H+ eq
Eutrophication	1.29E-03	kg N eq
Ozone depletion	3.50E-08	kg CFC-11 eq
Smog	0.146	kg O3 eq
Impact Assessment Method: CML 2 baseline 2000 V2.05		
PCR Impact Category	Impact	Units
Global warming (GWP100)	0.911	kg CO2 eq
Acidification	0.009	kg SO2 eq
Eutrophication	0.001	kg PO4 eq
Ozone layer depletion (ODP)	2.34E-08	kg CFC-11 eq
Photochemical oxidation	0.004	kg C2H4

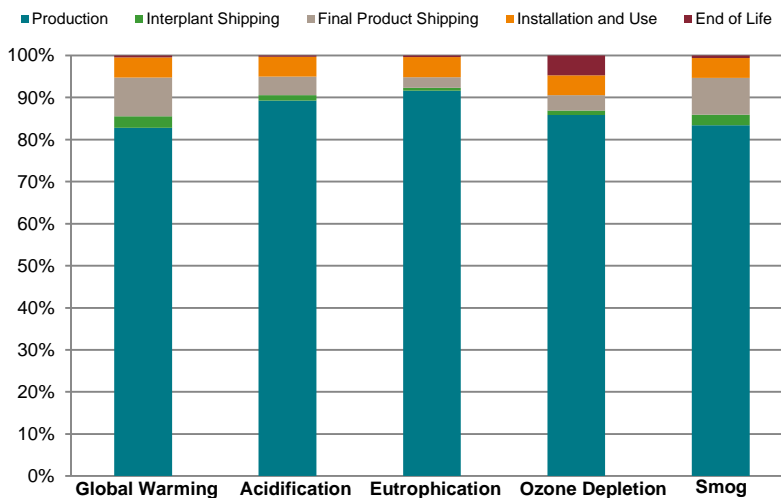
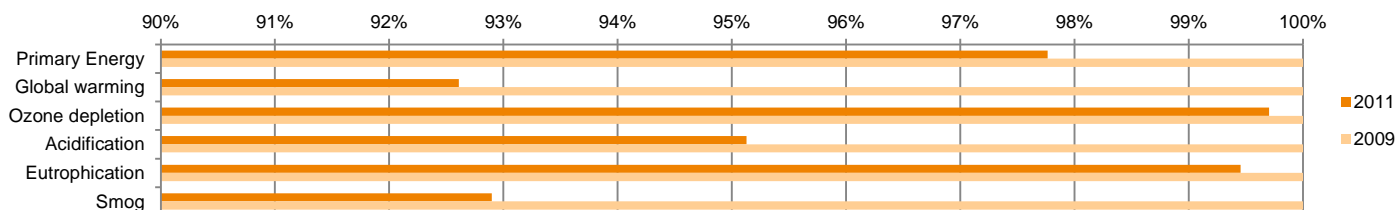


Figure 8: Relative Environmental Impact by Life Cycle Stage

Life Cycle Impact Reduction

CertainTeed Ceilings strives to continually improve their operations in order to reduce environmental impacts. Since 2009, production efficiencies have been implemented which reduce energy consumption of the L’Anse facility and therefore of the entire life cycle assessment. Figure 9 below illustrates the impact reductions made in six impact categories.





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Interpretation

Production Process Impacts

The majority of the environmental impacts occur during the extraction and processing of raw materials which is included in the Production stage. Mineral wool represents the highest percentage of impacts from raw materials. The use of renewable energy and waste steam reduces Global Warming Potential (Scopes 1 and 2 in the manufacturing process) by approximately 19 percent, which significantly reduces impacts of the manufacturing process compared to traditional manufacturing operations.

Installation Stage

Installation has minimal impacts due to the modular nature of ceiling panels and minimal energy requirements for installation. Transport energy from the distribution center to jobsite is included in this stage. A 5% scrap rate was assumed for the installation of ceiling panels.

Use Stage

The assumption is that the ceiling panels require no cleaning or maintenance so use phase impacts are zero.

End-of-Life Impacts

End-of-life impacts are a result of landfill disposition. The end-of-life impacts can be significantly reduced by recycling the panels through CertainTeed's Take Back Program.

Additional Information

Biopersistence of Mineral Wool Fibers

Slag wool fiber has been classified as "not classifiable as to its carcinogenicity to humans" (Group 3) by the International Agency for Research on Cancer (IARC). Primary routes of exposure are inhalation, eyes, and skin. Follow installation instruction and MSDS to reduce any effects.

VOC Emissions

This product meets the testing and product requirements of the California Department of Public Health CDPH/EHLB/Standard Method Version 1.1,2010 (Emissions Testing Method for CA Specification 01350). Independent test reports are available.

LCA Development

This EPD and corresponding LCA were prepared by Sustainable Solutions Corporation of Royersford, Pennsylvania.



SustainableSolutions
CORPORATION





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References

PCR	Product Category Rules for Environmental Product Declarations – ceiling panels for suspended ceiling systems. Confirmed by IBU Advisory Board October, 2010
IBU 2006	Leitfaden Umwelt-Produktdeklarationen (Ausgabe 20.01.2006) für die Formulierung der produktgruppen-spezifischen Anforderungen der Umwelt-Produktdeklarationen (Typ III) für Bauprodukte, (Guideline for Setting Up the Product Category Requirements of AUB Declarations (Type III) for Construction Products) Institut Bauen und Umwelt e.V. www.bau-umwelt.com
US LCI	LCI Database for Life Cycle Engineering, National Renewable Energy Laboratory, Lakewood, CO, 2008

Standards and laws

ISO 14025	ISO 14025: 2007-10, Environmental Labelling and Declarations - Type III – Environmental Declarations - Principles and Procedures (ISO 14025:2006); German and English version
ISO 14040	ISO 14040:2006-10, Environmental management - Life cycle assessment - Principles and framework (ISO 14040:2006); German and English version EN ISO 14040:2006
ISO 14044	ISO 14044:200610, Environmental management - Life cycle assessment - requirements and guidelines (ISO 14044:2006); German and English version EN ISO 14044:2006
ASTM E1264	Classification for Acoustic Ceiling Products
ASTM E84	Test Method for Surface Burning Characteristics of Building Materials
ASTM E119	Fire Test of Building Construction and Materials
ISO 9001	ISO 9001:2008-12, Quality management systems - Requirements (ISO 9001:2008); Trilingual version EN ISO 9001:2008, Corrigendum to ISO 9001:2008-12; Trilingual version EN ISO 9001:2008/AC:2009
ASTM C636	"Std Practice for Installation of Metal Ceiling Suspension Systems for Acoustic Panel and Lay-in Panels"
ASTM C423	Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method
ASTM E1414	Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum
ISO 14001	ISO 14001:2009-11, Environmental management systems - Requirements with guidance for use (ISO 14001:2004 + Cor. 1:2009); German and English version EN ISO 14001:2004 + AC:2009
CA Specification 01350	California Dept. of Public Health CDPH/EHLB/Std Method Version 1.1, 2010 (Emission testing method for CA Specification 01350)

