Environmental Product Declaration

Program Operator: Smart EPD®
www.smartepd.com

IN ACCORDANCE WITH ISO 14025:2006 AND ISO 21930

SmartEPD-2026-154-1042-01

Expanded Polystyrene (EPS) Insulation

Date of Issue	Expiration Date	Last Updated
Aug 25, 2026	**Aug 25, 2031**	**Aug 25, 2026**

Refer to the EPD Library at **www.smartepd.com** for the latest EPD listing information

General Information

EPS Industry Alliance

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epsindustry.org

Product Name:	Expanded Polystyrene (EPS) Insulation
Functional Unit:	1 m2 of material with RSI = 1 m2·K/W
Declaration Number:	SmartEPD-2026-154-1042-01
Date of Issue:	August 25, 2026
Expiration:	August 25, 2031
Last updated:	August 25, 2026
EPD Scope:	Cradle to grave A1 - A3, A4, A5, B1 - B7, C1 - C4
Market(s) of Applicability:	North America

General Organization Information

The EPS Industry Alliance (EPS-IA) represents manufacturers and distributors of expanded polystyrene (EPS) products across North America and facilitates educational outreach related to the technical performance, environmental attributes, and performance advancements of EPS.

The EPS industry is committed to sustainability through innovation. We demonstrate this dedication through lean manufacturing processes, a comprehensive recycling system, and by harnessing new technologies to conserve raw materials and reduce waste. The EPS industry is continuously seeking to further market applications, reduce impacts, and raise performance.

EPS-IA has invested substantial resources in life-cycle assessment to support transparent, science-based decision-making. This Environmental Product Declaration is part of EPS-IA's ongoing effort to provide life-cycle information for EPS insulation applications.

Further information can be found at: **https://www.epsindustry.org/**

Limitations, Liability and Ownership

The results of the study are only applicable to the defined products and scenarios. Any adjustment of the study boundaries or processes may change the results. Environmental declarations from different programs may not be comparable (ISO 14025, 2006).

Comparison of the environmental performance of EPS products using EPD information shall be based on the product's use and impacts at the construction works level, and therefore EPDs may not be used for comparability purposes when not considering the construction works energy use phase as instructed under this PCR.

Full conformance with the PCR for EPS products allows EPD comparability only when all stages of a life cycle have been considered, when they comply with all referenced standards, use the same sub-category Part B PCR, and use equivalent scenarios with respect to construction works. However, variations and

deviations are possible". Example of variations: Different LCA software and background LCI datasets may lead to differences results for upstream or downstream of the life cycle stages declared.

Even when the same PCR is followed, variations and deviations are possible. Example of variations: different LCA software and background LCI datasets may lead to different results for upstream or downstream of the life cycle stages declared. EPD's produced under this PCR do not include the operational impacts of the whole building or end of life impacts.

The findings in the study are limited by the inherent uncertainty of creating a representative model through LCA, but efforts were made to reduce uncertainty by examining 100% of the materials that make up the product.
EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc.

Reference Standards

Standard(s):	ISO 14025:2006 and ISO 21930
Core PCR:	UL Part A PCR for Building-Related Products and Services v.4
	Date of issue: March 01, 2022
Sub-category PCR:	UL Part B: Building Envelope Thermal Insulation Products v.4
	Date of issue: November 03, 2025
	Valid until: November 03, 2030
Sub-category PCR review panel:	Contact Smart EPD for more information.
General Program Instructions:	Smart EPD General Program Instructions v.2.0, March 2025

Verification Information

LCA Author/Creator:	trenor.philbin@truenorthcollective.net
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Verification:	Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071: External Vijay Thakur | Individual Verifier | thakur.vijay3011@gmail.com
	Independent external verification of EPD, according to ISO 14025 and reference PCR(s): External Vijay Thakur | Individual Verifier | thakur.vijay3011@gmail.com

Product Information

Functional Unit:	1 m2 of material with RSI = 1 m2·K/W
Mass:	0.578 kg
Reference Service Life:	75 Years
Product Specificity:	✗ Product Average ✓ Product Specific
Supply Chain Specific Data:	61.94 %
Variation in GWP Result (Facilities):	+77% to +147%

Product Description

Expanded polystyrene (EPS) insulation is a rigid, closed-cell thermal insulation material engineered to provide reliable, long-term thermal performance. EPS delivers a stable R-value over its service life and supports energy-efficient building envelope design in a wide range of applications. Designed for durability and dimensional stability, EPS insulation contributes to reduced operational energy demand while maintaining consistent performance over time. Additional attributes of EPS insulation include the use of recycled content, efficient material utilization, regional manufacturing and distribution, and compatibility with healthy indoor environments.

The portion of supply chain specific data is calculated from the total impact of the product contributed from supplier specific emissions. In this study EPS Resin emissions are calculated from supplier data rather than assuming market based assumptions. Considering EPS resin is the only input with supply chain specific data in this study, the percent contribution of impact from EPS resin is used as the calculated supply chain specific data percentage.

Further information can be found at: www.epsindustry.org

Product Specifications

Product SKU(s):	Expanded polystyrene (EPS) insulation
Product Classification Codes:	UNSPSC - 30141514 undefined - undefined
List of standards required for the testing, evaluation, and approval of the declared product and its application in building assemblies for building code and other regulation compliance :	CSI 07 21 13.13.01, ASTM C578 Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation or CAN/ULC S701.1 Standard for Thermal Insulation, Polystyrene Boards.
Thermal Insulation:	Foam Board Insulation
Roof and Deck Insulation:	Roof Board Insulation

Product Composition Diagram

Table 1. Material Composition

Material/Component Category	Origin	% Mass (excluding air)	% Mass (including air)
EPS Resin	US, CA	97.73%	90.58%
Other (adhesives, laminated facers, and termite resistance treatments)	varies	2.27%	2.10%
Air	not applicable	0.00%	7.32%

Packaging Material	Origin	kg Mass
Plastic	RoW	0.011
Cardboard	RoW	0.012

Biogenic Carbon Content	kg C per m2
Biogenic carbon content in product	0

Biogenic Carbon Content	kg C per m2
Biogenic carbon content in accompanying packaging	0.0111

Hazardous Materials
No regulated hazardous or dangerous substances are included in this product.

Material Composition and Environmental Impacts

EPS insulation is approximately 97% air by volume. The remaining approximately 3% consists primarily of polystyrene resin, along with small amounts of other materials that may include adhesives, laminated facers, or termite-resistance treatments. Although air makes up most of the product's volume, it represents only a small portion of its mass. The environmental impacts reported in this EPD are therefore primarily associated with the polystyrene resin and the energy and materials used to manufacture and process the insulation. The air contained within the cellular structure does not contribute material-production impacts.

EPD Data Specificity

Primary Data Year: 2024

Manufacturing Specificity:

- ✓ Industry Average
- ✗ Manufacturer Average
- ✗ Facility Specific

Averaging:
Results of this study are calculated with a weighted average of each product based on the production within each company for the reference year. The results of each product are determined using scaling factors from the weight per functional unit proportional to type I. The study is done with horizontal averaging of all companies participating in the study to determine the impact of similar products per functional unit.

Table 2. System Boundary

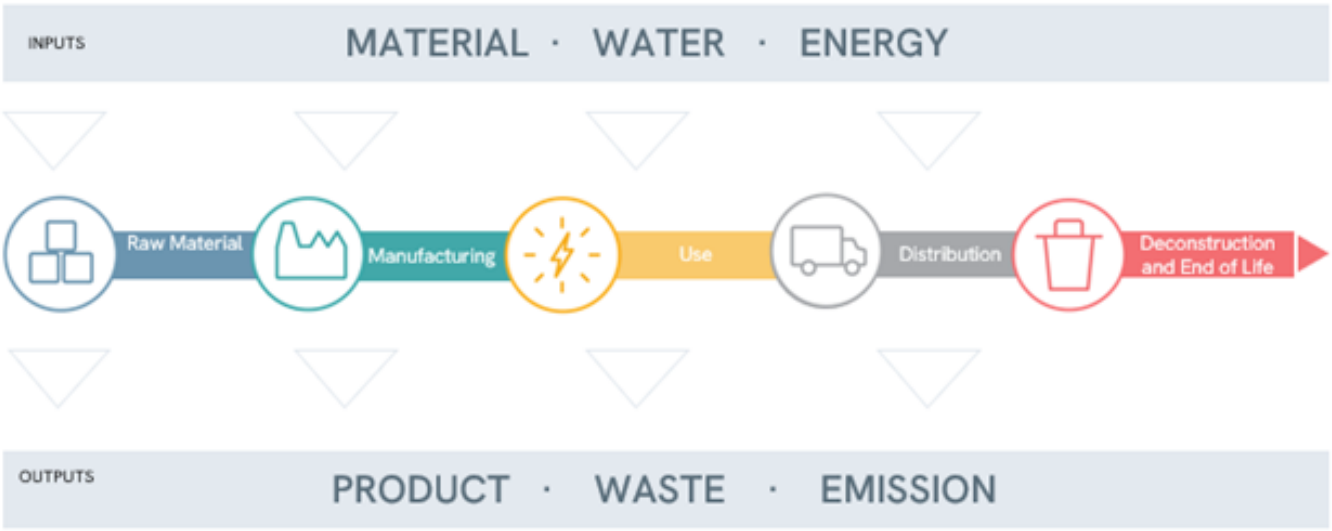
Production	A1	Raw material supply	✓
	A2	Transport	✓
	A3	Manufacturing	✓
Construction	A4	Transport to site	✓
	A5	Assembly / Install	✓

Use	B1	Use	✓
	B2	Maintenance	✓
	B3	Repair	✓
	B4	Replacement	✓
	B5	Refurbishment	✓
	B6	Operational Energy Use	✓
	B7	Operational Water Use	✓
End of Life	C1	Deconstruction	✓
	C2	Transport	✓
	C3	Waste Processing	✓
	C4	Disposal	✓
Benefits & Loads Beyond System Boundary	D	Recycling, Reuse Recovery Potential	ND

Note:

ND = Module not declared

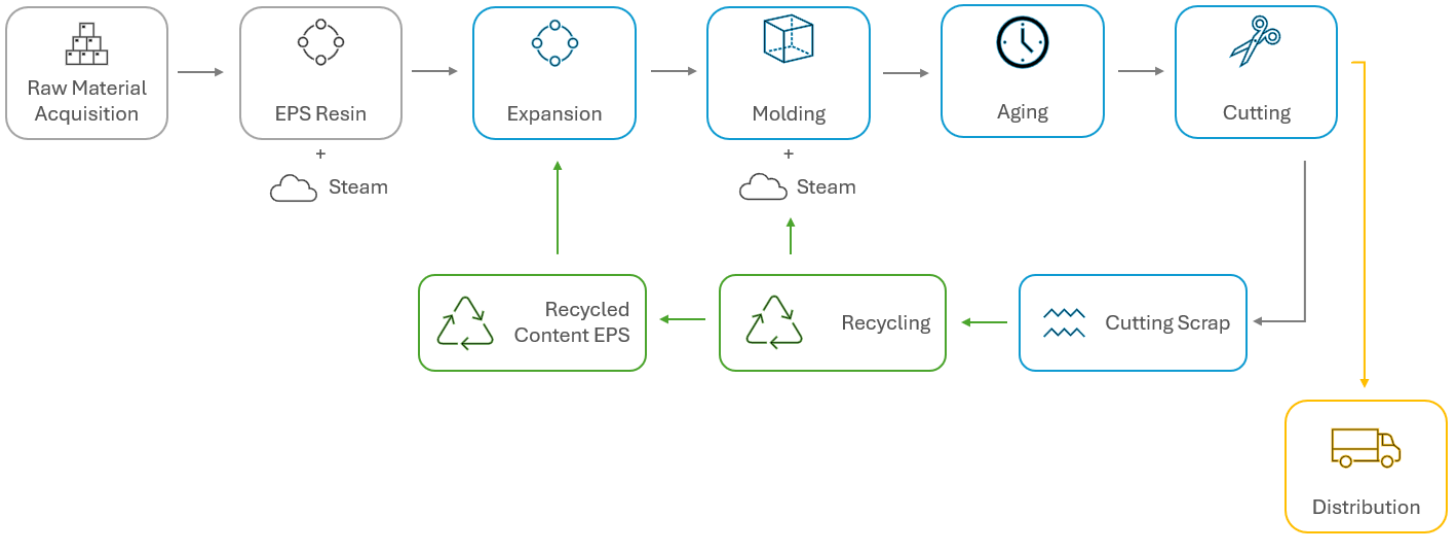
Product Composition Diagram



Participating Manufacturers

- Atlas EPS
- Insulfoam
- Plasti-Fab ltd
- Thermal Foams, Inc
- Airlite
- Alleguard
- Airfoam
- Beaver Plastics
- Fransyl
- Michigan Foam
- Epsilyte
- Nexkemia
- PFB
- Styropek

Product Flow Diagram



EPS insulation is created in a two-stage process. First, virgin or recycled content EPS resin is loaded into an expander and exposed to steam, which causes the resin to expand. After aging, the expanded material is transferred into a block mold where steam is used to further expand and fuse the material into a solid homogeneous block. Following a short aging process, the EPS block is cut into sheets or various shapes to suit all insulation applications. Cutting scrap is reground in-house and reused in the production cycle. Recycled content EPS resin can also be used in the manufacting process.

Software And Database

LCA Software:	SimaPro v. 10.2		
LCI Foreground Database(s):	Ecoinvent v. 3.10	GLO, RoW, US	Cut-off at Classification
LCI Background Database(s):	Ecoinvent v. 3.10	GLO, RoW, US	Cut-off at Classification

A foreground LCI database is the database used to model the primary, site-specific data collected for this EPD. A background LCI database is the database used to model generic or non-specific data.

Data Quality

Life cycle inventory data used in this study are evaluated based on three categories: precision and completeness, consistency and reproducibility, and representativeness.

Precision and completeness: Foreground data are sourced from primary information provided by the client and has been reviewed internally to ensure precision and completeness. In order to balance out seasonal variations, operations data over a 12-month period is used to represent production activities. In addition, key model input such as mass balance, energy balance and emission inventory are reviewed by TrueNorth Collective team. Data is sourced primarily from participating companies within the EPS industry alliance manufacturing EPS products.

The assessment is considered representative of the North American EPS manufacturing industry. The manufacturing sites and companies represented through EPS-IA are considered to provide broad coverage of the industry and a strong basis for characterizing typical EPS manufacturing practices and impacts. The assessment includes data from 24 manufacturing sites representing an estimated 65-75% of total North American EPS production volume.

Ecoinvent v3.10 cut-off by classification (Ecoinvent 3.10, 2024) is used as the main database for background data. This version is published in 2024. Ecoinvent is widely used in research and industry to support life cycle assessment practices. Each version of this database goes through thorough review process and documentation of precision and completeness is available by the provider.

Consistency and reproducibility: To ensure consistency, primary data were collected at the same level of granularity. All input and output information, modelling assumptions and dataset choices are provided in this report for the purpose of reproducibility.

Representativeness: Refer to the sections above for details about representativeness.

Life Cycle Module Description

The system boundary for the LCA and EPDs is cradle to grave, which includes all modules except for module D.

In accordance with the service-life modeling requirements of section 2.16 of the Part B PCR (UL 10010-1, Edition 4, 2025) the replacement phase is included in this study. Because wall-installed insulation is protected by adjacent wall components, its RSL is 75 years and a replacement phase has impact equal to zero. At end of life, when the building is dismantled, the insulation is disposed of in a landfill.

In accordance with UL Part B Section 2.16, EPS wall insulation protected within building assemblies is assigned a reference service life of 75 years, consistent with typical building design life.

LCA Discussion

Allocation Procedure

While conducting an LCA, if the life cycles of more than one product are connected, allocation of the process inputs should be avoided by using the system boundary expansion approach. In accordance with the guiding PCR, mass should be used as the primary basis for co-product allocation. There are no co-products produced from the manufacturing of the products in this study. The allocations of relevance for calculation (appropriation of impacts across various products) shall be indicated, at least:

- Allocation in the use of recycled and/or secondary raw materials.
- Allocation of energy, ancillary and operating materials used for individual products in a factory.

No multi-output allocation was necessary in the foreground of the study. Allocation of secondary data taken from ecoinvent v3.10.1 cut-off by classification has allocation applied to it.
This study uses the cut-off approach method for recycling. According to this approach, the first life of a material bears the environmental burdens of its production (e.g., raw material extraction and processing) and the second life (e.g., scrap input) bears the burdens of refurbishment (e.g., collection and refining of scrap).

Cut-off Procedure

For the processes within the system boundary, all energy and material flows have been included in the model. No known flows are excluded. All upstream and downstream activities are included using a combination of primary and secondary data. While the majority of inventory data are sourced from primary resources, representative proxies are used to close gaps in the absence of primary data.

The cut-off criteria for the PCR defaults to ISO 21930, Section 7.1.8. The model follows these criteria by including all known and available processes in the calculations and filling data gaps with conservative assumptions, using 1% cut-off criteria for any materials and energy impacts with a 5% maximum total, and using a mass balance to ensure correct calculation of material and energy flows.

Renewable Electricity

Energy Attribute Certificates (EACs) such as Renewable Energy Certificates (RECs) or Power Purchase Agreements (PPAs) are included in the baseline reported results:	✕ No

Results

Table 3. Environmental Impact Assessment Results

TRACI 2.1

per 1 m2 of product of material with RSI = 1 m2·K/W .

LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

Impact Category	Unit	Method	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
GWP-total	kg CO2 eq	TRACI 2.1	3.73e+0	1.79e-1	7.11e-2	0	0	0	0	0	0	0	0	6.87e-2	0	3.12e-1
GWP-total (excl biogenic)	kg CO2 eq	TRACI 2.1	3.71e+0	1.79e-1	5.78e-2	0	0	0	0	0	0	0	0	6.87e-2	0	2.63e-2
GWP-total (incl biogenic)	kg CO2 eq	TRACI 2.1	3.73e+0	1.79e-1	7.11e-2	0	0	0	0	0	0	0	0	6.87e-2	0	3.12e-1
ODP	kg CFC 11 eq	TRACI 2.1	7.51e-8	2.79e-9	9.41e-10	0	0	0	0	0	0	0	0	1.07e-9	0	1.74e-10
AP	kg SO2 eq	TRACI 2.1	1.06e-2	4.59e-4	3.81e-4	0	0	0	0	0	0	0	0	1.60e-4	0	8.05e-5
EP	kg N eq	TRACI 2.1	1.28e-3	6.93e-5	1.01e-4	0	0	0	0	0	0	0	0	2.43e-5	0	2.01e-4
POCP	kg O3 eq	TRACI 2.1	1.81e-1	7.97e-3	1.37e-2	0	0	0	0	0	0	0	0	2.79e-3	0	1.21e-3

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

GWP = Global Warming Potential, 100 years (may also be denoted as GWP-total, GWP-fossil (fossil fuels), GWP-biogenic (biogenic sources), GWP-luluc (land use and land use change)), ODP = Ozone Depletion Potential, AP = Acidification Potential, EP = Eutrophication Potential, SFP = Smog Formation Potential, POCP = Photochemical oxidant creation potential, ADP-Fossil = Abiotic depletion potential for fossil resources, ADP-Minerals&Metals = Abiotic depletion potential for non-fossil resources, WDP = Water deprivation potential, PM = Particular Matter Emissions, IRP = Ionizing radiation, human health, ETP-fw = Eco-toxicity (freshwater), HTP-c = Human toxicity (cancer), HTP-nc = Human toxicity (non-cancer), SQP = Soil quality index.

The analysis of EPS insulation products provides useful insights regarding the cradle-to-grave environmental impacts. The LCA results also identify where substantial impacts are occurring to allow further process and materials improvements to be implemented. Consistent with expectations for polymer-based building materials, a substantial portion of the impacts is associated with the extraction and processing of raw materials used to manufacture EPS resin. As a result, one of the greatest opportunities for reducing the environmental footprint of EPS insulation products is the increased use of post-consumer recycled (PCR) EPS resin with lower embodied impacts compared to virgin material inputs.

Additionally, there is a significant portion of the impacts associated with the manufacturing process. This has potential for improvement with the expansion of renewable energy in North America. Manufacturing improvements made to support the processing, forming or finishing would advance continued impact reduction efforts. Reducing operational downtime would further optimize environmental impact performance by improving process efficiency, lowering energy and material losses, and reducing the frequency of non-routine operations that can increase life cycle impacts. Enhanced operational continuity may therefore contribute to lower overall impacts across the relevant life cycle stages.

LCA results are based on a relative approach and indicate potential environmental effects therefore do not predict actual impacts on category impacts.

Table 4. Resource Use Indicator

per 1 m2 of product of material with RSI = 1 m2·K/W .

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
RPRE	MJ	1.90e+0	3.65e-2	2.50e-2	0	0	0	0	0	0	0	0	1.41e-2	0	3.38e-3
RPRM	MJ	3.29e-1	0	0	0	0	0	0	0	0	0	0	0	0	0
RPRT	MJ	2.23e+0	3.65e-2	2.50e-2	0	0	0	0	0	0	0	0	1.41e-2	0	3.38e-3
NRPRE	MJ	8.86e+1	2.82e+0	7.97e-1	0	0	0	0	0	0	0	0	1.08e+0	0	1.68e-1
NRPRM	MJ	4.73e-1	0	0	0	0	0	0	0	0	0	0	0	0	0
NRPRT	MJ	8.91e+1	2.82e+0	7.97e-1	0	0	0	0	0	0	0	0	1.08e+0	0	1.68e-1
ADP-fossil	MJ	7.96e+1	2.61e+0	7.19e-1	0	0	0	0	0	0	0	0	1.00e+0	0	1.54e-1
SM	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NRSF	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FW	m3	1.50e-2	4.07e-4	7.07e-5	0	0	0	0	0	0	0	0	1.57e-4	0	-2.18e-3
RE	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

RPRE or PERE = Renewable primary resources used as energy carrier (fuel), RPRM or PERM = Renewable primary resources with energy content used as material, RPRT or PERT = Total use of renewable primary resources with energy content, NRPRE or PENRE = Non-renewable primary resources used as an energy carrier (fuel), NRPRM or PENRM = Non-renewable primary resources with energy content used as material, NRPRT or PENRT = Total non-renewable primary resources with energy content, SM = Secondary materials, RSF = Renewable secondary fuels, NRSF = Non-renewable secondary fuels, RE = Recovered energy, ADPF = Abiotic depletion potential, FW = Use of net freshwater resources, VOCs = Volatile Organic Compounds.

Table 5. Waste and Output Flow Indicators

per 1 m2 of product of material with RSI = 1 m2·K/W .

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
HWD	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NHWD	kg	2.49e-2	0	1.18e-2	0	0	0	0	0	0	0	0	0	0	5.78e-1
RWD	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
HLRW	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ILLRW	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CRU	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MFR	kg	1.86e-2	0	0	0	0	0	0	0	0	0	0	0	0	0
MER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MNER	kg	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EEE	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EET	MJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

HWD = Hazardous waste disposed, NHWD = Non-hazardous waste disposed, RWD = Radioactive waste disposed, HLRW = High-level radioactive waste, ILLRW = Intermediate- and low-level radioactive waste, CRU = Components for re-use, MFR or MR = Materials for recycling, MER = Materials for energy recovery, MNER = Materials for incineration, no energy recovery, EE or EEE = Recovered energy exported from the product system, EET = Exported thermal energy.

Table 6. Carbon Emissions and Removals

per 1 m2 of product of material with RSI = 1 m2·K/W .

Indicator	Unit	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
BCRP	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BCEP	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BCRK	kg CO2	-1.10e-2	0	0	0	0	0	0	0	0	0	0	0	0	0
BCEK	kg CO2	0	0	1.10e-2	0	0	0	0	0	0	0	0	0	0	0
BCEW	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CCE	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CCR	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CWNR	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Note:

Not all abbreviated indicators listed below may be present in the results above. The inclusion of indicators varies based on PCR requirements.

Abbreviations:

BCRP = Biogenic Carbon Removal from Product, BCEP = Biogenic Carbon Emission from Product, BCRK = Biogenic Carbon Removal from Packaging, BCEK = Biogenic Carbon Emission from Packaging, BCEW = Biogenic Carbon Emission from Combustion of Waste from Renewable Sources Used in Production Processes, CCE = Calcination Carbon Emissions, CCR = Carbonation Carbon Removals, CWNR = Carbon Emissions from Combustion of Waste from Non-Renewable Sources used in Production Processes, GWP-luc = Carbon Emissions from Land-use Change.

Table 7. Scaling Factors

Reference ASTM C578 and CAN/ULC S701

EPS Type	Density (kg/m3)	R-Value (ft2 hr F/BTU in per in)	Thickness to achieve RSI=1 (m)	Weight (kg per FU)	Scaling Factor (kg/kg to achieve FU)
Type I	14.417	3.600	0.040	0.578	1
Type XI	11.213	3.100	0.046	0.520	0.9
Type VIII	18.421	3.800	0.038	0.700	1.21
Type II	21.625	4.000	0.036	0.780	1.35
Type IX	28.833	4.200	0.034	0.989	1.71

EPS Type	Density (kg/m3)	R-Value (ft2 hr F/BTU in per in)	Thickness to achieve RSI=1 (m)	Weight (kg per FU)	Scaling Factor (kg/kg to achieve FU)
Type XIV	38.444	4.200	0.034	1.324	2.29
Type XV	48.056	4.300	0.034	1.613	2.79
Type 1	14.400	3.750	0.039	0.555	0.96
Type 2	21.600	4.040	0.036	0.775	1.34
Type 3	28.800	4.270	0.034	0.977	1.69

Based on the functional unit of 1 m2 of EPS insulation with a thickness to achieve RSI=1 m2 KW additional EPS insulation types can be determined from the scaling factor provided These scaling factors are determined from the density and R-value per thickness to achieve the functional unit and scaled to the type I insulation results. Thickness to achieve RSI=1 is determined by the equation below. Thermal conductivity was determined from the R-Value of the material at 1 inch thickness.

RSI (m2 K/W)*Thermal Conductivity (W/(m*k))=Thickness (m)

All EPS insulation products in this study share a similar production processes and similar formulations but require different mass per functional unit. Other EPS insulation product types can be calculated by multiplying the results of type I EPS insulation in this report by the scaling factor provided. The below equation should be provided for the EPD user to calculate product-specific LCA results of a product type:

Results_PS=Results_Ref×Multiplier_PS

Where:
Results_PS is the product-specific result per functional unit
Results_Ref is the result per functional unit of the reference product
Multiplier_PS is the product-specific functional unit multiplier

In this way all required LCA results can be published for a single reference product and the EPD provides a table of multipliers for extrapolating to specific products, calculated as follows:

(specific product^' s mass per functional unit)/(reference product^' s mass per functional unit)

This calculation method can be used to derive a result for any or all declared indicators and for any reported life module(s). When using this equation, the EPD user defines which indicator and life cycle stage(s) they are using to calculate a product-specific result. The Results_PS and Results_Ref values must all align with the same indicator and life cycle stage(s) included.

EPS insulation products included in this EPD are manufactured in accordance with ASTM C578, *Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation*, and CAN/ULC S701, *Standard for Thermal Insulation, Polystyrene, Boards and Pipe Covering*, as applicable.

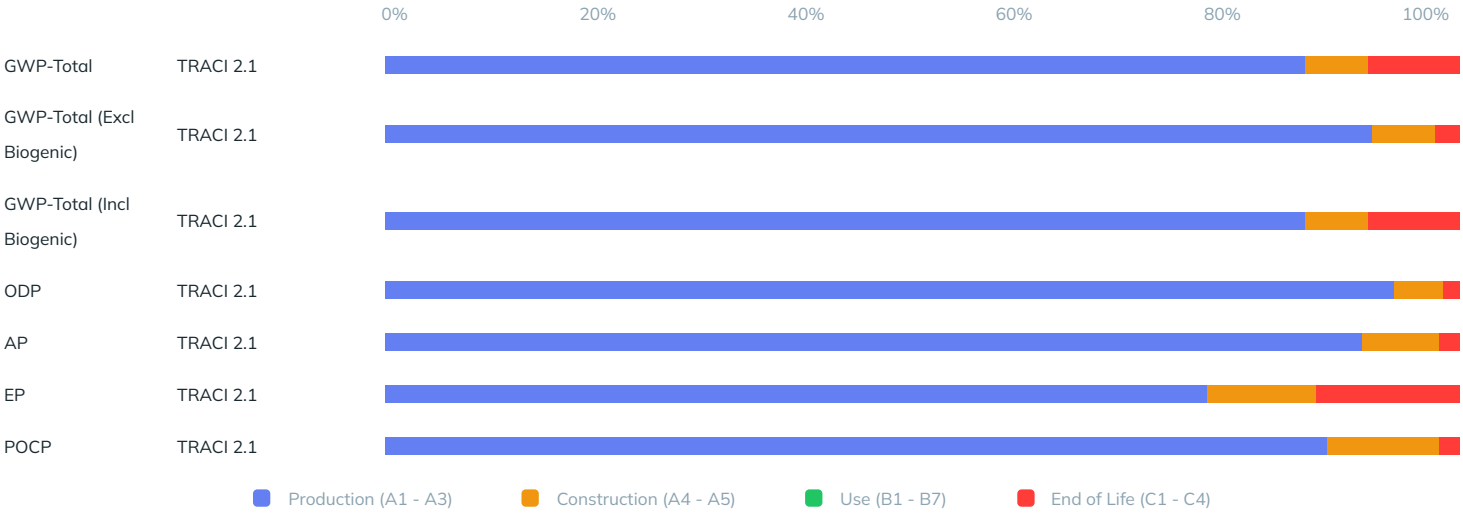
Interpretation

The analysis of EPS insulation products provides valuable insight into the cradle-to-grave environmental impacts associated with their production, use, and end-of-life management. The results help identify the life cycle stages and processes that contribute most significantly to overall environmental impacts, supporting ongoing efforts to improve manufacturing efficiency, material selection, and product sustainability.

Consistent with expectations for polymer-based building materials, a substantial portion of the impacts is associated with the extraction and processing of raw materials used to manufacture EPS resin. As a result, one of the greatest opportunities for reducing the environmental footprint of EPS insulation products is the increased use of recycled content EPS resin with lower embodied impacts compared to virgin material inputs.

Additionally, there is a significant portion of the impacts associated with the manufacturing process. This has potential for improvement with the expansion of renewable energy in North America. Reducing operational downtime would further optimize environmental impact performance by improving process efficiency, lowering energy and material losses, and reducing the frequency of non-routine operations that can increase life cycle impacts. Enhanced operational continuity may therefore contribute to lower overall impacts across the relevant life cycle stages.

LCA results are based on a relative approach and indicate potential environmental effects therefore do not predict actual impacts on category impacts.



Additional Environmental Information

Recycling is an integral part of operations at EPS manufacturing facilities and supports the industry's ongoing sustainability efforts. Cutting scrap generated during production is reground and reincorporated into the manufacturing process to produce new EPS insulation, helping reduce material waste and improve resource efficiency. In addition, post-consumer recycled (PCR) EPS resin can be used to further reduce the environmental footprint of EPS insulation products. Recycled EPS may also be processed into other durable products, including plastic lumber and similar secondary-use applications, supporting material circularity and landfill diversion.

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