

ENVIRONMENTAL PRODUCT DECLARATION

IN ACCORDANCE WITH ISO 14025 AND ISO 21930:2017

SmartEPD-2024-048-0211-01

Building Products of Canada - Industrial Wood Fiber Panel - 1/2"



Industrial
Fiberboard



MARKER BOARD



TABLE PAD



Date of Issue:
Dec 02, 2024

Expiration:
Dec 02, 2029

Last updated:
Dec 03, 2024



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General Information

Building Products of Canada

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Product Name:	Building Products of Canada - Industrial Wood Fiber Panel - 1/2"
Declared Unit:	1 m2
Declaration Number:	SmartEPD-2024-048-0211-01
Date of Issue:	December 02, 2024
Expiration:	December 02, 2029
Last updated:	December 03, 2024
EPD Scope:	Cradle to gate with other options A1 - A3
Market(s) of Applicability:	North America

Organization Information

BP of Canada, a subsidiary of Saint-Gobain, who which is a leading North American manufacturer of interior building materials including gypsum, ceilings, and insulation as well as exterior building materials which include roofing, vinyl siding, trim, and water protection.

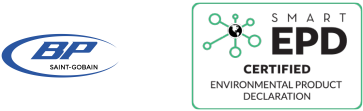
Further information can be found at: <https://bpcan.com/>

Limitations, Liability, and Ownership

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 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 results for upstream or downstream of the life cycle stages declared. The EPD owner has sole ownership, liability, and responsibility for the EPD.

Reference Standards

Standard(s): ISO 14025 and ISO 21930:2017



Core PCR:	Smart EPD® Part A Product Category Rules for Building and Construction Products and Services v1.01 Date of issue: January 15, 2024 Valid until: January 15, 2029
Sub-category PCR review panel:	Contact Smart EPD for more information.
General Program Instructions:	Smart EPD General Program Instructions v.1.0, November 2022

Verification Information

ACLCA PCR Guidance Version:	1.0
ACLCA PCR Conformance Level:	Transparency
LCA Author/Creator:	Saint-Gobain North American ESG Sustainability Group sustainability@saint-gobain.com
EPD Program Operator:	Smart EPD info@smartepd.com www.smartepd.com 585 Grove St., Ste. 145 PMB 966, Herndon, VA 20170, USA
Verification:	Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071 : External Rifat Karim Independent Consultant rifat.chimique@gmail.com Independent external verification of EPD, according to ISO 14025 and reference PCR(s) : External Rifat Karim Independent Consultant rifat.chimique@gmail.com

Product Information

Declared Unit:	1 m2
Mass:	2.63 kg
Product Specificity:	Product Average Product Specific

Product Description

BP SmartCore industrial panels are wood fiber boards. They are manufactured from 100% post-industrial wood residues and are 100% recyclable. Bonding agent is a natural renewable resource and contains no harmful chemicals (such as formaldehyde, urea formaldehyde, hydrochlorofluorocarbon (HCFC), pentane or VOC's). Wax emulsion is used to control water absorption. Industrial wood fiber boards are rigid, lightweight, confer sound-deadening properties and are environmentally friendly. They can contribute to qualifying for green building certification programs like LEED®. Some panels are available with an FSC® Mix credit certification. Panels are clay coated, smooth and have an ironed surface. This allows an excellent surface retention of adhesives. Material can be beveled, nailed, drilled, or die cut, laminated to hardboard, plywood, metal, cork, plastic, or other material. Applications for industrial wood fiber panels range from acoustical dividers and privacy screens for office furniture, tackboards for school walls, packaging and crating protection, to furniture and architectural paneling for sound deadening properties. Panels are available in 3 thicknesses (3/8 in., 7/16 in., and 1/2 in.) and multiple dimensions: widths of 48 in. and 49 in. and lengths from 84 in. to 144 in. This EPD focuses on 1/2 in. thickness wood fiber panel.

Further information can be found at: <https://bpcan.com/>

Product Specifications

Product SKU(s): BIN0547, BIN0548, BIN05485, BIN0549, BIN0540, BIN05402, BIN054997, BIN0549144, BIN0448A, BIN0440A, BIN04402A, BIN0448, BIN0449, BIN0440, BIN04402, BIN044997 BIN0348, BIN0348T (no coating), BIN034997, BIN0348108, BIN0349121, BIN03402, BIN0348144

Product Classification Codes: EC3 - Wood

Material Composition

Material/Component Category	Origin	% Mass
Wood	Canada	90 - 98
Starch	Canada	1 - 5
Wax	Canada	0 - 2
Coating	Canada	1-7

Packaging Material	Origin	kg Mass
Plastic Bags	Canada	0.02
Pallets	Canada	0.011
Edgeboard Corner Protectors	Canada	0.03
Strapping	Canada	0.033

Biogenic Carbon Content	kg C per m2
Biogenic carbon content in product	1.25
Biogenic carbon content in accompanying packaging	0.013



Hazardous Materials

No substances required to be reported as hazardous are associated with the production of this product

EPD Data Specificity

Primary Data Year:	2023
Manufacturing Specificity:	✗ Industry Average ✗ Manufacturer Average ✓ Facility Specific
Averaging:	
Averaging was not conducted for this EPD	

System Boundary

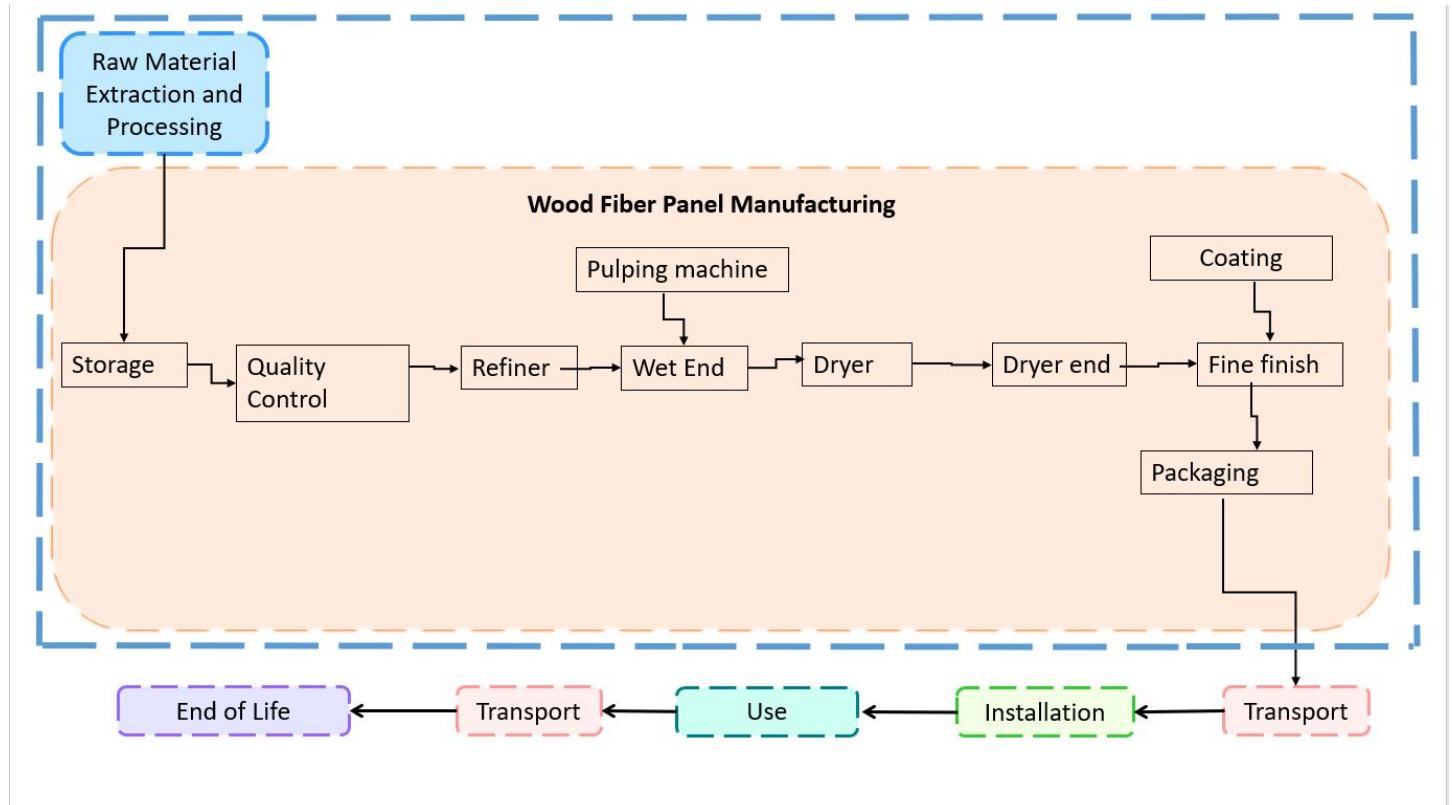
Production	A1	Raw material supply	✓
	A2	Transport	✓
	A3	Manufacturing	✓
Construction	A4	Transport to site	ND
	A5	Assembly / Install	ND
Use	B1	Use	ND
	B2	Maintenance	ND
	B3	Repair	ND
	B4	Replacement	ND
	B5	Refurbishment	ND
	B6	Operational Energy Use	ND
	B7	Operational Water Use	ND
End of Life	C1	Deconstruction	ND
	C2	Transport	ND
	C3	Waste Processing	ND
	C4	Disposal	ND
Benefits & Loads Beyond System Boundary	D	Recycling, Reuse Recovery Potential	ND

Plants



BP Canada
420 Rue Dupont, Pont-Rouge, Québec G3H 1S2, Canada

Product Flow Diagram



Software and Database

LCA Software:	 Sphera LCA for Experts (formerly GaBi) v. 10.8
LCI Foreground Database(s):	 GaBi Professional Database v. 2022
LCI Background Database(s):	 US LCI v. FY17.Q4.02  Ecoinvent v. 3.10

Data Quality

Wherever secondary data is used, the study adopts critically reviewed data for consistency, precision, and reproducibility to limit uncertainty. Since the inventory flows for the utilized databases are very often accompanied by a series of data quality ratings, a general indication of precision can be inferred. Using these ratings, the datasets used generally have medium-to-high precision. The Saint-Gobain North American ESG Department collected specific data on energy and material inputs, wastes, water use, emissions, and transportation impacts for the Pont Rouge, QC manufacturing plant.

Life Cycle Module Descriptions

This LCA study is characterized as a “cradle to gate” study, examining the Wood Fibre panel product lines from raw material extraction to factory gate. For this life cycle assessment, the Saint-Gobain North America (SGNA) ESG department, with assistance from personnel at the manufacturing locations, collected specific data on energy and material inputs, wastes, water usage, emissions, and transportation impacts for the BP of Canada Wood Fibre Panel, in Pont Rouge, QC for the calendar year 2023.

Raw Materials (Module A1)

A thorough analysis of the material inputs was completed for the inventory of this study.

Transportation of raw materials (Module A2)

Raw materials are transported to the manufacturing sites by standard freight truck, train, or ocean freighters. Unless otherwise noted, transport vehicles are fueled with diesel fuel. The raw material transportation distance were modeled based on the actual data provided by experts from the plant.

Manufacturing (Module A3)

All the fibers used in the manufacture of wood fiber boards are cellulosic fibers from post-industrial. Wood chips and shavings are refined using a thermomechanical pulping process. Fibers are not bleached nor colored. Water is added to refined fibers to obtain pulp. Water used in process comes from the adjacent Jacques-Cartier River. Additives are mixed in pulp to adjust quality properties.

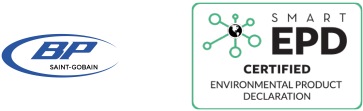
Wood fiber panels are produced with a papermaking-like process. Fiber pulp resulting from refined fibers, water and additives is uniformly distributed into the wet end of panel-forming machine. After, the material undergoes a drying process where excess moisture is removed. Dry panels are coated and calendered to get a smoother surface. At the end of the process line, panels are stacked on a wood pallet to facilitate manipulation. Wood fiber boards come in a superior weather-resistant packaging. All the water removed during the wet end process is treated on-site. Water is cleaned without using chemicals and cleaned water is returned to the river after being tested conform to environmental laws. Sludge generated during the water treatment process is used as a fertilizer for local farmers.

Packaging (Module A3)

Packaging of the final product after production is included in the life cycle assessment. The product is stacked on a wood pallet, material is protected using cardboard corners, covered with a weather-resistant bag, and labelled.

LCA Discussion

Allocation Procedure



The LCI data was collected from the Pont Rouge, QC manufacturing facility for the production year 2023. In addition to the Wood Fiber Panel products, the facility produces several other wood fiber product families. The manufacturing for all products made at this facility have similar energy, waste, and water input requirements. Allocation was conducted based on the production mass data provided by the facilities as a percentage of the overall production mass. Since the plant does not have submetering, there is no way to determine exact consumption for specific product lines. Mass allocation is the most accurate and representative way to allocate energy and water usage data. No waste flows during production have been allocated as co-products. Emissions associated with land use change were not included in the LCA due to the negligible impacts

Cut-off Procedure

Processes whose total contribution to the final result, with respect to their mass and in relation to all considered impact categories, is less than 1% can be neglected. The sum of the neglected processes may not exceed 5% by mass of the considered impact categories. For that a documented assumption is admissible. For Hazardous Substances – as regulated by the HPR (Hazardous Products Regulations) and via Health Canada's national hazard standard "WHMIS" the following requirements apply:

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

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

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
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Results

Environmental Impact Assessment Results

IPCC AR5 GWP 100, TRACI 2.1, CML 2016 v4.8

per 1 m2 of product .

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

Impact Category	Method	Unit	A1	A2	A3	A1A2A3
GWP-total	IPCC AR5 GWP 100	kg CO2 eq	-4.34e+0	1.06e-1	1.86e+0	-2.37e+0
ODP	TRACI 2.1	kg CFC 11 eq	5.45e-8	4.01e-12	1.52e-7	2.07e-7
AP	TRACI 2.1	kg SO2 eq	1.26e-3	6.84e-4	1.54e-3	3.48e-3
EP	TRACI 2.1	kg N eq	8.28e-4	3.80e-5	3.83e-4	1.25e-3
POCP	TRACI 2.1	kg O3 eq	4.34e-4	1.66e-5	2.00e-4	6.51e-4
GWP-fossil	IPCC AR5 GWP 100	kg CO2 eq	2.50e-1	1.06e-1	2.00e+0	2.36e+0
ADP-fossil	CML 2016 v4.8	MJ	4.48e-1	1.87e-1	4.15e+0	4.78e+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:

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.

The environmental impact results of products in this document are based on a declared unit and therefore do not provide sufficient information to establish comparisons. The results shall not be used for comparisons without knowledge of how the physical properties of the product impact the precise function at the construction level. The environmental impact results shall be converted to a functional unit basis before any comparison is attempted

Comparisons cannot be made between product-specific or industry average EPDs at the design stage of a project, before a building has been specified. Comparisons may be made between product-specific or industry average EPDs at the time of product purchase when product performance and specifications have been established and serve as a functional unit for comparison. Environmental impact results shall be converted to a functional unit basis before any comparison is attempted. Any comparison of EPDs shall be subject to the requirements of ISO 21930 or EN 15804. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries. EPDs are not comparative assertions and are either not comparable or have limited comparability when they have different system boundaries, are based on different product category rules or are missing relevant environmental impacts. Such comparison can be inaccurate, and could lead to erroneous selection of materials or products which are higher-impact, at least in some impact categories.

Resource Use Indicators

per 1 m2 of product .

Indicator	Unit	A1	A2	A3	A1A2A3
RPRE	MJ, net calorific value	2.95e+1	0	1.50e+1	4.45e+1
RPRM	MJ, net calorific value	4.23e+1	0	1.33e+0	4.36e+1
RPRT	MJ, net calorific value	7.26e+1	0	1.53e+1	8.79e+1
NRPRE	MJ, net calorific value	4.34e+0	1.36e+0	2.84e+1	3.41e+1
NRPRM	MJ, net calorific value	7.39e-1	0	2.28e-1	9.67e-1
NRPRT	MJ, net calorific value	5.08e+0	1.36e+0	2.86e+1	3.51e+1
FW	m3	8.18e-3	0	3.60e-2	4.42e-2
SM	kg	2.49e+0	0	0	2.49e+0
RSF	MJ	0	0	0	0
NRSF	MJ	0	0	0	0
ND	ND	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.

Waste and Output Flow Indicators

per 1 m2 of product .

Indicator	Unit	A1	A2	A3	A1A2A3
HWD	kg	2.54e-10	0	9.19e-9	9.44e-9
NHWD	kg	9.23e-4	0	9.66e-3	1.06e-2
HLRW	kg	1.47e-8	0	9.90e-9	2.46e-8
ILLRW	kg	1.23e-5	0	9.12e-6	2.14e-5
CRU	kg	0	0	0	0
MFR	kg	0	0	0	0
MER	kg	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.

Carbon Emissions and Removals

per 1 m2 of product .

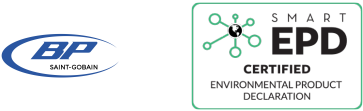
Indicator	Unit	A1	A2	A3	A1A2A3	A5	C3	C4
BCRP	kg CO2	-4.58e+0	0	0	-4.58e+0	0	0	0
BCEP	kg CO2	0	0	0	0	0	0	4.58e+0
BCRK	kg CO2	0	0	-4.77e-2	-4.77e-2	0	0	0
BCEK	kg CO2	0	0	0	0	4.77e-2	0	0

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.



Interpretation

To fully understand the results of the life cycle assessment, it is crucial to comprehensively review and ensure completeness, sensitivity, and consistency. The completeness check ensures that all relevant processes, inputs, and outputs are considered in the LCA. This study carefully examined key stages such as raw materials, raw material transportation, and manufacturing, and found no significant data gaps. The sensitivity check supported these findings by exploring the impacts of varying natural gas consumption by $\pm 10\%$, showing that changes in natural gas usage could reduce environmental impacts. A consistency check was also performed to ensure that the assumptions, data sources, and methodologies used in the LCA were applied consistently and aligned with the study's goals. These checks validate the reliability of the LCA findings and emphasize the significant impact of manufacturing processes, energy efficiency, raw material selection, and end-of-life considerations on the overall environmental performance of the products studied.

The results of the life cycle assessment indicate that the manufacturing process, and raw material phase have the most significant impact on the environmental performance of the products under study. More than 60% of the overall global warming potential of each thickness is attributed to the manufacturing process. The majority of the manufacturing impacts are due to the use of natural gas, which contributes to 95% of the manufacturing impacts. Improving energy efficiency at the manufacturing facility in Pont Rouge, QC would help to reduce the overall environmental impacts for all product groupings.

Moreover, the sensitivity analysis of the natural gas impacts at $\pm 10\%$ of the current manufacturing model provides valuable insights into the influence of energy inputs on the environmental impact intensity of wood fiber panels production. The results indicate that reducing natural gas consumption by 10% could achieve a more significant decrease in overall environmental impact potentials. These findings underscore the importance of prioritizing natural gas efficiency improvements to achieve more substantial environmental benefits in wood fiber panels production.

Additional Environmental Information

Environment and Health During Manufacturing

Building Products of Canada has well-established Environmental, Health, and Safety (EHS) and product stewardship programs which help to enforce proper evaluation and monitoring of chemicals that are chosen to manufacture products. These programs ensure that all environmental and WHMIS requirements are met or exceeded to ensure the health and safety of all employees and contractors.

Environment and Health During Installation

All recommendations should be utilized as indicated by Safety Data Sheets and installation guidelines.

Water

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

Delayed Emissions

No delayed emissions are expected from this product

Environmental Activities and Certifications

Certification
None

Further Information

- A manufacturer shall not make claims based on an industry-average EPD which leads the market to believe the industry-average is representative of manufacturer-specific or product-specific results.
- On account of the many different possible applications for BP SmartCore industrial panels, no reference service life is declared

References

- SMART EPD™ PART A PRODUCT CATEGORY RULES FOR BUILDING AND CONSTRUCTION PRODUCTS AND SERVICES Standard 1000-001, version 1.0, January 31, 2024
- ISO 14040: 2006 Series – Environmental Management-Life Cycle Assessment
- ISO 21930:2017– Sustainability in building construction – Environmental declaration of building products
- Sphera LCA FE Databases. <https://lcadatabase.sphera.com/>
- US LCI Database. <https://www.nrel.gov/lci/>
- Ecoinvent Database. <http://ecoinvent.org/>
- BP of Canada <https://bpca.com/>
- StatCan website: <https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/provincial-territorial-energy-profiles/provincial-territorial-energy-profiles-quebec.html>