Environmental Product Declaration

Greenscreen | Welded Wire Trellis System

Declaration Owner

Greenscreen
725 South Figueroa Street, Suite 1825
Los Angeles, CA 90017
Phone: (800) 450-3494
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www.greenscreen.com

Product:

Welded Wire Trellis System

Declared Unit

The declared unit is one ton of welded-wire trellis system produced at the Greenscreen facility in Fontana, CA

EPD Number and Period of Validity

SCS-EPD-09678
EPD Valid December 19, 2023 through December 18, 2028

Product Category Rule

Part A: PCR Guidance for Building-Related Products and Services. Version 3.2. UL Environment. Sept. 2018

Part B: Designated Steel Construction Product EPD Requirements. UL Environment. August 2020.

Program Operator

SCS Global Services
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Declaration owner:	Greenscreen
Address:	725 South Figueroa Street, Suite 1825, Los Angeles, CA 90017
Declaration Number:	SCS-EPD-09678
Declaration Validity Period:	EPD Valid December 19, 2023 through December 18, 2028
Program Operator:	SCS Global Services
Declaration URL Link:	https://www.scsglobalservices.com/certified-green-products-guide
LCA Practitioner:	Urvi Talaty, SCS Global Services
LCA Software and LCI database:	OpenLCA 1.11 software and the Ecoinvent v3.9 database
Product's Intended Application:	Welded Wire Trellis System
Product RSL:	n/a
Markets of Applicability:	Global
EPD Type:	Product-Specific
EPD Scope:	Cradle-to-Gate
LCIA Method and Version:	IPCC AR5 and TRACI 2.1
Independent critical review of the LCA and data, according to ISO 14044 and ISO 14071	☐ internal ☒ external
LCA Reviewer:	Lindita Bushi, Ph.D., Athena Sustainable Materials Institute
Part A Product Category Rule:	PCR Guidance for Building-Related Products and Services Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 3.2. UL Environment. Sept. 2018
Part A PCR Review conducted by:	Lindita Bushi, PhD (Chair); Hugues Imbeault-Tétreault, ing., M.Sc.A.; Jack Geibig
Part B Product Category Rule:	PCR Guidance for Building-Related Products and Services. Part B: Designated Steel Construction Product EPD Requirements. UL Environment. August 2020.
Part B PCR Review conducted by:	Thomas Gloria, PhD; Brandie Sebastian, James Littlefield
Independent verification of the declaration and data, according to ISO 14025, the PCR and ISO 21930:2017	☐ internal ☒ external
EPD Verifier:	Lindita Bushi, Ph.D., Athena Sustainable Materials Institute
Declaration Contents:	

Disclaimers: *This EPD conforms to ISO 14025, 14040, 14044, and ISO 21930:2017 and the SCS Type III Environmental Declaration Program: Program Operator Manual. V11.0 November 2021. SCS Global Services.*

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.*

In accordance with ISO 21930:2017, EPDs are comparable only if they comply with the core PCR, use the same sub-category PCR where applicable, include all relevant information modules and are based on equivalent scenarios with respect to the context of construction works.

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1. Greenscreen

As the originator of the welded wire trellis system, greenscreen leads the industry in green façade solutions, transforming metal, wire and plants into thriving living masterpieces across America's greatest landscapes for more than 25 years. Their three-dimensional welded wire green façade panels can be customized, and can be installed vertically or horizontally, combined or shaped for an endless number of ways to transform spaces.

2. Products

2.1 PRODUCT DESCRIPTION

The steel panels, clips and posts in this study are manufactured primarily from steel scrap, sourced from various aftermarkets. The steel is manufactured using both EAF and BOF steelmaking and hot rolled into steel products at various suppliers across North America.

The UNSPSC code for the product is 95122400 and the CSI code for the product is 05 41 00. A list of applicable standard for the declared product is shown below.

- ASTM A641: Standard Specification for Zinc–Coated (Galvanized) Carbon Steel Wire
- ASTM A879: Standard Specification for Steel Sheet, Zinc Coated by the Electrolytic Process for Applications Requiring Designation of the Coating Mass on Each Surface
- ASTM A500: Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes
- ASTM A1011: Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength
- ASTM B117: Standard Practice for Operating Salt Spray (Fog) Apparatus
- ASTM C 387: Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar

2.2 PRODUCT FLOW DIAGRAM

A flow diagram illustrating the production processes and life cycle phases included in the scope of the EPD is provided below.

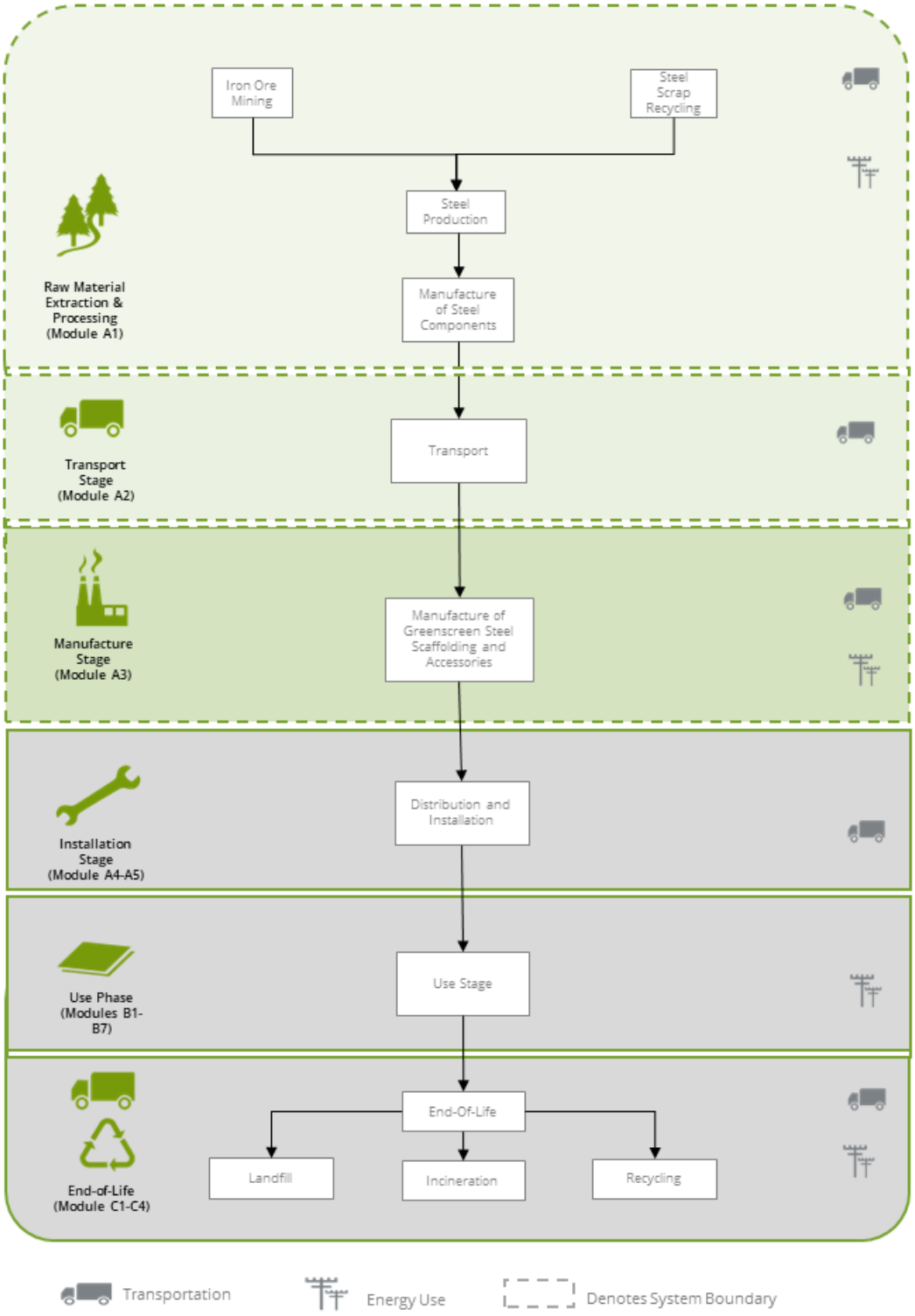

Figure 1. *Flow Diagram for the life cycle of the Greenscreen welded wire trellis system.*

2.3 DECLARATION OF METHODOLOGICAL FRAMEWORK

The scope of the EPD is cradle-to-gate, including raw material extraction and processing, transportation, and welded wire trellis system manufacture. The life cycle phases included in the product system boundary are shown below.

Table 1. *Life cycle phases included in the Greenscreen welded wire trellis system product system boundary.*

Product			Construction Process		Use							End-of-life				Benefits and loads beyond the system boundary
A1	A2	A3	A4	A5	B1	B1	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Raw material extraction and processing	Transport to manufacturer	Manufacturing	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	MND

X = Module Included | MND = Module Not Declared

Cut-off and allocation procedures are described below and conform to the PCR and ISO standards. This LCA follows the attributional LCA approach

2.4 INTENDED APPLICATION

The welded wire trellis system serves functions across applications. The declared product is used for both commercial and residential applications.

2.5 MATERIAL COMPOSITION

The steel panel modeled in this study contains approximately 71.5% recycled scrap steel. The steel clips and trim are EAF steel with 85% recycled content and the steel posts are EAF steel with 88% recycled content.

Steel construction products under normal conditions do not present inhalation, ingestion, or contact health hazards. These products are used inside the building envelope, or other structures, and do not include materials or substances which have potential route of exposure to humans or flora/fauna in the environment.

2.6 MANUFACTURING

The welded wire trellis system in this study is manufactured at the Fontana, California facility from primarily steel scrap.

2.7 PACKAGING

Packaging for the steel products includes cardboard, kraft paper, packaging film and wooden pallets used in shipping.

2.8 FURTHER INFORMATION

Further information on the product can be found on the manufacturers' website at www.greenscreen.com

3. LCA: Calculation Rules

3.1 DECLARED UNIT

The declared unit used in the study is defined as one (1) metric ton of welded wire trellis system product, consistent with the PCR. The density of the product is 7850 kg/m^3.

Table 2. *The modules and unit processes included in the scope for the Greenscreen welded wire trellis system.*

Module	Module Description	Unit Processes Included in Scope
A1	Extraction and processing of raw materials; any reuse of products or materials from previous product systems; processing of secondary materials; generation of electricity from primary energy resources; energy, or other, recovery processes from secondary fuels	Raw material extraction and processing, including but not limited to the recovery or extraction and processing of feedstock materials and including all activities necessary for the reprocessing steel scrap. Transportation to the melt shop. EAF and BOF Steelmaking and hot rolling of the unfabricated steel scaffolding and accessories.
A2	Transport (to the manufacturer)	Transportation of upstream materials to the Fontana, California facility
A3	Manufacturing, including ancillary material production	Manufacture of welded wire trellis system at the Fontana, California facility
A4	Transport (to the building site)	Module Not Declared
A5	Construction-installation process	Module Not Declared
B1	Product use	Module Not Declared
B2	Product maintenance	Module Not Declared
B3	Product repair	Module Not Declared
B4	Product replacement	Module Not Declared
B5	Product refurbishment	Module Not Declared
B6	Operational energy use by technical building systems	Module Not Declared
B7	Operational water uses by technical building systems	Module Not Declared
C1	Deconstruction, demolition	Module Not Declared
C2	Transport (to waste processing)	Module Not Declared
C3	Waste processing for reuse, recovery and/or recycling	Module Not Declared
C4	Disposal	Module Not Declared
D	Reuse-recovery-recycling potential	Module Not Declared

3.2 UNITS

All data and results are presented using SI units.

3.3 ESTIMATES AND ASSUMPTIONS

- Representative inventory data for raw materials were modeled with unit process data taken from Ecoinvent.
- Representative inventory data for electricity use were modified to reflect the eGRID subregion electricity supply mixes at the Greenscreen facility, CAMX.
- Steel datasets were developed using some representative secondary data sources for hot-dipped galvanized steel and cold formed steel from the AISI report, "Life Cycle Inventories of North American Steel Products.
- Technology of steelmaking for steel components produced in North America were based on the report "2022 World Steel in Figures.
- Powder coating ancillary resource requirements not provided by Landscape Forms were modeled based upon the area of the powder coated surface of each product using Ecoinvent datasets. Likewise welding resource requirements were modeled using the ecoinvent dataset and the actual length of welded surface. Electricity and natural gas from welding were allocated to the relevant products by length and removed from the overall resource requirements of the facility.

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- Disposal of manufacturing waste is modeled based for solid and hazardous waste generation and disposal in the United States, as specified in the PCR. Specifically, where the disposal was done by a third party, 80% of non-hazardous wastes are disposed in landfill and 20% incinerated. Transportation for end-of-life scenarios was modeled using the EPA WARM model assumption of 20 miles (~32 km), from the point of product use to a landfill, material recovery center, or waste incinerator. Ecoinvent datasets are used to model the impacts associated with incineration and landfilling, which does not include energy recovery from landfill gas.

The PCR requires the results for several inventory flows related to construction products to be reported including energy and resource use and waste and outflows. These are aggregated inventory flows, and do not characterize any potential impact; results should be interpreted considering this limitation.

3.4 CUT-OFF RULES

According to the PCR, processes contributing greater than 1% of the total environmental impact indicator for each impact are included in the inventory. No data gaps were allowed which were expected to significantly affect the outcome of the indicator results. No known flows are deliberately excluded from this EPD.

3.5 DATA SOURCES

Primary data were provided by Greenscreen for their manufacturing facility in Fontana, California. The sources of secondary LCI data are the Ecoinvent database.

Table 3. *Data sources for the Greenscreen welded wire trellis system*

Flow	Dataset	Data Source	Publication Date
Steel Datasets			
NA Low-alloyed Steel	steel production, electric, low-alloyed | steel, low-alloyed | Cutoff, U - CA-QC steel production, converter, low-alloyed | steel, low-alloyed | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Rolling	hot rolling, steel | hot rolling, steel | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Steel post-processing: Pickling and oiling, Galvanizing, Cold forming	Each process modeled with life cycle inventory from "Life Cycle Inventories of North American Steel Products" from AISI	AISI	2022
Wire drawing	market for wire drawing, steel | wire drawing, steel | Cutoff, U - GLO	Ecoinvent 3.9.1	2022
Hardware manufacturing	metal working, average for steel product manufacturing | metal working, average for steel product manufacturing | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Tube/Post manufacturing	drawing of pipe, steel | drawing of pipe, steel | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Other Materials			
Silicone Caulk	market for silicone product | silicone product | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Powder coating	market for coating powder | coating powder | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Packaging			
Cardboard	market for corrugated board box | corrugated board box | Cutoff, U - US	Ecoinvent 3.9.1	2022
Wooden pallet	market for EUR-flat pallet | EUR-flat pallet | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Kraft paper	market for kraft paper | kraft paper | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Stretch wrap	market for packaging film, low density polyethylene | packaging film, low density polyethylene | Cutoff, U - GLO	Ecoinvent 3.9.1	2022
Resource Use			
Electricity	market for electricity, medium voltage | electricity, medium voltage | Cutoff, U-WECC modified for egrid subregion CAMX	Ecoinvent 3.9.1 eGRID 2021	2022 2023
Natural Gas	market for heat, district or industrial, natural gas | heat, district or industrial, natural gas | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Propane	heat production, propane, at industrial furnace >100kW | heat, district or industrial, other than natural gas | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Tap water	market for tap water | tap water | Cutoff, U - RoW	Ecoinvent 3.9.1	2022
Transportation			
Truck transport	market for transport, freight, lorry 16-32 metric ton, EURO4 | transport, freight, lorry 16-32 metric ton, EURO4 | Cutoff, U - RoW	Ecoinvent 3.9.1	2022

3.6 DATA QUALITY

The data quality assessment addressed the following parameters: time-related coverage, geographical coverage, technological coverage, precision, completeness, representativeness, consistency, reproducibility, sources of data, and uncertainty.

Table 4. *Data quality assessment for the Greenscreen welded wire trellis system product system.*

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 10 years old (typically 2019 or more recent). All of the data used represented an average of at least one year's worth of data collection. Manufacturer-supplied data (primary data) are based on a full year of operations from January 1 - December 31, 2022 at the Greenscreen facility.
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. Actual processes for upstream operations are primarily North American. Surrogate data used in the assessment are representative of North American operations. Data representative of European operations are considered sufficiently similar to actual processes. Data representing disposal practices are based on regional statistics.
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.
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 welded wire trellis system. 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. For supplier information, the most representative source of data possible was chosen or modeled.
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 v3.9.1 data.
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	Different portions of the product life cycle are equally considered; however, it must be noted that final disposition of the product is based on assumptions of current average practices in North America.
Sources of the Data: Description of all primary and secondary data sources	Based on the description of data and assumptions used, this assessment would be reproducible by other practitioners with access to the primary data. All assumptions, models, and data sources are documented.
Uncertainty of the Information: Uncertainty related to data, models, and assumptions	Data representing energy use at the Greenscreen manufacturing 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. The Ecoinvent database is used for secondary LCI datasets. The other EPD data are also considered high quality due to the fact that they similarly span a full calendar year.

3.7 PERIOD UNDER REVIEW

The period of review for the welded wire trellis system produced at the Fontana facility is taken from January 01, 2022 through December 31, 2022.

3.8 ALLOCATION

This study follows the allocation guidelines of ISO 14044 and allocation rules specified in the PCR and minimized the use of allocation wherever possible.

With respect to the steel scrap, the 100-0 recycled content approach is used in which the recycled material bears only the burden of any processing from waste material.

Mass allocation was deemed the most accurate and reproducible way of calculating the energy and material requirements for the manufacture of the steel and steel products. Primary data for resource use (e.g., electricity, natural gas, water), waste/co-products, and emissions released, are allocated on a mass-basis as a fraction of total annual production.

The transportation from primary producer of material components to the Fontana facility is based on primary data provided by Greenscreen, including modes, distances, and amount of materials transported. Transportation was allocated on the basis of the mass and distance the material was transported.

3.9 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.

4. LCA: Scenarios and Additional Technical Information

Manufacturing

The Greenscreen facility in Fontana, California is located in the EPA eGRID CAMX subregion. The electricity supply mix for the Greenscreen facility is modeled using Ecoinvent electricity grid for the NERC WECC region and modifying to tailor to CAMX eGRID subregion.

Transportation for manufacturing wastes were modeled using the EPA WARM model assumption of 20 miles (~32 km), from the point of product use to a landfill, material recovery center, or waste incinerator. Ecoinvent datasets are used to model the impacts associated with incineration and landfilling, which does not include energy recovery from landfill gas.

5. LCA: Results

Results of the Life Cycle Assessment are presented below. It is noted that LCA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks.

The following environmental impact category indicators are reported using characterization factors based on the U.S. EPA's Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts – TRACI 2.1 and IPCC AR5.

Table 5. *Impact category indicators included in the study.*

IPCC AR5	Unit
Global Warming Potential **(GWP)**	kg CO_2 eq
TRACI 2.1 Impact Category	**Unit**
Ozone Depletion Potential **(ODP)**	kg CFC 11 eq
Acidification Potential **(AP)**	kg SO_2 eq
Eutrophication Potential **(EP)**	kg N eq
Smog Formation Potential **(SFP)**	kg O_3 eq
Fossil Fuel Depletion **(FFD)**	MJ, surplus

These impact categories are globally deemed mature enough to be included in Type III environmental declarations. Other categories are being developed and defined and LCA should continue making advances in their development. However, the EPD users shall not use additional measures for comparative purposes.

The following inventory parameters, specified by the PCR, are also reported.

Table 6. *Inventory parameters included in the study.*

Resources	Unit	Waste and Outflows	Unit
RPR_E: Renewable primary resources used as energy carrier (fuel)	MJ, LHV	**HWD:** Hazardous waste disposed	kg
RPR_M: Renewable primary resources with energy content used as material	MJ, LHV	**NHWD:** Non-hazardous waste disposed	kg
$NRPR_E$: Non-renewable primary resources used as an energy carrier (fuel)	MJ, LHV	**HLRW:** High-level radioactive waste, conditioned, to final repository	kg
$NRPR_M$: Non-renewable primary resources with energy content used as material	MJ, LHV	**ILLRW:** Intermediate- and low-level radioactive waste, conditioned, to final repository	kg
SM: Secondary materials	MJ, LHV	**CRU:** Components for re-use	kg
RSF: Renewable secondary fuels	MJ, LHV	**MR:** Materials for recycling	kg
NRSF: Non-renewable secondary fuels	MJ, LHV	**MER:** Materials for energy recovery	kg
RE: Recovered energy	MJ, LHV	**EE:** Recovered energy exported from the product system	MJ, LHV
FW: Use of net freshwater resources	m^3	-	-

Table 7. *Life Cycle Impact Assessment (LCIA) results for the Greenscreen welded wire trellis system. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.*

Impact Category (Units)	A1 Upstream Raw Material Production	A2 Transport to Greenscreen Facility	A3 Welded Wire Trellis System Production	Total (A1-A3)
IPCC AR5				
Climate Change Potential (kg CO_2 eq)	3,240	53.0	967	4,260
	76%	1%	23%	100%
TRACI 2.1				
Acidification Potential (kg SO_2 eq)	18.6	0.208	1.77	20.6
	90%	1%	9%	100%
Eutrophication Potential (kg N eq)	13.2	$4.95x10^{-2}$	1.77	15.0
	88%	0%	12%	100%
Smog Formation Potential (kg O_3 eq)	202	5.58	37.7	245
	82%	2%	15%	100%
Ozone Depletion Potential (kg CFC-11 eq)	$1.02x10^{-4}$	$8.98x10^{-7}$	$2.37x10^{-5}$	$1.27x10^{-4}$
	81%	1%	19%	100%
Fossil Fuel Depletion (MJ surplus)	3397	105	2051	5554
	61%	2%	37%	100%

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. 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.

Table 8. *Resource use and waste flows for Greenscreen welded wire trellis system. Results reported in MJ are calculated using lower heating values. All values are rounded to three significant digits.*

Parameter	A1	A2	A3	Total (A1-A3)
Resources				
RPRE (MJ)	6,660	9.53	3,740	10,400
	64%	0%	36%	100%
RPRM (MJ)	0	0	1598	1598
	0%	0%	100%	100%
NRPRE (MJ)	37,400	749	15,900	53,900
	69%	1%	29%	100%
NRPRM (MJ)	0	0	0	0
SM (kg)	780	0.00	0.00	1,040
	100%	0%	0%	100%
RSF/NRSF (MJ)	0	0	0	0
RE (MJ)	0	0	0	0
FW (m^3)	61.9	$9.45x10^{-2}$	37.9	99.9
	62%	0%	38%	100%
Wastes				
HWD (kg)	0.0	0.0	$4.95x10^{-4}$	$4.95x10^{-4}$
	0.0%	0.0%	100%	100%
NHWD (kg)	0.0	0.0	0.00	0.00
HLRW (kg)	0.0	0.0	0.00	0.00
	0.0%	0.0%	0.0%	0.0%
ILLRW (kg)	0.0	0.0	0.00	0.00
	0.0%	0.0%	0.0%	0.0%
CRU (kg)	0.0	0.0	0.0	0.0
MR (kg)	0.0	0.0	107	107
	0.0%	0.0%	100%	100%
MER (kg)	0.0	0.0	0.0	0.0
EE (MJ)	0.0%	0.0%	0.0%	0.0%

Additionally, the PCR requires the calculation of carbon emissions and removals. Biogenic carbon removals are included in the packaging, while emissions are not included in the A1-A3 modules as no biogenic materials are used in the product and packaging end of life is outside the scope. These parameters are reported in Table 9.

Table 9. *Biogenic carbon inventory parameters*

	Module		
Additional Inventory Parameters	**A1**	**A2**	**A3**
Biogenic Carbon Removal from Product	0.0	0.0	0.0
Biogenic Carbon Emission from Product	0.0	0.0	0.0
Biogenic Carbon Removal from Packaging	0.0	162 kg CO_2/ton steel	0.0
Biogenic Carbon Emission from Packaging	0.0	0.0	0.0
Biogenic Carbon Emission from Combustion of Waste from Renewable Sources Used in Production	0.0	0.0	0.0

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6. LCA: Interpretation

The primary contributor to indicator results for welded wire trellis system is from the Upstream Raw Material Production (A1) stage. Welded wire trellis system production (A3) is the second-most impactful module across all indicators.

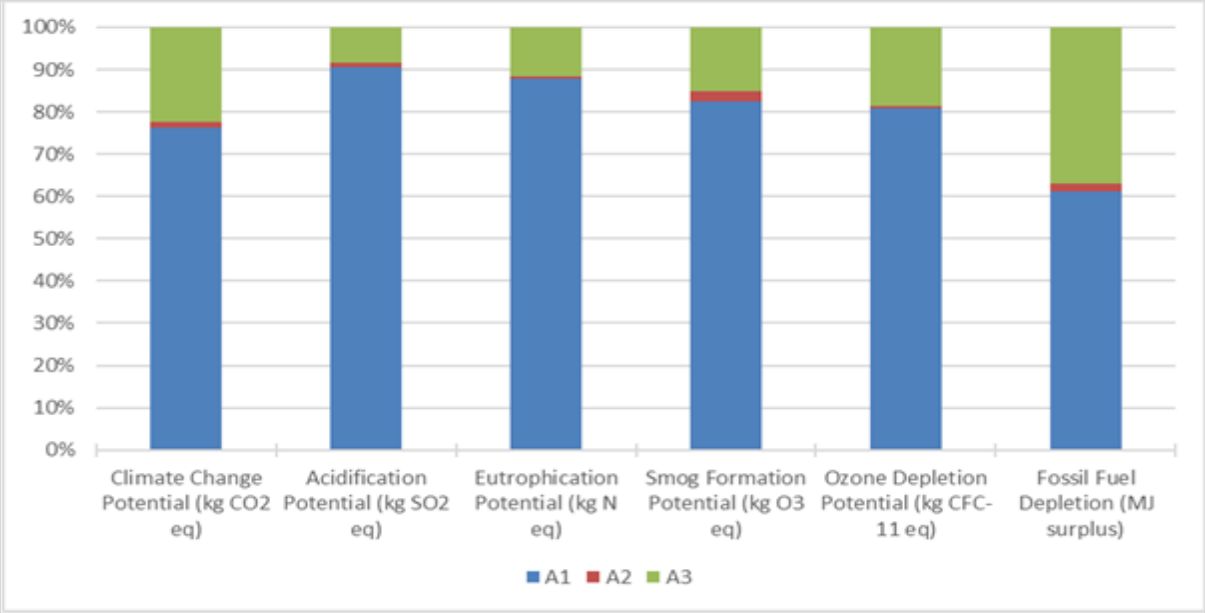

Figure 2. *Contribution analysis for the Greenscreen Welded Wire Trellis Systems*

Limitations

Primary data of material components could not be modeled with actual process information. Secondary data consists of Ecoinvent datasets.

7. Additional Environmental Information

As a product manufacturer, Greenscreen promotes the highest standards of product transparency while encouraging a further understanding of the life cycle process to provide insight and guide the design of buildings and landscapes. Greenscreen has completed a number of sustainability benchmarks and shares those benchmarks publicly with interdisciplinary design professionals and stakeholders in order to establish product standards going forward.

All benchmarks are third-party verified or peer reviewed and can be downloaded at https://greenscreen.com/about/sustainability

These benchmarks include:

- Health Product Declaration
- LEED v4
- Recycled Content
- Sustainable Sites Initiative

In conformance with the PCR, product materials were reviewed for the presence of any toxic or hazardous chemicals. Based on a review of the product components provided by the manufacturer, no regulated chemicals were identified in the product or product components.

8. References

1. Life Cycle Assessment of Welded Wire Trellis System Products for Greenscreen. SCS Global Services Report. Prepared for Greenscreen. December 2023.
2. ISO 14025:2006 Environmental labels and declarations – Type III environmental declarations – Principles and Procedures.
3. ISO 14040: 2006/Amd1 2020 Environmental Management – Life cycle assessment – Principles and Framework
4. ISO 14044: 2006/AMD 1:2017/ AMD 2:2020 Environmental Management – Life cycle assessment – Requirements and Guidelines
5. ISO 21930: 2017 Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services
6. ACLCA (2019). ACLCA Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017.
7. PCR Guidance for Building-Related Products and Services Part A: Life Cycle Assessment Calculation Rules and Report Requirements. Version 3.2. UL Environment. Sept. 2018
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