Minnesota Buy Clean Buy Fair Act

Global Warming Potential Limits

January 15, 2026

Preface

The Minnesota Buy Clean Buy Fair Act, Minnesota Statute, Chapter 16B, Section 16B.312, Subdivision 2 gives the Commissioner of Administration authority to establish a maximum acceptable global warming potential (GWP) for each eligible material used in an eligible project. These materials include concrete, carbon steel rebar, structural steel, asphalt paving mixtures, and concrete pavement. Sub-categories may be established within each material category.

Effective January 15, 2026, GWP limits are established for ready-mix concrete used in buildings and carbon steel rebar used in buildings. Material categories and sub-categories which do not have GWP limits set at this time will require disclosure of Environmental Product Declaration (EPD) data to inform future threshold setting as a part of the program. For more information on the research and collaboration that informed material-specific recommendations, please see the 2025 Environmental Standards Procurement Task Force Report which can be found in the reports section of the Task Force website located at https://mn.gov/admin/government/purchasing-contracting/buy-clean/.

These **GWP limits will apply to projects advertised on or after July 15, 2026**. The Department of Administration has not yet established GWP limits for certain material categories due to insufficient data. The Department of Administration may review and update GWP limits annually based on the availability, accuracy, and expiration dates of EPDs. For definitions of eligible materials, projects, and other key terms, please see the Glossary at the end of this document. Additional guidance regarding project compliance, documentation requirements, and justifiable circumstances that may warrant a waiver/exemption will be provided in a separate document.

Concrete

Concrete GWP limits are shown in Table 1 below. Ready mix concrete limits are based on the National Ready Mix Concrete Association (NRMCA) North Central Region Benchmark values and are categorized by concrete compressive strength for normal-weight and lightweight mixes. At this time, these limits apply only to ready-mix concrete used in buildings.

GWP limits for CMU and precast concrete products are listed as “TBD” (to be determined) and will be established at a future date once adequate data are available. Collection of robust EPD data for these materials will be essential for setting future GWP benchmarks, and thus EPD disclosure will still be required for CMU and precast, though they are not bound by GWP limits at this time.

Table 1: GWP Limits for Concrete Materials

Material Category[1]			Maximum Allowable GWP Limit
Ready-Mix Concrete[2] Used in Buildings ($kgCO_2e/m^3$) based on concrete compressive strength	Normal-Weight concrete (NW)	≤2500 psi	241 $kgCO_2e/m^3$
		3000 psi	264 $kgCO_2e/m^3$
		4000 psi	312 $kgCO_2e/m^3$
		5000 psi	372 $kgCO_2e/m^3$
		6000 psi	394 $kgCO_2e/m^3$
		8000 psi	460 $kgCO_2e/m^3$
	Lightweight concrete (LW)	3000 psi	487 $kgCO_2e/m^3$
		4000 psi	537 $kgCO_2e/m^3$
		5000 psi	591 $kgCO_2e/m^3$
	Add 30% to these GWP limits where high early strength[3] concrete mixes are required for technical reasons.		
Concrete Masonry Units (CMU)			TBD[4]
Precast/Prestressed Concrete			TBD[4]

1. Only permanently installed materials must be considered.
2. (a) GWP values shown are categorized by 28-day concrete compressive strengths (psi) and are based on NRMCA's North Central Regional Baseline values published in NRMCA's National and Regional LCA Benchmark Report v3.2 (2022).

   (b) Limits shown do not apply to concrete pavement mix designs and mix designs for abutting concrete elements for roadway applications such as curbs, sidewalks, aprons, barriers, and retaining walls. GWP limits specific to concrete pavement and abutting concrete element applications will be developed at a later date, taking into account other factors, aside from concrete compressive strength, including but not limited to permeability, workability, smoothness, and functional application which may warrant creation of additional concrete subclassifications unique to pavement.

   (c) Portable/mobile batch plants need not meet the GWP limits shown, but required material EPD data shall be submitted as recommended in NSF PCR for Concrete v2.3 – 2025 Extension (NSF 1112-19 with 2024 deviation and 2025 Extension).

   (d) Requirements apply to concrete utilized on the project site including but not limited to: building elements (walls, beams, columns, slabs, foundations, etc.), hardscape, curbs, site retaining walls, sidewalks, aprons, barriers, and other cast-in-place concrete elements on building sites.
3. "High early strength" is concrete that, through the use of additional cement, high-early-strength cement, or admixtures, has accelerated early-age strength development. High early strength concrete produced using additional cement should be avoided where possible, due to its higher embodied carbon. An affected project delivery team must submit documentation from the Structural Engineer of Record (SEOR) on whether high early strength concrete is necessary for technical reasons, and obtain written approval from the Department of Administration or Department of Transportation prior to procurement. This 30% allowance reflects input from building sustainability experts, general contractors, engineers, and ready-mix or cement producers.
4. Lack of data at this time. It is anticipated that limits will be set for these materials once data availability and accuracy improve. Please note: Items (mixtures, materials, products) for which GWP limits are not set per this table require mandatory EPD disclosure, though they are not bound by GWP limits at this time.

Steel

Steel GWP limits for carbon reinforcing steel bar (rebar) are shown in Table 2. These limits apply to rebar used on eligible building projects. Table 3 shows GWP values for other steel products aligned with current industry data available, however, GWP limits for these products will be integrated into program requirements in 2028, once adequate, market-representative product data is collected and analyzed. GWP values that are listed in Table 3 as "TBD" (to be determined) are not currently shown due to inadequate data and will be established once adequate data are available. Collection of robust EPD data for these materials will be essential for setting future GWP benchmarks, and thus EPD disclosure will still be required for these steel products, though they are not bound by GWP limits at this time.

Table 2: GWP Limits for Steel Reinforcing Bar (Rebar) Used in Buildings Projects

Steel Product Category	Maximum GWP[1] Limit at Mill or Manufacturer Gate	Equivalent GWP[1] Limit Converted for use with Fabricated[2] Product EPD
Steel Reinforcing Bar (Rebar)[3]	0.755	0.854

1. GWP limits shown are in dimensionless standard units (ton CO2e / ton steel or kg CO2e / kg steel). GWP limits are based on a 100-year lifetime impact (GWP-100) in accordance with the Product Category Rule (PCR) for Designated Steel Construction Products. The GWP value shown for fabricated reinforcing steel is based on the Industry Wide EPD: *Environmental Product Declaration: Fabricated Steel Reinforcement, Concrete Reinforcing Steel Institute (CRSI), 2022*. The unfabricated value is back-calculated from the report.
2. GWP Limits are based on cradle-to-mill-gate or cradle-to-manufacturer-gate LCA scopes, as appropriate for the particular steel product. When interpreting individual steel product EPDs, care should be taken to identify the GWP value that corresponds to the correct LCA scope. When multiple scope values are present in an EPD, preference shall be given to the cradle-to-mill-gate or cradle-to-manufacturer-gate LCA scopes when evaluating compliance with the above table.

   When the cradle-to-mill-gate or cradle-to-manufacturer-gate LCA scopes are not listed explicitly in individual steel product EPDs, this is likely due to the values being reported as cradle-to-fabricator-gate LCA scopes. In that case, one may use the values listed in the column, Equivalent GWP Limit Converted for use with Fabricated Product. The values in this column include the effects of scrap rates, transportation to fabrication, and fabrication. Impacts from reinforcing bars are from the CRSI industry-wide EPD (2022) and indicate a scrap rate of 3.0% (A1 multiplier), transportation (A2) of 0.0490 tons/ton, and fabrication (A3) of 0.0270 tons/ton.
3. The Reinforcing Steel Bar product category includes all rebar grade ASTM A615(M) and ASTM A706(M).

The Task Force recognizes merit in separate GWP limits for secondary steel production (EAF or Electric Arc Furnace) and integrated steel production (BF-BOF or Blast Furnace-Basic Oxygen Furnace) methods in these product categories. For certain products, including HSS (Hollow Structural Sections), Plate, and Steel Deck—there isn't adequate data available at this time to establish BOF-only or EAF-only values. Current industry-wide EPD data for these product categories includes a blend of EAF and BOF data, both due to the inclusion of products manufactured primarily utilizing an EAF or BOF process or due to products being manufactured using multiple parts/pieces/portions of source material that may have been produced via EAF/BOF processes. Therefore, a single, blended GWP value for these products, based on published production-weighted industry averages, is provided in Table 3 until more comprehensive, disaggregated data is available to establish separate EAF/BOF industry-wide benchmark values. For additional background information, please reference the 2025 Environmental Standards Procurement Task Force Report.

Table 3: Current GWP Values for Steel Products, Based on Respective Industry-Average EPDs

Steel Product Category[7]		GWP[1] at Mill or Manufacturer Gate	Equivalent GWP[1] Converted for use with Fabricated[2] Product EPD
Structural Steel	Hot-Rolled Sections (W-, S-, C-, MC-, M- shapes, angles, tees)	1.00	1.22
	HSS[3] (Hollow Structural Sections) (EAF/BOF blended)[4]	1.71	1.99
	HSS from Secondary Steel Production (EAF-only)[5]	TBD	TBD
	HSS from Integrated Steel Production (BOF-only)[5]	TBD	TBD
	Plate (EAF/BOF blended)[4]	1.47	1.73
	Plate from Secondary Steel Production (EAF-only)[5]	TBD	TBD
	Plate from Integrated Steel Production (BOF-only)[5]	TBD	TBD
Open Web Steel Joists (OWSJ)		1.43	n/a
Steel Deck (EAF/BOF blended)[4]		2.32	n/a
Steel Deck from Secondary Steel Production (EAF-only)[5]		TBD	n/a
Steel Deck from Integrated Steel Production (BOF-only)[5]		TBD	n/a
Cold-Formed Steel Framing (EAF/BOF blended)[6]		TBD	TBD
CFS Framing from Secondary Steel Production (EAF-only)[4]		TBD	TBD
CFS Framing from Integrated Steel Production (BOF-only)[4]		TBD	TBD

1. GWP values shown are in dimensionless standard units (ton CO_2e / ton steel or kg CO_2e / kg steel). GWP values are based on a 100-year lifetime impact (GWP-100) in accordance with the *Product Category Rule (PCR) for Designated Steel Construction Products*. GWP values shown are based on production-weighted averages calculated and published in industry-wide EPDs for each of the respective product categories.
2. GWP values are based on cradle-to-mill-gate or cradle-to-manufacturer-gate LCA scopes, as appropriate for the particular steel product. When interpreting individual steel product EPDs, care should be taken to identify the GWP value that corresponds to the correct LCA scope. Guidance is provided at www.aisc.org/epd. When multiple scope values are present in an EPD, preference shall be given to the cradle-to-mill-gate or cradle-to-manufacturer-gate LCA scopes when evaluating compliance with the above table.

   When the cradle-to-mill-gate or cradle-to-manufacturer-gate LCA scopes are not listed explicitly in individual steel product EPDs, this is likely due to the values being reported as cradle-to-fabricator-gate LCA scopes. In that case, one may use the values listed in the column, Equivalent GWP Limit Converted for use with Fabricated Product. The values in this column include the effects of scrap rates, transportation to fabrication, and fabrication. Impacts for structural products are taken directly from the 3rd-party verified AISC fabrication background LCA report (February 2021) documenting a scrap rate of 7.71% (A1 multiplier), transportation (A2) of .0446 tons/ton, and fabrication (A3) of .0967 tons/ton.
3. HSS (Hollow Structural Sections) consisting of carbon or low-alloy steel that is cold-formed and welded (ASTM A500, A847 or A1085) in round, square and rectangular configurations.
4. GWP values shown are based on production-weighted averages calculated and published in the current Industry-wide EPD for each respective material product, which includes a mix/blend of products/subproducts manufactured utilizing secondary steel production (EAF or Electric Arc Furnace), integrated steel production (BF-BOF or Blast Furnace-Basic Oxygen Furnace) methods, or a combination thereof.
5. The Task Force recognizes merit in separate GWP limits for secondary steel production (EAF or Electric Arc Furnace) and integrated steel production (BF-BOF or Blast Furnace-Basic Oxygen Furnace) methods in these product categories. Once adequate data is available to accurately report GWP impacts distinguishing between EAF and BOF methods for the product category, the Task Force may develop recommendations to update one or more GWP values for products made via secondary steel production, integrated steel production, or a combination thereof to reflect market developments.
6. Cold-formed steel framing, also called cold-formed metal framing, includes stud, track, U-channel, furring channel, L-headers, and built-up sections using one or more of these shapes.

Glossary

The following key terms and definitions are based on several of which are included in Minnesota legislative language to date or have been established by the Task Force for the purposes of this program.

Carbon steel means steel in which the main alloying element is carbon and whose properties are chiefly dependent on the percentage of carbon present (16B.312.1).

Electric arc furnace means a furnace that produces molten alloy metal and heats the charge materials with electric arcs from carbon electrodes (16B.312.1).

Eligible project means (16B.312.1):

1) new construction of a state building larger than 50,000 gross square feet of occupied or conditioned space;
2) renovation of more than 50,000 gross square feet of occupied or conditioned space in a state building whose renovation cost exceeds 50 percent of the building's assessed value; or
3) new construction or reconstruction of two or more lane-miles of a trunk highway.

Environmental Product Declaration (EPD) means a supply chain specific type III environmental product declaration that (16B.312.1):

1) contains a material production life cycle assessment of the environmental impacts of manufacturing a specific product by a specific firm, including the impacts of extracting and producing the raw materials and components that compose the product;
2) is verified by a third party; and
3) meets the ISO 14025 standard developed and maintained by the International Organization for Standardization (ISO).

Global Warming Potential (GWP) has the meaning given in section 216H.10, subdivision 6: *"Global warming potential" or "GWP" means a quantitative measure of the potential of an emission of a greenhouse gas to contribute to global warming over a 100-year period expressed in terms of the equivalent emission of carbon dioxide needed to produce the same 100-year warming effect, as reported in Fourth Assessment Report: Climate Change 2007, Intergovernmental Panel on Climate Change.* (216H.01, referenced in 16B.312.1)

Greenhouse gas has the meaning given to "statewide greenhouse gas emissions" in section 216H.01, subdivision 2: *"Statewide greenhouse gas emissions" include emissions of carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride emitted by anthropogenic sources within the state and from the generation of electricity imported from outside the state and consumed in Minnesota. Carbon dioxide that is injected into geological formations to prevent its release to the atmosphere in compliance with applicable laws, and carbon dioxide associated with the combustion of fuels other than coal, petroleum, and natural gas are not counted as contributing to statewide greenhouse gas emissions.* (216H.01, referenced in 16B.312.1)

Integrated steel production means the production of iron and subsequently steel primarily from iron ore or iron ore pellets (16B.312.1).

Material production life cycle means an analysis that includes the environmental impacts of all stages of a specific product's production, from mining and processing the product's raw materials to the process of manufacturing the product (16B.312.1).

Product Category Rule (PCR) is a set of standards specific to a certain material/product that defines the rules and requirements for creating life cycle assessments (LCAs), and it is a critical component of EPD development. PCRs ensure that LCAs and EPDs for the same type of product are developed using the same methodology, data requirements, and reporting standards.

Rebar means a steel reinforcing bar or rod encased in concrete (16B.312.1).

Secondary steel production means the production of steel from primarily ferrous scrap and other metallic inputs that are melted and refined in an electric arc furnace (16B.312.1).

State building means a building owned by the state of Minnesota or a Minnesota state agency (16B.312.1).

Structural steel means steel that is used in structural applications in accordance with industry standard definitions (16B.312.1).

Supply chain specific means an environmental product declaration that includes specific data for the production processes of the materials and components composing a product that contribute at least 80 percent of the product's material production life cycle global warming potential, as defined in ISO standard 21930 (16B.312.1). Note that PCRs for some materials provide additional guidance on inclusion of supply chain–specific information. Inclusion of supply chain–specific (i.e. primary) upstream data for processes with large impacts is recommended, and may be required in PCRs for certain materials, in lieu of secondary data.