



Montreal Gypsum Panels LCA Action Plan

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INTRODUCTION

About CertainTeed

With innovative building solutions made possible through its comprehensive offering of interior and exterior products, CertainTeed is transforming how the industry builds. As leaders in building science and sustainable construction, CertainTeed makes it easier than ever to create high-performance, energy-efficient places to live, work and play, so that together we can *make the world a better home*.

A subsidiary of Saint-Gobain, one of the world's largest and oldest building products companies, CertainTeed has more than 6,900 employees and more than 60 manufacturing facilities throughout the United States and Canada. For more information visit: certainteed.ca.

Since 2020, CertainTeed has published Environmental Product Declarations (EPDs) on their gypsum drywall products. These EPDs can be found on SmartEPD Library (smarterpd.com/epd-library) or [UL's sustainable product database](#). We are committed to market transparency through **third-party verified EPDs**. These EPDs provide us with a baseline on potential environmental impacts that we will strive to act upon and reduce our footprint. The following products have been included within our LCA program with EPDs published for CertainTeed Gypsum Board product lines.

Table 1: Product Systems and Product Lines in LCA Action Plan Scope

PRODUCT SYSTEM	PRODUCT	EPD DECLARATION #	EPD EXPIRATION DATE
CertainTeed Gypsum Panels - Montreal, QC	GlasRoc Sheathing 5/8" Gypsum Board	UL- 4790745506.107.1	July 1, 2028
	M2Tech Type X 5/8" Gypsum Board	SmartEPD-2025-071-0508-01	June 18, 2030
	Type X 5/8" Gypsum Board	SmartEPD-2025-071-0507-01	June 18, 2030
	GlasRoc Tile Backer 5/8" Gypsum Board	SmartEPD-2025-038-0237-01.2	April 22, 2030
	Easi-Lite 1/2" Gypsum Board	SmartEPD-2025-038-0238-01.2	February 12, 2030

This action plan is eligible for credit under LEED v4.1 (*Building Product Disclosure and Optimization: Environmental Product Declarations* credit - Option 1 and 2) for the optimization of the environmental footprint of the CertainTeed Gypsum (see Table 1). Any claimed improvement must clearly be linked to a specific formulation and/or supply chain improvement as opposed to a life cycle inventory (LCI) update per LEED requirements.

Overview of the LCA

To ensure maximum accuracy and consistency in the optimization process, the following information about the LCA will be considered and is disclosed below (see Tables 2). Disclosing this information ensures that any positive development of the product is because of an improvement CertainTeed Gypsum has made, and not due to a software or methodology revision. In addition, all assessments shall use the same version of the LCA software and LCI databases to ensure consistency. However, limitations in the LCA exist and these are further discussed in the limitations section. The EPDs for this product line are available on the CertainTeed website [certainteed.ca](https://www.certainteed.ca).

Table 2: Information and Assumptions Regarding LCA Studies

Product EPDs	GlasRoc Sheathing 5/8" Gypsum Board (UL- 4790745506.107.1)	GlasRoc Tile Backer 5/8" Gypsum Board (SmartEPD-2025-038-0237-01.2)	Type X 5/8" Gypsum Board (SmartEPD-2025-071-0507-01)
		Easi-Lite 1/2" Gypsum Board (SmartEPD-2025-038-0238-01.2)	M2Tech Type X 5/8" Gypsum Board (SmartEPD-2025-071-0508-01)
Information/ Assumption/ Data	2023 LCA STUDY	2024 Study	2025 Study
LCA/Framework	TRACI 2.1 Impact assessment	TRACI 2.1 Impact assessment	IPCC AR6 GWP 100
Sub-Category Product Category Rule (PCR)	NSF International PCR for Gypsum Panel Products v.1e October 2019	"NSF PCR for Gypsum Panel Products. Date of issue: April 01, 2020 Valid until: December 31, 2024"	"Smart EPD® Part B PCR for Gypsum Panels, 1000-004, v2.0 Date of issue: February 24, 2025 Valid until: February 24, 2030"
LCA Software	Sphera Life Cycle for Experts (Formerly GaBi) v9.2	Sphera LCA for Experts (formerly GaBi) v. 10.7.1	Sphera LCA for Experts (formerly GaBi) v. 10.9
Scope	Cradle to Grave	Cradle to Grave	Cradle to Grave
Primary Impact Drivers	Raw Material Transportation, Installation, Manufacturing Energy Use, Packaging Materials	Raw Material Transportation, Installation, Manufacturing Energy Use, Packaging Materials	Raw Material Transportation, Installation, Manufacturing Energy Use, Packaging Materials
Manufacturing Facility	Montreal, QC	Montreal, QC	Montreal, QC
Distribution Transportation Distance (A4)	40 km - Truck 208 km - Rail 448 km - Commercial tractor-trailer truck	40 km - Truck 208 km - Rail 448 km - Commercial tractor-trailer truck	40 km - Truck 208 km - Rail 448 km - Commercial tractor-trailer truck
Installation Scrap Rate (A5)	10%	10%	10%
Product Disposal Method (C4)	100% Landfilled	100% Landfilled	100% Landfilled
Verified LCA Model	Saint-Gobain North America: 2020 Gypsum Generator Model verified by UL	Saint-Gobain North America: 2020 Gypsum Generator Model verified by UL	Saint-Gobain North America: 2020 Gypsum Generator Model verified by UL

LCA Action Plan Developer	CertainTeed Gypsum
LCA Action Plan Verifier	SmartEPD

Table 3: Baseline- Life Cycle Impact Assessment for Cradle to Gate

	TRACI 2.1 ENVIRONMENTAL IMPACTS A1-A3 LIFE CYCLE STAGES (PER 92.9 m² OR 1,000 ft²)							
		Global Warming Potential, excl. biogenic	Global Warming Potential, incl. biogenic	Ozone Depletion Potential	Acidification Potential	Eutrophication Potential	Smog Creation Potential	Abiotic Depletion Potential (fossil)
	Product	kg CO₂ eq	kg CO₂ eq	kg CFC 11 eq	kg SO₂ eq	kg N eq	kg O₃ eq	MJ
CertainTeed Gypsum Panels - Montreal, QC	GlasRoc Sheathing 5/8"	4.45E+02	4.45E+02	5.35E-02	2.57E+00	2.00E-01	4.88E+01	2.69E+03
	M2Tech Type X 5/8"	3.30E+02	2.67E+02	7.65E-05	3.73E-01	1.09E-01	8.77E+00	4.07E+03
	Type X 5/8"	2.89E+02	2.30E+02	6.13E-05	3.16E-01	8.23E-02	7.74E+00	3.40E+03
	GlasRoc Tile Backer 5/8"	4.56E+02	4.5E+02	4.98E-04	5.61E-01	1.36E-01	1.11E+01	5.95E+03
	Easi-Lite 1/2"	2.28E+02	1.61E+02	4.49E-05	2.53E-01	6.81E-02	6.59E+00	3.02E+03

It is important to note that any improvements of these products shall only be compared against the same type. For example, an improvement of a Type X 5/8" Gypsum Board - Montreal, QC shall only be compared against the baseline Type X 5/8" Gypsum Board - Montreal, QC LCA results and not against any other type to ensure consistency.

Targeted Reduction

The targeted reduction is from the manufacturing life cycle stage where energy efficiency will be improved by 30-40% by implementing several energy conservations measures. Alongside improving energy efficiency, the whole production process will be electrified, switching the current natural gas process equipment to equipment powered by hydroelectricity. This fuel switch will eliminate up to 99.5% of the impact of the manufacturing step on the life cycle analysis.

Saint-Gobain Group Strategy

To achieve carbon neutrality, Saint-Gobain has published a CO₂ roadmap. The roadmap incorporates the Group's commitments through to 2030 in terms of reducing not only its direct and indirect carbon dioxide emissions, but also the emissions along its value chain. These new targets for 2030 have been validated by the Science-Based Targets (SBT) initiative which considers them aligned with the Group's 2050 net-zero commitment:

- 33% reduction in scope 1 and 2 emissions in absolute terms*
- 16% reduction in scope 3 emissions*

Montreal Plant Strategy

CertainTeed's collaborative teams have identified areas in which to focus over the next five years from the original performance period (Table 2) to reduce the impacts from producing these gypsum board products. These actions will include:

Energy Efficiency Programs

- Replace natural gas burners with highly efficient electrical heating elements
- Improve compressed air design
- Implement energy meters and energy management system
- Implement heat recovery
- Upgrade equipment insulation
- Add process sensors to monitor and improve production quality

Material and Transportation Efficiency

- Increase recycled content by using pre- and post-consumer waste
- Reduce inbound transportation of natural gypsum rock from various sources

* Compared to a 2017 baseline

Timeline

The estimated timeline for this optimization is outlined in the table below. If at any point it becomes clear that any improvement or optimization is not possible because of technical limitations, this action plan shall be taken down by CertainTeed. Additionally, if any significant delays occur, the timeline shall be updated to reflect this. The timeline will be checked for accuracy at least once per year.

Table 4: Reduction Strategies Schedule for life cycle impact assessment (LCIA) Optimization

LIFE CYCLE PHASE	TARGETED GWP REDUCTIONS PER LIFE CYCLE STAGE (%)	PROCESS STEP	TARGET COMPLETION DATE	ANTICIPATED TARGETED GWP REDUCTION IN RESPECTIVE LIFE CYCLE STAGE (%)
A1. Raw Materials A2. Transportation of Raw Materials	0%	Increasing recycled content by up to 30% improves circularity but is not expected to decrease A1 & A2 significantly	January 2026	0%
A3. Manufacturing	80% to 100%	Replacing equipment with higher energy efficiency and their electrification	2025	Up to 100%

Limitations

LCA does not have a measure of true uncertainty and its results are changing constantly. While quality control was undertaken at each step in building the life cycle inventory (LCI) and conducting the life cycle impact assessment (LCIA), uncertainty is present in the results since the data represents limited years of manufacturing information. Many assumptions were made in the modeling of the product system with representative processes and datasets. CertainTeed will use the best available data and resources when conducting its assessments and will ensure that any Optimized LCA meets the relevant ISO comparability requirements. However, any LCAs shall not be used as a comparative assertion or overall superiority claim per ISO requirements.

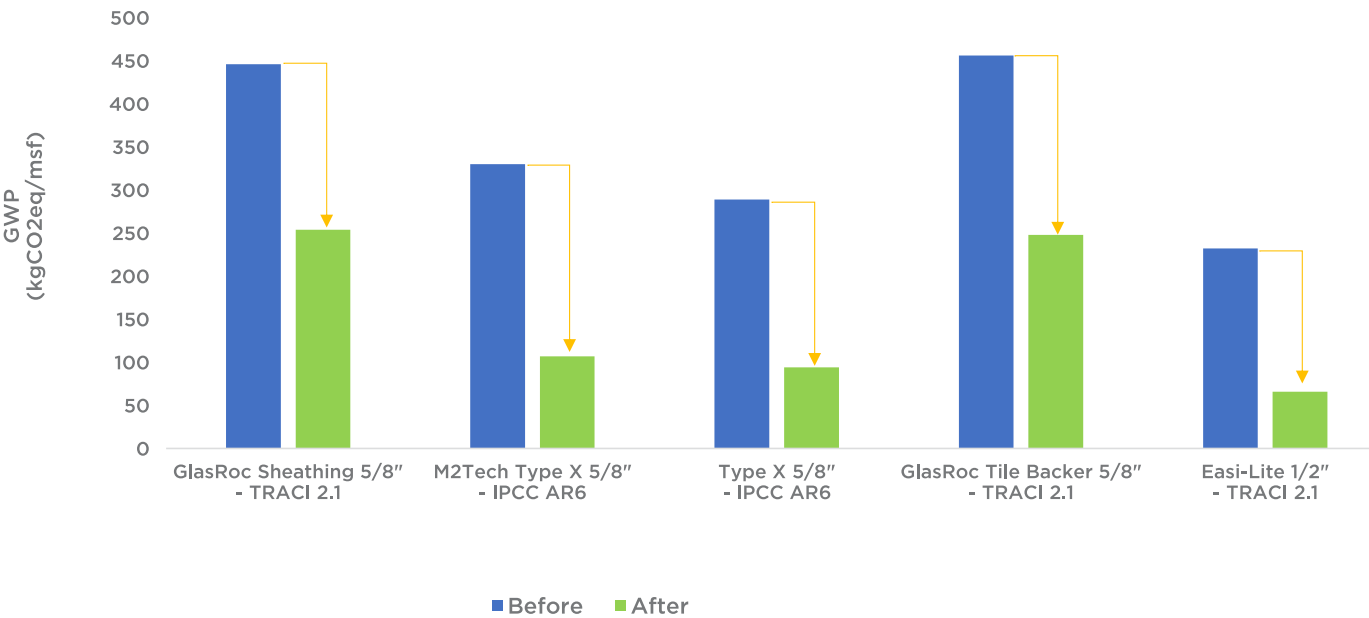
Examples of non-compliant changes are reductions that occurred without manufacturer action. For example, regulatory changes that result in lower impacts, energy grid emissions factor updates for the region or LCA software updates that result in lower impacts due to dataset changes rather than product optimizations.

Sources

www.saint-gobain.com/en/corporate-responsibility/our-pillars/climate-change

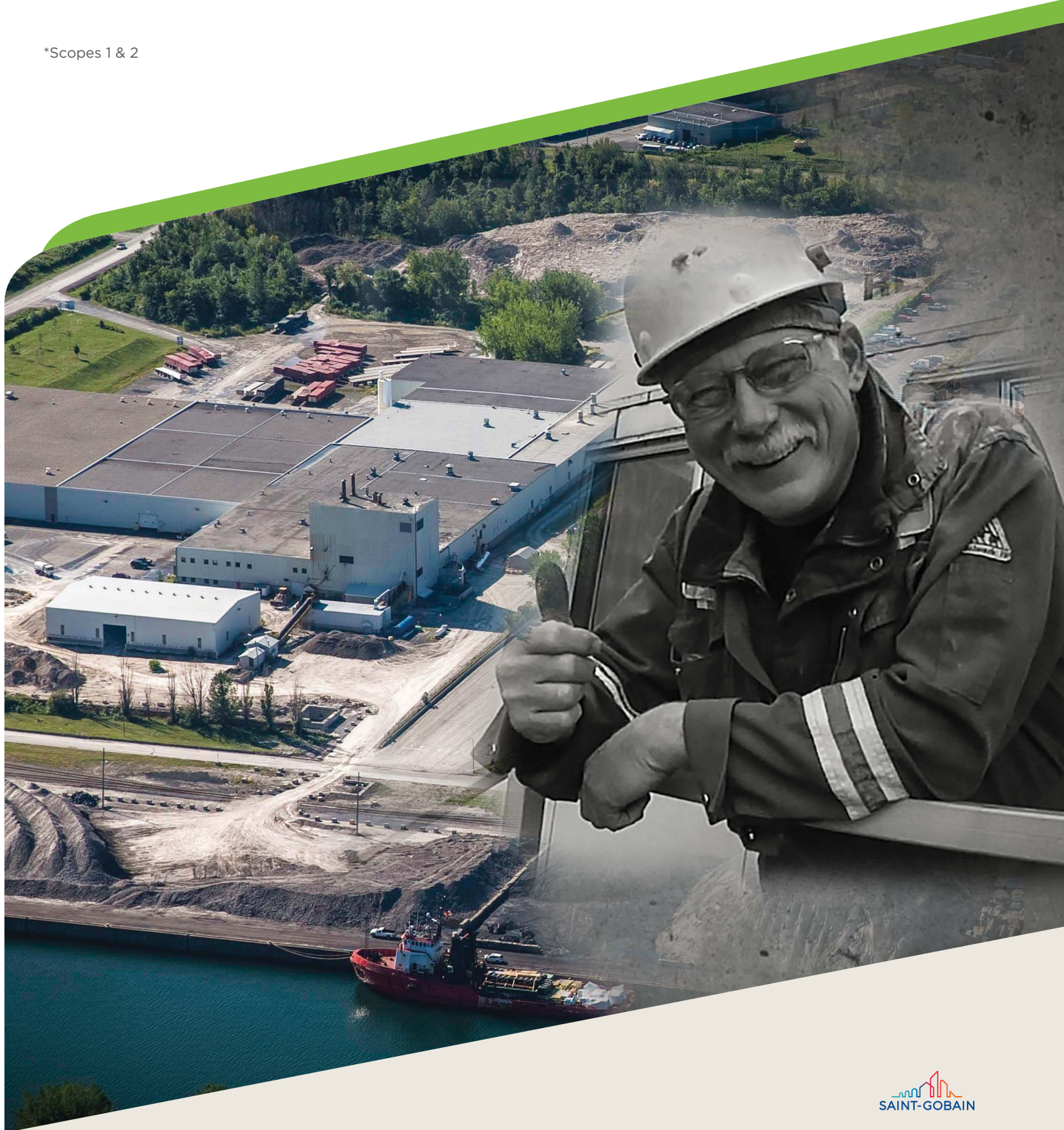
Appendix A

Comparison of Cradle-to-gate A1-A3 LCA of Montreal drywall panels before and after equipment electrification alone



Our Montreal plant is North America's FIRST zero-carbon* production drywall plant.

*Scopes 1 & 2





CertainTeed is focused on innovation, safety, durability and sustainability. Learn more at certainteed.ca/lowcarbonpanel

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CertainTeed Canada

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December 18, 2025

Arch. Lucas Pedro Berman
Rauric 2, Barcelona, 08002 - Spain

Verification Report: Montreal Gypsum Panels LCA Action Plan

The program operator, Smart EPD, commissioned Arch. Lucas Pedro Berman to perform an external independent verification of the **Montreal Gypsum Panels Life Cycle Assessment (LCA) Action Plan (December 1, 2025)**. **Samantha Schneider for Saint-Gobain**, completed the LCA project report and LCA Action Plan on behalf of the commissioning organization, CertainTeed Saint-Gobain.

The review of the LCA Action Plan and supporting third-party verified LCA project report was performed to demonstrate conformance with the following standards, general program instructions, and Product Category Rules:

- International Organization for Standardization. (2000). *Environmental labels and declarations -- General principles* (ISO 14020:2000).
- International Organization for Standardization. (2006). *Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures* (ISO 14025:2006).
- International Organization for Standardization. (2020). *Environmental management - Life cycle assessment - Principles and framework* (ISO 14040:2006/Amd 1:2020).
- International Organization for Standardization. (2020). *Environmental management - Life cycle assessment -- Requirements and guidelines* (ISO 14044:2006/Amd 2:2020).
- *Smart EPD® Part B PCR for Gypsum Panels, 1000-004, v2.0*
- International Organization for Standardization. (2014). *Environmental management -- Life cycle assessment -- Critical review processes and reviewer competencies: Additional requirements and guidelines to ISO 14044:2006*. (ISO/TS 14071:2014).
- *General Program Instructions for Smart EPD*. Version 2.0, March 2025.
- *LEED BD+C: New Construction, LEED BD+C: Core and Shell, LEED BD+C: Schools, LEED BD+C: Retail, LEED BD+C: Data Centers, LEED BD+C: Warehouses and Distribution Centers, LEED ID+C: Commercial Interiors, LEED ID+C: Retail, LEED ID+C: Hospitality*. Version 4.1.
- *LEED v4.1 Material and Resource Credit: Embodied Carbon/LCA Optimization Report Guidance - Action Plans*
- *LEED v4.1. Addenda ID#100002454*, Nov 09, 2020.

The independent third-party verification was conducted by an external expert per ISO 14044:2006 Section 6.2: Critical review by external expert:

Arch. Lucas Pedro Berman
Senda – Environmental & Energy Consulting

REVIEW SCOPE

The intent of this review was to provide an external independent third-party critical review of a completed LCA study project report.

REVIEW PROCESS

The LCA Action Plan verification involved assessing conformance to the requirements set forth by the applicable ISO standards, LEED v4.1, and the most recent version of Smart EPD's General Program Instructions (GPIs).

Based on the Montreal Gypsum Panels LCA Action Plan review, the core strategies are focused on aggressive reductions in the manufacturing phase (A3) through energy optimization and electrification, supplemented by material and transportation efficiency measures.

The key action plan strategies include:

- **Manufacturing Electrification and Energy Efficiency:** The primary goal is to improve energy efficiency by 30–40% and electrify the entire production process, transitioning existing natural gas equipment to equipment powered by hydroelectricity. This fuel switch is projected to eliminate up to 99.5% of the manufacturing step's impact on the life cycle assessment, with a targeted reduction of 80% to 100% in Global Warming Potential (GWP) during the manufacturing (A3) phase.
- **Specific Energy Programs:** Detailed steps for energy efficiency include replacing natural gas burners with highly efficient electrical heating elements, improving compressed air design, implementing energy meters and an energy management system, utilizing heat recovery, and upgrading equipment insulation.
- **Material and Circularity Improvement:** The plan aims to increase recycled content by incorporating pre- and post-consumer waste. While this improves circularity (a goal under the A1 Raw Materials phase), it is not expected to significantly decrease the environmental impacts in the Raw Materials (A1) and Transportation of Raw Materials (A2) life cycle stages.
- **Inbound Transportation Reduction:** CertainTeed plans to reduce the inbound transportation of natural gypsum rock sourced from various locations.
- **Alignment with Corporate Goals:** These localized actions support the Saint-Gobain Group's broader strategy for carbon neutrality, which includes validated targets for a 33% absolute reduction in Scope 1 and 2 emissions and a 16% reduction in Scope 3 emissions compared to a 2017 baseline.

Eligibility for Credits: Successful implementation of this action plan is eligible for credit under LEED v4.1 (Building Product Disclosure and Optimization: Environmental Product Declarations credit—Option 1 and 2)

STATEMENT ON LIMITATIONS AND COMPARABILITY

Limitations of the LCA

The LCA does not inherently contain a measure of true uncertainty, and its results are subject to constant change. Uncertainty is present in the current results because the data represents limited years of manufacturing information. Furthermore, the modeling of the product system involved many assumptions, utilizing representative processes and datasets. Although quality

control was undertaken during the development of the life cycle inventory (LCI) and the life cycle impact assessment (LCIA), these factors contribute to the overall limitations of the assessment.

Rules Governing Comparability

To ensure compliance with requirements, the LCAs conducted shall not be used as a comparative assertion or overall superiority claim. CertainTeed is committed to using the best available data and resources and will ensure that any Optimized LCA meets the relevant ISO comparability requirements.

For the purpose of tracking improvements derived from the LCA action plan, comparisons must adhere to the following strict rule:

- Any claimed improvements must be compared exclusively against the baseline LCA results for the same product type. For instance, an improvement realized for a Type X 5/8" Gypsum Board manufactured in Montreal, QC, must only be compared against the corresponding baseline Type X 5/8" Gypsum Board LCA results from that location, and not against any other product type

VERIFICATION STATEMENT

As an independent third-party reviewer, I have reviewed the Montreal Gypsum Panels Life Cycle Assessment Impact Reduction Plan and the supporting third party verified LCA documentation for CertainTeed Saint-Gobain. Based on my review, it is my professional opinion that the Action Plan meets the intent of LEED v4.1 MR Credit: Environmental Product Declarations, Option 2, including the requirement for an externally verified LCA and a publicly available action plan.

I confirm that I have the knowledge and experience necessary to conduct this verification, including expertise in gypsum products, the applicable PCR, ISO standards, the geographic scope of the LCA, and LEED 4.1 guidelines.

Sincerely,



Arch. Lucas Pedro Berman
Senda – Environmental & Energy Consulting