

# ENVIRONMENTAL PRODUCT DECLARATION HOT-ROLLED STRUCTURAL STEEL SECTIONS

NUCOR STEEL BERKELEY – A NUCOR COMPANY



**NUCOR®**  
**NUCOR STEEL BERKELEY**

Nucor Corporation (Nucor) is North America's most diversified steel and steel products company specializing in a wide variety of products, including hot-rolled structural steel sections (Beam) produced at Nucor Steel Berkeley facility (the facility). Nucor Steel Berkeley manufactures a wide range of hot-rolled rolled structural steel sections products. The facility, along with another beam facility Nucor Steel Yamato, has the capacity to produce up to 3,250,000 tons of wide-flange steel beams, pilings, and heavy structural steel products for fabricators, construction companies, manufacturers, and steel service centers.

Nucor beam product for this EPD is manufactured at the Nucor Steel Berkeley facility in Huger, SC and is made from steel which is melted and rolled in the United States and sourced from Nucor Electric Arc Furnace (EAF) steel mills. Nucor is North America's largest steel producer and recycler, turning approximately 20.6 million net tons of scrap steel in 2023 into new steel. Nucor uses Electric Arc Furnace (EAF) technology at each of its steel recycling facilities. Unlike traditional blast furnace steelmaking—which produces more than 70% of the world's steel using mined iron ore and metallurgical coal as feedstock—EAFs use post-consumer scrap as their major feedstock.

Through its use of EAFs, Nucor's steelmaking CO<sub>2</sub> emissions are less than one-half of the global average on a per ton basis, and Nucor's energy intensity is approximately one-quarter the global average.

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## NUCOR®

### NUCOR STEEL BERKELEY

**Hot-Rolled Structural Steel Sections**  
Designated Steel Construction Product

**According to ISO 14025, and ISO 21930:2017**

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| EPD PROGRAM AND PROGRAM OPERATOR<br>NAME, ADDRESS, LOGO, AND WEBSITE                                                                                                                                                         | <b>SCS GLOBAL SERVICES HEADQUARTERS</b><br>2000 POWELL STREET, SUITE 600<br>EMERYVILLE, CA<br>94608, USA<br><a href="https://www.scsglobalservices.com/">HTTPS://WWW.SCSGLOBALSERVICES.COM/</a>                                                          |
| GENERAL PROGRAM INSTRUCTIONS<br>AND VERSION NUMBER                                                                                                                                                                           | SCS Type III Environmental Declaration Program: Program Operator Manual. v12.0<br>(December 2023)                                                                                                                                                        |
| MANUFACTURER NAME AND ADDRESS                                                                                                                                                                                                | Nucor Corporation, 1915 Rexford Road, Charlotte, North Carolina 28211                                                                                                                                                                                    |
| DECLARATION NUMBER                                                                                                                                                                                                           | SCS-EPD-10312                                                                                                                                                                                                                                            |
| DECLARED PRODUCT &<br>FUNCTIONAL UNIT OR DECLARED UNIT                                                                                                                                                                       | Hot-Rolled Structural Steel Sections (Beam), 1 metric ton                                                                                                                                                                                                |
| REFERENCE PCR AND VERSION NUMBER                                                                                                                                                                                             | ISO 21930:2017 serves as the core PCR and UL Part A: Life Cycle Assessment<br>Calculation Rules and Report Requirements (UL Environment, V4.0, 2022) and Part B:<br>Designated Steel Construction Product EPD Requirements (UL Environment, V2.0, 2020). |
| DESCRIPTION OF PRODUCT APPLICATION/USE                                                                                                                                                                                       | Hot-Rolled Structural Steel Sections (Beam) used in construction                                                                                                                                                                                         |
| PRODUCT RSL DESCRIPTION (IF APPL.)                                                                                                                                                                                           | N/A                                                                                                                                                                                                                                                      |
| MARKETS OF APPLICABILITY                                                                                                                                                                                                     | North America                                                                                                                                                                                                                                            |
| DATE OF ISSUE                                                                                                                                                                                                                | EPD Valid December 20, 2024 through December 19, 2029                                                                                                                                                                                                    |
| PERIOD OF VALIDITY                                                                                                                                                                                                           | 5 years                                                                                                                                                                                                                                                  |
| EPD TYPE                                                                                                                                                                                                                     | Product-Specific, Manufacturer-Specific                                                                                                                                                                                                                  |
| EPD SCOPE                                                                                                                                                                                                                    | Cradle to Gate                                                                                                                                                                                                                                           |
| YEAR(S) OF REPORTED PRIMARY DATA                                                                                                                                                                                             | July 2023 – June 2024 for Traditional Beam<br>December 2023 – January 2024 for HiRec Beam                                                                                                                                                                |
| LCA SOFTWARE & VERSION NUMBER                                                                                                                                                                                                | LCA for Experts v10.9.0.20                                                                                                                                                                                                                               |
| LCI DATABASE(S) & VERSION NUMBER                                                                                                                                                                                             | LCA for Experts 2024.2                                                                                                                                                                                                                                   |
| LCIA METHODOLOGY & VERSION NUMBER                                                                                                                                                                                            | TRACI 2.1, IPCC 2013 (AR5), CML-baseline v4.7 August 2016                                                                                                                                                                                                |
| The PCR Part A review was conducted by:                                                                                                                                                                                      | <b>Dr. Lindita Bushi, Chair, Athena Sustainable Materials<br/>Institute</b>                                                                                                                                                                              |
|                                                                                                                                                                                                                              | <b>Hugues Imbeault-Tétreault, Eng., M.A.Sc., Groupe<br/>AGÉCO</b>                                                                                                                                                                                        |
|                                                                                                                                                                                                                              | <b>Jack Geibig, Ecoform</b>                                                                                                                                                                                                                              |
| The PCR Part B review was conducted by:                                                                                                                                                                                      | <b>Dr. Tom Gloria, Chair, Industrial Ecology Associates</b>                                                                                                                                                                                              |
|                                                                                                                                                                                                                              | <b>Brandie Sebastian, JBE Consultants</b>                                                                                                                                                                                                                |
|                                                                                                                                                                                                                              | <b>James Littlefield, Independent Consultant</b>                                                                                                                                                                                                         |
| This declaration was independently verified in accordance with ISO 14025: 2006, ISO<br>14044:2006, ISO 21930:2017, and the reference PCRs.<br><input type="checkbox"/> INTERNAL <input checked="" type="checkbox"/> EXTERNAL |                                                                                                                                                                      |
|                                                                                                                                                                                                                              | <b>Dr. Tess Garvey, SCS Global Services</b>                                                                                                                                                                                                              |
| This life cycle assessment was conducted in accordance with ISO 14025:2006, ISO<br>14044:2006, ISO 21930:2017, and the reference PCRs by:                                                                                    |                                                                                                                                                                                                                                                          |
|                                                                                                                                                                                                                              | <b>Trinity Consultants</b>                                                                                                                                                                                                                               |

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### LIMITATIONS

The environmental impact results of steel 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 steel 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. Environmental declarations from different programs (ISO 14025) may not be comparable.

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: Comparisons of the environmental performance of steel products using EPD information shall be based on the product's use and impacts at the construction works level, and therefore EPDs may not be used for comparability purposes when not considering the construction works energy use phase as instructed under this PCR. 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.

EPDs from different programs may not be comparable. Full conformance with a PCR for steel products allows EPD comparability only when all stages of a life cycle have been considered, when they comply with all referenced standards, use the same sub-category Part B PCR, and use equivalent scenarios with respect to construction works. 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.

This declaration was independently verified in accordance with ISO 14025: 2006. The UL Environment "Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report," v4.0 (March 2022), in conformance with ISO 21930:2017, serves as the core PCR, with additional considerations from the USGBC/UL Environment Part A Enhancement (2017). EPDs are only comparable if they comply with this document, 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. PRODUCT DEFINITION AND INFORMATION

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### Description of Organization

This environmental product declaration (EPD) represents hot-rolled structural steel sections (beam) produced by Nucor Steel Berkeley Facility located in Huger, South Carolina. As a vertically integrated company, Nucor controls a large and growing part of its supply chain from scrap recycling to raw steelmaking to steel products and distribution. Nucor Steel Berkeley utilizes electric arc furnace (EAF) steel recycling technology. All steel produced by Nucor is 100% recyclable at the end of its useful life.

For production of the raw steel used in Nucor's steel mills, Nucor uses scrap as its primary feedstock, which is largely provided by its wholly owned subsidiary, the David J. Joseph Company (DJJ). DJJ operates more than 60 scrap recycling facilities within close proximity to Nucor steel mills, processing approximately 5,000,000 tons of ferrous scrap annually and providing an abundant supply of scrap to the steel mills. Having an abundant and reliable supply of recycled scrap within close proximity not only gives Nucor's steel mills a logistics and economic advantage over their competitors, but also a carbon footprint that is a fraction of the average steel producer.

In addition to ferrous scrap, Nucor Steel Berkeley also uses direct reduced iron (DRI) produced with natural gas as a raw material input to meet more stringent quality requirements for steel products. Nucor annually produces and uses up to 4.5 million tons of DRI for use by its steel mills. By using natural gas, Nucor's two DRI plants each emit about **ONE-HALF the CO<sub>2</sub>** compared to iron produced in blast furnaces at integrated steel mills.

This EPD represents the traditional and HiRec beam products produced by the EPD owner, Nucor Corporation.

### Product Description

Nucor Steel Berkeley produces traditional beams and high-recycled content beams, referred to as HiRec beams in the balance of this EPD. The manufacturing processes for both products are identical; the only difference is in the amount of recycled steel scrap used as raw material.

Beams are used in building, bridge, and industrial products. These products are rolled shapes such as wide-flange sections, angles, channels and tees that are detailed, cut, drilled, bolted, welded, and otherwise processed at the fabricator in order to prepare them for installation.

Nucor Steel Berkeley uses a special continuous casting method that produces a beam blank closer in shape to that of the finished beam than traditional methods. Structural steel products come in standard sizes and grades, which allows Nucor to maintain inventory levels of these products to meet customers' expected orders.

Beam products produced by Nucor Steel Berkeley are defined by the following standards:

- ABS A
- ABS AH36
- ASTM A992
- ASTM A36
- ASTM A572
- ASTM A529
- ASTM A588
- ASTM A709
- ASTM A370
- ASTM A6
- AASHTO M270
- MIL S22698C

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- ASME SA36
- CSA G40

In addition, Nucor manufacturers steel to various customer-specific standards.

The United Nations Standard Products and Service Code (UNSPSC) and the Construction Specifications Institute (CSI) / Constructions Specifications Canadian (CSC) classification identified for steel beam products are:

- CSI MasterFormat Code: 05 10 00 Structural Metal Framing
- UNSPSC Code: 30260000 Structural materials

This EPD reports the LCA results of each beam product’s unfabricated and fabricated impacts separately.

## Product Composition

Steel is an alloy of iron containing small amounts of manganese, silicon, chromium, nickel, aluminum, copper, and trace alloys. These alloying elements improve the chemical and physical properties of steel, such as strength, ductility, durability, and corrosion resistance. There are many different grades of steel with many different physical, chemical, and environmental properties. Composition data for the studied product can be found in the table below, which outlines all materials that constitute the final product. Ancillary materials do not constitute any part of the final product. Various grades of steel will contain different combinations of these elements and/or trace materials. Exact specifications may be found by calling the division and asking for a specifications sheet. No substances required to be reported as hazardous are associated with the production of this product.

Table 1. Composition Data for Steel Product<sup>1</sup>

| NAME      | MAX VALUE | UNIT      |
|-----------|-----------|-----------|
| Boron     | <0.9      | % by mass |
| Carbon    | <1.2      | % by mass |
| Chromium  | 0.01-1.2  | % by mass |
| Manganese | 0.2-2     | % by mass |
| Silicon   | 0.6       | % by mass |
| Iron      | Balance   | % by mass |

## Product Average

Traditional beam product uses the average values from July 2023 to June 2024 (12 consecutive months of averaged data as required for manufacturer-specific datasets), while HiRec beam product uses the weighted average values during December 2023 to January 2024.<sup>2</sup> The products are manufactured at Huger, SC in the US.

Nucor Steel Berkeley’s beam production will include a limited production of HiRec beam. HiRec beam will only be produced upon customer request, and Nucor does not anticipate any seasonal variation with this beam production. HiRec beam production will be separate from traditional beam production. From the melt shop all the way through final rolling and processing, the heat number will be associated with each product and tracked on the material testing report (MTR) that is available to each customer.

Product-specific global warming potential results are provided separately.

<sup>1</sup> <https://nucor.com/certifications#sds> – Bar/Beam-Merchant, Rebar & Structural

<sup>2</sup> HiRec beam production was limited during this timeframe.

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### Application

Common applications for beams include gravity columns for high-rise buildings, long span trusses for stadiums and convention centers, solar pile applications, projects with seismic design considerations, and numerous other Original Equipment Manufacturer (OEM) applications. These products come in standard sizes and grades, which allows Nucor to continuously supply the right hot-rolled structural steel sections that meet customers' expected application and performance.

### Declaration of Methodological Framework

The scope of the EPD is cradle-to-gate, including raw material extraction and processing, upstream transportation, and product manufacture (Modules A1, A2, and A3).

### Technical Requirement

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

Table 2. Technical data for steel product

| NAME                             | VALUE                         | UNIT              |
|----------------------------------|-------------------------------|-------------------|
| Density                          | 7,800                         | kg/m <sup>3</sup> |
| Melting point                    | 1425-1540                     | °C                |
| Electrical conductivity at 20°C  | NA                            | % of IAC          |
| Thermal conductivity             | NA                            | W/(m-K)           |
| Coefficient of thermal expansion | NA                            | m/m-°C            |
| Modulus of elasticity            | NA                            | N/mm <sup>2</sup> |
| Shear modulus                    | NA                            | N/mm <sup>2</sup> |
| Specific heat capacity           | NA                            | J/kg-°C           |
| Yield strength                   | Varies by Specification/Grade | N/mm <sup>2</sup> |
| Ultimate tensile strength        | Varies by Specification/Grade | N/mm <sup>2</sup> |
| Breaking elongation              | Varies by Specification/Grade | %                 |
| Chemical composition             | Varies by Specification/Grade | % by mass         |
| Surface Area                     | Varies by Specification/Grade | m <sup>2</sup>    |
| Thickness                        | Varies by Specification/Grade | Mm                |

### Properties of Declared Product as Delivered

Steel beam can be fabricated (i.e., cut or otherwise modified) by a fabricator or shipped directly to a job site or end user.

### Material Composition

Nucor beam is manufactured entirely from carbon steel, which is produced through an electric arc furnace whose largest component is scrap steel being recycled. The product does not include materials or substances which may have any potential route of exposure to humans or flora/fauna in the environment. The product does not contain any hazardous substances according to the Resource Conservation and Recovery Act (RCRA), Subtitle 3. The products do not release dangerous substances to the environment, including indoor air emissions, gamma or ionizing radiation, or chemicals released to air or

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leached to water and soil.

### Manufacturing

Nucor Steel Berkeley uses EAF technology to produce steel from recycled scrap metal or scrap substitutes. Scrap metal or scrap substitutes are received via rail, truck and/or barge and are inspected and sorted into piles located within the on-site scrapyard. Scrap or scrap substitutes are moved from the scrapyard via trucks to the scrap buckets located in the melt shop. Scrap buckets are picked up using an overhead charging crane and dumped into the top of the EAFs.

Once the EAFs are charged with scrap, electric current is applied via large electrodes made of graphite or other high carbon material to melt the raw materials. Other raw materials are introduced to assist the melting process. Once the ideal melt conditions have been reached, ladles are placed at the tapping side of the EAFs, the furnaces are de-energized, and the molten steel is poured into the ladles. The ladles transport the molten steel to a ladle metallurgy furnace (LMF) which promotes a more homogeneous mixture. Additional additives may include various metal alloys to achieve the desired composition and steel grade of the final steel product.

The molten steel is then transported to casters where the steel begins to cool and solidify into billets. The steel billets are then directly charged into the reheat furnace or stored for future reheating and run through the rolling mill, from which they are output as steel beam. Metal scrap generated during manufacturing is recycled internally.

Steel is transported via rail, barge, or truck from Nucor Steel Berkeley to various types of customers, including downstream fabrication facilities. At these facilities, the steel is cut, rolled, or bent before being sold to consumers. Finished steel is also sold to distributors for consumer use.

The life cycle phases included in this study are illustrated in Figure 1. In Figure 1, fabrication is shown as its own process step. All other portions of the manufacturing process are considered as part of pre-fabrication.

### Packaging

Packaging at Nucor Steel Berkeley is not included in the LCA for this EPD.

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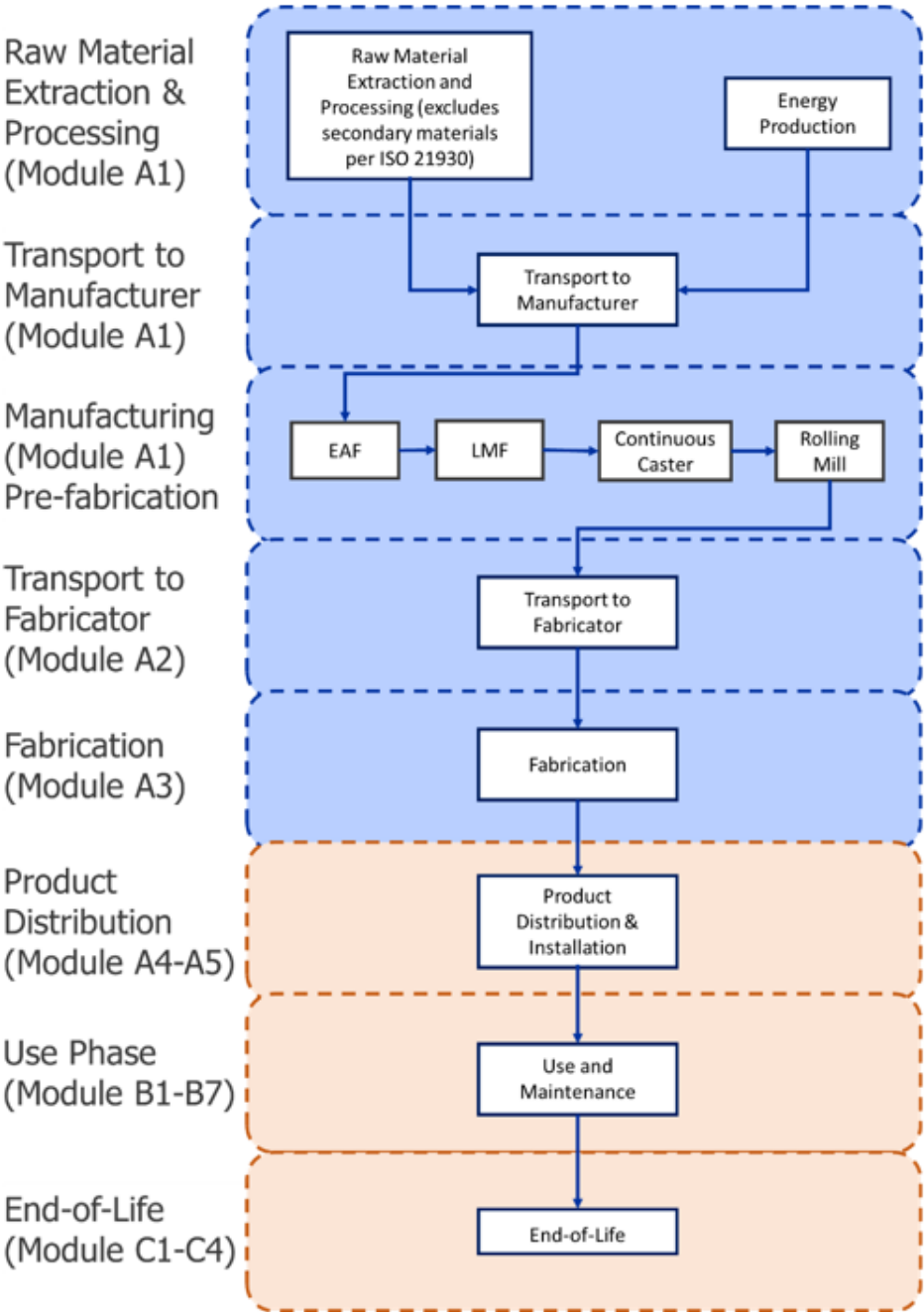


Figure 1. Flow Chart for Product System

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## 2. LCA CALCULATION RULES

### Declared Unit

The declared unit is one (1) metric ton of beam product.

### 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 delivery, installation and use, and product disposal (modules A4 – A5, B1 – B7, C1 – C4, and D) have not been included.

| PRODUCT STAGE       |           |               | CONSTRUCTION<br>PROCESS STAGE |                  | USE STAGE |             |        |             |               |                                                       |                                                      | END OF LIFE STAGE |           |                  |          | BENEFITS AND LOADS<br>BEYOND THE SYSTEM<br>BOUNDARY |
|---------------------|-----------|---------------|-------------------------------|------------------|-----------|-------------|--------|-------------|---------------|-------------------------------------------------------|------------------------------------------------------|-------------------|-----------|------------------|----------|-----------------------------------------------------|
| Raw material supply | Transport | Manufacturing | Transport from gate to site   | Assembly/Install | Use       | Maintenance | Repair | Replacement | Refurbishment | Building Operational Energy Use<br>During Product Use | Building Operational Water Use<br>During Product Use | Deconstruction    | Transport | Waste processing | Disposal | Reuse, Recovery, Recycling<br>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                                                 |

X = Module declared  
MND = Module not declared

### 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. In cases where no matching life cycle inventories were available to represent a flow, proxy data were applied based on conservative assumptions regarding environmental impacts. No data gaps were allowed which were expected to significantly affect the outcome of the indicator results. No other known flows are deliberately excluded from this EPD.

The mass input of each omitted stream is less than 1% of the total mass input streams into the system and the cumulative mass input of all omitted streams is less than 5% of the total mass input streams. Therefore, no data gaps were allowed which were expected to significantly affect the outcome of the indicator results.

### Biogenic Carbon and Land-Use Change

The production of beam products at Nucor Steel Berkeley does not include significant sources of biogenic carbon or GHG emissions occurring as a result of land-use change. The biogenic carbon emissions and removals were determined to be negligible for both products; therefore, the biogenic carbon emissions are considered zero in this analysis. Similarly, GHG emissions occurring as a result of land-use change were determined to be negligible and land-use change emissions considered zero in this analysis. The characterization method for GWP100 excludes both biogenic carbon and land-use change. Additional indicators on the uptake and emissions of CO<sub>2</sub> are not included or published in this EPD as they are not considered relevant.

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### Carbonation, Calcination, and Combustion of Waste

There is no carbonation, calcination or combustion of waste from renewable or non-renewable sources used in the production processes of beam products and the scope of this analysis did not include use and end-of-life stages. Accordingly, the environmental impacts do not account for any environmental benefits attributed to carbonation, calcination or combustion of waste from renewable or non-renewable sources.

### Data Sources

The LCA model was created using the LCA for Experts (formerly GaBi) Software system for life cycle engineering, version 10.9.0.20, developed by Sphera. Background life cycle inventory data for raw materials and processes were obtained from LCA for Experts 2024.2 databases (formerly known as GaBi databases). Primary manufacturing data were provided by Nucor. Impacts from transportation of unfabricated product to fabricators (A2) and fabrication (A3) were taken from the 2021 industry average EPD created by the American Institute of Steel Construction (AISC).<sup>3</sup>

### 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.

Traditional beam production data has been collected by Nucor directly from the production sites and are average values for July 2023 – June 2024 (12 consecutive months of averaged data as required for manufacturer-specific data sets). HiRec beam production was limited during this timeframe and is represented based on a limited subset of data from December 2023 – January 2024. The data has been measured and verified internally. The data is assumed to be the most relevant according to current conditions and production practices. Based on availability of data, natural gas, and electricity usage for the operation of administrative offices was included in the system boundary.

Time-related coverage, geographical coverage, technological coverage, precision, completeness, representativeness, consistency, reproducibility, sources of data, and uncertainty have each been analyzed as part of this LCA. All inputs and data sources meet the requirements set forth in the PCR and there is no reason to believe that any of the employed material, data, or inputs are not representative of the product under study.

### Geographical Coverage

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

- Nucor Steel Berkeley – Huger, SC

Regionally specific datasets, where available, were used to represent the 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 traditional beam production during July 2023 – June 2024 and HiRec beam production during December 2023 – January 2024. This analysis is intended to represent traditional beam production during July 2023 – June 2024 and HiRec beam production during December 2023 – January 2024

### Allocation

Per ISO 21930 and the PCR, this is an attributional LCA and as such, no allocation using system expansion was performed. Allocation of background data (energy and materials) taken from the Managed LCA Content (formerly known as GaBi databases) is documented online at <https://sphera.com/life-cycle-assessment-lca-database/>.

<sup>3</sup> <https://www.aisc.org/globalassets/why-steel/epd-aisc-hr-sections-2021.pdf>

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Nucor Steel Berkeley uses external scrap and home scrap as raw materials for the EAF to produce traditional and HiRec beams. In accordance with ISO 21930's "polluter pays principle", where processes relevant to waste processing are assigned to the product system that generates the waste until the system boundary between product systems is reached, external scrap used by Nucor Steel Berkeley carries no upstream material processing impact burden because the burden is associated with the producer of the steel scrap. Therefore, external scrap is modeled as a secondary material with only impacts associated with transportation from the steel scrap provider to Nucor Steel Berkeley. Any home scrap processing conducted at Nucor Steel Berkeley is assumed to be accounted for in the facility-wide material and energy usages. Therefore, home scrap is modeled as a secondary material with no additional impacts.

The Nucor Steel Berkeley melt shop produces steel billet and slag. All slag is sold as-is. All steel billet continues onto the rolling mill to be rolled into beam products ("steel"). The slag and steel product are considered co-products of the product system resulting from a joint co-production process. Per Worldsteel Association methodology, the steel production process is a thermodynamic system requiring energy to drive production processes; therefore, the energy associated with the mass flows and chemical reactions of the co-products should be the basis for the partitioning of the flows between the coproducts. Nucor performed a slag-related energy analysis in accordance with this methodology for a representative Nucor mill to determine slag allocation for applicable flows. The results of the representative Nucor mill study were applied to Nucor Steel Berkeley.

The Nucor Steel Berkeley also produces mill scale which is sold as a co-product from the facility. However, since allocation for mill scale will require system expansion, it is not considered in this LCA.

### 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 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 the reported material and energy flows have been accounted for.

Raw material procurement and upstream transport to Nucor Steel Berkeley is included for all raw materials above the cut-off thresholds. For each raw material, a representative dataset was selected to represent the geographic region of origin. Distances by truck and rail were estimated using Google Maps. Distances by ship were estimated using ports.com.<sup>4</sup> In some cases, Nucor Steel Berkeley sourced a single raw material from multiple distributors, in which case the transport from every distributor was modeled. Only travel to the facility is accounted for (i.e., return truck and rail trips are considered out of scope).

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<sup>4</sup> <http://ports.com/sea-route/>

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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 and ADP<sub>fossil</sub>. GWP 100 is reported using the IPCC 2013 (AR5) methodology, and ADP<sub>fossil</sub> is reported using CML-baseline v4.7 August 2016. LCIA results are relative expressions and do not predict actual impacts, the exceeding of thresholds, safety margins or risks.

The impact categories reported in the LCIA tables below 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.

Any comparison of EPDs shall be subject to the requirements of ISO 21930. Environmental impact results shall be converted to a functional unit basis before any comparison is attempted. 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. EPDs are only comparable if they comply with the same document, 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.

All acronyms used in the following results tables are defined in Section 6 of this EPD.

#### Traditional Beam Unfabricated Product Results

Table 3. LCIA results, per 1 metric ton of unfabricated traditional beam

| PARAMETER                               | UNIT                   | A1       | A2       | A3       | TOTAL    |
|-----------------------------------------|------------------------|----------|----------|----------|----------|
| GWP 100 (excl. biogenic C and land-use) | kg CO <sub>2</sub> eq. | 6.93E+02 | 4.96E+01 | 4.08E+02 | 1.15E+03 |
| ODP                                     | kg CFC 11 eq.          | 9.07E-10 | 5.68E-13 | 4.17E-05 | 4.17E-05 |
| AP                                      | kg SO <sub>2</sub> eq. | 2.03E+00 | 1.10E+00 | 1.01E+00 | 4.14E+00 |
| EP                                      | kg N eq.               | 7.69E-02 | 3.86E-02 | 1.03E-01 | 2.19E-01 |
| SFP                                     | kg O <sub>3</sub> eq.  | 3.14E+01 | 2.07E+01 | 2.59E+01 | 7.80E+01 |
| ADP <sub>FOSSIL</sub>                   | MJ surplus             | 9.84E+03 | 5.95E+02 | 2.56E+03 | 1.30E+04 |

Table 4. Resource use results, per 1 metric ton of unfabricated traditional beam <sup>a</sup>

| PARAMETER         | UNIT   | A1       | A2       | A3       | TOTAL    |
|-------------------|--------|----------|----------|----------|----------|
| RPR <sub>E</sub>  | MJ LHV | 3.12E+02 | 2.68E+01 | 7.42E+02 | 1.08E+03 |
| RPR <sub>M</sub>  | MJ LHV | 0.00E+00 | N/A      | N/A      | 0.00E+00 |
| NRPR <sub>E</sub> | MJ LHV | 6.36E+03 | 6.22E+02 | 4.50E+03 | 1.15E+04 |
| NRPR <sub>M</sub> | MJ LHV | 3.58E+03 | N/A      | N/A      | 3.58E+03 |
| SM                | kg     | 7.16E+02 | N/A      | 0.00E+00 | 7.16E+02 |
| RSF               | MJ LHV | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| NRSF              | MJ LHV | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| RE                | MJ LHV | N/A      | N/A      | 0.00E+00 | 0.00E+00 |

# ENVIRONMENTAL PRODUCT DECLARATION



## NUCOR STEEL BERKELEY

Hot-Rolled Structural Steel Sections  
Designated Steel Construction Product

According to ISO 14025, and ISO 21930:2017

| PARAMETER | UNIT           | A1       | A2       | A3       | TOTAL    |
|-----------|----------------|----------|----------|----------|----------|
| FW        | m <sup>3</sup> | 9.40E-01 | 4.85E-02 | 7.06E+00 | 8.05E+00 |

a. Lower calorific values (LHV) of fuels are used for energy parameters.

Table 5. Output flows and waste categories results, per 1 metric ton of unfabricated traditional beam <sup>a</sup>

| PARAMETER | UNIT   | A1       | A2       | A3       | Total    |
|-----------|--------|----------|----------|----------|----------|
| HWD       | kg     | 8.22E-02 | N/A      | 1.30E-02 | 9.52E-02 |
| NHWD      | kg     | 5.06E-03 | N/A      | 4.85E+01 | 4.85E+01 |
| HLRW      | kg     | 4.48E-05 | 1.14E-05 | 8.21E-04 | 8.77E-04 |
| ILLRW     | kg     | 3.78E-02 | 9.54E-03 | 6.86E-01 | 7.33E-01 |
| CRU       | kg     | N/A      | N/A      | N/A      | N/A      |
| MR        | kg     | 4.18E-03 | N/A      | 2.55E+01 | 2.55E+01 |
| MER       | kg     | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| EE        | MJ LHV | N/A      | N/A      | 0.00E+00 | 0.00E+00 |

a. Lower calorific values (LHV) of fuels are used for energy parameters.

## HiRec Beam Unfabricated Product Results

Table 6. LCIA results, per 1 metric ton of unfabricated HiRec beam

| PARAMETER                               | UNIT                   | A1       | A2       | A3       | TOTAL    |
|-----------------------------------------|------------------------|----------|----------|----------|----------|
| GWP 100 (excl. biogenic C and land-use) | kg CO <sub>2</sub> eq. | 1.65E+02 | 1.95E+01 | 4.01E+02 | 5.85E+02 |
| ODP                                     | kg CFC 11 eq.          | 9.49E-10 | 3.47E-13 | 4.17E-05 | 4.17E-05 |
| AP                                      | kg SO <sub>2</sub> eq. | 7.20E-01 | 2.80E-01 | 1.01E+00 | 2.01E+00 |
| EP                                      | kg N eq.               | 1.84E-02 | 1.14E-02 | 1.03E-01 | 1.33E-01 |
| SFP                                     | kg O <sub>3</sub> eq.  | 7.21E+00 | 5.49E+00 | 2.58E+01 | 3.85E+01 |
| ADP <sub>FOSSIL</sub>                   | MJ surplus             | 4.57E+03 | 2.41E+02 | 2.48E+03 | 7.29E+03 |

Table 7. Resource use results, per 1 metric ton of unfabricated HiRec beam <sup>a</sup>

| PARAMETER         | UNIT           | A1       | A2       | A3       | TOTAL    |
|-------------------|----------------|----------|----------|----------|----------|
| RPR <sub>E</sub>  | MJ LHV         | 1.00E+02 | 1.80E+01 | 7.12E+02 | 8.30E+02 |
| RPR <sub>M</sub>  | MJ LHV         | 0.00E+00 | N/A      | N/A      | 0.00E+00 |
| NRPR <sub>E</sub> | MJ LHV         | 2.57E+03 | 2.58E+02 | 4.33E+03 | 7.16E+03 |
| NRPR <sub>M</sub> | MJ LHV         | 2.05E+03 | N/A      | N/A      | 2.05E+03 |
| SM                | kg             | 1.12E+03 | N/A      | 0.00E+00 | 1.12E+03 |
| RSF               | MJ LHV         | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| NRSF              | MJ LHV         | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| RE                | MJ LHV         | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| FW                | m <sup>3</sup> | 2.65E-01 | 3.62E-02 | 7.03E+00 | 7.33E+00 |

# ENVIRONMENTAL PRODUCT DECLARATION



## NUCOR STEEL BERKELEY

Hot-Rolled Structural Steel Sections  
Designated Steel Construction Product

According to ISO 14025, and ISO 21930:2017

| PARAMETER | UNIT | A1 | A2 | A3 | TOTAL |
|-----------|------|----|----|----|-------|
|-----------|------|----|----|----|-------|

a. Lower calorific values (LHV) of fuels are used for energy parameters.

**Table 8. Output flows and waste categories results, per 1 metric ton of unfabricated HiRec beam <sup>a</sup>**

| PARAMETER | UNIT   | A1       | A2       | A3       | Total    |
|-----------|--------|----------|----------|----------|----------|
| HWD       | kg     | 2.95E-02 | N/A      | 1.30E-02 | 4.25E-02 |
| NHWD      | kg     | 1.82E-03 | N/A      | 4.85E+01 | 4.85E+01 |
| HLRW      | kg     | 2.26E-05 | 7.07E-06 | 7.86E-04 | 8.16E-04 |
| ILLRW     | kg     | 1.90E-02 | 5.91E-03 | 6.57E-01 | 6.82E-01 |
| CRU       | kg     | N/A      | N/A      | N/A      | N/A      |
| MR        | kg     | 1.50E-03 | N/A      | 2.55E+01 | 2.55E+01 |
| MER       | kg     | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| EE        | MJ LHV | N/A      | N/A      | 0.00E+00 | 0.00E+00 |

a. Lower calorific values (LHV) of fuels are used for energy parameters.

## Traditional Beam Fabricated Product Results

**Table 9. LCIA results, per 1 metric ton of fabricated traditional beam**

| PARAMETER                               | UNIT                   | A1       | A2       | A3       | TOTAL    |
|-----------------------------------------|------------------------|----------|----------|----------|----------|
| GWP 100 (excl. biogenic C and land-use) | kg CO <sub>2</sub> eq. | 1.24E+03 | 4.46E+01 | 9.67E+01 | 1.38E+03 |
| ODP                                     | kg CFC 11 eq.          | 4.50E-05 | 8.67E-14 | 1.62E-09 | 4.50E-05 |
| AP                                      | kg SO <sub>2</sub> eq. | 4.47E+00 | 1.83E-01 | 1.52E-01 | 4.80E+00 |
| EP                                      | kg N eq.               | 2.36E-01 | 1.64E-02 | 1.23E-02 | 2.65E-01 |
| SFP                                     | kg O <sub>3</sub> eq.  | 8.42E+01 | 4.44E+00 | 2.23E+00 | 9.09E+01 |
| ADP <sub>FOSSIL</sub>                   | MJ surplus             | 1.40E+04 | 7.16E+01 | 1.04E+02 | 1.42E+04 |

**Table 10. Resource use results, per 1 metric ton of fabricated traditional beam <sup>a</sup>**

| PARAMETER         | UNIT           | A1       | A2       | A3       | TOTAL    |
|-------------------|----------------|----------|----------|----------|----------|
| RPR <sub>E</sub>  | MJ LHV         | 1.17E+03 | 6.24E+01 | 2.16E+02 | 1.45E+03 |
| RPR <sub>M</sub>  | MJ LHV         | 0.00E+00 | N/A      | N/A      | 0.00E+00 |
| NRPR <sub>E</sub> | MJ LHV         | 1.24E+04 | 6.91E+02 | 1.47E+03 | 1.46E+04 |
| NRPR <sub>M</sub> | MJ LHV         | 3.87E+03 | N/A      | 1.26E+01 | 3.88E+03 |
| SM                | kg             | 7.73E+02 | N/A      | 7.52E-01 | 7.74E+02 |
| RSF               | MJ LHV         | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| NRSF              | MJ LHV         | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| RE                | MJ LHV         | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| FW                | m <sup>3</sup> | 8.70E+00 | 1.81E-01 | 6.82E-01 | 9.56E+00 |

a. Lower calorific values (LHV) of fuels are used for energy parameters.

# ENVIRONMENTAL PRODUCT DECLARATION



## NUCOR STEEL BERKELEY

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Table 11. Output flows and waste categories results, per 1 metric ton of fabricated traditional beam <sup>a</sup>

| PARAMETER | UNIT   | A1       | A2       | A3       | Total    |
|-----------|--------|----------|----------|----------|----------|
| HWD       | kg     | 1.03E-01 | N/A      | 3.32E-01 | 4.35E-01 |
| NHWD      | kg     | 5.24E+01 | N/A      | 9.66E+00 | 6.21E+01 |
| HLRW      | kg     | 9.47E-04 | 3.16E-05 | 1.18E-04 | 1.10E-03 |
| ILLRW     | kg     | 7.92E-01 | 2.64E-02 | 9.85E-02 | 9.17E-01 |
| CRU       | kg     | N/A      | N/A      | N/A      | N/A      |
| MR        | kg     | 2.75E+01 | N/A      | 7.71E+01 | 1.05E+02 |
| MER       | kg     | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| EE        | MJ LHV | N/A      | N/A      | 0.00E+00 | 0.00E+00 |

a. Lower calorific values (LHV) of fuels are used for energy parameters.

## HiRec Beam Fabricated Product Results

Table 12. LCIA results, per 1 metric ton of fabricated HiRec beam

| PARAMETER                               | UNIT                   | A1       | A2       | A3       | TOTAL    |
|-----------------------------------------|------------------------|----------|----------|----------|----------|
| GWP 100 (excl. biogenic C and land-use) | kg CO <sub>2</sub> eq. | 6.32E+02 | 4.46E+01 | 9.67E+01 | 7.74E+02 |
| ODP                                     | kg CFC 11 eq.          | 4.50E-05 | 8.67E-14 | 1.62E-09 | 4.50E-05 |
| AP                                      | kg SO <sub>2</sub> eq. | 2.17E+00 | 1.83E-01 | 1.52E-01 | 2.50E+00 |
| EP                                      | kg N eq.               | 1.43E-01 | 1.64E-02 | 1.23E-02 | 1.72E-01 |
| SFP                                     | kg O <sub>3</sub> eq.  | 4.16E+01 | 4.44E+00 | 2.23E+00 | 4.82E+01 |
| ADP <sub>FOSSIL</sub>                   | MJ surplus             | 7.87E+03 | 7.16E+01 | 1.04E+02 | 8.05E+03 |

Table 13. Resource use results, per 1 metric ton of fabricated HiRec beam <sup>a</sup>

| PARAMETER         | UNIT           | A1       | A2       | A3       | TOTAL    |
|-------------------|----------------|----------|----------|----------|----------|
| RPR <sub>E</sub>  | MJ LHV         | 8.96E+02 | 6.24E+01 | 2.16E+02 | 1.17E+03 |
| RPR <sub>M</sub>  | MJ LHV         | 0.00E+00 | N/A      | N/A      | 0.00E+00 |
| NRPR <sub>E</sub> | MJ LHV         | 7.73E+03 | 6.91E+02 | 1.47E+03 | 9.89E+03 |
| NRPR <sub>M</sub> | MJ LHV         | 2.22E+03 | N/A      | 1.26E+01 | 2.23E+03 |
| SM                | kg             | 1.21E+03 | N/A      | 7.52E-01 | 1.21E+03 |
| RSF               | MJ LHV         | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| NRSF              | MJ LHV         | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| RE                | MJ LHV         | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| FW                | m <sup>3</sup> | 7.92E+00 | 1.81E-01 | 6.82E-01 | 8.78E+00 |

a. Lower calorific values (LHV) of fuels are used for energy parameters.

# ENVIRONMENTAL PRODUCT DECLARATION



## NUCOR STEEL BERKELEY

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Table 14. Output flows and waste categories results, per 1 metric ton of fabricated HiRec beam <sup>a</sup>

| PARAMETER | UNIT   | A1       | A2       | A3       | Total    |
|-----------|--------|----------|----------|----------|----------|
| HWD       | kg     | 4.60E-02 | N/A      | 3.32E-01 | 3.78E-01 |
| NHWD      | kg     | 5.24E+01 | N/A      | 9.66E+00 | 6.21E+01 |
| HLRW      | kg     | 8.81E-04 | 3.16E-05 | 1.18E-04 | 1.03E-03 |
| ILLRW     | kg     | 7.36E-01 | 2.64E-02 | 9.85E-02 | 8.61E-01 |
| CRU       | kg     | N/A      | N/A      | N/A      | N/A      |
| MR        | kg     | 2.75E+01 | N/A      | 7.71E+01 | 1.05E+02 |
| MER       | kg     | N/A      | N/A      | 0.00E+00 | 0.00E+00 |
| EE        | MJ LHV | N/A      | N/A      | 0.00E+00 | 0.00E+00 |

a. Lower calorific values (LHV) of fuels are used for energy parameters.

## 4. LCA INTERPRETATION

In order to facilitate a more detailed understanding of the contributions from different mill processes, an analysis is included in this section which details the contribution from Modules A1, A2, and A3. The results in Figure 2 and Figure 3 are for unfabricated traditional and HiRec beam and in Figure 4 and Figure 5 are for the fabricated traditional and HiRec beam, respectively. These facilitate a better understanding of which categories contribute most to which impacts.

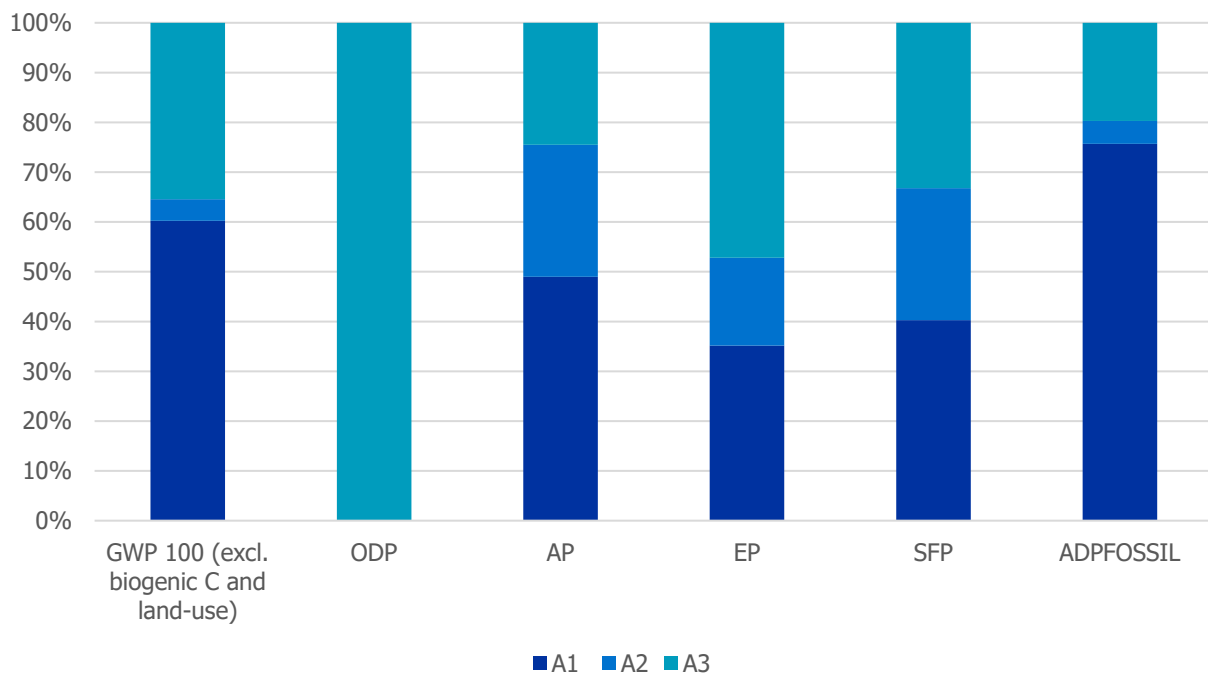


Figure 2. Unfabricated Traditional Beam Relative Contributions by Module and Impact Categories

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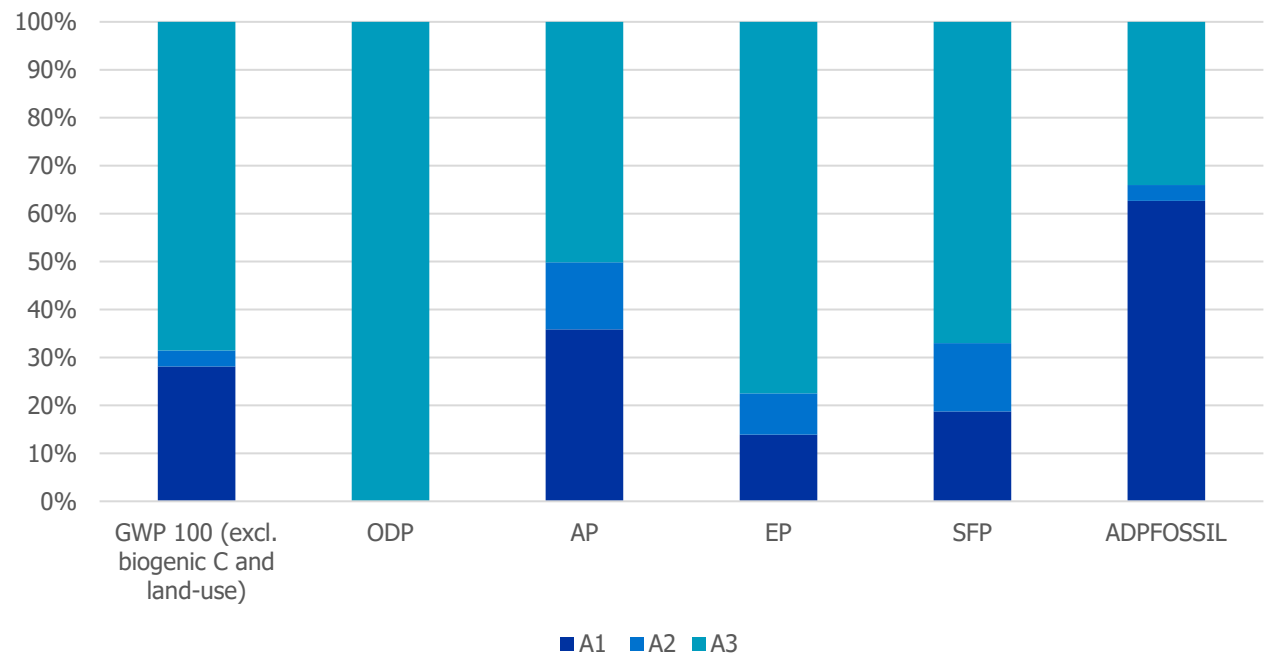


Figure 3. Unfabricated HiRec Beam Relative Contributions by Module and Impact Categories

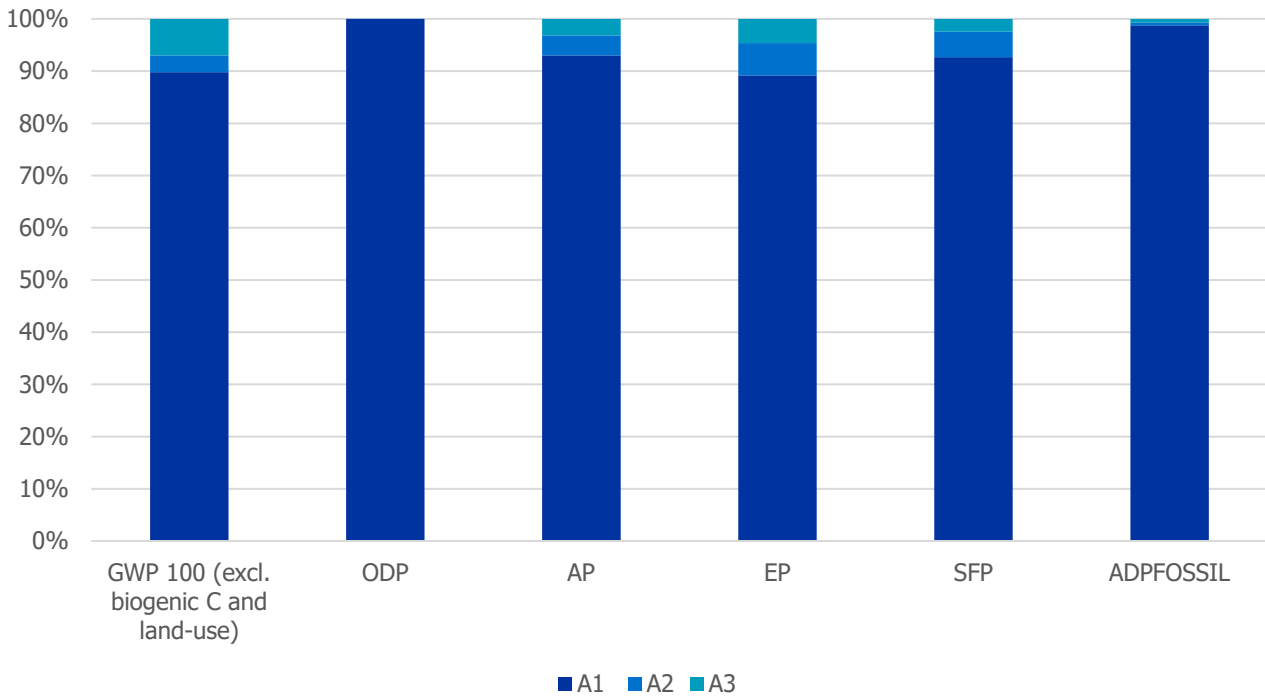


Figure 4. Fabricated Traditional Beam Relative Contributions by Module and Impact Categories

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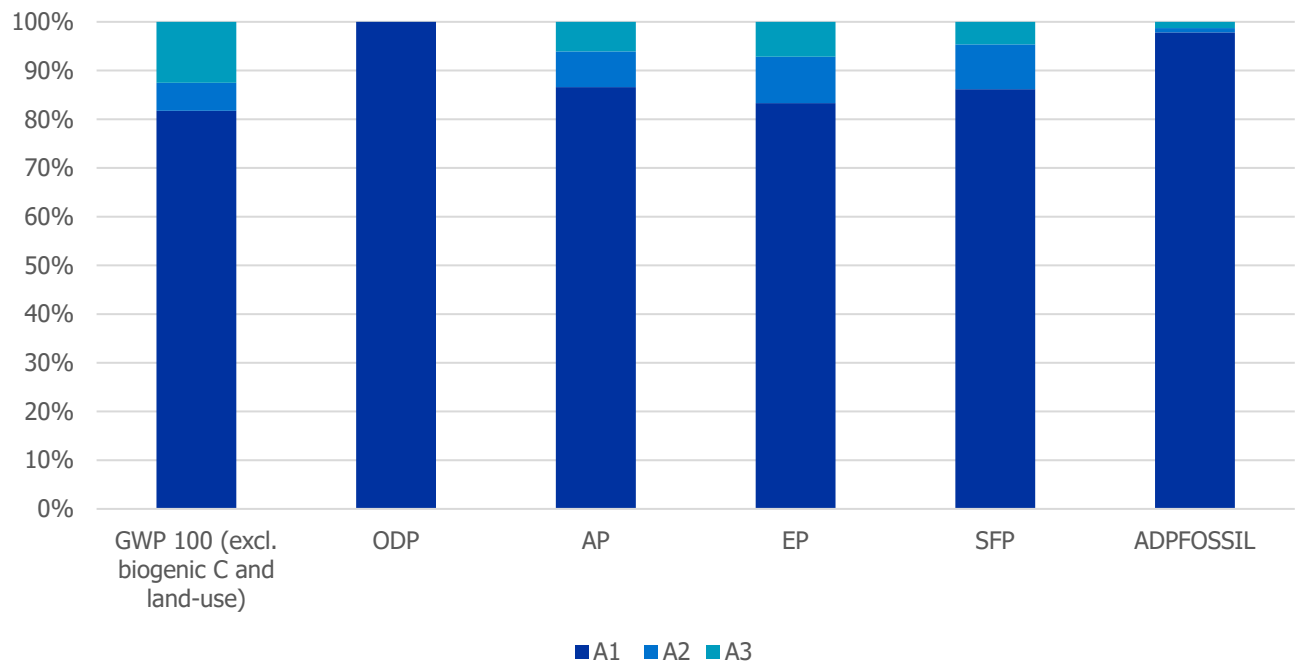


Figure 5. Fabricated HiRec Beam Relative Contributions by Module and Impact Categories

For unfabricated traditional beam product, the impact assessment results indicate that Module A3, i.e. manufacturing, which includes purchased electricity, on-site natural gas and other fuels combustion, and facility emissions, is the largest contributor to key potential environmental impact categories for Ozone Depletion Potential and Eutrophication Potential. Module A1, i.e. raw material procurement is a key contributor to Global Warming Potential, Acidification Potential, Smog Formation Potential, and Abiotic Resource Depletion. Module A2, i.e. transport to manufacturer, is not the most significant contributor to any impact category.

For unfabricated HiRec beam product, the impact assessment results indicate that Module A3 is the largest contributor to key potential environmental impact categories for Global Warming Potential, Ozone Depletion Potential, Acidification Potential, Eutrophication Potential, and Smog Formation Potential. Module A1 is a key contributor to Abiotic Resource Depletion. Module A2, i.e. transport to manufacturer, is not the most significant contributor to any impact category.

For fabricated traditional and HiRec beam products, the impact assessment results indicate that Module A1, i.e. Raw Materials, pre-fabrication transport and pre-fabrication manufacturing, which includes purchased electricity generation, on-site natural gas combustion, and facility emissions is the key contributor to potential environmental impact categories for Global Warming Potential, Ozone Depletion Potential, Acidification Potential, Eutrophication Potential, Smog Formation Potential, and Abiotic Resource Depletion Potential of Fossil Energy Resources. Module A2, i.e. transport to manufacturer, and Module A3, i.e. manufacturing at the fabricator, are not the most significant contributor to any impact category.

Additionally, compared to the traditional beam, the HiRec beam demonstrates lower environmental impact across all categories, as it utilizes a higher proportion of recycled steel and less DRI and scrap.

# ENVIRONMENTAL PRODUCT DECLARATION



NUCOR STEEL BERKELEY

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## 5. ADDITIONAL ENVIRONMENTAL INFORMATION

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### Health and Safety

**Health:** Refer to the specific Nucor product SDS for health, safety, and proper handling information.<sup>5</sup>

**Safety:** Nucor's top priority is to become the safest steel company in the world. This is accomplished through the empowerment of each and every teammate to hold one another accountable to work safely. In 2020, Nucor had its best safety performance in company history. At Nucor, nothing is more important than our teammates returning home safely to their families after each and every shift.

### Environmental Activities and Certifications

**ISO 14001:2015 Environmental Management System:** The environmental performance of Nucor's steel mills focuses on continuous improvement through internal and external training, application of new technologies and how data and results are communicated. To provide a framework for Nucor teammates to follow, Nucor utilizes ISO 14001, which is the international standard that establishes specific requirements for an effective environmental management system (EMS). Nucor Steel Berkeley is certified to ISO 14001.

**Sustainability:** Nucor is dedicated to engineering a wide range of steel product lines, prioritizing safety, and sustainability throughout the manufacturing process. For more than 50 years, Nucor has been making steel using an electric arc furnace (EAF) that melts recycled scrap and turns it into new steel. EAFs are far less energy intensive and more energy efficient than traditional blast furnace steel making. Electric arc furnaces allow Nucor to produce less emissions than competitors who often make steel by melting iron ore and coking coal.

By recycling scrap in EAFs, Nucor's energy intensity (average gigajoules per metric ton of steel produced) is 74% lower than the global average, and its greenhouse gas intensity (metric tons CO<sub>2</sub> per ton of steel produced) is less than one-fourth the global average, and nearly one-fifth of the average integrated (BF/BOF) steel producer. Nucor is also committed to a net-zero 2050 science-based greenhouse gas (GHG) target as defined by the Global Steel Climate Council's (GSCC) "Steel Climate Standard", an ambitious standard consistent with the International Energy Agency Net Zero by 2050: A Roadmap for the Global Energy System glidepath for the industry (IEA NZE). The net-zero 2050 target will result in a GHG intensity of 116 kg GHGs per metric ton of steel, including Scopes 1, 2 and 3 emissions as defined by GSCC. Nucor will continue to be an industry leader in GHG transparency, with reporting continuing to be third-party verified.

Currently, Nucor accounts for more than 25% of the United States' steel production, but only accounts for 8% of the domestic steel industry's greenhouse gas emissions. Nucor is also committing to a 35% combined reduction in its steel mill Scope 1 and Scope 2 greenhouse gas intensity by 2030, measured against a 2015 baseline. This goal will take Nucor's steel mill CO<sub>2</sub> emissions down to 77% less than today's global steelmaking average, and 82% less than today's integrated steelmaking average.

In November 2022, Nucor, along with five other international steel manufacturers, formed a new coalition to establish and promote a global steel standard that leads toward a cleaner, lower GHG future. This coalition, named the Global Steel Climate Council (GSCC), is a nonprofit association dedicated to sharing best practices, establishing standards, and advocating for carbon emissions reductions by members of the steel industry.

The specific purposes of the GSCC include supporting technology-agnostic reduction methods that reduce greenhouse gas emissions from the global steel industry; creating a system boundary that includes Scope 1, 2, and 3 emissions; and adopting a science-based glidepath to achieve a 1.5 degrees Celsius (1.5°C) scenario by 2050.

In alignment with the Global Steel Climate Council's (GSCC) "Steel Climate Standard" and the International Energy Agency's Net

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<sup>5</sup> <https://nucor.com/certifications#sds> – Bar/Beam-Merchant, Rebar & Structural

# ENVIRONMENTAL PRODUCT DECLARATION



## NUCOR STEEL BERKELEY

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Zero by 2050: A Roadmap for the Global Energy Sector, Nucor is steadfast in its commitment to achieving a net-zero greenhouse gas (GHG) target by 2050. This ambitious target, defined by science-based criteria, aligns with the Paris Agreement's efforts to limit global temperature rise to less than 1.5 degrees Celsius (1.5°C) above pre-industrial levels.

**Recycled Materials Content:** Nucor proudly uses recycled scrap to make high-quality steel with low emissions, using one of the cleanest and most energy efficient steel-making processes available. Steel is unique in its ability to be repeatedly recycled and reused without loss of quality. Nationwide, in 2023 Nucor steel products were made from an average of 77.0% recycled content, with some products containing almost 100% recycled content. Nucor facilities use Nucor steel products for over 99% of their steel raw materials.

Globally, only 26.3% of the more than 2 billion net tons of steel produced in 2020 was made by recycling scrap in EAFs. Scrap inputs for the total crude steel production globally have remained at around 35% since 2013.

**Waste and Water Recycling:** Nucor's EAFs, including Nucor Steel Berkeley mill, emit less than 1% of the particulate matter of a traditional steel blast furnace – and the company recycles 99% of the EAF dust it collects in its baghouses. Nucor also recognizes that water is a critical natural resource and is essential to Nucor and the communities in which it operates. Nucor has worked extensively to improve water use efficiency in its processes.

Nucor also participates in the Network for Business Innovation and Sustainability (NBIS) By-Product Synergy Group. This NBIS group brings together environmental experts from a wide variety of industries to allow them to compare waste streams and find ways to divert materials from landfills.

**Clean Energy:** Nucor is increasing its utilization of renewable energy and supporting the continued growth of clean power generation in the United States. In addition, in November 2020 and March 2021, Nucor entered two Virtual Power Purchase Agreements (VPPAs) which support the development of more than 350 megawatts of new clean energy infrastructure.

The VPPAs 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.

**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 and Nucor teammates have completed at least 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.

**Additional Information:** Refer to Nucor's website for additional information: <https://nucor.com/company>.

# ENVIRONMENTAL PRODUCT DECLARATION



NUCOR STEEL BERKELEY

Hot-Rolled Structural Steel Sections  
Designated Steel Construction Product

According to ISO 14025, and ISO 21930:2017

## 6. RESULTS ACRONYMS AND DEFINITIONS

Table 15. Results Acronyms and Definitions

| ACRONYM                                | DEFINITION                                                                      |
|----------------------------------------|---------------------------------------------------------------------------------|
| ADP <sub>FOSSIL</sub>                  | Abiotic Resource Depletion Potential of Non-Renewable (Fossil) Energy Resources |
| AP                                     | Acidification Potential                                                         |
| CRU                                    | Components for Reuse                                                            |
| EE                                     | Recovered Energy Exported from the Product System                               |
| EP                                     | Eutrophication Potential                                                        |
| FW                                     | Use of Fresh Water Resources                                                    |
| GWP100 (excl. biogenic C and land-use) | Global Warming Potential, Excluding Biogenic Carbon and Land-Use                |
| HLRW                                   | High-Level Radioactive Waste, Conditioned, to Final Repository                  |
| HWD                                    | Hazardous Waste Disposed                                                        |
| ILLRW                                  | Intermediate and Low-Level Radioactive Waste, Conditioned, to Final Repository  |
| MER                                    | Materials for Energy Recovery                                                   |
| MR                                     | Materials for Recycling                                                         |
| NHWD                                   | Non-Hazardous Waste Disposed                                                    |
| NRPR <sub>E</sub>                      | Non-Renewable Primary Resources Used as an Energy Carrier (Fuel)                |
| NRPR <sub>M</sub>                      | Non-Renewable Primary Resources with Energy Content Used as Material            |
| NRSF                                   | Non-Renewable Secondary Fuels                                                   |
| ODP                                    | Ozone Depletion Potential                                                       |
| RE                                     | Recovered Energy                                                                |
| RPR <sub>E</sub>                       | Renewable Primary Resources Used as an Energy Carrier (Fuel)                    |
| RPR <sub>M</sub>                       | Renewable Primary Resources with Energy Content Used as Material                |
| RSF                                    | Renewable Secondary Fuels                                                       |
| SFP                                    | Smog Formation Potential                                                        |
| SM                                     | Secondary Materials                                                             |

# ENVIRONMENTAL PRODUCT DECLARATION



## NUCOR STEEL BERKELEY

Hot-Rolled Structural Steel Sections  
Designated Steel Construction Product

According to ISO 14025, and ISO 21930:2017

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# ENVIRONMENTAL PRODUCT DECLARATION



**NUCOR STEEL BERKELEY**

Hot-Rolled Structural Steel Sections  
Designated Steel Construction Product

According to ISO 14025, and ISO 21930:2017

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