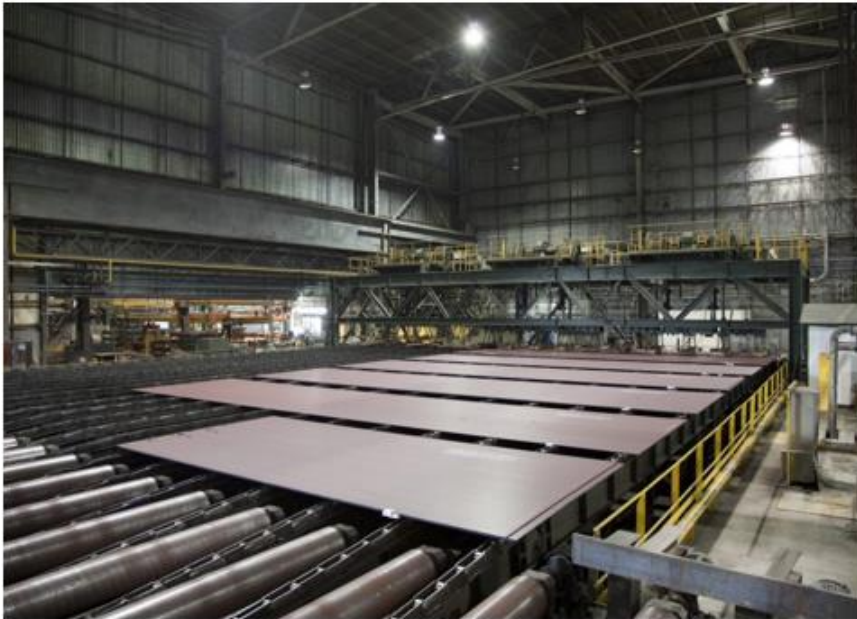


ENVIRONMENTAL PRODUCT DECLARATION

STEEL PLATE

NUCOR CORPORATION



NUCOR®

The Nucor Plate Mill Group produces recycled steel plate products at 2 recycled scrap-based mills strategically located in North Carolina and Alabama. The company is currently building a fourth plate mill in Kentucky. These mills produce plate for manufacturers of barges, bridges, heavy equipment, rail cars, refinery tanks, ships, wind towers and other items. Nucor's plate products are made with 65.3% recycled content, and the capacity of Nucor's plate mills is estimated at nearly 3 million tons per year.

Nucor is North America's largest recycler, processing approximately 20 million tons of ferrous scrap annually to produce new steel that is 100% recyclable at the end of its useful life. Nucor uses Electric Arc Furnace (EAF) technology at all of its steel recycling facilities. EAFs use post-consumer scrap as its major feedstock, unlike traditional blast furnace steelmaking, which produces more than 70% of the world's steel using mined iron ore and metallurgical coal as feedstock.

Through its use of EAFs, Nucor has already achieved and will continue to meet greenhouse gas emission intensity benchmarks for the steel industry that are part of the Paris Climate Agreement. Nucor's steelmaking CO₂ emissions are one-half of the global average on a per ton basis, and Nucor's energy intensity is about one-quarter the global average.





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According to ISO 14025
and ISO 21930:2017

EPD PROGRAM AND PROGRAM OPERATOR NAME, ADDRESS, LOGO, AND WEBSITE	UL Environment 333 Pfingsten Road Northbrook, IL 60611 https://www.ul.com/ https://spot.ul.com
GENERAL PROGRAM INSTRUCTIONS AND VERSION NUMBER	0.1.1
MANUFACTURER NAME AND ADDRESS	Nucor Corporation, 1915 Rexford Road, Charlotte, North Carolina 28211
DECLARATION NUMBER	4789971287
DECLARED PRODUCT & FUNCTIONAL UNIT OR DECLARED UNIT	Fabricated Steel Plate, 1 metric ton
REFERENCE PCR AND VERSION NUMBER	Part A: Calculation Rules for the LCA and Requirements Project Report, (IBU/UL Environment, V3.2, 12.12.2018) and Part B: Designated Steel Construction Product EPD Requirements (UL Environment, V2.0, 08.26.2020).
DESCRIPTION OF PRODUCT APPLICATION/USE	Hot rolled structural steel sections used in construction
PRODUCT RSL DESCRIPTION (IF APPL.)	N/A
MARKETS OF APPLICABILITY	North America
DATE OF ISSUE	April 2019
PERIOD OF VALIDITY	1 Year
EPD TYPE	Product Specific
EPD SCOPE	Cradle to gate
YEAR(S) OF REPORTED PRIMARY DATA	2019
LCA SOFTWARE & VERSION NUMBER	GaBi v10
LCI DATABASE(S) & VERSION NUMBER	GaBi 2020.2
LCIA METHODOLOGY & VERSION NUMBER	IPCC AR5 + TRACI 2.1

This PCR review was conducted by:	W. J. ...
	U. ...
This declaration was independently verified in accordance with ISO 14025: 2006. <input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL	Grant R. Martin
	Grant R. Martin, UL Environment
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	James H. Mellentine
	James Mellentine, Thrive ESG

LIMITATIONS

Exclusions: EPDs do not indicate that any environmental or social performance benchmarks are met, and there may be impacts that they do not encompass. LCAs do not typically address the site-specific environmental impacts of raw material extraction, nor are they meant to assess human health toxicity. EPDs can complement but cannot replace tools and certifications that are designed to address these impacts and/or set performance thresholds – e.g. Type 1 certifications, health assessments and declarations, environmental impact assessments, etc.

Accuracy of Results: EPDs regularly rely on estimations of impacts; the level of accuracy in estimation of effect differs for any particular product line and reported impact.

Comparability: EPDs from different programs may not be comparable. Full conformance with a PCR allows EPD comparability only 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.



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1. Product Definition and Information

Description of Organization

This Environmental Product Declaration (EPD) represents recycled steel plate products produced at Nucor Steel – Hertford County (NC) and Nucor Steel Tuscaloosa Inc. (AL). The overall recycled steel content of Nucor’s Steel Plate Products (% by total weight) is 65.3 percent. In addition, all of the steel produced by Nucor is 100% recyclable at the end of its useful life. In addition to ferrous scrap, Nucor plate mills also use direct reduced iron (DRI) produced with natural gas as a raw material input to meet metallurgical and inventory requirements for steel plate products.

The primary feedstock for our recycled steel facilities is largely provided by Nucor’s wholly-owned subsidiary, the David J. Joseph Company (DJJ). DJJ operates more than 60 scrap recycling facilities within close proximity to our steel mills, processing approximately 5,000,000 tons of ferrous scrap annually and provide an abundant supply of scrap to our plate mills. Having an abundant and reliable supply of recycled scrap within close proximity not only gives Nucor’s plate mills a logistical and economic advantage over their competitors, but also a carbon footprint that is a fraction of the average steel producer.

Nucor is currently constructing a new recycled scrap-based plate mill in Brandenburg, Kentucky, which will be the company’s fourth plate mill. Its centralized location will allow the mill to source raw materials from more than a dozen area DJJ locations and serve its customers throughout the Midwest. The new plate mill will significantly strengthen Nucor’s plate product portfolio, giving the company the ability to produce 97 percent of the products demanded in the domestic plate market, including the specialty higher-margin products. It will also be one of only a few mills in the world capable of supporting the offshore wind market’s towers and foundations.

Product Description

The Nucor Plate Mill Group manufactures a wide range of carbon, HSLA, alloy and pressure vessel-quality steel products in coils, cut-to-length and discrete plates. Our mills offer a wide range of gauges, widths, lengths and grades that are customized to meet each individual customer’s precise specifications.

Steel plate produced by Nucor’s mills are defined by the following ASTM standards:

- ASTM A36/44W
- ASTM A572-50
- ASTM A709-50
- ASTM A572-55, 60, 65
- ASTM A588
- ASTM A871
- ASTM A871-65
- ASTM A709-50
- ASTM A709-50W
- ASTM A516-60, 65, 70, 537
- ASTM AH36
- ASTM DH36
- ASTM A514/A517
- ASTM A283, A285
- ASTM A710
- ASTM A606
- ASTM A1011
- ASTM A1018
- ASTM A36/44W
- ASTM A57250
- ASTM A612
- ASTM A656
- ASTM A57250
- ASTM A139/A500/A252
- CSA 350AT
- CSA 350WT



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Product Average

The 2018/2019 production data used in this EPD considers structural plate products produced by Nucor Corporation during the year. The products are manufactured at in North Carolina and Alabama. Results are weighted according to production totals of these locations based on the provided data. Facility-specific global warming potential results are provided in a separate table.

Application

Nucor Plate Group products are used in a wide range of applications including rail, marine, wind turbines, high mast utility poles and transmission towers, bridges, pipe/tube, construction and mining equipment, infrastructure and storage tanks. Nucor is also one of only two steel companies in the United States certified to produce Navy-grade armor plate for aircraft carriers, destroyers, and submarines.

Technical Requirements

Technical data for the studied product can be found in the table below.

Table 1. Technical data for steel product

NAME	VALUE	UNIT
Density	7,800	kg/m ³
Melting point	1425-1450	°C
Electrical conductivity at 20°C	NA	% of IAC ⁸
Thermal conductivity	NA	W/(m-K)
Coefficient of thermal expansion	NA	m/m-°C
Modulus of elasticity	NA	N/mm ²
Shear modulus	NA	N/mm ²
Specific heat capacity	NA	J/kg-°C
Hardness, Brinell Number	80-100	HB
Yield strength	250-550	N/mm ²
Ultimate tensile strength	410-655	N/mm ²
Breaking elongation	13-20	%
Chemical composition	Varies by ASTM Specification/Grade	% by mass

Properties of Declared Product as Delivered

The structural plate can be fabricated (i.e., cut or otherwise modified) by a fabricator or shipped directly to a job site.





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Material Composition

Steel plate products are manufactured entirely from carbon steel. They do not contain any materials or substances for which there exists a route to exposure that leads to humans or flora/fauna in the environment being exposed to said materials or substances at levels exceeding safe health thresholds.

Manufacturing

Nucor manufactures plate products from secondary steel (i.e., from steel scrap) and DRI via an electric arc furnace (EAF). Steel scrap is loaded into a refractory-lined vessel and melted via electric energy supplied through graphite electrodes. Oxy-fuel burners and other means of generating heat through chemical reactions are also employed. The chemistry of the molten steel is adjusted at this stage by adding material to attain a specific alloy composition and by removing impurities, which migrate to the slag. Once the desired chemical composition is attained, the molten steel is then cast into slabs for eventual processing in the rolling mill located in the same facility.

At the rolling mill, the slabs are reheated in a natural gas furnace and run through rollers to shape their profile. Any steel scrap generated is recycled internally (i.e., put back into the EAF). The finished products are packaged and loaded onto trucks for distribution to fabricators or job sites.

Fabrication results are taken from the American Institute of Steel Construction (AISC) average EPD (AISC, 2021).

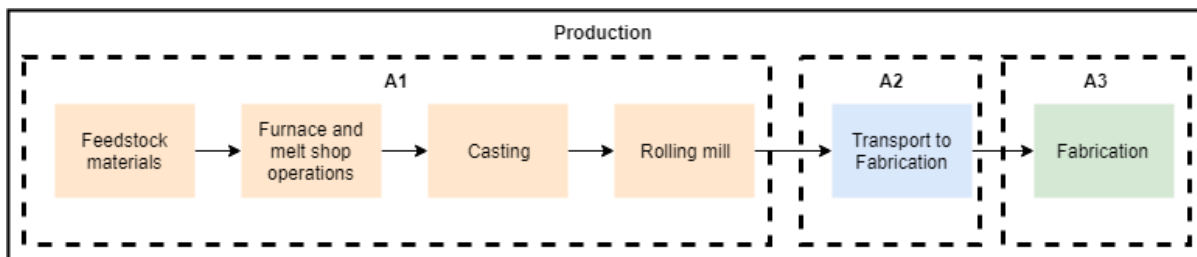


Figure 1: Flow chart for product system

Transportation

Transportation to the customer or construction site is outside the scope of this EPD.

Product Installation

Installation is outside the scope of this EPD.

Use

Product use is outside the scope of this EPD.

Reuse, Recycling, and Energy Recovery

Product reuse, recycling, and incineration for energy recovery is outside the scope of this EPD





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Disposal

Product disposal is outside the scope of this EPD.

2. LCA Calculation Rules

Declared Unit

The declared unit is 1 metric ton of fabricated steel product. An alternative declared unit of 1 short ton is also presented.

System Boundary

Per the PCR, this cradle-to-gate analysis provides information on the Product Stage of the steel product life cycle, including modules A1, A2, and A3.

PRODUCT STAGE			CONSTRUCTION PROCESS STAGE		USE STAGE							END OF LIFE STAGE				BENEFITS AND LOADS BEYOND THE SYSTEM BOUNDARY
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
A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND

Cut-off Rules

No cut-off criteria are defined for this study. The system boundary was defined based on relevance to the goals of the study. For the processes within the system boundary, all available energy and material flow data have been included in the model. In cases where no matching life cycle inventories are available to represent a flow, proxy data have been applied based on conservative assumptions regarding environmental impacts.

Data Sources

The LCA model was created using the GaBi Software system for life cycle engineering, version 10, developed by Sphera (Sphera, 2020). Background life cycle inventory data for raw materials and processes were obtained from the GaBi 2020.2 database. Primary manufacturing data were provided by Nucor.



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Data Quality

A variety of tests and checks were performed by the LCA practitioner throughout the project to ensure high quality of the completed LCA. Checks included an extensive review of project-specific LCA models as well as the background data used.

Geographical Coverage

Primary data represents production in the United States at the following Nucor facilities:

- Nucor Steel Hertford (NC)
- Nucor Steel Tuscaloosa, Inc. (AL)

Fabrication is represented by average US plate fabrication data (AISC, 2021).

Regionally specific datasets, where available, were used to represent each manufacturing location's energy consumption. Proxy datasets were used as needed for raw material inputs to address lack of data for a specific material or for a specific geographical region. These proxy datasets were chosen for their technological representativeness of the actual materials.

Period under Review

Primary data collected represent production during the 2018 or 2019 calendar year. This analysis is intended to represent production in 2019.

Allocation

Co-products during steel mill operations are allocated using a method used developed by the World Steel Association and EUROFER (Worldsteel and EUROFER, 2014) reviewed to be in line with CEN EN 15804 (CEN, 2019). The methodology takes into the account of the manner in which changes in inputs and outputs affect the production of co-products. The method also takes account of material flows that carry specific inherent properties.

Mill outputs such as scale and baghouse dust are handled via system expansion in line with the Worldsteel and EUROFER methodology. Recovered materials are assumed to substitute on a 1:1 mass basis. Mill scale is substituted with iron ore and baghouse dust is substituted for zinc or iron ore, depending on its specific zinc and iron contents.

Estimates and Assumptions

The underlying study was conducted in accordance with the PCR. While this EPD has been developed by industry experts to best represent the product system, real life environmental impacts of fabricated steel products may extend beyond those defined in this document.

All of the raw materials and energy inputs have been modeled using processes and flows that closely follow actual production data on raw materials and processes. All of the reported material and energy flows have been accounted for.

Transportation distances were provided by some mills for the inbound transportation of purchased steel scrap. These distances were used to estimate scrap transport and applied to all purchased scrap, even for mills that did not provide data. Other key materials were assumed to be transported 250 miles via truck and 250 miles via rail.



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3. LCA Results

North American life cycle impact assessment (LCIA) results are declared using TRACI 2.1 methodology, with the exception of GWP which uses the latest IPCC methodology (IPCC, 2014). LCIA results are relative expressions and do not predict actual impacts, the exceeding of thresholds, safety margins or risks.

Fabrication requires 1.08 metric tons of bar per 1 metric ton of fabricated product (AISC, 2021). A1 includes production of all 1.08 metric tons of bar.

Table 2. LCIA results, per 1 metric ton

PARAMETER	UNIT	A1	A2	A3	TOTAL
GWP 100	kg CO ₂ eq.	1.40E+03	4.46E+01	9.67E+01	1.54E+03
ODP	kg CFC 11 eq.	0.00E+00	0.00E+00	1.6E-09	1.6E-09
AP	kg SO ₂ eq.	3.31E+00	1.83E-01	1.52E-01	3.64E+00
EP	kg N eq.	1.60E-01	1.64E-02	1.23E-02	1.89E-01
SFP	kg O ₃ eq.	5.47E+01	4.44E+00	2.23E+00	6.14E+01
ADP _{fossil}	MJ surplus	1.40E+03	7.16E+01	1.04E+02	1.58E+03

Table 3. LCIA results, per 1 short ton

PARAMETER	UNIT	A1	A2	A3	TOTAL
GWP 100	kg CO ₂ eq.	1.27E+03	4.05E+01	8.77E+01	1.40E+03
ODP	kg CFC 11 eq.	0.00E+00	0.00E+00	1.5E-09	1.5E-09
AP	kg SO ₂ eq.	3.00E+00	1.66E-01	1.38E-01	3.31E+00
EP	kg N eq.	1.45E-01	1.49E-02	1.12E-02	1.71E-01
SFP	kg O ₃ eq.	4.96E+01	4.03E+00	2.02E+00	5.57E+01
ADP _{fossil}	MJ surplus	1.27E+03	6.50E+01	9.43E+01	1.43E+03

Table 4. Resource use results, per 1 metric ton

PARAMETER	UNIT	A1	A2	A3	TOTAL
RPR _E	MJ LHV	8.00E+02	6.24E+01	2.16E+02	1.08E+03
RPR _M	MJ LHV	-	-	-	-
NRPR _E	MJ LHV	1.88E+04	6.91E+02	1.47E+03	2.10E+04
NRPR _M	MJ LHV	-	-	12.6	1.26E+01
SM	kg	8.22E+02	-	7.52E-01	8.23E+02
RSF	MJ LHV	-	-	-	-
NRSF	MJ LHV	-	-	-	-
RE	MJ LHV	-	-	-	-
FW	m ³	4.00E+00	1.81E-01	6.82E-01	4.87E+00



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Table 5. Resource use results, per 1 short ton

PARAMETER	UNIT	A1	A2	A3	TOTAL
RPR _E	MJ LHV	7.26E+02	5.66E+01	1.96E+02	9.78E+02
RPR _M	MJ LHV	-	-	-	-
NRPR _E	MJ LHV	1.71E+04	6.27E+02	1.33E+03	1.90E+04
NRPR _M	MJ LHV	-	-	1.14E+01	1.14E+01
SM	kg	7.46E+02	-	6.82E-01	7.46E+02
RSF	MJ LHV	-	-	-	-
NRSF	MJ LHV	-	-	-	-
RE	MJ LHV	-	-	-	-
FW	m ³	3.63E+00	1.64E-01	6.19E-01	4.42E+00

Table 6. Output flows and waste categories results, per 1 metric ton

PARAMETER	UNIT	A1	A2	A3	TOTAL
HWD	kg	8.62E-02	-	3.32E-01	4.18E-01
NHWD	kg	2.74E+01	-	9.66E+00	3.71E+01
HLRW	kg	1.13E-03	3.16E-05	1.18E-04	1.28E-03
ILLRW	kg	9.46E-01	2.64E-02	9.85E-02	1.07E+00
CRU	kg	-	-	-	-
MR	kg	4.39E+01	0	7.71E+01	1.21E+02
MER	kg	-	-	-	-
EE	MJ LHV	-	-	-	-

Table 7. Output flows and waste categories results, per 1 short ton

PARAMETER	UNIT	A1	A2	A3	TOTAL
HWD	kg	7.82E-02	-	3.01E-01	3.79E-01
NHWD	kg	2.49E+01	-	8.76E+00	3.37E+01
HLRW	kg	1.03E-03	2.87E-05	1.07E-04	1.16E-03
ILLRW	kg	8.58E-01	2.39E-02	8.94E-02	9.71E-01
CRU	kg	-	-	-	-
MR	kg	3.98E+01	-	6.99E+01	1.10E+02
MER	kg	-	-	-	-
EE	MJ LHV	-	-	-	-

To align with the PCR, “product specific EPDs which include averaging shall report the range of results for all IPCC AR5 and TRACI indicators for products included in the average.” Fabrication represents the US average; therefore, it does not change between sites.





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Table 8. LCIA results, variation per 1 metric ton

PARAMETER	UNIT	A1 (MIN)	A1 (MAX)	A2	A3	TOTAL (MIN)	TOTAL (MAX)
GWP 100	kg CO ₂ eq.	1.34E+03	1.50E+03	4.46E+01	9.67E+01	1.49E+03	1.64E+03
ODP	kg CFC 11 eq.	0.00E+00	0.00E+00	0.00E+00	1.6E-09	1.6E-09	1.6E-09
AP	kg SO ₂ eq.	3.03E+00	3.78E+00	1.83E-01	1.52E-01	3.36E+00	4.11E+00
EP	kg N eq.	1.43E-01	1.89E-01	1.64E-02	1.23E-02	1.72E-01	2.17E-01
SFP	kg O ₃ eq.	5.03E+01	6.20E+01	4.44E+00	2.23E+00	5.70E+01	6.87E+01
ADP _{fossil}	MJ surplus	1.21E+03	1.71E+03	7.16E+01	1.04E+02	1.39E+03	1.89E+03

Table 9. LCIA results, variation per 1 short ton

PARAMETER	UNIT	A1 (MIN)	A1 (MAX)	A2	A3	TOTAL (MIN)	TOTAL (MAX)
GWP 100	kg CO ₂ eq.	1.22E+03	1.36E+03	4.05E+01	8.77E+01	1.35E+03	1.49E+03
ODP	kg CFC 11 eq.	0.00E+00	0.00E+00	0.00E+00	1.47E-09	1.5E-09	1.5E-09
AP	kg SO ₂ eq.	2.75E+00	3.43E+00	1.66E-01	1.38E-01	3.05E+00	3.73E+00
EP	kg N eq.	1.30E-01	1.71E-01	1.49E-02	1.12E-02	1.56E-01	1.97E-01
SFP	kg O ₃ eq.	4.57E+01	5.63E+01	4.03E+00	2.02E+00	5.17E+01	6.23E+01
ADP _{fossil}	MJ surplus	1.10E+03	1.56E+03	6.50E+01	9.43E+01	1.26E+03	1.71E+03

4. LCA Interpretation

The below figure presents the relative contribution of the A1, A2, and A3 modules to the total.

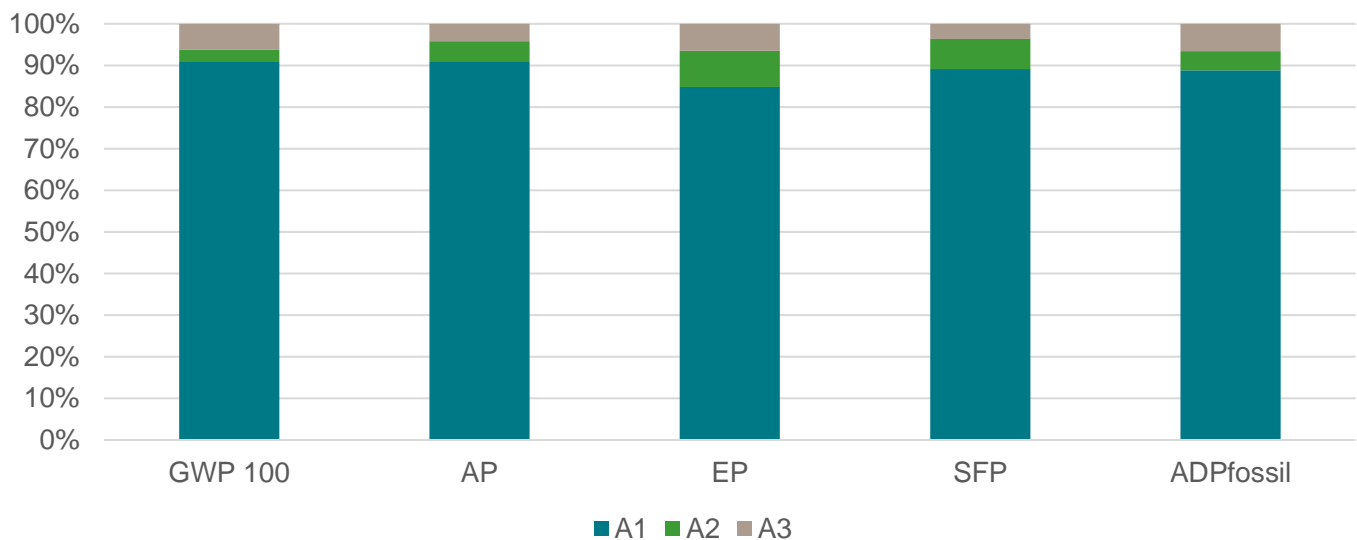


Figure 2: Relative contributions by module, IPCC AR5 + TRACI 2.1 impact categories





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Within mill production, the main drivers are iron/steel inputs and electricity. Emissions from the melt shop and rolling mill are a significant contributor to global warming potential and, to a lesser extent, smog formation, acidification, and eutrophication potentials. Alloying elements are relevant contributors to potential acidification and eutrophication.

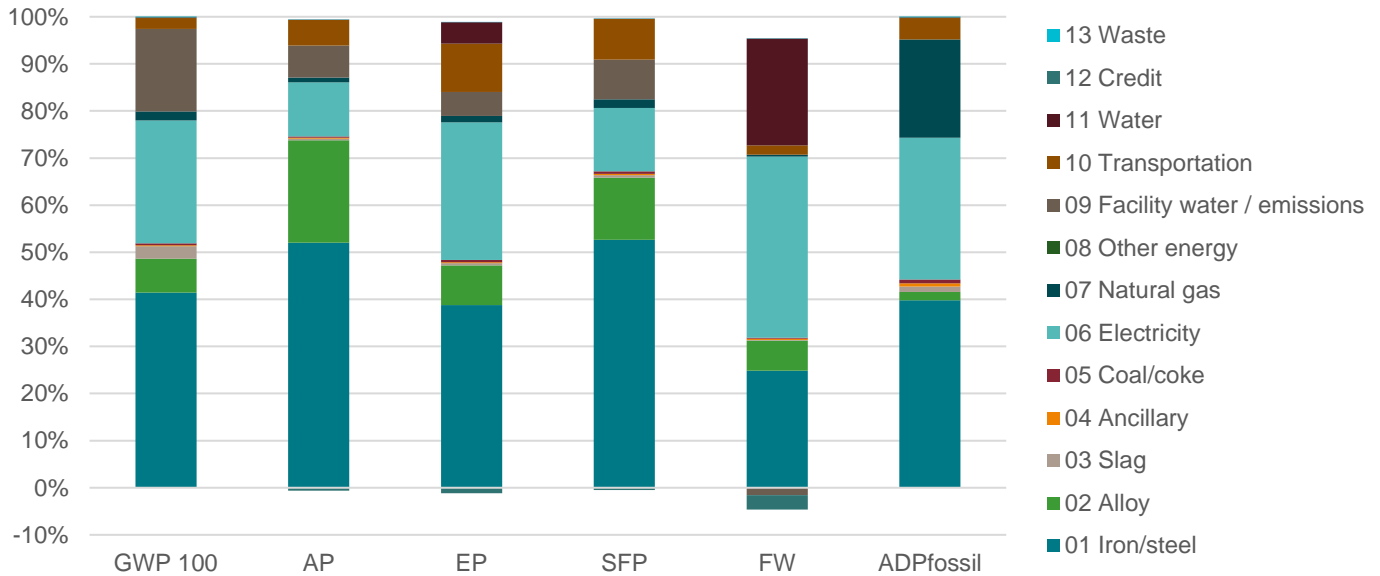


Figure 3: Relative contributions for module A1, IPCC AR5 + TRACI 2.1 impact categories

Facility-Specific GWP100 Results

Nucor hot-rolled structural plate may be shipped from one of two different mills. The results presented previously represent a production-weighted average of these facilities. To understand how the GWP may vary between sites, facility-specific GWP100 results are presented below, per metric ton and per short ton. As mill products may be shipped to any number of fabricators, the US average AISC fabricator data was used for both sites and therefore does not change. Results are also presented for bar at the mill level, which excludes impacts from the additional material requirements associated with the scrap generated during fabrication.

Table 10: Facility-specific GWP100 results, per 1 metric ton fabricated product and 1 metric ton rolled (un-fabricated) product

GWP [KG CO2 EQ.]	A1	A2	A3	TOTAL	CRADLE-TO-GATE, MILL PRODUCT
Hertford	1.34E+03	4.46E+01	9.67E+01	1.49E+03	1.24E+03
Tuscaloosa	1.50E+03	4.46E+01	9.67E+01	1.64E+03	1.39E+03





Table 11: Facility-specific GWP100 results, per 1 short ton fabricated product and 1 short ton rolled (un-fabricated) product

GWP [KG CO2 EQ.]	A1	A2	A3	TOTAL	CRADLE-TO-GATE, MILL PRODUCT
Hertford	1.22E+03	4.05E+01	8.77E+01	1.35E+03	1.13E+03
Tuscaloosa	1.36E+03	4.05E+01	8.77E+01	1.49E+03	1.26E+03

5. Additional Environmental Information

Environment and Health During Manufacturing

Refer to the Nucor Plate SDS¹ for additional environmental and health protection during the product manufacturing process. Be sure to follow all recommended handling and product manufacturing guidance.

Environmental Activities and Certifications

ISO 14001: Nucor’s Plate Mill Group operates an aggressive and sustainable environmental program that incorporates the concept of individual employee, as well as management responsibility for environmental performance. All of Nucor’s steelmaking operations are ISO 14001 certified. Achieving ISO 14001 certification means that each of Nucor’s steel mills has put an environmental management system in place with measurable targets and objectives, such as reducing the use of oil and grease and minimizing electricity use, and has implemented site-wide recycling programs. Many of our facilities have incorporated energy efficiency targets to reduce both cost and environmental impacts into their environmental management systems. These environmental management systems help facilitate compliance with our environmental commitment, which is every Nucor teammate’s responsibility. Nucor’s environmental program maintains a high level of ongoing training, commitment, outreach and visibility.

Waste and Water Recycling: Nucor’s EAFs, including the EAFs located at its plate mills, emit less than 1% of the particulate matter of a traditional steel blast furnace – and Nucor sends all but a small fraction of the EAF dust it produces to recycling facilities that recover the zinc, lead, chrome and other valuable metals from this dust. By recycling this material, Nucor is not only acting in a sustainable, responsible manner but is also substantially limiting its potential for future liability under both CERCLA and RCRA.

Because Nucor long ago implemented environmental practices that have resulted in the responsible disposal of waste materials, Nucor is also not presently considered a major contributor to any major cleanups under CERCLA for which Nucor has been named a potentially responsible party.

Nucor also recognizes that water is a critical natural resource and is essential to our business and the communities in which we operate. We have worked extensively to improve water use efficiency in our processes. One hundred percent of the process water from our steelmaking operations is recycled multiple times at our plate mills. Currently there are no Nucor steel mill divisions located in a High or Extremely High Water Stress Area.

In addition to its routine compliance costs, last year Nucor budgeted over \$10 million in capital spending related to environmental improvement projects in 2019.

In February 2020, USEPA unveiled its 2018 National Analysis of Toxics Release Inventory (TRI) and identified Nucor

¹<https://assets.ctfassets.net/aax1cfbwhqog/5IWu1mNQWTnnfDwJsJOPe0/fb549eee70ec497ae71c5592c4418b4f/SDS-Plate.pdf>





as one of the Top 10 Parent Companies in terms of pollution source reduction activities.

Safety: Safety is the most important value in Nucor's culture. The company has a goal of becoming the Safest Steel Company in the World. In 2020, Nucor had its best safety performance in company history. Nucor Steel – Hertford has attained its Voluntary Protection Program (VPP) certification from the federal Occupational Safety & Health Administration (OSHA), which is OSHA's highest level of recognition that few manufacturers achieve.

Clean Energy Investments: As America's cleanest and most efficient steel company, Nucor is extending beyond its fence line to lower its carbon footprint by investing in the development of new clean wind and solar power generation capacity. Nucor is currently supporting the development of more than 350MW, of new clean energy infrastructure, making us the 7th largest corporate buyer of renewable energy in America. Since November 2019, Nucor has entered two Virtual Power Purchase Agreements, which will enable the construction of 250MW of new solar energy and 100MW of new wind energy in Texas. Together, these two projects are equal to the electricity usage of nearly 70,000 Texas homes, and have the potential to supply renewable power to the regional electric grid 24-hours a day.

Nucor is also investing to build recycled steel facilities that will build our clean energy future. Nucor's new plate steel mill in Brandenburg, Kentucky will be one of only a few mills in the world capable of supporting the offshore wind market's towers and foundations, and the company recently announced a tube mill project in Kentucky that will supply galvanized solar torque tube to America's expanding solar energy markets.

In addition, Nucor is investing to produce 3rd Generation Advanced High-Strength Steel (AHSS) products that will allow vehicles to meet stricter mileage standards and reduce their life cycle emissions. Until recently, AHSS products were only made by high emissions blast furnaces. AHSS-intensive vehicles also have lower life cycle GHG emissions than aluminum-intensive vehicles for every class of vehicle tested.

Environmental Training: In 2015, Nucor established Nucor Environmental University (NEU), an online training platform for Nucor teammates with environmental responsibilities and others looking to expand their involvement with the environmental team. From the beginning, Nucor designed this program to help teammates develop a thorough and meaningful understanding of environmental compliance.

NEU has had over 1,000 active users since its inception five years ago, and Nucor teammates have completed nearly 10,000 environmental training courses, passed over 6,600 training exams, and helped develop dozens of courses. Because of NEU, Nucor's teammates are better prepared to meet the demands of environmental compliance and achieve Nucor's goal of being a sustainable organization.

6. References

AISC. (2021). *Fabricated Plate EPD*. UL Environment.

CEN. (2019). *EN 15804: 2019-04 Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products*.

ISO. (2006). *ISO 14044: Environmental management - Life cycle assessment - Requirements and guidelines*.

ISO. (2009). *ISO 14040: Environmental management - Life cycle assessment - principles and frameworks*.

ISO. (2011). *ISO 14025: Environmental labels and declarations - Type III environmental declarations - principles and procedures*.

ENVIRONMENTAL PRODUCT DECLARATION

NUCOR®



Fabricated Steel Plate
Designated Steel Construction Product

According to ISO 14025
and ISO 21930:2017

ISO. (2017). *ISO 21930 Sustainability in building construction - Environmental declaration of building products.*

Sphera. (2020). *GaBi LCA Database Documentation.* Retrieved from Sphera Solutions, Inc.: <http://www.gabi-software.com/america/support/gabi/>

UL Environment. (2018). *Product Category Rules for Building-Related Products and Services - Part A: Life Cycle Assessment Calculation Rules and Report Requirements, v3.2.*

UL Environment. (2020). *General Program Instructions, v2.5.*

UL Environment. (2020). *Part B: Designated Steel Construction Product EPD Requirements, v2.0.*

Worldsteel and EUROFER. (2014). *A methodology to determine the LCI of steel industry co-products.*

7. Contact Information

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