Environmental Product Declaration | SCAFCO Steel Stud Company

Declaration Owner
SCAFCO Steel Study Company
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Products
Steel framing studs and track

Declared Unit

The declared unit is one metric ton of light gauge steel studs and track.
Results are reported using SI units.

EPD Number and Period of Validity
SCS-EPD-05752
EPD Valid October 21, 2019 through October 20, 2024
Version: December 11, 2020

Product Category Rule
North American Product Category Rule for Designated Steel Construction Products

Program Operator
SCS Global Services
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Declaration Owner:	SCAFCO Steel Stud Company
Address:	2800 E. Main Ave, Spokane, WA 99220
Declaration Number:	SCS-EPD-05752
Declaration Validity Period:	October 21, 2019 through October 20, 2024
Version Date:	December 11, 2020
Program Operator:	SCS Global Services
Declaration URL Link:	https://www.scsglobalservices.com/certified-green-products-guide
LCA Practitioner:	Dr. Gerard Mansell, SCS Global Services
LCA Software:	
Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071	☐ internal ☒ external
LCA Reviewer:	Tom Gloria, Ph.D., Industrial Ecology Consultants
Product Category Rule:	North American Product Category Rule for Designated Steel Construction Products
PCR Review conducted by:	
Independent verification of the declaration and data, according to ISO 14025 and the PCR	☐ internal ☒ external
EPD Verifier:	Tom Gloria, Ph.D., Industrial Ecology Consultants
Declaration Contents:	

Disclaimers: *This EPD conforms to ISO 14025, 14040, 14044, and ISO 21930:2007.*

Scope of Results Reported: *The PCR requirements limit the scope of the LCA metrics such that the results exclude environmental and social performance benchmarks and thresholds, and exclude impacts from the depletion of natural resources, land use ecological impacts, ocean impacts related to greenhouse gas emissions, risks from hazardous wastes and impacts linked to hazardous chemical emissions.*

Accuracy of Results: *Due to PCR constraints, this EPD provides estimations of potential impacts that are inherently limited in terms of accuracy.*

Comparability: *The PCR this EPD was based on was not written to support comparative assertions. EPDs based on different PCRs, or different calculation models, may not be comparable. When attempting to compare EPDs or life cycle impacts of products from different companies, the user should be aware of the uncertainty in the final results, due to and not limited to, the practitioner's assumptions, the source of the data used in the study, and the specifics of the product modeled.*

ABOUT SCAFCO STEEL STUD COMPANY

SCAFCO Steel Stud Company is a manufacturer of a complete line of steel framing products and accessories. Providing direct access to our engineering department, SCAFCO allows contractors to leverage our team to save on labor costs and improve installation efficiency. We produce customers' framing products to exact specifications, saving time and in-field modifications. SCAFCO's distributors have large inventories of standard products, which limits lead times and eliminates lost work time while waiting for materials on the jobsite.

SCAFCO offers a complete line of studs, track, and furring products. These are complemented by our specialty products of custom framing shapes, curved framing products, resilient sound channel, acoustical framing systems, shaftwall studs, rigid wall posts, backing supports, and framing clips/connectors. SCAFCO materials are available at over 20 distribution locations on the Western United States, as well as in Hawaii and Alaska.

PRODUCT DESCRIPTION

SCAFCO Steel Stud Company manufactures cold-formed steel framing products from galvanized sheet steel measuring from 0.0147 to 0.127 inches thick. These products are produced with a variety of galvanized coating thicknesses ranging from G40 up to G185. These steel framing products include steel studs, tracks, furring members, headers and jambs, clips and connectors, and other accessories products. All SCAFCO products are made from the same quality mill certified galvanized sheet steel.

These steel framing products are used in a variety of construction applications for both load bearing and non-load bearing conditions including, but not limited to: interior walls and ceiling systems, exterior walls, floor and roof framing, soffit framing, and other architectural features. These products are used for both commercial and residential construction.

Table 1: *Declared unit for light gauge steel studs and track and the approximate density.*

Parameter	Value, SI Units	Value, US Customary Units
Declared unit	1 metric ton	1 short ton
Density	7,850 kg/m3	490 lb/ft3

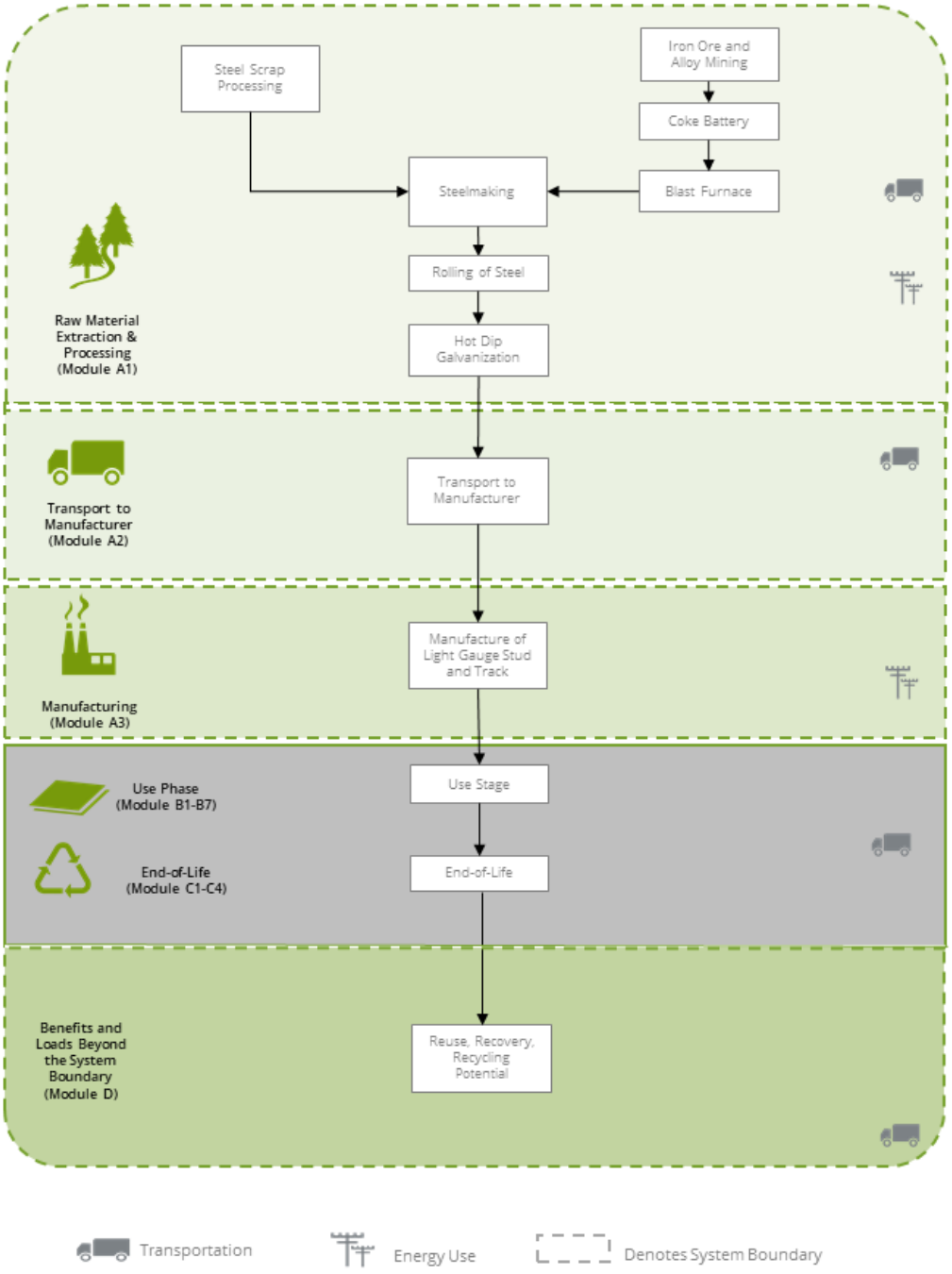
MATERIAL CONTENT

The steel stud and track represented by this EPD includes hot dip galvanized-coated carbon alloy steel, with a coating thickness ranging from G40 to G185.

These products, when used inside the building envelope, do not include materials or substances that have a potential route of exposure to humans or flora/fauna in the environment.

PRODUCT LIFE CYCLE FLOW DIAGRAM

The diagram below is a representation of the most significant contributions to the production of light gauge steel studs and track. This includes resource extraction, steelmaking, transport to fabrication shops, and product fabrication. The cradle-to-gate (A1-A3) system boundaries, including Module D (Benefits and loads beyond the system boundary) are shown in the diagram.



LIFE CYCLE ASSESSMENT STAGES AND REPORTED INFORMATION

In accordance with the PCR, the life cycle stages included in this EPD are as shown below (X = included, MND = module not declared).

Product			Construction Process		Use							End-of-Life				Benefits & Loads Beyond the System Boundary
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw Material Extraction and	Transport to the Fabricator	Fabrication	Transport	Construction – Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	Operational water use	Deconstruction demolition	Transport	Waste processing	Disposal	Reuse, recovery, and/or recycling potential
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	X

X = included, MND = module not declared

The following life cycle stages are included in the EPD:

Raw Material Extraction and Processing (A1): Includes all activities necessary for the production of light gauge steel studs and track. This includes recovery and processing of steel scrap, and extraction and processing of alloys, fluxes, EAF (electric arc furnace) and integrated consumables, and refractory consumables. The transportation from the supplier of materials to the steel mill is included. Lastly, this stage includes furnace and related process operations, creation of the billet, and the rolling of the final product. All upstream activities related to fuel use and electricity generation are included in this stage.

Transport to the Fabricator (A2): Includes the transportation of steel studs and track. from mill to fabricator by truck, rail, and ship.

Fabrication (A3): Includes all activities necessary for the fabrication of steel studs and track. which includes production of all ancillary materials, pre-products, products, and packaging.

Module D: Includes the potential avoided burden resulting from scrap steel at end-of-life. The approach used follows the World Steel Life Cycle Assessment Methodology.

The Reference Service Life (RSL) of the products is not specified.

The construction process stage, use stage and end-of-life stage of the products are excluded from the system boundaries of the study. Additional elements that are excluded from the study are:

- Construction activities, capital equipment and infrastructure
- Maintenance and operation of equipment
- Personnel travel and resource use

The deletion of these inputs or outputs is permitted since they are not expected to significantly change the overall conclusions of the study.

LIFE CYCLE IMPACT ASSESSMENT

Results are reported in Tables 3 and 4 according to the LCIA methodologies of the Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts (TRACI version 2.1) and CML-IA version 4.1.

Table 3. *LCIA results for 1 metric ton of steel framing studs and track produced by SCAFCO Steel Stud Company at the Spokane, WA facility.*

Impact Category	Impact Assessment Method	Units	A1	A2	A3	D
			Steel Production	Transport to the Fabricator	Fabrication	CREDITS AND BURDENS BEYOND THE SYSTEM BOUNDARY
Global Warming Potential	TRACI 2.1	ton CO_2 eq/ ton[b]	2.0	0.21	$2.6x10^{-2}$	-0.70
Ozone Depletion Potential	TRACI 2.1	ton CFC-11 eq/ ton[b]	$1.5x10^{-7}$	$3.9x10^{-8}$	$2.2x10^{-9}$	$4.7x10^{-9}$
Acidification Potential	TRACI 2.1	ton SO_2 eq/ ton[b]	$1.0x10^{-2}$	$2.2x10^{-3}$	$1.3x10^{-4}$	$-1.6x10^{-3}$
Eutrophication Potential	TRACI 2.1	ton N eq/ ton[b]	$1.4x10^{-2}$	$4.1x10^{-4}$	$9.3x10^{-5}$	$-5.0x10^{-5}$
Photochemical Ozone Creation Potential	TRACI 2.1	ton O_3 eq/ ton[b]	0.11	$6.1x10^{-2}$	$2.1x10^{-3}$	$-1.4x10^{-2}$
Depletion of Abiotic Resources (Elements)[a]	CML-IA	ton Sb eq/ ton[b]	$2.3x10^{-5}$	$2.2x10^{-10}$	$3.5x10^{-8}$	$7.5x10^{-8}$
Depletion of Abiotic Resources (Fossil)	CML-IA	BTU/short ton	$2.2x10^{7}$	$2.3x10^{6}$	320,000	$-7.0x10^{6}$
		(MJ/ metric ton)[c]	(25,000)	(2,700)	(380)	(-8,100)

(a) This indicator is based on assumptions regarding current reserves estimates. Users should use caution when interpreting results because there is insufficient information on which indicator is best for assessing the depletion of abiotic resources.
(b) Results shown represent both short ton per short ton of steel product, and metric ton per metric ton of steel product (these values are equivalent).
(c) Results shown represent U.S. Customary (BTU per short ton of steel product) and SI (MJ per metric ton of steel product) units. SI units are shown using parenthesis.

Table 4. *LCIA results for 1 metric ton of steel framing stud and track produced by SCAFCO Steel Stud Company at the Stockton, CA facility.*

Impact Category	Impact Assessment Method	Units	A1	A2	A3	D
			Steel Production	Transport to the Fabricator	Fabrication	CREDITS AND BURDENS BEYOND THE SYSTEM BOUNDARY
Global Warming Potential	TRACI 2.1	ton CO_2 eq/ ton[b]	2.0	0.18	$2.0x10^{-2}$	-0.70
Ozone Depletion Potential	TRACI 2.1	ton CFC-11 eq/ ton[b]	$1.5x10^{-7}$	$3.5x10^{-8}$	$2.0x10^{-9}$	$4.7x10^{-9}$
Acidification Potential	TRACI 2.1	ton SO_2 eq/ ton[b]	$1.0x10^{-2}$	$1.9x10^{-3}$	$8.8x10^{-5}$	$-1.6x10^{-3}$
Eutrophication Potential	TRACI 2.1	ton N eq/ ton[b]	$1.4x10^{-2}$	$3.6x10^{-4}$	$7.2x10^{-5}$	$-5.0x10^{-5}$
Photochemical Ozone Creation Potential	TRACI 2.1	ton O_3 eq/ ton[b]	0.11	$5.4x10^{-2}$	$1.6x10^{-3}$	$-1.4x10^{-2}$
Depletion of Abiotic Resources (Elements)[a]	CML-IA	ton Sb eq/ ton[b]	$2.3x10^{-5}$	$2.0x10^{-10}$	$3.6x10^{-8}$	$7.5x10^{-8}$
Depletion of Abiotic Resources (Fossil)	CML-IA	BTU/short ton	$2.2x10^{7}$	$2.0x10^{6}$	270,000	$-7.0x10^{6}$
		(MJ/ metric ton)[c]	(25,000)	(2,400)	(310)	(-8,100)

(a) This indicator is based on assumptions regarding current reserves estimates. Users should use caution when interpreting results because there is insufficient information on which indicator is best for assessing the depletion of abiotic resources.

(b) Results shown represent both short ton per short ton of steel product, and metric ton per metric ton of steel product (these values are equivalent).

(c) Results shown represent U.S. Customary (BTU per short ton of steel product) and SI (MJ per metric ton of steel product) units. SI units are shown using parenthesis.

Disclaimer:

This Environmental Product Declaration (EPD) conforms to ISO 14025, 14040, ISO 14044, and ISO 21930:2007.

Scope of Results Reported: *The PCR requires the reporting of a limited set of LCA metrics; therefore, there may be relevant environmental impacts beyond those disclosed by this EPD. The EPD does not indicate that any environmental or social performance benchmarks are met nor thresholds exceeded.*

Accuracy of Results: *This EPD has been developed in accordance with the PCR applicable for the identified product following the principles, requirements and guidelines of the ISO 14040, ISO 14044, ISO 14025 and ISO 21930 standards. The results in this EPD are estimations of potential impacts. The accuracy of results in different EPDs may vary as a result of value choices, background data assumptions and quality of data collected.*

Comparability: *EPDs are not comparative assertions and are either not comparable or have limited comparability when they cover different life cycle stages, are based on different product category rules or are missing relevant environmental impacts. Such comparisons can be inaccurate and could lead to the erroneous selection of materials or products which are higher impact, at least in some impact categories. Any comparison of EPDs shall be subject to the requirements of ISO 21930. For comparison of EPDs which report different module scopes, such that one EPD includes Module D and the other does not, the comparison shall only be made on the basis of Modules A1, A2, and A3. Additionally, when Module D is included in the EPDs being compared, all EPDs must use the same methodology for calculation of Module D values.*

Interpreting the Results in Module D: *The values in Module D include a recognition of the benefits or impacts related to steel recycling which occur at the end of the product's service life. The rate of steel recycling and related processes will evolve over time. The results included in Module D attempt to capture future benefits, or impacts, but are based on a methodology that uses current industry - average data reflecting current processes.*

Resource Use

The PCR requires that several parameters be reported in the EPD, including resource use, waste categories and output flows, and other environmental information. The results for these parameters per declared unit are shown in Table 5 and Table 6.

Table 5. *Resource use and waste results for 1 metric ton of steel framing studs and track produced by SCAFCO Steel Stud Company at the Spokane, WA facility.*

		PRODUCT STAGE			CREDITS AND BURDENS BEYOND SYSTEM BOUNDARY
Impact category	Unit	Module A1 - Raw Materials	Module A2 - Transport to fabricator	Module A3 - Manufacturing	Module D - EOL
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	BTU/short ton (MJ/metric ton)[a]	$1.6x10^6$ (1,900)	66,000 (77)	950,000 (1,100)	4,300 (5.1)
Use of renewable primary energy resources used as raw materials		None	None	None	None
Total use of renewable primary energy resources	BTU/short ton (MJ/metric ton)[a]	$1.6x10^6$ (1,900)	66,000 (77)	950,000 (1,100)	4,300 (5.1)
Use of nonrenewable primary energy excluding nonrenewable primary energy resources used as raw materials	BTU/short ton (MJ/metric ton)[a]	$2.3x10^7$ (26,000)	$2.2x10^6$ (2,600)	260,000 (310)	$-7.4x10^6$ (-8,600)
Use of nonrenewable primary energy resources used as raw materials		Negligible	Negligible	Negligible	Negligible
Total use of nonrenewable primary energy resources (primary energy and primary energy resources used as raw materials)	BTU/short ton (MJ/metric ton)[a]	$2.3x10^7$ (26,000)	$2.2x10^6$ (2,600)	260,000 (310)	$-7.4x10^6$ (-8,600)
Use of secondary materials	ton/ton[b]	0.48	0.0	0.0	0.0
Use of renewable secondary fuels	ton/ton[b]	Negligible	Negligible	Negligible	Negligible
Use of nonrenewable secondary fuels	ton/ton[b]	Negligible	Negligible	Negligible	Negligible
Net use of fresh water	gal/short ton (m^3/metric ton)[a,c]	14,000 (58)	840 (3.5)	320 (1.4)	69 (0.29)
Nonhazardous waste disposed	ton/ton[b]	0.64	$3.4x10^{-2}$	$7.6x10^{-3}$	$1.8x10^{-2}$
Hazardous waste disposed	ton/ton[b]	$2.3x10^{-6}$	$8.69x10^{-6}$	$1.31x10^{-5}$	$3.45x10^{-8}$
Radioactive Waste disposed	ton/ton[b]	0.0	$1.7x10^{-5}$	$9.1x10^{-7}$	$8.3x10^{-8}$
Components for re-use		Negligible	Negligible	Negligible	Negligible
Materials for recycling	ton/ton[b]	Not available [d]	None	1.1	$5.1x10^{-3}$
Materials for energy recovery		Negligible	Negligible	Negligible	Negligible
Exported energy		Negligible	Negligible	Negligible	Negligible

(a) Results shown represent U.S. Customary units per short ton of steel product, and SI units per metric ton of steel product. SI units are shown using parenthesis.
(b) Results shown represent both short ton per short ton of steel, and metric ton per metric ton of steel (these values are equivalent).

Table 6. *Resource use and waste results for 1 metric ton of steel framing studs and track produced by SCAFCO Steel Stud Company at the Stockton, CA facility.*

Impact category	Unit	PRODUCT STAGE			CREDITS AND BURDENS BEYOND SYSTEM BOUNDARY
		Module A1 - Raw Materials	Module A2 - Transport to fabricator	Module A3 - Manufacturing	Module D - EOL
Use of renewable primary energy excluding renewable primary energy resources used as raw materials	BTU/short ton (MJ/metric ton)[a]	$1.6x10^6$ (1,900)	58,000 (67)	860,000 (1,000)	4,300 (5.1)
Use of renewable primary energy resources used as raw materials		None	None	None	None
Total use of renewable primary energy resources	BTU/short ton (MJ/metric ton)[a]	$1.6x10^6$ (1,900)	58,000 (67)	860,000 (1,000)	4,300 (5.1)
Use of nonrenewable primary energy excluding nonrenewable primary energy resources used as raw materials	BTU/short ton (MJ/metric ton)[a]	$2.3x10^7$ (26,000)	$1.9x10^6$ (2,300)	220,000 (250)	$-7.4x10^6$ (-8,600)
Use of nonrenewable primary energy resources used as raw materials		Negligible	Negligible	Negligible	Negligible
Total use of nonrenewable primary energy resources (primary energy and primary energy resources used as raw materials)	BTU/short ton (MJ/metric ton)[a]	$2.3x10^7$ (26,000)	$1.9x10^6$ (2,300)	220,000 (250)	$-7.4x10^6$ (-8,600
Use of secondary materials	ton/ton[b]	0.48	0.0	0.0	)0.0
Use of renewable secondary fuels	ton/ton[b]	Negligible	Negligible	Negligible	Negligible
Use of nonrenewable secondary fuels	ton/ton[b]	Negligible	Negligible	Negligible	Negligible
Net use of fresh water	gal/short ton (m^3/metric ton)[a,c]	14,000 (58)	740 (3.1)	270 (1.1)	69 (0.29)
Nonhazardous waste disposed	ton/ton[b]	0.64	$3.0x10^{-2}$	$8.2x10^{-3}$	$1.8x10^{-2}$
Hazardous waste disposed	ton/ton[b]	$2.3x10^{-6}$	$7.61x10^{-6}$	$1.30x10^{-5}$	$3.45x10^{-8}$
Radioactive Waste disposed	ton/ton[b]	0.0	$1.5x10^{-5}$	$9.1x10^{-7}$	$8.3x10^{-8}$
Components for re-use		Negligible	Negligible	Negligible	Negligible
Materials for recycling	ton/ton[b]	Not available [d]	None	1.0	$5.1x10^{-3}$
Materials for energy recovery		Negligible	Negligible	Negligible	Negligible
Exported energy		Negligible	Negligible	Negligible	Negligible

(a) Results shown represent U.S. Customary units per short ton of steel product, and SI units per metric ton of steel product. SI units are shown using parenthesis.
(b) Results shown represent both short ton per short ton of steel, and metric ton per metric ton of steel (these values are equivalent).

SUPPORTING TECHNICAL INFORMATION

Data Sources

Table 7. *LCI datasets and associated databases used to model material production and processing.*

Component	Material Dataset	Processing Dataset	Publication Date
PRODUCT			
Galvanized steel sheet (BOF)	Steel, low-alloyed {CSI}| steel production, converter, low-alloyed | Alloc Rec[1]; Steel, low-alloyed {USS}| steel production, converter, low-alloyed | Alloc Rec[1]	Steel galvanized sheet, fabrication (CSI)[2]	2016; 2016; 2016
Galvanized steel sheet (EAF)	steel production, electric, low-alloyed | steel, low-alloyed | Cutoff, US	Steel galvanized sheet, fabrication (CSI)[2]	2019; 2016
PACKAGING			
Wood packaging	Packaging wood; market for EUR-flat pallet | EUR-flat pallet | Cutoff, S/GLO	Included in dataset	2016; 2019
Plastic packaging	market for packaging film, low density polyethylene | packaging film, low density polyethylene | Cutoff, S/GLO	Included in dataset	2019
Steel banding	Worldsteel Data - Hot Dip Galvanized Steel (Steel Banding)[3]	Included in dataset	2015
RESOURCE USE			
Electricity use	Electricity, medium voltage, per kWh - NWPP/NWPP; Electricity, medium voltage, per kWh - CAMX/CAMX	NA	2018; 2018
Natural gas	market group for heat, district or industrial, natural gas | heat, district or industrial, natural gas | Cutoff, S/GLO	NA	2019
TRANSPORTATION			
Road	transport, freight, lorry 16-32 metric ton, EURO4 | transport, freight, lorry 16-32 metric ton, EURO4 | Cutoff, S/RoW	NA	2019
Rail	transport, freight train, diesel | transport, freight train | Cutoff, S/RoW		
Ship	transport, freight, sea, container ship | transport, freight, sea, container ship | Cutoff, S/GLO	NA	2019

1) Developed from Ecoinvent v3.3 Life Cycle Database modified for steel mill location
2) Developed from Ecoinvent v3.3 Life Cycle Database and supplier data
3) Worldsteel Association Life Cycle Data for North American HDG steel
NA is not applicable

Allocation

The study followed the allocation guidelines of ISO 14044, and sought to minimize the use of allocation wherever possible. Secondary databases used for the product system (discussed below) apply allocation based primarily on physical relationships.

Annual resource and electricity use were provided for each SCAFCO manufacturing facility and allocated to the product based on mass.

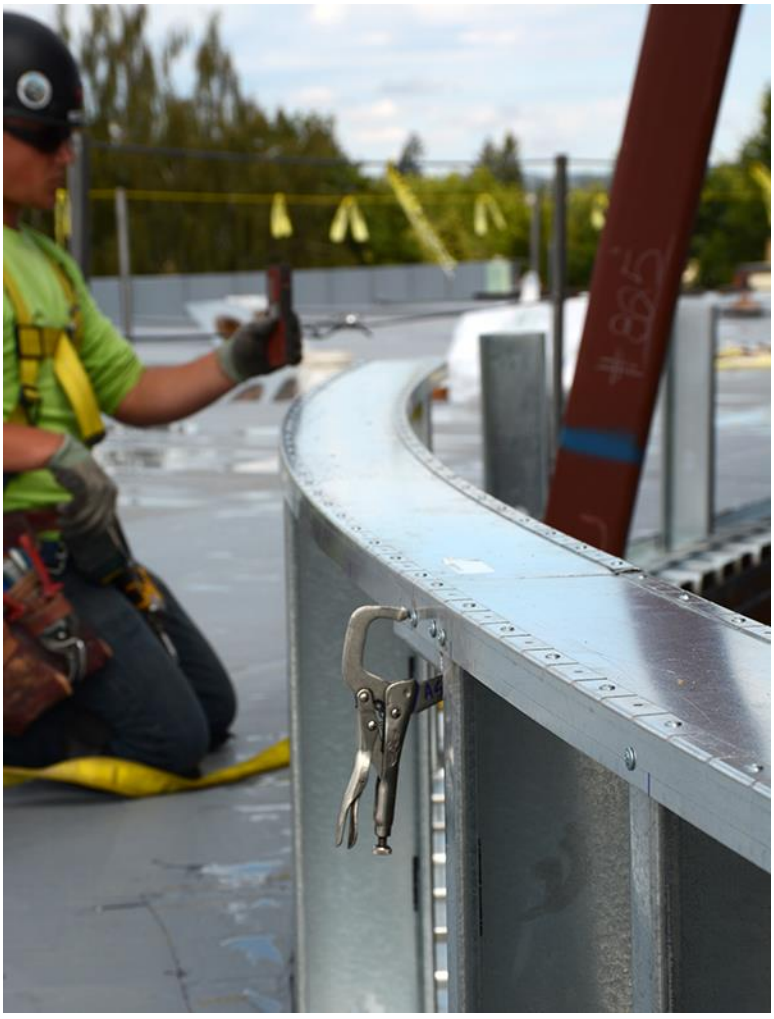
For Module D calculations, a credit is calculated for the potential avoided production of primary steel, due to the generation of steel scrap at end-of-life, and at other stages in the product life cycle. This additional credit is calculated considering the net input of steel scrap into the system.

Cut-off Criteria

All known inputs are included in the assessment.

Limitations

- Data for the production of BOF and EAF steel at specific steel mills was not available. A representative dataset for steelmaking in Europe was adapted for use in the assessment to reflect the appropriate regional electricity grid. The production of steel is the primary contributor to the impact results, and this is a study limitation.
- Process data for the fabrication of galvanized steel sheet was based on data for a representative rolling mill in the U.S. The data include materials and resource use for fabrication of steel sheeting from slab steel and hot-dip galvanizing and were used to model the steel sheet sourced by the SCAFCO manufacturing facilities.
- Comparison of the environmental performance of construction products should be based on the product's use in and impacts on the building, considering the complete life cycle. Results that do not consider the complete building context are inappropriate for comparing construction products. As the scope of this LCA is the production of steel construction products, and does not include impacts on the building, indicator results presented in this LCA cannot be compared directly to another material type, unless these products have equivalent use phase impacts and identical effects on the whole building.
- The results presented should be considered in the context of operational impacts from the function of the integrated whole building system. When the building lifetime considered, the impacts resulting from the production of these steel products can range from small, to significant, due to the nearly limitless number of building designs possible. These impacts from the operational phase of a whole building are not the subject of this study but should be considered when interpreting results.



Data Quality

Data Quality Parameter	Data Quality Discussion
Time-Related Coverage: Age of data and the minimum length of time over which data is collected	The most recent available data are used, based on other considerations such as data quality and similarity to the actual operations. Typically, these data are less than 5 years old (typically 2016). All of the data used represented an average of at least one year's worth of data collection, and up to three years in some cases. Manufacturer-supplied data (primary data) are based on annualized production for 2019.
Geographical Coverage: Geographical area from which data for unit processes is collected to satisfy the goal of the study	The data used in the analysis provide the best possible representation available with current data. Electricity use for product manufacture is modeled using representative data for the US. Surrogate data used in the assessment are representative of global or European operations. Data representative of European operations are considered sufficiently similar to actual processes.
Technology Coverage: Specific technology or technology mix	For the most part, data are representative of the actual technologies used for processing, transportation, and manufacturing operations. Representative fabrication datasets, are used to represent the actual processes, as appropriate.
Precision: Measure of the variability of the data values for each data expressed	Precision of results are not quantified due to a lack of data. Data collected for operations were typically averaged for one or more years and over multiple operations, which is expected to reduce the variability of results.
Completeness: Percentage of flow that is measured or estimated	The LCA model included all known mass and energy flows for production of the steel framing products. In some instances, surrogate data used to represent upstream and downstream operations may be missing some data which is propagated in the model. No known processes or activities contributing to more than 1% of the total environmental impact for each indicator are excluded.
Representativeness: Qualitative assessment of the degree to which the data set reflects the true population of interest	Data used in the assessment represent typical or average processes as currently reported from multiple data sources and are therefore generally representative of the range of actual processes and technologies for production of these materials. Considerable deviation may exist among actual processes on a site-specific basis; however, such a determination would require detailed data collection throughout the supply chain back to resource extraction.
Consistency: Qualitative assessment of whether the study methodology is applied uniformly to the various components of the analysis	The consistency of the assessment is considered to be high. Data sources of similar quality and age are used; with a bias towards Ecoinvent v3.6 data where available. Different portions of the product life cycle are equally considered.
Reproducibility: Qualitative assessment of the extent to which information about the methodology and data values would allow an independent practitioner to reproduce the results reported in the study	Based on the description of data and assumptions used, this assessment would be reproducible by other practitioners. All assumptions, models, and data sources are documented.
Sources of the Data: Description of all primary and secondary data sources	Data representing energy use at SCAFCO's facilities represent an annual average and are considered of high quality due to the length of time over which these data are collected, as compared to a snapshot that may not accurately reflect fluctuations in production. Primary data were not available for all upstream producers of steel sheet; secondary LCI datasets from Ecoinvent and Worldsteel are used, as appropriate.
Uncertainty of the Information: Uncertainty related to data, models, and assumptions	Uncertainty related to materials in the steel framing products and packaging is low. Actual supplier data for upstream operations was not available for all suppliers and the study relied upon the use of existing representative datasets. These datasets contained relatively recent data (<10 years) but lacked geographical representativeness. Uncertainty related to the impact assessment methods used in the study are high. The impact assessment method required by the PCR includes impact potentials, which lack characterization of providing and receiving environments or tipping points.

REFERENCES

1. Life Cycle Assessment of Steel Framing Studs and Track. SCS Global Services. Prepared for SCAFCO. December 2020.
2. ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures.
3. ISO 14040: 2006 Environmental Management – Life cycle assessment – Principles and Framework
4. ISO 14044: 2006 Environmental Management – Life cycle assessment – Requirements and Guidelines.
5. North American Product Category Rule for Designated Steel Construction Products. SCS Global Services. Version 1.0. May 2015.
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