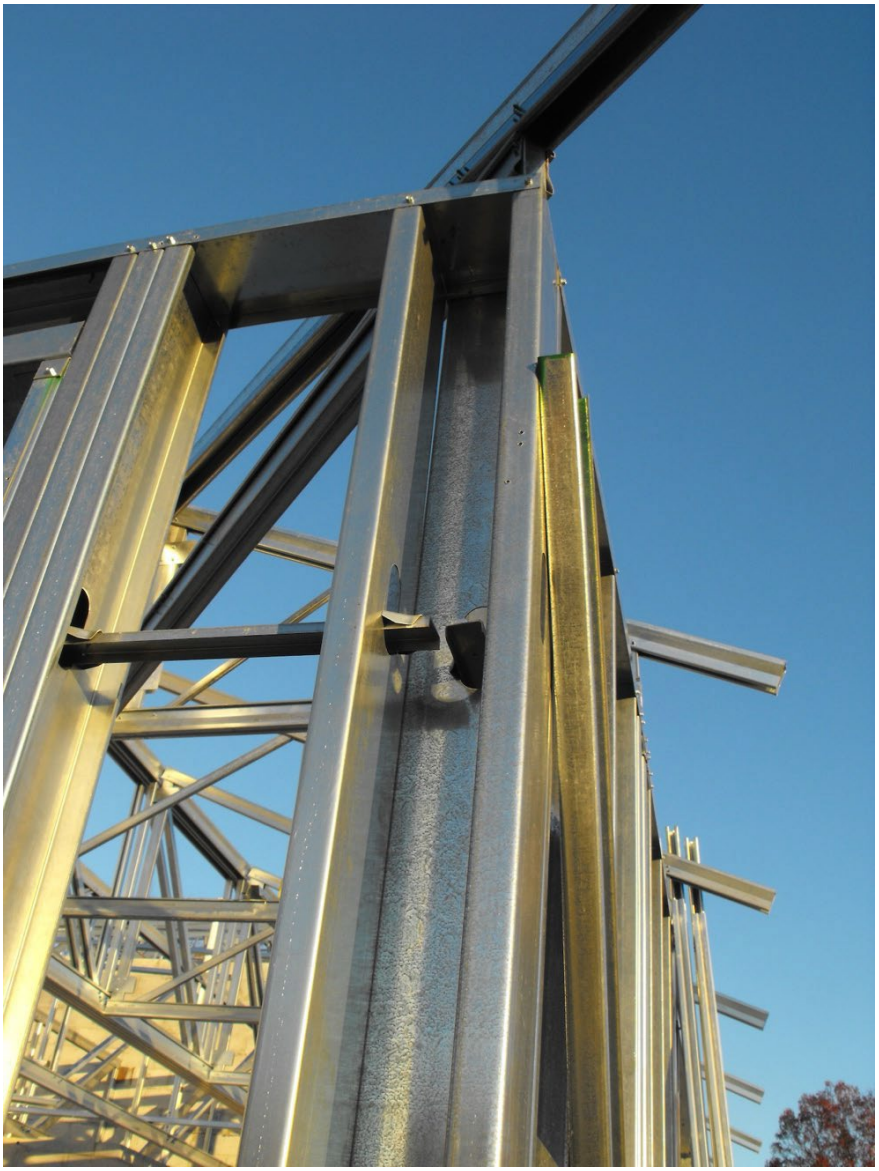
ENVIRONMENTAL PRODUCT DECLARATION

INDUSTRY-AVERAGE COLD-FORMED STEEL FRAMING



Cold-formed steel framing (CFS) products meet AISI S220 and AISI S240 and include structural and nonstructural framing components for walls, floors, ceilings, and roofs composed of hot-dip galvanized cold-formed steel members and flat straps used for bracing.

SFIA
STEEL FRAMING INDUSTRY ASSOCIATION

The Steel Framing Industry Association (SFIA) consists of manufacturers, designers, suppliers, and construction professionals committed to improving market conditions for and the quality of cold-formed steel in construction, and its members represent 80% of the cold-formed steel (CFS) framing products produced in the US. SFIA and its member companies pursue its goals through programs and initiatives that promote the use of cold-formed steel framing as a sustainable and cost-effective solution, advocate the development and acceptance of appropriate code provisions, educate members with reliable data and other critical information that is essential to effective business planning, and create a positive environment for innovation.

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ENVIRONMENTAL PRODUCT DECLARATION

STEEL FRAMING INDUSTRY ASSOCIATION

STEEL FRAMING INDUSTRY ASSOCIATION
INDUSTRY-AVERAGE COLD-FORMED STEEL FRAMING PRODUCTS

According to ISO 14025 and ISO 21930:2017

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Solutions www.ul.com 333 Pfingsten Rd, Northbrook IL, 60062 www.spot.ul.com
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	UL Solutions Program Operator Rules v.2.7 2022
MANUFACTURER NAME AND ADDRESS	Steel Framing Industry Association 513 W. Broad Street Suite 210 Falls Church, VA 22046
DECLARATION NUMBER	4792282816.101.2
DECLARED PRODUCT & DECLARED UNIT	Industry-Average Cold-Formed Steel (CFS) Framing Products 1 metric ton
REFERENCE PCR AND VERSION NUMBER	Smart EPD PCR Part A Product Category Rules for Building and Construction Products and Services, v1.2 (2025) Smart EPD PCR Part B for Designated Steel Construction Products, v3 (2025)
DESCRIPTION OF PRODUCT APPLICATION/USE	The intended use of products is for structural and non-structural framing of interior and exterior walls, roof, floors, and ceilings.
MARKETS OF APPLICABILITY	North America
DATE OF ISSUE	August 13th , 2026
PERIOD OF VALIDITY	5 Years
EPD TYPE	Industry-average Type III
EPD SCOPE	Cradle to gate (A1-A3)
ACLCA PCR GUIDANCE CONFORMANCE LEVEL	Transparency, per ACLCA PCR Guidance version 1.0 (ACLCA, 2022)
YEAR(S) OF REPORTED PRIMARY DATA	2024 – 2025
LCA SOFTWARE & VERSION NUMBER	Microsoft Excel
LCI DATABASE(S) & VERSION NUMBER	ecoinvent v3.12
LCIA METHODOLOGY & VERSION NUMBER	TRACI 2.2, IPCC AR6 GWP_{100}, CML 2001-Jan 2016 ADP_{fossil}
Part A PCR review was conducted by:	Jack Geibig, Chair Terrie Boguski Hugues Imbeault-Tétrault, Eng., M.A. Sc.
The sub-category PCR review was conducted by:	Dr. Thomas Gloria (chair) Industrial Ecology Consulting t.gloria@industrial-ecology.com
This declaration and background LCA report were independently verified in accordance with ISO 14025: 2006. The SmartEPD Part A: Product Category Rules for Building and Construction Products and Services, v1.2, based on ISO 21930:2017, serves as the core PCR. ☐ INTERNAL ☒EXTERNAL	Kun Chen, UL Solutions Cooper McCollum, UL Solutions
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	WAP Sustainability
Further explanatory materials may be obtained from	UL Solutions www.ul.com

The EPD owner has sole ownership, liability, and responsibility for the EPD.
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.
EPDs are only comparable if they conform with ISO 21930, this sub-category PCR, include all relevant information modules, and are based on equivalent scenarios with respect to the construction works context.
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.
It is recognized that by following the typical ISO 21930:2017 definitions of module A1, A2 and A3 for a specific production facility, inconsistencies will occur in classifying individual processes as either A1 or A3 based on the scope of the operations that take place at a given facility. Care must be taken not to compare A1, A2 or A3 on an individual basis for a given product from various mill producers, but, instead on the aggregated total of A1, A2 and A3. Separate A1, A2 and A3 values are provided for a better understanding of the processes taking place at a given facility and a greater level of transparency.
Construction product environmental impact results provide a sufficient basis for comparison only when considered in the context of the construction works project. In all cases of comparing construction products, the principle that the basis for comparison of the assessment is the construction works level shall be maintained by ensuring that the same functional requirements are met and the criteria in ISO 21930:2017 Section 5.5 "Comparability of EPDs for construction products" are satisfied.
Note: A collection of manufacturer-average and/or facility-specific EPDs is insufficient for setting benchmarks and thresholds unless production volumes are taken into account. Benchmarking and threshold setting efforts shall also consider that some manufacturer-average data and facility-specific data may be represented in Industry-average EPDs and may result in double counting of the same data.

1. Product Definition and Information

1.1. Description of Organization

The Steel Framing Industry Association (SFIA) consists of manufacturers, designers, suppliers, and construction professionals committed to improving market conditions for and the quality of cold-formed steel in construction, and its members represent 80% of the cold-formed steel (CFS) framing products produced in the US. SFIA and its member companies pursue its goals through programs and initiatives that promote the use of cold-formed steel framing as a sustainable and cost-effective solution, advocate the development and acceptance of appropriate code provisions, educate members with reliable data and other critical information that is essential to effective business planning, and create a positive environment for innovation.

Recognized participants in the Industry Wide EPD include the following cold-formed steel framing product producers.

SFIA Members:

- CEMCO
- ClarkDietrich
- Ironline
- JN Linrose
- MBA Building Supplies
- Panel Rey
- State Building Products
- Steeler
- Super Stud Building Products
- The Steel Network

SFIA Nonmembers:

- Klover
- Marino\WARE

SFIA conducted open solicitation for participation in EPD development through industry association meetings and outreach campaigns. Twelve manufacturers contributed data for the study. One manufacturing facility per participating manufacturer was selected for the LCA to maximize technological, geographical, and industry representativeness while considering time and budgetary constraints.

Results in this EPD are based on a weighted average by production mass across the manufacturing facilities included in the sample.

1.2. Product Description and Technical Requirements

Cold-formed steel framing (CFS) products include structural and nonstructural framing components for walls, floors, ceilings, and roofs composed of hot-dip galvanized cold-formed steel members and flat straps used for bracing. A non-exhaustive list of cold-formed steel members include C-shape studs, joists, rafters, or truss components; channel and furring; and angle or L-headers. These cold-formed steel framing products meet the requirements of AISI S220 and AISI S240. The hot dip galvanized steel sections used as an input material are produced globally using a mix of both BOF (Basic Oxygen Furnace) and EAF (Electric Arc Furnace) steel making processes.

These products fall under CSI MasterFormat® division 05 40 00 Cold-Formed Metal Framing and 09 22 16 Nonstructural Metal Framing.

Figure 1: Cold-Formed Steel Framing Products

Table 1: Steel Product Specifications

PARAMETER	VALUE	
System boundary option	Option 2. Manufactured product	
Form factor	Cold-formed steel framing	
Production route representation	**Route**	**Is represented?**
	BOF	True
	EAF	True
	OHF	False
	Unknown	True
Steel type	Carbon / Alloy	
Options	Galvanized (Mill Process)	

1.3. Application

The intended use of products is for structural and non-structural framing of interior and exterior walls, roof, floors, and ceilings.

1.4. Material Composition

Cold-formed steel framing is produced from hot-dip galvanized cold rolled steel coil. Coil production takes place at domestic and international mills using EAF and BOF steelmaking technologies. Material composition per declared unit is presented in the table below.

Table 2: Material Composition per Declared Unit

MATERIAL	MASS %
Alloys and Other Iron Units	57.6%
Steel Scrap, Pre-Consumer	42.4%
Steel Scrap, Post-Consumer	0.0%

Recycled content is calculated as a weighted average by production mass across participating companies using primary data, where available. Where recycled content for a manufacturer's supply is unknown, region-specific recycled content data in industry-average LCAs from AISI and Worldsteel corresponding to the geography of the manufacturer's supply chain are used as a proxy. For most manufacturers and industry-average LCAs, the source of recycled content is unknown; therefore, recycled content is reported as an aggregated value of pre-consumer and post-consumer recycled content.

Galvanized coatings include zinc, aluminum, and silicon. Mass of coatings per declared unit varies with thickness of the steel and is excluded from the material composition tables.

1.5. Declaration of Methodological Framework

This LCA uses an attributional approach.

1.6. Manufacturing

Galvanized steel coil is unloaded onto an uncoiler and slit to size. Sheet steel, strip, and straps are cut to size. The sized steel is rollformed into different shapes. Depending on customer and product specifications, CFS products may also be punched, stamped, and pressed to form precise shapes.

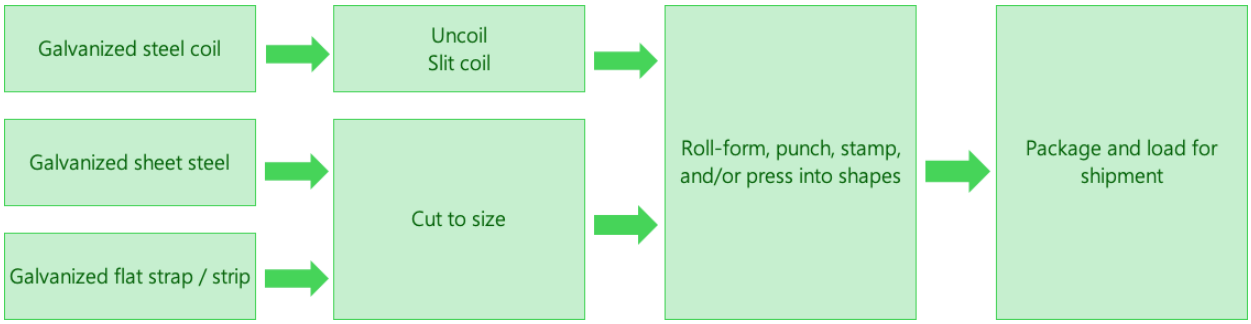

Figure 2: Process Flow Diagram

1.7. Packaging

The products are packaged using wood, steel or plastic banding, plastic buckets, plastic film, paper, and cardboard.

As required per ISO 21930 and the Part A PCR, information on packaging is provided to specify the end of life scenarios used for packaging or to support development of the end of life scenarios for packaging at the construction works level where the A5 module is not declared.

Table 3: Packaging Waste Details for A5 Scenario Development, per Declared Unit

PACKAGING WASTE	VALUE	UNIT
Packaging Waste to Landfill	9.49E-03	kg
Packaging Waste to Incineration	2.12E-03	kg
Packaging Waste to Recycling	1.20E-02	kg
Biogenic Carbon Content of Packaging	2.59E+01	kg CO_2

1.8. Transportation

Steel coils are delivered to CFS manufacturer facilities via truck, rail, and ship, which is accounted for in the model. The distances were calculated using the supplier location and the location of manufacturing. Because primary data on backhauls are not available, any short-haul supplier transport distances (<200 miles) are multiplied by 2 to model impacts related to backhauls, per the Part B PCR.

1.9. Product Installation

Because the declared system boundary is cradle-to-gate, product installation is not declared in this EPD.

1.10. Use

Because the declared system boundary is cradle-to-gate, use of product is not declared in this EPD.

1.11. Reference Service Life and Estimated Building Service Life

Because the declared system boundary is cradle-to-gate, a reference service life is not declared.

1.12. Reuse, Recycling, and Energy Recovery

Because the declared system boundary is cradle-to-gate, reuse, recycling, or energy recovery is not declared.

1.13. Disposal

Because the declared system boundary is cradle-to-gate, the end-of-life module is not declared.

2. Life Cycle Assessment Background Information

2.1. Declared Unit

The declared unit is one (1) metric ton of cold-formed steel framing products.

Table 4: Declared Unit Details

PARAMETER	VALUE	UNIT
Mass Per Declared Unit	1,000	kg
Density	7,769-7,849	kg/m^3

2.2. System Boundary

The declared system boundary is cradle-to-gate (A1-A3). This includes the PCR life cycle modules A1, A2, and A3. Module A1 represents cradle-to-gate impacts including raw material supply. Module A2 represents transport of hot-dip galvanized steel coil to CFS manufacturer facilities, and module A3 represents manufacturing of the CFS products. The declared system boundaries are shown in the diagram below.

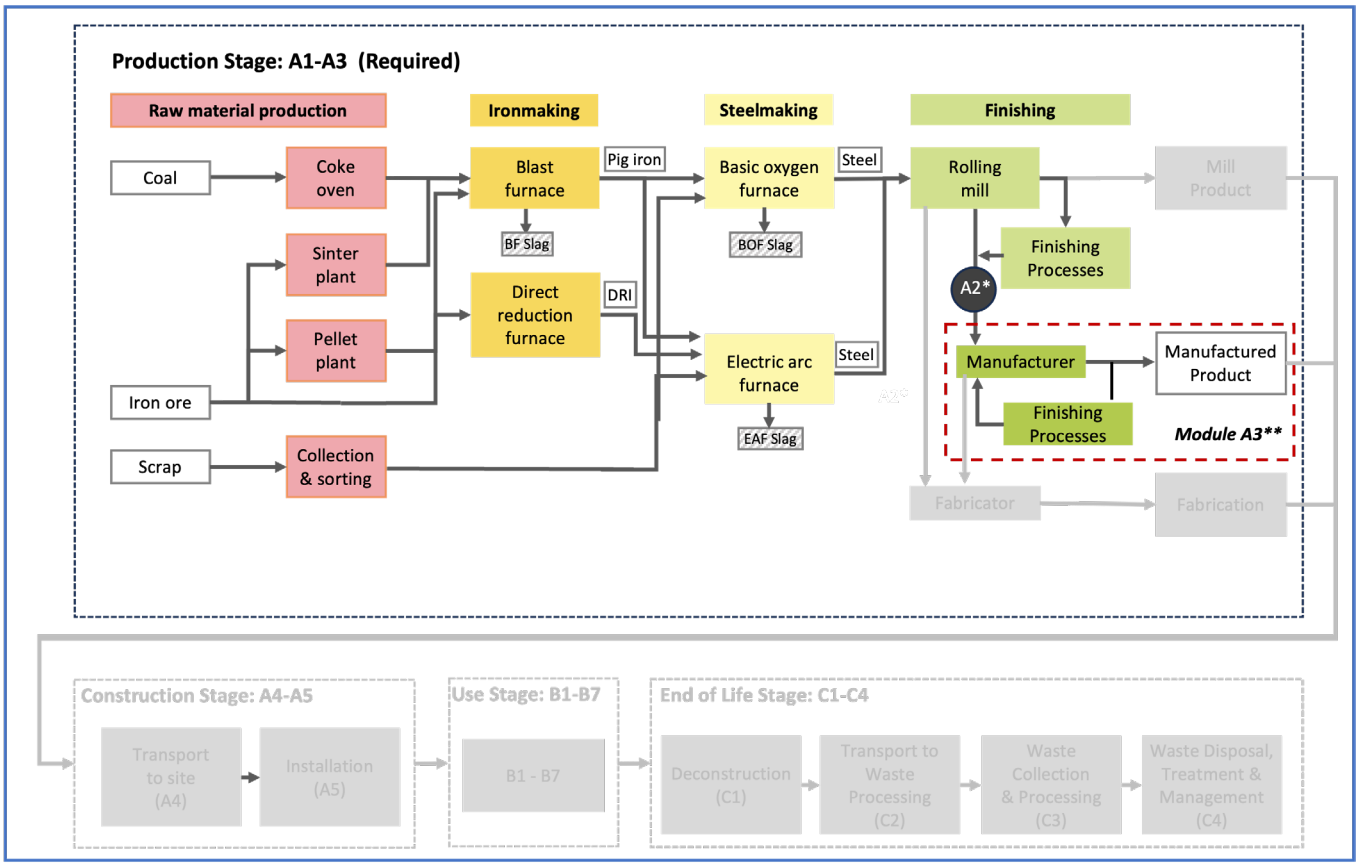

Figure 3: System Boundary Diagram

2.3. Estimates and Assumptions

All estimates and assumptions are within the requirements of ISO 14040/44. The primary energy and ancillary material data were collected as annual totals including all utility usage and production information. For the LCA, the energy and ancillary usage information was divided by the production to use per metric ton.

Assumptions and limitations to the study have been identified as follows. Specific assumptions relating to primary production data and modeling are detailed in the LCA report.

- This study is cradle-to-gate in scope and does not consider impacts of distribution, installation, use, or end-of-life of the product.
- Industry-average results are calculated as a production-weighted average based on the production volume of the facilities included in the sample. A sensitivity analysis on this decision revealed that alternative averaging methods may have significant effects on cradle-to-gate LCIA results, but the averaging method used in the study was deemed representative of actual CFS industry operations, meets PCR requirements, and satisfies the goals of the industry-average LCA.
- The choice to use industry-average secondary data for impacts of the steel coil supply is considered appropriate for an industry-average LCA because the sub-set of facilities assessed do not represent 100% of the CFS industry.
- While secondary datasets for hot-dip galvanized coil from AISI and worldsteel use system expansion for co-product allocation, these datasets are the best data available for representing industry-average impacts for production of hot-dip galvanized coil in the relevant regions.
- Natural gas consumption at all participating member facilities is confirmed to be used for non-production processes such as building heat and is therefore excluded from the scope of the LCA.
- The inclusion of overhead energy data was determined appropriate due to the inability to sub-meter and isolate manufacturing energy from overhead energy.
- The use and selection of secondary datasets from ecoinvent – The selection of which generic dataset to use to represent an aspect of a supply chain is a significant value choice. Collaboration between the LCA practitioner and the manufacturer was invaluable in determining best-case scenarios in the selection of data. However, no generic data can be a perfect fit. Improved supply chain specific data would improve the accuracy of results, however budgetary and time constraints also must be considered.
- Since this LCA uses the cut-off approach to model recycled material in the product, no credit is given to the product system. Instead, the manufacturer realizes reduced environmental impacts through the absence of the burden of extracting virgin material.
- Only known and quantifiable environmental impacts are considered.
- Due to the assumptions and value choices listed above, the LCA does not reflect real-life scenarios and hence cannot assess actual and exact impacts, but only potential environmental impacts.

2.4. Cut-off Criteria

Input and output flows of mass and energy greater than 1% (based on total mass final product and total energy usage of the product system) or greater than 1% of environmental impacts were included within the scope of analysis. Flows less than 1% were included if sufficient data were available to warrant inclusion and/or the flow was thought to have significant environmental impact. Cumulative excluded flows and environmental impacts are less than 5% per module based on total mass, energy usage, and impacts of the product system. Where data gaps were identified, they are filled by conservative assumptions with average, generic, or proxy data and assumptions are documented.

No known flows relevant to the product system are deliberately excluded from this LCA and EPD. Some material inputs may have been excluded within the ecoinvent datasets used for this project. All ecoinvent datasets have been critically reviewed and conform to the exclusion requirement of the study.

2.5. Data Sources

Primary data were collected by participants and were used for all manufacturing processes for the period of January 2024 to Dcember 2025. This period varies by manufacturer depending on the most recent 12 months of data available when data collection began.

Secondary data for raw material production were utilized from the AISI industry average dataset for hot-dip galvanized steel coil in North America (AISI, 2020), and worldsteel industry average datasets for hot-dip galvanized steel coil in Asia, Europe, and global production (worldsteel, 2022).

Per the PCR Part A, the data sources for key processes that contributes 10% or more to GWP-total in any module are disclosed below.

Table 5: Details on Datasets with Significant Contribution

CATEGORY	MODULE	MATERIAL/PROCESS NAME	DATASET NAME	DATASET GEOGRAPHY	DATASET REFERENCE YEAR
Material	A1	HDG Steel, Domestic	Steel hot dip galvanised AISI	RNA	2017
Material	A1	HDG Steel, Global	Steel hot dip galvanised worldsteel	GLO	2017-2022
Transportation	A2	Transport of Raw Materials, Truck	market group for transport, freight, lorry, diesel, unspecified ecoinvent	GLO	2025
Transportation	A2	Transport of Raw Materials, Train	market for transport, freight, train, fleet average ecoinvent	US	2025
Transportation	A2	Transport of Raw Materials, Ship	market for transport, freight, sea, container ship, heavy fuel oil ecoinvent	GLO	2025
Packaging	A3	Plastic Packaging Materials	polyethylene production, low density, granulate ecoinvent	US	2025
Packaging	A3	Plastic Packaging Production Process	market for injection moulding ecoinvent	GLO	2025
Energy	A3	Electricity, RFC	market for electricity, low voltage ecoinvent	US-RFC	2025
Energy	A3	Electricity, SERC	market for electricity, low voltage ecoinvent	US-SERC	2025
Energy	A3	Electricity, WECC	market for electricity, low voltage ecoinvent	US-WECC	2025
Energy	A3	Propane	market for propane, burned in building machine ecoinvent	GLO	2025

2.6. Data Quality

Geographic Coverage
The geographical scope of the manufacturing portion of the life cycle is North America. Participating company facilities represent a mix of geographies across the United States and Mexico. All primary data were collected from participants. The geographic coverage of primary data is considered very good.

The geographical scope of the raw material acquisition is North America, Europe, Asia, Oceania, and South America. Industry-average datasets for hot-dip galvanized steel coil from AISI and worldsteel were used to represent raw materials

impacts. These datasets represents industry average production in the relevant regions. Geogrpahical coverage of these data are considered good.

Time Coverage
Primary data were provided by participants and represent all information for January 2024–December 2025. Using this data meets the part B PCR requirements that primary foreground data are less than 2 years old. Time coverage of this primary data is considered very good.

Data necessary to model cradle-to-gate unit processes were sourced from ecoinvent LCI datasets and industry average hot-dip galvanized steel coil datasets. Time coverage of the datasets varies based on latest updates in the ecoinvent database. All datasets rely on at least 1-year average data. Overall time coverage of the datasets is considered good and meets PCR requirements.

Technological Coverage
Primary data provided by participants are representative of rollforming technology the industry uses in manufacturing cold-formed steel framing. Participating companies represent a mix of small, medium, and large CFS manufacturers. Through the use of industry-average datasets for hot-dip galvanized steel coil from AISI and worldsteel, the data also represent technology used in upstream production of hot-dip galvanized steel coil used by the industry.

Primary data is site-specific and considered of very good quality. It is worth noting that the energy and water used in manufacturing the product includes overhead energy such as lighting, heating, and sanitary use of water. Sub-metering was not available to extract process-only energy and water use from the total energy use. Sub-metering would improve the data quality of technological coverage.

The reported impact assessment values in this EPD may not be a precise representation of potential environmental burdens.

2.7. Period under Review

Period under review is January 2024 to December 2025.

2.8. Allocation

General principles of allocation were based on ISO 14040/44. Where possible, allocation was avoided. For most manufacturers, there are no products other than the product under study that are produced as part of the specific manufacturing processes under study. One manufacturer reported other products produced at the manufacturing facility. In all cases, to derive a per-unit value for manufacturing inputs such as electricity, thermal energy and water, allocation based on total production by mass was adopted.

Secondary ecoinvent datasets use a mix of economic and physical bases for allocation, depending on the dataset. Secondary datasets for hot-dip galvanized coil from worldsteel also uses a physical basis for allocation. While the secondary dataset for hot-dip galvanized coil from AISI uses system expansion for co-product allocation, this dataset is the best data available for representing industry-average impacts for production of hot-dip galvanized coil in North America. Furthermore, these industry average datasets from AISI and worldsteel are prescribed as default background datasets in the part B PCR.

Of relevance to the defined system boundary is the method in which recycled materials were handled. Throughout the study recycled materials were accounted for via the cut-off method. Under this method, impacts and benefits associated with the previous life of a raw material from recycled stock are excluded from the system boundary. Additionally, impacts and benefits associated with secondary functions of materials at end of life are also excluded (i.e., production into a third life or energy generation from the incineration plant). The study does include the impacts associated with reprocessing and preparation of recycled materials that are part of the bill of materials of the products under study.

3. Life Cycle Assessment Results

Table 6: Description of the system boundary modules

PRODUCT STAGE			CONSTRUCT-ION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw material supply	Transport	Manufacturing	Transport from gate to site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Building Operational Energy Use During Product Use	Building Operational Water Use During Product Use	Deconstruction	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling Potential
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

X=module is declared, MND=module not declared

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.

3.1. Industry-Average Life Cycle Assessment Results

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

Table 7: North American Impact Assessment Results: 1 metric ton

IPCC AR6 GWP_{100}, TRACI 2.2	A1	A2	A3	A1-A3 TOTAL
GWP-total [kg CO_2 eq]	2.46E+03	1.18E+02	3.51E+01	**2.62E+03**
GWP-fossil [kg CO_2 eq]	2.47E+03	1.18E+02	5.97E+01	**2.65E+03**
GWP-biogenic [kg CO_2 eq]	-4.24E+00	8.70E-02	-2.47E+01	**-2.88E+01**
GWP-luluc [kg CO_2 eq]	6.04E-01	1.81E-01	5.68E-02	**8.42E-01**
ODP [kg CFC 11 eq]	4.17E-10	1.78E-06	5.32E-06	**7.10E-06**
AP [kg SO_2 eq]	4.98E+00	1.14E+00	1.87E-01	**6.30E+00**
EP-freshwater [kg P eq]	8.29E-04	4.69E-03	1.12E-02	**1.67E-02**
EP-marine [kg N eq]	2.27E+00	8.68E-01	8.11E-02	**3.21E+00**
SFP [kg O_3 eq]	8.16E+01	3.37E+01	3.31E+00	**1.19E+02**

Table 8: Carbon emissions and removals: 1 metric ton

IPCC AR6 GWP_{100}, TRACI 2.2	A1	A2	A3	A1-A3 TOTAL
BCRP [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
BCEP [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
BCRK [kg CO_2]	0.00E+00	0.00E+00	2.57E+01	**2.57E+01**
BCEK [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
BCEW [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
CCE [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
CCR [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
CWNR [kg CO_2]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**

Table 9: Resource Use, Waste Parameters, and Output Flows: 1 metric ton

PARAMETER	A1	A2	A3	A1-A3 TOTAL
Resource Use				
RPR_E [MJ, LHV]	1.72E+03	2.70E+01	5.24E+02	**2.27E+03**
RPR_M [MJ, LHV]	0.00E+00	0.00E+00	2.61E+01	**2.61E+01**
RPR_T [MJ, LHV]	1.72E+03	2.70E+01	5.50E+02	**2.29E+03**
$NRPR_E$ [MJ, LHV]	2.94E+04	1.55E+03	1.07E+03	**3.20E+04**
$NRPR_M$ [MJ, LHV]	0.00E+00	0.00E+00	2.49E+02	**2.49E+02**
$NRPR_T$ [MJ, LHV]	2.94E+04	1.55E+03	1.32E+03	**3.23E+04**
SM [kg]	3.00E+02	0.00E+00	0.00E+00	**3.00E+02**
RSF [MJ, LHV]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
NRSF [MJ, LHV]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
RE [MJ, LHV]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
ADPf [MJ, LHV]	2.77E+04	1.53E+03	1.13E+03	**3.04E+04**
FW [m^3]	5.57E+01	1.96E-01	3.88E-01	**5.63E+01**
Waste Parameters and Output Flows				
HWD [kg]	8.53E-04	1.20E+01	1.28E+01	**2.48E+01**
NHWD [kg]	7.96E+01	1.24E+02	2.28E+02	**4.31E+02**
HLRW [kg]	7.19E-04	0.00E+00	0.00E+00	**7.19E-04**
ILLRW [kg]	6.01E-01	0.00E+00	0.00E+00	**6.01E-01**
CRU [kg]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
MR [kg]	0.00E+00	0.00E+00	4.45E+01	**4.45E+01**
MER [kg]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
EEE [MJ, LHV]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**
EET [MJ, LHV]	0.00E+00	0.00E+00	0.00E+00	**0.00E+00**

3.2. Statistical Information of Industry-Average Results

Statistical Information and Distribution for Life Cycle Impact Assessment (LCIA) results per metric ton of CFS product across manufacturers, including weighted mean, weighted standard deviation, median value, minimum value, maximum value, and sample size per the part B PCR.

The sample size (number of facilities represented in the statistics) for all statistics reported below is 12 facilities.

Table 10: Statistical Information: 1 metric ton

IPCC AR6 GWP_{100}, TRACI 2.2	Weighted Mean	Weighted Standard Deviation	Median	Minimum	Maximum
GWP-total [kg CO_2 eq]	2.62E+03	2.97E+02	2.43E+03	2.30E+03	2.95E+03
GWP-fossil [kg CO_2 eq]	2.65E+03	3.03E+02	2.50E+03	2.31E+03	2.99E+03
GWP-biogenic [kg CO_2 eq]	-2.88E+01	2.07E+01	-1.31E+01	-7.85E+01	3.83E+00
GWP-luluc [kg CO_2 eq]	8.42E-01	1.55E-01	9.36E-01	6.71E-01	1.18E+00
ODP [kg CFC 11 eq]	7.10E-06	1.77E-05	6.26E-06	3.82E-07	1.53E-04
AP [kg SO_2 eq]	6.30E+00	1.46E+00	5.35E+00	4.64E+00	7.96E+00
EP-freshwater [kg P eq]	1.67E-02	6.27E-03	1.66E-02	5.74E-03	4.06E-02
EP-marine [kg N eq]	3.21E+00	7.64E-01	2.68E+00	2.25E+00	4.04E+00
SFP [kg O_3 eq]	1.19E+02	3.12E+01	9.68E+01	8.03E+01	1.53E+02

4. Life Cycle Assessment Interpretation

Over the product life cycle the greatest contributor to GWP for industry-average CFS products is raw materials (A1). Transport contributes significantly to AP, EP-fresh, and POFP due to fuel combustion. Production is insignificant to most impact categories except EP-fresh, driven by electricity and plastic packaging.

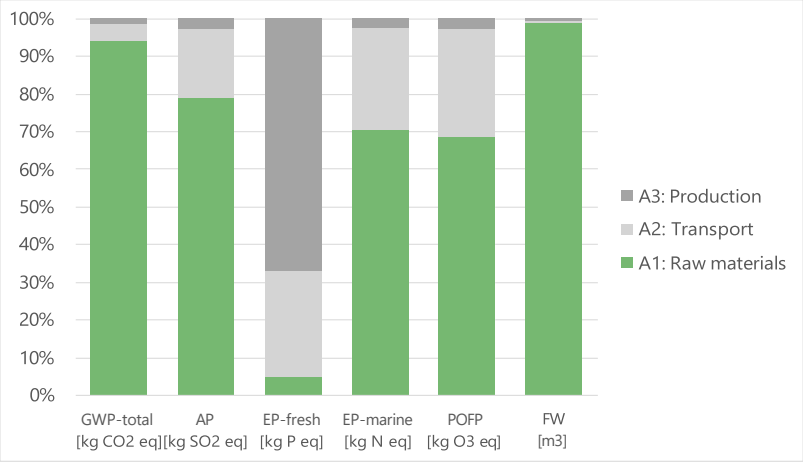

Figure 4: Cradle-to-Gate Impacts for Industry-Average Cold-Formed Steel Framing Products

5. Additional Environmental Information

5.1. Regulated Hazardous Substances

No substances required to be reported as hazardous per the EPA's Resource Conservation and Recovery Act were identified during the LCA associated with the production or disposal of this product. Product SDSs may be obtained directly from participating company websites or upon request.

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