



Environmental Product
Declaration

Program Operator: Smart EPD®

www.smartepd.com

IN ACCORDANCE WITH ISO 14025:2006 AND ISO 21930:2017



SmartEPD-2026-140-0933-01

North American Industry Average EPD for 5/8" Type X Conventional Gypsum Board

Date of Issue

Jun 23, 2026

Expiration date

Jun 23, 2031

Last updated

Jun 23, 2026



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

General Information

Gypsum Association

962 Wayne Ave, Suite 620. Silver Spring, MD 20910

+1 301-277-8686

info@gypsum.org

gypsum.org



Product Name:	North American Industry Average EPD for 5/8" Type X Conventional Gypsum Board
Functional Unit:	1,000 ft2 (92.9 m2)
Declaration Number:	SmartEPD-2026-140-0933-01
Date of Issue:	June 23, 2026
Expiration:	June 23, 2031
Last updated:	June 23, 2026
EPD Scope:	Cradle to grave A1 - A3, A4, A5, B1 - B7, C1 - C4
Market(s) of Applicability:	North America

General Organization Information

The Gypsum Association (GA) is a not-for-profit trade association founded in 1930. Any firm or corporation established in the business of calcining gypsum and manufacturing gypsum board in accordance with ASTM C 1396 in the U.S., Canada or Mexico is eligible for membership. The GA is the technical center for the application, finishing, and overall use of gypsum panels.

The vision of the GA is to ensure a future where gypsum products are recognized and relied upon as being essential to the health, safety, comfort, sustainability and resilience of our buildings and quality of life.

The mission of the GA is to promote the use of gypsum products while advancing the development, growth, and general welfare of the gypsum product industry on behalf of its member companies.

The majority of GA member companies provided LCI and meta-data for the 2024 reference year.

Limitations, Liability and Ownership

The EPD owner has sole ownership, liability, and responsibility for the EPD.

The following statement from Smart EPD Part A PCR indicates the EPD comparability limitations and intent to avoid any market distortions or misinterpretation of EPDs based on the Smart EPD Part B PCR for Gypsum Panel Products (6), (7):

Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of products using EPD information shall be based on the product's use and impacts at the building or construction works level, and therefore EPDs may not be used for comparability purposes when not considering the whole building life cycle. EPD comparability is only possible when all stages of a life cycle have been

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

Reference Standards

Standard(s):	ISO 14025:2006 and ISO 21930:2017
Core PCR:	Smart EPD® Part A Product Category Rules for Building and Construction Products and Services, 1000, v1.2 Date of issue: March 14, 2025
Sub-category PCR:	Smart EPD® Part B PCR for Gypsum Panels, 1000-004, v2.0 Date of issue: February 24, 2025 Valid until: February 24, 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:	 Kevin Garrahan  Athena Sustainable Materials Institute  info@athenasmi.org	
EPD Program Operator:	 Smart EPD  info@smartepd.com  www.smartepd.com  585 Grove St., Ste. 145, Herndon, VA 20170, USA	
Verification:	Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071:  Sevda Alanya Rosenbaum  alanyas@gmail.com Independent external verification of EPD, according to ISO 14025 and reference PCR(s):  Sevda Alanya Rosenbaum  alanyas@gmail.com	External External

Product Information

Functional Unit:	1,000 ft2 (92.9 m2)
Mass:	963 kg
Reference Service Life:	75 Years
Product Specificity:	 Product Average  Product Specific

Product Description

Gypsum board (UN CPC Code 314, UNSPSC 30161509), is manufactured to ASTM C1396 (1) and is designed to be used as an interior panel capable of supporting an array finishes and demonstrating various performance characteristics. Gypsum board is the generic name for a family of sheet products consisting of a non-combustible core primarily made of gypsum with paper facing (9). Gypsum board is ubiquitous in its use and is also known as wallboard, drywall, plaster board, and gypsum panel. Conventional 5/8" (15.9 mm) Type X gypsum board, having additional fire rating characteristics, is used primarily in commercial applications. As calculated, the weighted average density of 5/8" Type X conventional gypsum board with 0% moisture content (MC) was 10.4 kg/m², with a minimum and maximum density value of 9.2 and 11.0 kg/m², respectively. The substrates consist of a noncombustible gypsum core sandwiched between two layers of paper. Typically, gypsum boards are manufactured as four-foot by eight-foot panels (4'x8') with a beveled edge, and the product is compatible with most interior wall and ceiling applications. Gypsum board may be available in other lengths and can vary in thickness and fire rating properties depending on additive types. It should be noted that this EPD for 5/8" Type X conventional gypsum board (type X core) does not cover 5/8" Mold and Moisture Resistant (MMR), including paper faced abuse resistant, paper faced impact resistant (fiberglass mesh reinforcement embedded in the core), and paper faced plaster base gypsum board.

Product Specifications

Applicable Product Standards

Applicable product standards for gypsum board include:

- ASTM C11-24a – *Standard Terminology Relating to Gypsum and Related Building Materials and Systems*
- ASTM C22/C22M-00(2021) – *Standard Specification for Gypsum*
- ASTM C473-19 – *Standard Test Methods for Physical Testing of Gypsum Panel Products*
- ASTM C1396/C1396M-17 – *Standard Specification for Gypsum Board*
- ASTM D3273-16 – *Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber*
- ASTM E84-21a – *Standard Test Method for Surface Burning Characteristics of Building Materials*
- ASTM E119-20 – *Standard Test Methods for Fire Tests of Building Construction and Materials*
- ASTM E2921-22 – *Standard Practice for Minimum Criteria for Comparing Whole Building Life Cycle Assessments for Use with Building Codes, Standards, and Rating Systems*

Product Classification Codes:	UNCPC - 314
	UNSPSC - 30161509
	Masterformat - 09 29 00
	EC3 - Sheathing -> GypsumSheathingBoard
Form Factor:	Sheathing >> GypsumSheathingBoard
Options:	
Product subcategory:	Gypsum Wallboard, Gypsum Ceiling Board
CSI/Masterformat:	Gypsum Board
Product class and standard:	Gypsum Board (ASTM C1396)
Core type:	Type X
Face type:	Paper
Options:	✓ Recycled paper (pre-consumer)
	✓ Recycled paper (post-consumer)

Material Composition

Material/Component Category	Mass
Natural gypsum ore	513.99 kg
FGD synthetic gypsum	377.35 kg
Post-consumer gypsum1)	2.28 kg
Facing paper	20.04 kg
Backing paper	18.45 kg
Starch	3.50 kg
Vermiculite	0.46 kg
Fiberglass	2.34 kg
Potash	0.041 kg
Dextrose	0.68 kg
Dispersant	2.08 kg
Other Chemicals (retarders, foaming agents, etc.)	0.84 kg
Ball mill accelerator, BMA	1.86 kg
Edge Paste	0.20 kg
Sodium Trimetaphosphate	0.24 kg
Emulsion (fluidizer)	1.72 kg
Siloxane	0.39 kg
Water	610.49 kg
Wet weight	1459.06 kg
Final weight, with moisture content	984 kg
Final moisture content	2.11 %
Final weight, with 0% moisture content	963 kg
Percent Gypsum Core	96%
Percent Facing & Backing Paper	4%

Packaging Material	kg Mass
Plastics	0.17
Metals	2.77E-5

Packaging Material	kg Mass
Paper and Cardboard	0.37
Scrap Gypsum used as Dunnage	12.0

Biogenic Carbon Content	kg C per 1000 ft2
Biogenic carbon content in product	19.25
Biogenic carbon content in accompanying packaging	0.164

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

EPD Data Specificity

- Primary Data Year:2024
- Manufacturing Specificity:

✓

 Industry Average

✗

 Manufacturer Average

✗

 Facility Specific

Averaging:
Data collection was based on an initial survey of all GA member facility operations. GA members operate 51 facilities in North America producing various gypsum panel products. Some facilities are 100% dedicated to the production of gypsum boards while others may produce paper faced as well as other gypsum panel products. In total, 16 facilities operated by eight GA company members completed LCI data collection questionnaires representing a third of all GA member facilities producing gypsum board. The gypsum board manufacturing plant study sample represented about 25% of all establishments producing gypsum and about 30% of all gypsum board produced in North America. To ensure representativeness, the gypsum board manufacturing plant study also considered the scale of operations including a mix of small, medium and large facilities, their geographical location in each US census region and their source of gypsum (adjacent quarry, mine, imported natural gypsum ore) and their use of flue gas desulfurized (FGD) synthetic gypsum (both domestic and imported).

Per Smart EPD Part B PCR, Section 5.3 (7), all facility specific LCI data were weighted based on total annual production by mass to calculate the mass-weighted average LCI profile for and gypsum boards.

Data calculation procedures follow ISO 14044 (5), and Smart EPD Part A PCR and Part B PCR for Gypsum Panel Products (6), (7). Per ISO 21930, 7.2.2 (2), when transforming the inputs and outputs of combustible material into inputs and outputs of energy, the net calorific value (lower heating value) of fuels is applied according to scientifically based and accepted values specific to the combustible material.

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

Participating Manufacturers



American Gypsum Company LLC

5960 Berkshire Lane, Suite 800

Dallas, TX 75225, USA

Member Link (URL): <https://www.americangypsum.com/>

The logo for Cabot Gypsum Company is set against a solid green rectangular background. The word 'Cabot' is written in a large, white, rounded sans-serif font, with a registered trademark symbol (®) to its upper right. Below 'Cabot', the words 'Gypsum Company' are written in a smaller, white, rounded sans-serif font.

Cabot Gypsum Company

521 Ferdinand Boulevard

Dieppe, New Brunswick E1A 7G1, Canada

Member Link (URL):

<https://cabotgypsum.com/>

The logo for CertainTeed features a blue square icon with a white stylized 'C' on the left. To the right of the icon, the word 'certainteed' is written in a blue, lowercase, sans-serif font. Below 'certainteed', the words 'SAINT-GOBAIN' are written in a smaller, blue, uppercase, sans-serif font.

CertainTeed Gypsum, Inc.

CertainTeed Gypsum Canada, Inc.

20 Moores Road

Malvern, PA 19355, USA

Member Link (URL):

<https://www.certainteed.com/>



Georgia-Pacific
Gypsum

Georgia-Pacific Gypsum LLC
133 Peachtree Street NE
Atlanta, GA 30303, USA
Member Link (URL):
<https://www.gp.com/>

National 
Gypsum®

National Gypsum Company
2001 Rexford Road
Charlotte, NC 28211, USA
Member Link (URL):
<https://www.nationalgypsum.com/>

 **PABCO® Gypsum**
what the job demands®

PABCO Gypsum
10811 International Drive
Rancho Cordova, CA 95670, USA
Member Link (URL)
<https://pabcogypsum.com/>



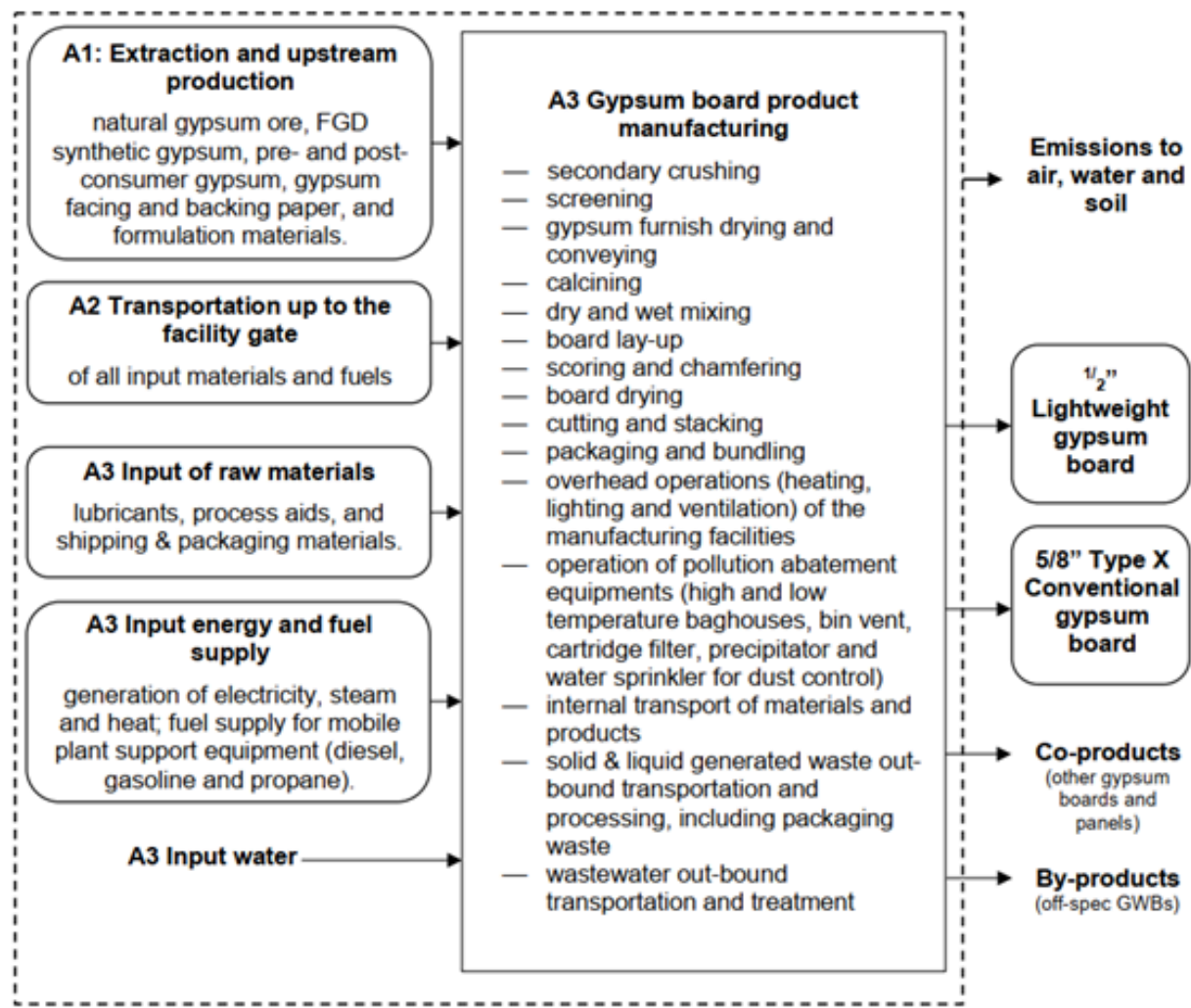
Panel Rey Drywall Solutions
1310 Rayford Park Road, Suite 404
Spring, TX 77386, USA
Member Link (URL)
<https://www.panelrey.com/>



United States Gypsum Company (USG)
550 West Adams Street
Chicago, IL 60661-3676, USA
Member Link (URL):
<https://www.usg.com/en-US>

Canadian Gypsum Company (CGC) Inc.
350 Burnhamthorpe Road West, 5th Floor
Mississauga, ON L5B 3J1, Canada
Member Link (URL)
<https://www.usg.com/en-CA>

Product Flow Diagram



Software And Database

LCA Software:	 SimaPro v. 10.2
LCI Foreground Database(s):	 Ecoinvent v. 3.11  North America  Cut-off, U  US LCI v. 1.2024-10.0  North America
LCI Background Database(s):	 Ecoinvent v. 3.11  North America  Cut-off, U  US LCI v. 1.2024-10.0  North America

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

A detailed description of collected data and the data quality assessment regarding the Smart EPD PCR requirements (6), (7) and ISO 14044 (5) is provided in the LCA report. Data quality is assessed based on its representativeness (technology coverage, geographic coverage, time coverage), completeness, consistency, reproducibility, transparency and uncertainty.

Technology Coverage

Data represents the prevailing technology in use in North America. Whenever available, for all upstream and core material and processes, North American typical or average industry LCI datasets were utilized. *Technological representativeness is characterized as "high".*

Geographic Coverage

The geographic region considered is North America. The geographic coverage of all LCI databases and datasets is documented in the LCA report. *Geographical representativeness is characterized as "high".*

Time Coverage

Activity data are representative as of 2024.

- Gypsum board manufacturing process- primary data collected from 16 facilities: reference year 2024 (12 months);
 - In-bound/ out-bound transportation data- primary data collected from 16 facilities: reference year 2024 (12 months);
 - Natural gypsum ore – primary data collected from six quarries and one gypsum ore underground mine: reference year 2017 (12 months);
 - Face and backing paper manufacturing- primary data collected from 3 facilities: reference year 2017 (12 months).
 - Generic data: the most appropriate LCI datasets were used as found in the US LCI Database, ecoinvent v.3.11 database for US, Canada and global, 2025.
- Temporal representativeness is characterized as "high".*

Completeness

All relevant, specific processes, including inputs (raw materials, energy and ancillary materials) and outputs (emissions and production volume) were considered and modeled to provide an industry average for 1/2" (12.7 mm) Lightweight and 5/8" (15.9 mm) Type X conventional gypsum board.

The relevant background materials and processes were taken from the US LCI Database (adjusted for known data placeholders), ecoinvent v 3.11 LCI database for US and Canada, and modeled in SimaPro software v.10.2.0.1, 2025. The completeness of the cradle-to-gate and cradle-to-grave process chains in terms of process steps is rigorously assessed in the LCA report.

Consistency

To ensure consistency, the LCI modeling of the production weighted input and output LCI data for the gypsum board product of interest used the same LCI modeling structure across the selected GA member facilities, which consisted of input raw, secondary, facing/backing, formulation, ancillary and packaging materials, energy flows, water resource inputs, product outputs, co-products, by-products, emissions to air, water and soil, and solid and liquid waste disposal. Crosschecks concerning the plausibility of mass and energy flows were continuously conducted. The LCA team conducted mass and energy balances at the facility level and selected process levels to maintain a high level of consistency.

Reproducibility

Internal reproducibility is possible since the data and the models are stored and available in GA Athena GB LCI database developed in SimaPro, 2025. A high level of transparency is provided throughout the report as the mass-weighted average LCI profile is presented for each of the declared products as well as major upstream inputs. Key primary (manufacturer specific) and secondary (generic) LCI data sources are summarized in the LCA report. GA internal reproducibility is also possible as a high level of transparency is provided throughout the LCA report.

Transparency

Activity and background LCI datasets are transparently documented in the LCA report, including data sources.

Uncertainty

A sensitivity check was conducted to assess the reliability of the EPD results and conclusions by determining how they are affected by uncertainties in the data or assumptions on calculation of LCIA and energy indicator results. The sensitivity check includes the results of the sensitivity analysis and Monte Carlo uncertainty analysis and is documented in the LCA report.

Life Cycle Module Description

For this study, the boundary is "cradle-to-grave," which includes the Production, Construction, Use, and End-of-Life stages (A1-C4). Optional supplementary module D is excluded from the system boundary.

Per ISO 21930, 7.1.7.1 (2), the information modules A1, A2, and A3 are based on the actual and representative data of the production process of the product. However, as soon as a construction product leaves the factory gate, the assessment shall be based on scenarios and assumptions. The scenarios and assumptions considered depend upon various details including location, type of transport, method of installation and construction, type of construction works, use, maintenance and repair, end-of-life treatment, and waste handling.

The *Production stage* includes the following three information modules: A1, extraction and upstream production; A2, transport to factory; and A3, manufacturing.

The scenarios and assumptions used for modeling the Construction, Use, and End-of-Life stages are outlined in Section 7.1.7 of Smart EPD Part B PCR and documented below (7).

The *Construction stage* includes the two information modules A4 and A5.

Module A4 Transport to the Construction Site includes both transportation from the factory gate to the central warehouse or intermediate distribution site (if relevant), as well as transport to the construction site. As specified in Smart EPD Part B PCR Section 7.1.7.3.1 (7), the following transportation modes and distances have been used:

- Distribution of gypsum panel products from the manufacturing gate to the distribution center gate is assumed as 448 km (280 miles) by commercial tractor-trailer truck and 208 km (130 miles) by rail.
- Final transport from the distribution gate to the construction site is assumed as 40 km (25 miles) by a single unit truck with an empty backhaul.

Module A5, Construction includes the assumptions and scenarios documented in Smart EPD Part B PCR Section 7.1.7.3.2 (7), which are outlined below:

- The default on-site installation waste scenario for all gypsum panel products is 10% on a surface area basis of product.
- The ancillary material required for installation includes fasteners, joint tape, and joint compound. The amount of joint compound assumed used during installation adheres to the PCR for joint compound, which specifies an installation scenario defined by a GA-214 Level 4 finish with the quantity adjusted for the measured shrinkage for a service life of 75 years. The amount of fasteners, joint tape, and joint compound usage is provided in Smart EPD Part B PCR Section 7.1.7.3.2 (7).
- Packaging waste from gypsum board and ancillary materials.

The *Use Stage* includes seven information modules (B1-B7). As specified in Section 7.1.7.4 of Smart EPD Part B PCR (7), gypsum panels do not require maintenance, repair, replacement, or refurbishment over the course of the product's life cycle. Additionally, gypsum panels are assumed to have no operational energy or water use during the use phase of the product. As such, the Use Stage (B1-B7) potential environmental impacts are reported as zero ("0").

The *End of Life Stage* includes the four information modules C1, C2, C3, and C4.

Module C1, Deconstruction/Demolition is assumed to be zero ("0") based on manual labor using hand tools, as specified in Smart EPD Part B PCR Section 7.1.7.5 (7).

Module C2, End of life transportation includes the transport of gypsum panel waste from the building to the landfill site. Assumptions for the waste transportation mode and distance are provided in Smart EPD Part B PCR, Section 7.1.7.5 (7).

Module C3, Waste processing assumes no gypsum panel waste goes to a waste processing facility prior to disposal in the landfill. Impacts from this module are assumed to be zero, as specified in Smart EPD Part B PCR Section 7.1.7.5 (7).

Module C4, Waste disposal assumes gypsum waste is disposed of in an appropriate landfill, as specified in Smart EPD Part B PCR Section 7.1.7.5 (7). The burden of *Module C4* is calculated using appropriate secondary datasets.

LCA Discussion

Allocation Procedure

Per Smart EPD Part B PCR, Section 7.2.3 and 7.2.6 (7), allocation, if required, shall follow the requirements and guidance of ISO 14044:2006, Section 4.3.4 and shall be based on the mass of gypsum panel products produced. Allocation related to transport shall be based on the mass of the transported product. The GA gypsum board manufacturing facilities produce other co-products besides selected gypsum boards and thus allocation based on the mass of gypsum board products was necessary. Per ISO 21930, Section 3 (2), a co-product is defined as any of one or more products from the same unit process but which is not the object of the assessment. As a result, plant specific generic formulations for 1 MSF (92.9 m²) of the two gypsum board products of interest were used to model and calculate the required input raw materials (both primary and secondary), facing/backing and formulation materials, and water input.

Per Smart EPD Part B PCR, Section 7.2.3 and 7.2.6 (7), "mass" was used as the physical parameter for allocating flows between the products of interest and other co-products to calculate the input energy flows (electricity, natural gas, propane, etc.), shipping and packaging materials, lubricants, hydraulic fluid, greases, and oils, total water consumption, process emissions to air, water and land and waste flows. Similarly, plant specific generic formulations for 1 MSF (92.9 m²) of gypsum paper and mass were used as the basis for allocating flows across products and co-products of gypsum paper manufacturing. LCI modeling accounts for the plant specific fabrication yields in accordance with ISO 14044, 4.3.4.2. Per Smart EPD Part B PCR Section 7.1.7.2.4, "A3 Manufacturing shall include an assumption of 5% material loss unless product specific data are available and transparently reported in the project LCA report".

Per ISO 21930, Section 3 (2), by-product is defined as co-product from a process that is incidental or not intentionally produced and which cannot be avoided. No burden is allocated to any of the by-products of the selected product systems such as off-spec gypsum boards (used as dunnage/bunks/sleuters); side rolls (recycled back into the gypsum paper production, or sold out to other converters to make tubes and cores); downgraded rolls (used as paper fiber in the wallboard, or sold to other converters to make tubes and cores), or other rocks from gypsum ore extraction sites (sold to other industries).

Per Smart EPD Part B PCR 7.1.7.2.5 and 7.2.3 (7), *flue gas desulfurization (FGD) gypsum is used without an upstream burden, including all treatments necessary to make it usable as a product input such as sulfate conversion and dewatering*. As a result, the only burden associated with FGD gypsum is transportation to the manufacturing facility (Module A2), along with any drying of the FGD gypsum performed at the manufacturing facility (Module A3). It should be mentioned that saleable FGD synthetic gypsum has the same molecular composition as raw gypsum.

Cut-off Procedure

The cut-off criteria as per Smart EPD Part A and Part B PCRs (6), (7), and ISO 21930 (2) Section 7.1.8 were followed for this EPD. Per ISO 21930, 7.1.8 (2), all input/output data required were collected and included in the LCI modeling. No substances with hazardous and toxic properties that pose a concern for human health and/or the environment were identified in the framework of this EPD. Any plant specific data gaps for the reference year 2024 e.g. input

hydraulic fluids, lubricants, oils, or packaging materials were filled in with primary plant specific data from previous years or industry average data. Safety Data Sheets (SDSs) are provided confidentially by GA plants per each chemical class e.g. sizing agents, retention chemicals, etc. Any data gaps in the SDS are filled in with two generic LCI datasets, as appropriate (conservative assumptions): *Chemical, organic {GLO} production / Cut-off, U*; *Chemical, inorganic {GLO} production / Cut-off, U*.

Per Smart EPD Part B PCR, Section 7.1.6 (7), the Production Stage *excludes* capital goods and infrastructure.

Renewable Electricity

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

Scenarios

Transport to the building/construction site (A4)

[A4 Module](#)

Transport / Vehicle Type	Description of transport	Fuel Type	Fuel Efficiency, L/100km	Distance, km	Capacity utilization	Capacity utilization volume	Weight of products transported, kg
Tractor-trailer truck	From manufacturing site to DC	Diesel	35	448	Empty backhaul	=1	5/8" Type X: 963 kg
Rail	From manufacturing site to DC	Diesel	3	208		=1	
Single unit truck	From DC to construction site	Diesel	25	40	Empty backhaul	=1	

Installation in to the building/construction site (A5)

[A5 Module](#)

Name	Quantity per Functional Unit 5/8" Type X	Unit
Installation scrap rate	10	%
Lightweight ready mixed joint compound, packaged in plastic pail	18.27	kg
Lightweight ready mixed joint compound, packaged in carton	9.13	kg

Name	Quantity per Functional Unit 5/8" Type X	Unit
Conventional ready mixed joint compound, packaged in plastic pail	27.47	kg
Conventional ready mixed joint compound, packaged in carton	13.73	kg
Screws	2.70	kg
Joint tape	0.90	kg
Net freshwater consumption	0	m ³
Electricity consumption	0	kWh
Other energy carriers	0	kWh
Product loss per functional unit	96.3	kg
Total packaging waste materials resulting from on-site waste processing, sent to landfill	12.5	kg
Packaging – Plastics	0.17	kg
Packaging – Metals	2.77E-05	kg
Packaging – Paper & Cardboard	0.37	kg
Packaging – Scrap Gypsum Board Used as Dunnage	12.0	kg
Total waste materials resulting from on-site waste processing, sent to landfill (sum of product loss and packaging waste)	108.8	kg
Biogenic carbon contained in packaging	0.60	kg CO ₂

End of Life (C1 - C4)

C1 - C4 Modules

Name	Quantity per Functional Unit 5/8" Type X		Unit
Demolition (Module C1)	0		kWh
Transport (Module C2)	Mass %		Distance
	Truck	74.6%	44
	Rail	25.4%	469
			km



Name	Quantity per Functional Unit 5/8" Type X	Unit
Collection process	Collected with mixed construction waste	
Disposal of waste gypsum in inert material landfill (Module C4)	963	kg
Emissions of biogenic carbon (excluding packaging) (Module C4)	70.6	kg CO ₂

Results

Environmental Impact Assessment Results

IPCC AR6 GWP 100, TRACI 2.2, CML 2016 v4.8

per 1,000 ft2 of product (92.9 m2).

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	A2	A3	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
GWP-total	kg CO2 eq	IPCC AR6 GWP 100	-1.31e+1	5.21e+1	2.16e+2	2.55e+2	5.43e+1	5.90e+1	0	0	0	0	0	0	0	0	1.26e+1	0	7.46e+1
GWP-fossil	kg CO2 eq	IPCC AR6 GWP 100	5.56e+1	5.21e+1	2.16e+2	3.24e+2	5.43e+1	5.91e+1	0	0	0	0	0	0	0	0	1.26e+1	0	2.53e+0
GWP-biogenic	kg CO2 eq	IPCC AR6 GWP 100	-6.89e+1	5.65e-4	-8.37e-2	-6.90e+1	0	-1.50e-1	0	0	0	0	0	0	0	0	0	0	7.21e+1
GWP-luluc	kg CO2 eq	IPCC AR6 GWP 100	1.90e-1	5.10e-4	8.61e-3	1.99e-1	0	4.47e-2	0	0	0	0	0	0	0	0	0	0	1.55e-4
AP	kg SO2 eq	TRACI 2.2	1.40e-1	6.10e-1	1.70e-1	9.20e-1	4.40e-1	2.00e-1	0	0	0	0	0	0	0	0	7.37e-2	0	2.12e-2
EP-freshwater	kg P eq	TRACI 2.2	6.10e-3	6.33e-5	3.73e-3	9.89e-3	4.20e-6	3.70e-3	0	0	0	0	0	0	0	0	9.82e-7	0	1.24e-5
EP-marine	kg N eq	TRACI 2.2	3.28e-2	1.20e-1	3.55e-2	1.88e-1	1.30e-1	4.61e-2	0	0	0	0	0	0	0	0	2.14e-2	0	5.75e-3
POCP	kg O3 eq	TRACI 2.2	2.27e+0	1.49e+1	4.26e+0	2.14e+1	1.55e+1	4.74e+0	0	0	0	0	0	0	0	0	2.58e+0	0	6.90e-1
ODP	kg CFC 11 eq	TRACI 2.2	9.07e-7	3.00e-7	1.37e-6	2.58e-6	1.03e-7	3.37e-7	0	0	0	0	0	0	0	0	2.42e-8	0	4.09e-8
ADP-minerals&metals	kg Sb eq	CML 2016 v4.8	9.51e-4	2.26e-7	1.60e-5	9.67e-4	1.67e-7	1.03e-4	0	0	0	0	0	0	0	0	3.79e-8	0	8.81e-8
ADP-fossil	MJ	CML 2016 v4.8	7.62e+2	1.92e+2	3.32e+3	4.28e+3	1.61e+1	7.51e+2	0	0	0	0	0	0	0	0	3.66e+0	0	3.29e+1

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 = Particulate 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.

Resource Use Indicator

[illegible]

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, NRPRRT 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.

Calculated as per ACLCA ISO 21930 Guidance (11), respective sections 6.2 to 10.8.

Waste and Output Flow Indicators

per 1,000 ft2 of product (92.9 m2).

Indicator	Unit	A1	A2	A3	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
HWD	kg	1.48e+0	1.03e-2	2.60e-1	1.75e+0	0	1.13e+0	0	0	0	0	0	0	0	0	0	0	1.86e-3
NHWD	kg	3.12e+1	1.20e-1	1.94e+1	5.07e+1	0	1.24e+2	0	0	0	0	0	0	0	0	0	0	9.63e+2
HLRW	kg	1.78e-4	2.40e-6	1.15e-4	2.95e-4	0	5.92e-5	0	0	0	0	0	0	0	0	0	0	6.64e-7
ILLRW	kg	6.30e-4	5.09e-6	3.76e-4	1.01e-3	0	4.56e-3	0	0	0	0	0	0	0	0	0	0	1.87e-6
CRU	kg	ND	ND	ND	0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MFR	kg	0	0	1.10e-1	1.10e-1	0	1.14e-2	0	0	0	0	0	0	0	0	0	0	0
MER	kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
EE	MJ	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

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.

Calculated as per ACLCA ISO 21930 Guidance (11), respective sections 6.2 to 10.8.

Carbon Emissions and Removals

per 1,000 ft2 of product (92.9 m2).

Indicator	Unit	A1	A2	A3	A1 - A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4
BCRP	kg CO2	7.06e+1	0	0	7.06e+1	0	8.55e+0	0	0	0	0	0	0	0	0	0	0	0
BCEP	kg CO2	0	0	0	0	0	7.06e+0	0	0	0	0	0	0	0	0	0	0	7.21e+1
BCRK	kg CO2	0	0	6.00e-1	6.00e-1	0	5.97e-2	0	0	0	0	0	0	0	0	0	0	0
BCEK	kg CO2	0	0	0	0	0	6.60e-1	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.

Per Smart EPD Part B PCR, 7.2.7 (7), starch, dextrose, and recycled raw materials used to produce paper are counted as biogenic carbon. Calculations for the biogenic carbon content contained in the product and packaging are presented below.

Biogenic CO₂ content contained in the product and packaging – 92.9 m² (1 MSF) of 5/8" Type X conventional

North American Industry Average EPD for 5/8" Type X Conventional Gypsum Board

Gypsum Association



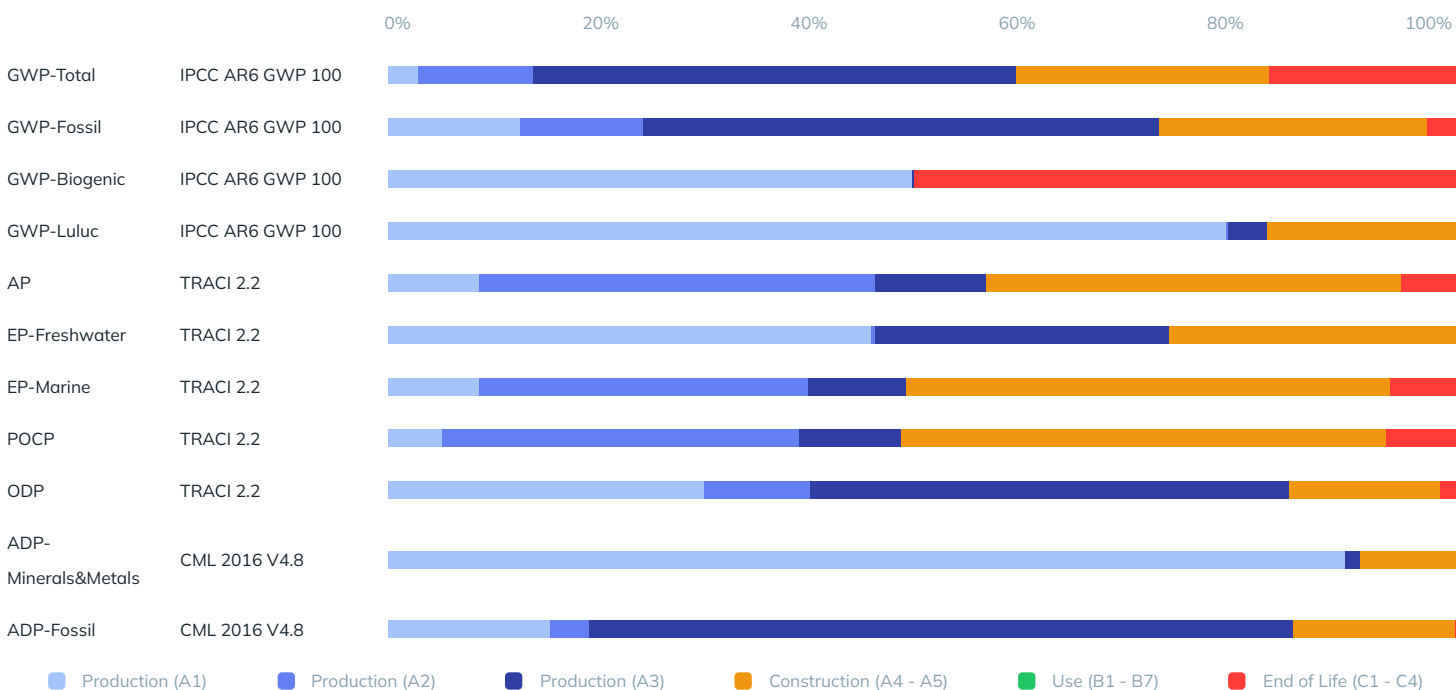
Inputs	Chemical formula	C-Content (%)	Biogenic CO ₂ Content (kg CO ₂ / MSF) 5/8" Type X conventional
Product			
Paper facing ¹⁾	(C ₆ H ₁₀ O ₅) _n	45%	33.07 kg CO₂/MSF = 20.04 kg × 0.45 × (44/12)
Paper backing ¹⁾	(C ₆ H ₁₀ O ₅) _n	45%	30.44 kg CO₂/MSF = 18.45 kg × 0.45 × (44/12)
Starch	(C ₆ H ₁₀ O ₅) _n	44%	5.65 kg CO₂/MSF = 3.5 kg × 0.44 × (44/12)
Dextrose	C ₆ H ₁₂ O ₆	40%	1.41 kg CO₂/MSF = (0.68+0.28) kg × 0.40 × (44/12)
Packaging			
Paper end tape ¹⁾	(C ₆ H ₁₀ O ₅) _n	45%	0.48 kg CO₂/MSF = 0.3 kg × 0.45 × (44/12)
Cardboard Edge Protectors ¹⁾	(C ₆ H ₁₀ O ₅) _n	45%	0.11 kg CO₂/MSF = 0.07 kg × 0.45 × (44/12)
Installation			
Paper joint tape ¹⁾	(C ₆ H ₁₀ O ₅) _n	45%	1.49 kg CO₂/MSF = 0.90 kg × 0.45 × (44/12)

Interpretation

It should be noted that LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks (4), (5).

*Module A3 Manufacturing, and Module A1, Extraction and Upstream Production typically contribute the largest share of the LCIA and energy indicator results. Module A5, Installation also contributes significantly to the overall environmental impact across all major impact categories. Module A2, Transportation, and Module A4, Transportation to Construction Site are significant contributors to the global warming, acidification, marine eutrophication, and smog formation potential environmental indicators. Over 96% of the total primary energy is derived from *non-renewable primary energy resources*. On-site energy use at the plant (*natural gas and purchased electricity*) and the *facing and backing paper input* are the major contributing sources to total primary energy use.*

The use of FGD synthetic gypsum and post-consumer paper is environmentally beneficial for the gypsum board industry as it reduces the dependency on primary material resources (natural gypsum ore and virgin paper stock).



Additional Environmental Information

Hydrogen sulfide (H₂S) formation in Municipal Solid Waste (MSW) and Construction & Demolition (C&D) landfills requires a sulfate source, carbon source, anaerobic conditions, moisture, pH, and temperature. Gypsum panels are a significant contributor to H₂S formation.

Problems and Solutions:

Issues in Landfill Gas (LFG) Projects: High H₂S concentrations in LFG can cause engine wear and corrosion, leading to more frequent maintenance. Combustion of H₂S-rich LFG emits sulfur dioxide (SO₂), a regulated pollutant with strict emission limits in the U.S.

Prevention Measures: Diverting gypsum panels from landfills can reduce H₂S formation. Some landfills ban drywall disposal, except in small amounts. Recycling markets for gypsum drywall (e.g., agricultural soil amendments, new drywall production) help reduce landfill deposits.

Health Protection Manufacture

The OSHA standards are applicable and followed.

- U.S. Department of Labor, Occupational Safety & Health Administration (OSHA), 29 CFR, PART 1910 Occupational Safety and Health Standards.

https://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=STANDARDS&p_toc_level=1&p_keyvalue=1910

No additional health protection measures extending beyond mandatory occupational safety measure for commercial operations are required.

Environmental Protection Manufacture and Equipment

The GA member manufacturing facilities comply with the regional environmental protection requirements, monitor and report the emissions to air during the manufacturing process as per the following:

- EPCRA Section 313 Toxic Release Inventory Reporting (U.S) [https://www.osha.gov/pls/oshaweb/owasrch.search_form?](https://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=STANDARDS&p_toc_level=1&p_keyvalue=1910)

[p_doc_type=STANDARDS&p_toc_level=1&p_keyvalue=1910](https://www.osha.gov/pls/oshaweb/owasrch.search_form?p_doc_type=STANDARDS&p_toc_level=1&p_keyvalue=1910)

- The Canadian National Pollutant Release Inventory (NPRI) reporting <http://www.ec.gc.ca/inrp-npri/default.asp?lang=En&n=4A577BB9-1>

Pollution abatement equipment typically used in the gypsum board manufacturing facilities consist of high and low temperature baghouses, bin vent filter, cartridge filter, precipitator and water sprinklers for dust control.

References

1. ASTM C1396/C1396M-17 - Standard Specification for Gypsum Board.
2. ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services.
3. ISO 14025: 2006 Environmental labeling and declarations - Type III environmental declarations - Principles and procedures.
4. ISO 14040:2006/Amd 1:2020 Environmental Management – Life Cycle Assessment – Principles and Framework.
5. ISO 14044/Amd1:2017/Amd2:2020 Environmental Management – Life Cycle Assessment – Requirements and guidelines.
6. Smart EPD (2025) Part A Product Category Rules for Building and Construction Products and Services Version 1.2. Standard 1000. Published March 14, 2025. www.smartepd.com.
7. Smart EPD Part B Product Category Rules for Gypsum Panels, Standard 1000-004. Version 2. February 24, 2025. www.smartepd.com.
8. General Program Instructions for Smart EPD, Version 2.0. March 2025.
9. ASTM C11-24a - Standard Terminology Relating to Gypsum and Related Building Materials and Systems.
10. LEED v4.1, MRc2: Building product disclosure and optimization, Environmental Product Declarations., <https://leeduser.buildinggreen.com/credit/NC-v4.1/MRc2#tab-credit-language>.
11. ACLCA 2019, Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017. The American Centre for Life Cycle Assessment. May, 2019.
12. Wood in Our Future. Proceedings of a Symposium Environmental Implications of Wood as a Raw Material for Industrial Use. s.l. : National Research Council, 1997. pp. 11-16.
13. Drywall Finishing Council. Industry Average Joint Compound Environmental Product Declaration. October 2024. ASTM-EPD642. ASTM International.
14. ASTM C22/C22M-00(2021) - Standard Specification for Gypsum.
15. ASTM C475/C475M-17(2022) - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
16. ISO 14020:2000 Environmental labels and declarations.
17. ISO 14021:2016 Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling).
18. PRé Sustainability. SimaPro LCA Software. Version 10.2.0.1. 2025.
19. A North American Industry Average Cradle-to-Grave Life Cycle Assessment of ½" Lightweight and ½" Type X Conventional Gypsum Board. January 2026.
20. Sarah Hansen, Pedram Sadeghian, Recycled gypsum powder from waste drywalls combined with fly ash for partial cement replacement in concrete, Journal of Cleaner Production, Volume 274, 20 November 2020, 122785.

21. Chea Chandara, et al., Use of waste gypsum to replace natural gypsum as set retarders in portland cement, Waste Management, Volume 29, Issue 5, May 2009, Pages 1675–1679.
22. Authors: Kasra Takbiri and Pedram Sadeghian, Recycling Waste Gypsum Drywalls as Partial Cement Replacement in Concrete Exposed to Different Environmental Conditions, Journal of Materials in Civil Engineering, Volume 36, Issue 8.

Appendix A: Dataset Information

Material/Process Category	Module	Material/Process Name	Inventory Dataset Name	Dataset Geographic Region	Reporting Period/Year Dataset Represents	Reference
Input Material	A1	Natural gypsum extraction, US	Specific data based on primary data from gypsum extraction facilities for the 2017 reference year.	US	2017	Updated with Ecoinvent 3.11, Cut-off, U
Input Material	A1	Natural gypsum extraction, MX	Specific data based on primary data from gypsum extraction facilities for the 2017 reference year.	Mexico	2017	Updated with Ecoinvent 3.11, Cut-off, U
Input Material	A1	Natural gypsum extraction, ES	Specific data based on primary data from gypsum extraction facilities for the 2017 reference year.	Spain	2017	Updated with Ecoinvent 3.11, Cut-off, U
Input Material	A1	FGD synthetic gypsum	Specific data. Includes A2 Transportation; any on-site treatment is included in A3.	North America	2024	Updated with Ecoinvent 3.11, Cut-off, U
Input Material	A1	Post-consumer gypsum	Specific data. Includes A2 Transportation; any on-site treatment is included in A3.	North America	2024	Updated with Ecoinvent 3.11, Cut-off, U
Input Material	A1	Facing gypsum paper	Specific data based on primary data from gypsum paper manufacturing facilities for the 2017 reference year.	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U
Input Material	A1	Backing gypsum paper	Specific data based on primary data from gypsum paper manufacturing facilities for the 2017 reference year.	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U
Input Material	A1	Starch	Maize starch {US/DE} maize starch production Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Vermiculite	Vermiculite {US/RoW} vermiculite mine operation Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Fiberglass	Glass fibre {US/RER} glass fibre production Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Potash	Potassium sulfate {US/RER} potassium sulfate production Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Dextrose	Glucose {US/RER} glucose production Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Dispersant	Specific data based on confidential industry generic formulation data	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U
Input Material	A1	Retarders	Specific data based on confidential industry generic formulation data	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U

North American Industry Average EPD for 5/8" Type X Conventional Gypsum Board
Gypsum Association



Material/Process Category	Module	Material/Process Name	Inventory Dataset Name	Dataset Geographic Region	Reporting Period/Year Dataset Represents	Reference
Input Material	A1	Other chemicals	Potassium sulfate {US/RER} potassium sulfate production Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Other chemicals	Kaolin {US/RER} kaolin production Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Other chemicals	Boric acid, anhydrous, powder {US/RER} boric acid production, anhydrous, powder Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Other chemicals	Soap {US} soybean oil refinery operation Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Ball mill accelerator	Specific data based on confidential industry generic formulation data	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U
Input Material	A1	Edge paste	Specific data based on confidential industry generic formulation data	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U
Input Material	A1	Sodium trimetaphosphate	Sodium tripolyphosphate {US/RER} sodium tripolyphosphate production Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Transportation	A2	Combination truck, long haul	Transport, combination truck, long-haul, diesel powered {RNA} Transport, combination truck, long-haul, diesel powered	North America	2024	USLCI
Transportation	A2	Combination truck, short haul	Transport, combination truck, short-haul, diesel powered {RNA} Transport, combination truck, short-haul, diesel powered	North America	2024	USLCI
Transportation	A2	Single unit truck, long haul	Transport, single unit truck, long-haul, diesel powered {RNA} Transport, single unit truck, long-haul, diesel powered	North America	2024	USLCI
Transportation	A2	Single unit truck, short haul	Transport, single unit truck, short-haul, diesel powered {RNA} Transport, single unit truck, short-haul, diesel powered	North America	2024	USLCI
Transportation	A2	Rail	Transport, train, diesel powered {US} Transport, train, diesel powered	US	2024	USLCI
Transportation	A2	Barge	Transport, barge, average fuel mix {US} Transport, barge, average fuel mix	US	2024	USLCI
Transportation	A2	Ocean container ship	Transport, freight, sea, container ship, heavy fuel oil {GLO} market for transport, freight, sea, container ship, heavy fuel oil Cut-off, U	Global	2025	Ecoinvent 3.11, Cut-off, U
Transportation	A2	Ocean bulk carrier	Transport, freight, sea, bulk carrier for dry goods, heavy fuel oil {GLO} transport, freight, sea, bulk carrier for dry goods, heavy fuel oil Cut-off, U	Global	2025	Ecoinvent 3.11, Cut-off, U

North American Industry Average EPD for 5/8" Type X Conventional Gypsum Board
Gypsum Association



Material/Process Category	Module	Material/Process Name	Inventory Dataset Name	Dataset Geographic Region	Reporting Period/Year Dataset Represents	Reference
Packaging	A3	Packaging - paper	Kraft paper {US/RER} kraft paper production Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Packaging	A3	Ink, water based	Specific data based on confidential industry generic formulation data	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U
Packaging	A3	Ink, oil based	Specific data based on confidential industry generic formulation data	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U
Packaging	A3	Packaging - plastic	Polyethylene, linear low-density (LLDPE) virgin resin, at plant {RNA} Polyethylene, linear low-density (LLDPE) virgin resin, at plant	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Packaging	A3	Packaging - plastic	Polypropylene, granulate {RER} polypropylene production, granulate Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Packaging	A3	Packaging - cardboard	Containerboard, linerboard {US/RER} containerboard production, linerboard, kraftliner Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Packaging	A3	Packaging - steel wire	Wire drawing, steel {US/RER} wire drawing, steel Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Packaging	A3	Packaging - steel wire	Steel, unalloyed {GLO} market for steel, unalloyed Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Packaging	A3	Edge glue	Specific data based on confidential industry generic formulation data	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U
Packaging	A3	Ink, alcohol based	Specific data based on confidential industry generic formulation data	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U
Packaging	A3	Mixed chemicals	Specific data based on confidential industry generic formulation data	North America	2017	Updated with Ecoinvent 3.11, Cut-off, U
Ancillary material	A3	Lubrication and hydraulic oils	Lubricating oil {US/RER} lubricating oil production Cut-off, U	US adjusted	2025	Ecoinvent 3.11, Cut-off, U
Energy	A3	Electricity	Electricity, AC, 120 V Electricity, at user, consumption mix	US	2016	USLCI - based on data from US Electricity Baseline v6 (2016)
Energy	A3	Electricity	Electricity, low voltage market for electricity, low voltage Cut-off, U	Country-specific	2025	Ecoinvent 3.11, Cut-off, U
Energy	A3	Natural gas	Heat, district or industrial, natural gas {US/RNA} heat production, natural gas, at industrial furnace >100kW Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U

North American Industry Average EPD for 5/8" Type X Conventional Gypsum Board
Gypsum Association



Material/Process Category	Module	Material/Process Name	Inventory Dataset Name	Dataset Geographic Region	Reporting Period/Year Dataset Represents	Reference
Energy	A3	Natural gas	Heat, district or industrial, natural gas {US/RNA} heat production, natural gas, at industrial furnace low-NOx >100kW Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Chemicals, generic	Chemical, organic {GLO} market for chemical, organic Cut-off, U	Global	2025	Ecoinvent 3.11, Cut-off, U
Input Material	A1	Chemicals, generic	Chemical, organic {GLO} market for chemical, organic Cut-off, U	Global	2025	Ecoinvent 3.11, Cut-off, U
Energy	A3	LPG	Liquefied petroleum gas, combusted in industrial boiler {RNA} Liquefied petroleum gas, combusted in industrial boiler	US	2024	USLCI
Energy	A3	Gasoline	Gasoline, combusted in equipment {RNA} Gasoline, combusted in equipment	US	2024	USLCI
Water	A3	Tap water	Tap water {US/CA} tap water production, conventional treatment Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Water	A3	Ground water	Tap water {US/CA} tap water production, underground water without treatment Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Waste	A3	Gypsum waste	Waste gypsum {US/CH} treatment of waste gypsum, inert material landfill Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Waste	A3	Waste oil	Waste mineral oil {US/CH} treatment of waste mineral oil, hazardous waste incineration, with energy recovery Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Waste	A3	General waste	Municipal solid waste {US/CA-QC} treatment of municipal solid waste, sanitary landfill Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Waste	A3	Hazardous waste	Hazardous waste, for incineration {US/CH} treatment of hazardous waste, hazardous waste incineration Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Waste	A3	Solvent mixture waste	Spent solvent mixture {CH} treatment of spent solvent mixture, hazardous waste incineration Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Waste	A3	Sludge waste	Sludge from pulp and paper production {US/CH} treatment of sludge from pulp and paper production, sanitary landfill Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Waste	A3	Waste water treatment	Wastewater, average {US/CH} treatment of wastewater, average, wastewater treatment Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U

North American Industry Average EPD for 5/8" Type X Conventional Gypsum Board
Gypsum Association



Material/Process Category	Module	Material/Process Name	Inventory Dataset Name	Dataset Geographic Region	Reporting Period/Year Dataset Represents	Reference
Transportation	A4	Combination truck, long haul	Transport, combination truck, long-haul, diesel powered {RNA} Transport, combination truck, long-haul, diesel powered	North America	2024	USLCI
Transportation	A4	Combination truck, short haul	Transport, combination truck, short-haul, diesel powered {RNA} Transport, combination truck, short-haul, diesel powered	North America	2024	USLCI
Transportation	A4	Rail	Transport, train, diesel powered {US} Transport, train, diesel powered	North America	2024	USLCI
Installation Materials	A5	Screws	Steel, unalloyed {GLO} market for steel, unalloyed Cut-off, U	Global	2025	Ecoinvent 3.11, Cut-off, U
Installation Materials	A5	Screws	Wire drawing, steel {US/RER} wire drawing, steel Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Installation Materials	A5	Screws	Impact extrusion of steel, cold, 1 strokes {GLO} market for impact extrusion of steel, cold, 1 strokes Cut-off, U	Global	2025	Ecoinvent 3.11, Cut-off, U
Installation Materials	A5	Joint compound, conventional	A1-A5 environmental impact sourced from:	North America	2024	ND
Installation Materials	A5	Joint compound, conventional	A1-A5 environmental impact sourced from:	North America	2024	ND
Installation Materials	A5	Joint compound, lightweight	A1-A5 environmental impact sourced from:	North America	2024	ND
Installation Materials	A5	Joint compound, lightweight	A1-A5 environmental impact sourced from:	North America	2024	ND
Installation Materials	A5	Paper joint tape	Kraft paper {US/RER} kraft paper production Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U
Transportation	C2	Single unit truck, short haul	Transport, single unit truck, short-haul, diesel powered {RNA} Transport, single unit truck, short-haul, diesel powered	North America	2024	USLCI
Transportation	C2	Rail	Transport, train, diesel powered {US} Transport, train, diesel powered	North America	2024	USLCI
Waste	C4	Gypsum waste	Waste gypsum {US/CH} treatment of waste gypsum, inert material landfill Cut-off, U	US Adjusted	2025	Ecoinvent 3.11, Cut-off, U