NSF Product Category Rule
for Environmental Product Declarations

NSF 1100-26

Construction Products and Services

Part A

Program Operator: NSF
National Center for Sustainability Standards
Valid through January 31, 2031
ncss@nsf.org

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Valid through February 28, 2031

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NSF

Prepared by NSF staff with assistance from the
NSF Product Category Rules Independent Review Panel.

NSF's product category rules program advisory team advanced the drafting of this Part A PCR, and a three-member expert panel provided technical feedback. In lieu of assembling a seated PCR committee, over 300 interested parties were invited to provide feedback during the open consultation phase, comments have been considered and incorporated. At the time of this PCR publication, the NSF PCR expert review panel consisted of the following individuals:

Thomas P. Gloria, PhD, Industrial Ecology Consultants
Bill Stough, Bill Stough LLC
Lindita Bushi, PhD, Athena Institute

PCR review panel comments may be obtained by contacting NSF's National Center for Sustainability Standards at ncss@nsf.org.

No participation fees were charged by NSF to interested parties. NSF ensured that reasonable representation among the members of the PCR committee was achieved and potential conflicts of interest were resolved prior to commencing this PCR development. Each member has signed a legal document stating that they have no conflicts of interest.

PCR revision history

Version	Changes	Date issued
1.0	Initial publication	February 2026

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For inquiries regarding this PCR, please reference the designation: “NSF 1100-26.”

Unit abbreviations

The following table is provided as a reference for unit abbreviations for common forms of measurement used within NSF documents.

Time	second	s
	minute	min
	hour	h
	day	d
	week	wk
	month	mo
	year	yr
Length	inch	in.
	foot	ft
	yard	yd
	micrometer	µm
	nanometer	nm
	millimeter	mm
	centimeter	cm
	meter	m
	kilometer	km
	miles	mi
Liquid measure	milliliter	mL
	liter	L
	liters per day	LPD
	liters per minute	LPM
	ounce	oz
	pint	pt
	quart	qt
	gallon	gal
	gallons per minute	GPM
	gallons per day	GPD
Weight	microgram	µg
	picogram	pg
	nanogram	ng
	milligram	mg
	centigram	cg
	gram	g
	kilogram	kg
	pound	lb
	ton	t
	metric ton	mt

Miscellaneous	British Thermal Unit	BTU
	Kelvin	K
	megajoules	MJ
	W	W

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Foreword

This product category rule for construction products and services is Version 1 of the NSF Product Category Rules (PCR) for ISO 14025:2006 Type III Environmental Product Declarations (EPDs) for construction products and services. It is informally referred to as the NSF Part A PCR. This PCR adds to and clarifies the rules of ISO 21930:2017, and it is the core PCR for EPDs written for NSF publication. This Part A is intended to be used with a relevant subcategory Part B PCR, when available. This Part A may also be used to develop and publish EPDs without Part Bs for selected types of EPDs (see Figure 1 for details).

This Part A PCR applies to all building construction products and services, construction elements, and integrated technical systems in accordance with ISO 21930:2017. This Part A PCR has no impact on existing NSF stand-alone subcategory PCRs during their period of validity. New PCRs shall be developed as Part B PCRs, effective January 2026. For existing PCRs, the 5-year renewal cycle shall be followed, with transition to the Part A/Part B structure completed at the time.

The sections in this Part A PCR follow the structure of ISO 21930:2017, offering additional clarifications and requirements as necessary and deferring to ISO 21930:2017 where no changes are necessary. This NSF Part A PCR shall be used in conjunction with NSF Part B PCRs. NSF Part B PCRs should be adapted if used by another EPD Program Operator that wishes to use it with a different Part A PCR in accordance with ISO/TS 14029:2022, Clause 8.3: *PCR harmonization* and ISO/TS 14027:2017, Clause 6.4.3: *Adaptation of existing PCR*.

This PCR incorporates the most recent version of the NSF General Program Instructions (GPI), which are available upon request from ncss@nsf.org. All requirements of NSF's GPI are required to be met for EPDs published by NSF.

NSF's GPI define the rules for the administration and operation of the NSF EPD program, as well as for the development of PCRs. Subcategory (Part B) PCRs may augment the requirements of this Part A PCR.

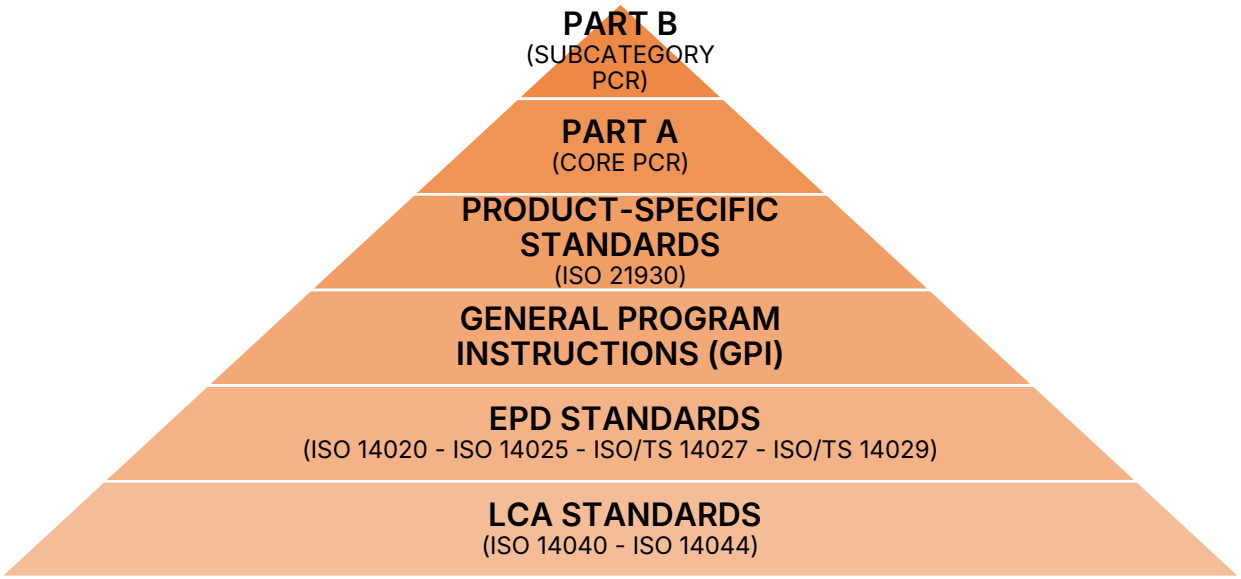
The terms "may," "should," and "shall" are used throughout the Part A PCR as well as in subsequent Part B PCRs. Definitions of these terms are provided below:

- **may**: A permissible option, there is no obligation or requirement
- **should**: A recommendation, and conformance is not mandatory
- **shall**: A requirement which must be followed in order to conform with the PCR. To cite this Part A PCR, NSF Part A: *Product Category Rules for Building and Construction Products and Services*, PCR 1100-26, v1, February 2026. Review copyright disclosure in foreword.

The normative standard hierarchy of documents shown in Figure 1 governs the organization and operation of the NSF Program Operations. The figure demonstrates where this NSF Part A PCR fits into the ISO hierarchy of LCA and EPD standards. Standards at the top of the hierarchy utilize the standards at the base of the hierarchy as normative references, which are listed in Section 2. The document version, including any amendments, referenced in this document applies, unless applicable standard(s) or PCR(s) refer to another version. All conflicting rules shall be resolved in a manner consistent with the NSF GPI or any applicable PCR.

Figure 1

PCR and selected normative standards hierarchy



This is the first edition of the PCR.

Suggestions for improvement of this guideline are welcome. Comments should be sent to ncss@nsf.org, or c/o NSF, National Center for Sustainability Standards, PO Box 130140, Ann Arbor, Michigan 48113-0140, USA.

About the NSF National Center for Sustainability Standards

Through the NCSS, NSF develops life cycle-based, multi-attribute sustainability standards, protocols, and PCRs for various industries including building products and materials, furniture, carpet and flooring, fabrics, wallcoverings, roofing membranes, green chemicals, electronics, and water and wastewater.

The NCSS will continue to add to its growing portfolio while providing education, outreach, and innovation support to private industry, trade associations, government and academia to foster a consensus-based approach toward conformity assessment in the sustainability field. Visit nsfsustainability.org or contact ncss@nsf.org.

NSF Product Category Rule
for Environmental Product Declarations –

Construction Products and Services
Part A

1 Scope

Per ISO 21930:2017 Clause 1, with the following additions.

Title of document	*NSF Product Category Rule for Construction Products and Services – Part A*
Version number	1.0
Date of publication	February, 2026
Period of validity	5 years
Geography	North America
Conformance to	ISO 21930:2017 NSF General Program Instructions (GPI) ISO 14020:2022 ISO 14025:2006 ISO/TS 14027:2017 ISO/TS 14029:2022 ISO 14040:2006/AMD 1:2020 ISO 14044:2006/AMD 1:2007/AMD 2:2020 ISO 14071:2024 ACLCA PCR Guidance

While this Part A PCR will be used in conjunction with NSF Part B PCRs, primarily in North America, NSF Part B PCRs should be adapted if used by another EPD Program Operator that wishes to use it with a different Part A PCR in accordance with ISO/TS 14029:2022, [1] Clause 8.3: *PCR harmonization* and ISO/TS 14027:2017, [1] Clause 6.4.3: *Adaptation of existing PCR*. If this Part A PCR is used in regions other than North America, data specific to that region shall be used, where available and appropriate.

This PCR is valid through February 28, 2031.

[1] International Organization for Standardization. Chemin de Blandonnet 8, Case Postale 401, 1214 Vernier, Geneva, Switzerland. <iso.org>

2 Normative references

The following documents are referred to in the text. For dated references, the edition cited or the latest version applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ACLCA, *PCR Guidance – Process and Methods Toolkit: Creating standardized, consistent, and reliable PCRs & EPDs for transparency, procurement, and supply chain data* (2022) [2]

ACLCA, *Guidance for Determining EPD Types and Calculating and Communicating Data Specificity Through the Supply Chain* (2025) (hereinafter referred to as *ACLCA Guidance for Determining EPD Types*) [2]

ACLCA, *Guidance for Assessing Data Quality of Background Life Cycle Inventory (LCI) Datasets* (2022) [2]

ACLCA, *Guidance for Quantifying Renewable Electricity Instruments in Environmental Product Declarations* (2022) [2]

ACLCA, *Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017* (2019) [2]

ASHRAE 189.1-2023, *Standard for the Design of High-Performance Green Buildings Except Low-Rise Residential Buildings* [3]

EPA-740-R-24-009, *US EPA Criteria for Product Category Rules (PCRs) to Support the Label Program for Low Embodied Carbon Construction Materials. Office of Chemical Safety and Pollution Prevention,* v.1, 2024 [4]

ICC, *International Green Construction Code® (IgCC)®*, 2024 [5]

ISO 14020:2022, *Environmental statements and programmes for products – Principles and general requirements* [1]

ISO 14025:2006, *Environmental labels and declarations – Type III environmental declarations – Principles and procedures* [1]

ISO/TS 14027:2017, *Environmental labels and declarations – Development of product category rules* [1]

ISO/TS 14029:2022, *Environmental statements and programmes for products – Mutual recognition of environmental product declarations (EPDs) and footprint communication programmes* [1]

ISO 14040:2006/AMD 1:2020, *Environmental management – Life cycle assessment – Principles and framework* and its amendments [1]

ISO 14044:2006/AMD 1:2017/AMD 2:2020, *Environmental management – Life Cycle Assessment – Requirements and guidelines* and its amendments [1]

ISO 14071:2024, *Environmental management – Life cycle assessment – critical review processes and reviewer competencies* [1]

[2] American Center for Life Cycle Assessment. 6900 Wisconsin Avenue, Unit 30953, Bethesda, MD 20824. <aclca.org>

[3] ASHRAE. 180 Technology Parkway NW, Peachtree Corners, Georgia 30092. <ashrae.org>

[4] US Environmental Protection Agency. 1200 Pennsylvania Avenue NW, Washington, DC 20004. <epa.gov>

[5] International Code Council. 200 Massachusetts Avenue NW, Suite 250, Washington, DC 20001. <iccsafe.org>

ISO 21930:2017, *Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services* [1]

US EPA, *Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts* (TRACI 2.2) [6]

US Life Cycle Inventory (USLCI) Database Project Development Guidelines [7]

3 Terms and definitions

Per ISO 21930:2017 [1] Clause 3, with the following additions.

cut-off allocation method: Allocation method for recycled materials in which no burden can be assigned to secondary material inputs, and no benefits can be gained from the export of materials for energy recovery, reclaim, or recycling (also referred to as the recycled content approach or the 100:0 approach).

data, cut-off criteria: Specification of the amount of material or energy flow or the level of environmental significance associated with unit processes of a product system to be excluded from a LCA study. (Adapted from ISO 14044 [1])

data, background/secondary: Indirectly measured, calculated, or obtained quantified value of a unit process or activity and related information within a product system (ISO 14040:2006 [1] Clause 3.28) or organization, not based on specific original source measurements. (ISO 21930:2017, [1] as modified)

data, foreground/primary: Quantified value of a unit process or an activity obtained from a direct measurement, or a calculation based on indirect measurements at its original source. (ISO 21930:2017 [1])

facility-specific EPD: An EPD that covers a single manufacturer and a single facility for the last facility in the production chain. (2022 *ACLCA Guidance for Determining EPD Types* [2])

hazardous waste: Waste identified as hazardous according to regulations applicable in the market for which the EPD is valid.

For the US market, wastes are hazardous if they are regulated under the Resource Conservation and Recovery Act. [8] See also 40 CFR 261.33. [9]

For the Canadian market, wastes are hazardous if they are regulated under the Canadian Environmental Protection Act, 1999 Regulations. [10]

Note. Hazardous waste does not include radioactive waste. (See ISO 21930:2017 [1] Clause 7.2.14)

industry-average EPD: An EPD that reports the impacts for a product, which is an average of data provided by multiple manufacturers in a clearly defined sector and/or geographical area. Also called "sector-average EPD." (2022 *ACLCA Guidance for Determining EPD Types* [2])

[6] Tool for Reduction and Assessment of Chemicals and Other Environmental Impacts (TRACI), US Environmental Protection Agency. 1200 Pennsylvania Avenue NW, Washington, DC 20004. <epa.gov>

[7] National Laboratory of the Rockies, US Department of Energy, Office of Critical Minerals and Energy Innovation. <nrel.gov>

[8] Resource and Recovery Act, US Environmental Protection Agency. <epa.gov/rcra>

[9] <govinfo.gov/content/pkg/CFR-2011-title40-vol26/pdf/CFR-2011-title40-vol26-sec261-33.pdf>

[10] Department of Justice, Government of Canada. 284 Wellington Street, Ottawa, ON K1A 0H8, Canada. <laws.justice.gc.ca>

manufacturer-average EPD: An EPD that covers a product or products from a single manufacturer, and that reports environmental impacts based on an average of data from multiple facility locations for the last facilities in the production chain. (2022 *ACLCA Guidance for Determining EPD Types* [2])

product-average EPD: An EPD that covers a group of similar products from one or more sites of one company or multiple companies, or an EPD that groups similar products using average environmental performance data across Modules A1-A3. Products included in an average EPD should be within ±10% of the mean impact per reported environmental impact category (from ISO 21930:2017 [1] Clause 5.3). A product-average EPD also includes a product description explaining the variation in the composition or performance of the products that the EPD represents. (2022 *ACLCA Guidance for Determining EPD Types* [2])

product-specific EPD: An EPD that covers a single product. Given that the distinguishing benefit of a product-specific EPD is its accuracy of environmental impact results (by avoiding product-to-product variability), an EPD may also be considered product-specific if it covers a group of similar products that share equivalent material and performance characteristics such that their environmental impacts per declared unit are sufficiently equivalent. (2022 *ACLCA Guidance for Determining EPD Types* [2])

recovered material: *(n)* Material that would have otherwise been disposed of as waste or used for energy recovery but has instead been collected and recovered as a material input, in lieu of new primary material, for a recycling or manufacturing process. (ISO 14021 [1])

technosphere: Sphere or realm of human technological activity which results in a technologically modified environment. (ISO 21930 [1])

waste: *(n)* Substances or objects which the holder intends or is required to dispose of. (ISO 14040 [1])

4 Abbreviated terms

Per ISO 21930:2017 [1] Clause 4, with the following additions.

ACLCA	American Center for Life Cycle Assessment
AMD	amendment
AP	acidification potential
ASHRAE	ASHRAE (company)
B2B	business-to-business
B2C	business-to-consumer
BTS	Bureau of Transportation Statistics
CFR	Code of Federal Regulations
CSI	Construction Specifications Institute
DOT	Department of Transportation
DQA	data quality assessment
EP	eutrophication potential
EPA	Environmental Protection Agency
EPD	environmental product declaration
ESL	estimated service life

GHGRP	Greenhouse Gas Reporting Program
GPI	general program instructions
GWP	global warming potential
ICC	International Code Council
IPCC	Intergovernmental Panel on Climate Change
ISO	International Organization for Standardization
LCA	life cycle assessment
LCI	life cycle inventory
LCIA	life cycle impact assessment
NERC	North American Electric Reliability Corporation
NIST	National Institute of Standards and Technology
PCR	product category rule
POCP	photochemical ozone creation potential
REC	renewable energy certificate
RSL	reference service life
SI	Système International d'Unités (International System of Units)
TRACI	Tool for the Reduction and Assessment of Chemical and Other Environmental Impacts
TS	Technical Scheme
UN	United Nations
US	United States
USLCI	United States Life Cycle Inventory
WARM	Waste Reduction Model

5 General aspects

5.1 Objectives of this PCR

Per ISO 21930:2017 [1] Clause 5.1, with the following additions.

The objective of these PCRs is to provide rules for the assessment and reporting of the environmental performance of building and construction products and services in alignment with the requirements of ISO 21930:2017. This Part A provides specific guidance for the calculation of product level LCAs, creation of Type III EPDs, and for the development of subcategory PCR (Part B) documents, which provide more specific requirements for construction products and services subcategories.

This NSF Part A PCR supports the development of EPDs to the “transparency” use case as defined in the most recent version of the *ACLCA PCR Open Standard* [2] (currently v1.0). A Part B PCR is required for an EPD to conform to the “procurement” use case due to the more specific requirements needed for the procurement use case.

5.2 Life cycle stages and their information modules

5.2.1 General

Per ISO 21930:2017 [1] Clause 5.2.1, with the following clarifications.

System boundaries of the product system shall be defined to be consistent with Section 5.2.2 of this PCR using the life cycle stages and modules defined in Figure 2. EPDs shall include, at a minimum, the life cycle phases from A1-A3. All other information modules under this PCR are optional, including Module D, except as noted in Figure 1. The modules included in an EPD shall be clearly stated in both the EPD and the background LCA.

This PCR allows the aggregation and reporting of A1, A2, and A3 to a total for each indicator in the production stage for scopes other than cradle-to-gate and encourages the reporting of these modules separately to increase transparency. Part B PCRs are allowed to require or disallow modules (except A1-A3), provided that justification is presented in the Part B PCR.

Figure 2

Common life cycle stages and their information modules [Source: 21930:2017, as modified]

PCR Requirements		EPD Types	PRODUCTION (A1-A3)			CONSTRUCTION (A4-A5)		USE (B1-B7)							END-OF-LIFE (C1-C4)				BENEFITS & LOADS BEYOND SYSTEM BOUNDARY (D)	Reference Service Life
			A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
Part A	**Part B**		Raw material supply	Transport	Manufacturing	Transport to site	Assembly/Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operational energy use	operational water use	Deconstruction	Transport	Waste processing	Disposal	Reuse, recovery, recycling potential	
Required	**Optional**	**Cradle-to-gate**	*Required*			*Excluded*		*Excluded*							*Excluded*				*Optional*	*Optional*
	Optional	**Cradle-to-gate w/ end-of-life**	*Required*			*Excluded*		*Excluded*							*Required*				*Required*	*Optional*
	Optional	**Cradle-to-gate w/ options**	*Required*			*Optional*		*Optional*							*Optional*				*Optional*	*Optional*[a]
	Optional	**Cradle-to-grave**	*Required*			*Required*		*Required*							*Required*				*Required*	*Required*

[a] *RSL reporting is required if Modules B1-B5 are reported.*

5.2.2 Types of EPD with respect to lifecycle stages covered

Per ISO 21930:2017 [1] Clause 5.2.2, with the following clarifications.

EPDs produced under this PCR shall conform to one of the following types:

- **cradle-to-gate EPD**: Life cycle Modules A1-A3 include mandatory production stages of the raw materials supply and manufacture of the product(s). Modules A1-A3 are required for all EPDs produced using this PCR, Module D is optional. Results shall be reported based on a declared unit.
- **cradle-to-gate with options EPD**: Cradle-to-gate with options EPDs include the mandatory A1-A3 stages, with additional optional modules reported. Results shall be reported based on a declared unit or functional unit according to the requirements of ISO 21930:2017 Clause 5.2.2. Optional information modules reported beyond the gate shall be based on scenarios described in the EPD according to ISO 21930:2017 Clauses 7.1.7.3 to 7.1.7.5.
- **cradle-to-grave EPD**: Covers all life cycle modules including A1-A3 mandatory production stage, A4-A5 construction stage, B1-B7 use stage, C1-C4 end of life stage. Results shall be reported based on a functional unit. Modules reported beyond the gate shall be reported based on scenarios described in the EPD according to ISO 21930:2017 Clauses 7.1.7.3 to 7.1.7.5. If no activity is expected in an information module, then the scenario and assessment of the module shall reflect this rather than declaring the module not relevant or not applicable for a cradle-to-grave EPD.

Module D, which provides supplementary environmental information, may also be reported in any of the allowable EPD types, consistent with ISO 21930:2017 Clause 5.2.2. If Module D is declared, information Modules C1-C4 shall also be declared.

Any omissions of lifecycle stages, processes, or data shall be justified and documented in the LCA project report and the EPD.

5.2.3 Use of scenarios for assessment of information modules beyond the production stage

Per ISO 21930:2017 [1] Clause 5.2.3.

5.3 Average EPDs for groups of similar products

Per ISO 21920 [1] Clause 5.3.

5.3.1 Specificity of manufacturing data

Manufacturing data specificity concerns the determination and reporting of specifically what activities/unit processes are included in the manufacturing stage (Module A3) for a particular product and which instead fall within the upstream Modules A1 and A2. Manufacturing data specificity requires that an EPD be classified as one (and only one) of the following:

- **industry-average EPD**: An EPD that represents an average of data from multiple manufacturers in a defined product sector and/or geographical area.
- **manufacturer-average EPD**: An EPD that covers a single product or group of products produced by a single manufacturer using an average of data from multiple facility locations.
- **facility-specific EPD**: An EPD that covers a single manufacturer and a single facility at which the final product is manufactured.

An industry-average EPD may be developed under this PCR. Requirements for industry-average EPDs given in ISO 21930:2017 [1] Clause 5.3 shall apply, with the following additions which shall each be documented in the EPD:

- report the robustness of the study by reporting the percentage of the industry that participated, either by percent of manufacturers or by percent of annual production
- indicate the method used to calculate each information Module (A1-A3, etc.). In cases where plant grouping averages are reported, the EPD shall include the geographic range of the production facilities
- include a mix of small, medium, and large operations to reflect changes in scale within the industry
- represent a mix of technologies currently used in production
- include manufacturers from a mix of geographical locations
- include in the EPD a list of all manufacturers who provided primary data for the LCA
- require the submission of primary data for at least one production facility for a manufacturer to be listed as a participant to the industry-average EPD.
- manufacturers seeking to align their individual Type III EPDs against a Type III industry-average EPD shall have participated in the production of that industry-average EPD
- the development of an industry-average EPD shall not be used to actively exclude specific companies. Actions taken to notify potential stakeholders of participation in the process shall be documented.

A manufacturer may apply to the Program Operator for retroactive participation in an already published industry-average EPD by providing the information and data required of original participants to the LCA practitioner. Upon receipt of the required data, a preliminary estimate shall be made of whether inclusion of the new data would likely result in a significant shift of greater than ±10% in the reported industry-average impacts. This assessment may or may not include the actual modeling of LCA results. The Program Operator, the primary sponsor, and the LCA practitioner of the industry-average EPD shall then confer together to reach a consensus on whether a recalculation of the industry-average impacts and an update to the EPD is required.

For manufacturer-average EPDs, instances will likely occur where products are made at multiple manufacturing locations or travel to different distribution or retail centers. For situations such as this, a weighted average production volume at each facility, site, or both shall be utilized for calculation purposes. For example, if Site A manufactures 80% of the product system covered by the EPD and each kilogram of product manufactured requires 5 MJ of energy, whereas Site B makes 20% of the product and each kilogram of product manufactured requires 10 MJ of energy, the average energy used per kilogram would be 6 MJ [(80%*5) + (20%*10)]. The same method would apply for transportation distances.

5.3.2 Specificity of products

An EPD shall report its product specificity consistent with the requirements of the *ACLCA Guidance for Determining EPD Types.* [2] An EPD shall indicate its specificity using one of the following terms defined in Section 3:

- product-average EPD
- product-specific EPD.

While an EPD for a single product is classified as product-specific, an EPD may also be considered product-specific if it covers a group of similar products that share equivalent material and performance characteristics such that their environmental impacts per declared unit are sufficiently equivalent. A subcategory PCR shall define the material and performance characteristics and associated criteria that define “sufficiently equivalent”

for products within the category, in conformance with the *ACLCA Guidance for Determining EPD Types.*[2] If there is no subcategory PCR (Part B PCR), a group of products in which none of the impact indicator results in any module varies by more than ±5% may be considered a product-specific group. Likewise, if products vary in shape and size, but not in material composition, packaging is consistent, results are reported on a mass basis and conversion table(s) are provided to convert results from mass of product to actual size, volume or piece of packaged product as sold, these products may be considered a product-specific group. Examples include pipe of different dimensions, pavers of different dimensions and fasteners of different shapes.

All EPDs not meeting the requirements for a product-specific EPD shall be considered a product-average EPD. For greater transparency, product-specific EPDs are preferred. Rules specific to averaging are spelled out in ISO 21930:2017[1] Clause 5.3. These pertain to product-average EPDs. In all cases, the average shall be carried out using a weighted average based on the annual production of the product.

A facility-specific Project Report and EPD shall report a supply-chain specificity metric between 0% and 100% that is calculated following the requirements of the *ACLCA Guidance for Determining EPD Types.*[2] EPDs that do not report supply-chain specificity are assumed to have 0% supply-chain specificity according to the ACLCA document.

5.4 Use of EPDs for construction products

Per ISO 21930:2017[1] Clause 5.4, with the following clarifications and additions.

This PCR is intended to be used to create EPDs for use in B2B communication. If the EPD is intended for use in the B2C marketplace, the provisions of ISO 14025:2006[1] Clause 9 apply. The manufacturer, or group of manufacturers, of the construction product is the sole owner of the EPD and is responsible for developing the EPD of the construction product according to this PCR. As such, the manufacturer is solely responsible for the accuracy of the content of the EPD. Only the manufacturer or group of manufacturers is authorized to declare the environmental performance of the construction product using an EPD.

5.5 Comparability of EPDs for construction products

Per ISO 21930:2017[1] Clause 5.,5 with the following additions.

If the intended use of the EPD is for comparison purposes between different building products, the entire life cycle shall be included, covering the use and end-of-life stages. In such situations, the functional unit, and not the declared unit, shall be used as the reference unit.

EPDs intended to be used for procurement choices shall meet the most recent *ACLCA PCR Open Standard*[2] (currently v1.0) requirements for “procurement” use.

5.6 Documentation

Per ISO 21930:2017[1] Clause 5.6. See Sections 8 and 10 of this document for additional guidance.

6 PCR development and use

6.1 Core PCR structure

Per ISO 21930[1] Clause 6.1.

6.2 Relation between ISO 21930, Part A PCR and Part B PCR

Per ISO 21930[1] Clause 6.2, with the following additions.

ISO 21930 provides the core rules to develop building and construction product or service EPDs. This Part A PCR conforms to and provides clarifications for EPDs developed using ISO 21930 as the core PCR. Part A shall be used with a Part B PCR if a current and appropriate Part B PCR exists for the relevant construction product or service, see Figure 2.

This Part A may optionally serve as a core PCR to produce EPDs using the NSF framework for building and construction products in categories that do not have a current and viable Part B subcategory PCR. When used as a core PCR, the development of an EPD should align to the extent possible (i.e. system boundaries, functional units, etc.) with existing PCRs for product systems immediately upstream and/or downstream of product system boundaries. Where there are no such existing PCRs, other documentation (e.g. expired PCRs) may be used to inform the development of the Part B PCR.

In addition to the documentation requirements of ISO 21930:2017 Clause 6.2, a checklist of requirements shall be developed in detail sufficient to facilitate the critical review of LCA and EPD documents developed to this PCR. The checklist shall be developed in conformance with the requirements given in Annex B of this Part A, and at a minimum, contain all of the mandatory requirements of the subcategory PCR.

Part A shall be effective for five (5) years from the latest date of publication and shall be open for review and possible revision at that time. If relevant changes occur at any time (for example, the evolution of LCA methodology in ISO 21930:2017, ISO 14025:2006[1]), the document will be revised. See Section 5.5 for comparability.

6.3 Development of subcategory PCR (Part B PCR)

Per ISO 21930[1] Clause 6.3, with the following clarifications.

Subcategory PCRs developed under this Part A shall unambiguously define the product group covered by the PCR. Key characteristics or factors needed to determine if a product is in scope shall be detailed, including e.g. CSI codes,[11] testing specifications, or other determinative physical or performance characteristics. Specific exclusions from the product category shall be clearly stated.

Part B PCRs are expected to be more prescriptive and to provide product or service-specific default scenarios to replace the more general scenarios provided in this Part A. Part B PCRs shall be developed using a representative underlying LCA study, which may be used as a template for creating LCAs that conform to the Part B PCR. Alternatively, the development of a subcategory PCR may be informed by an LCA that is being conducted in parallel to the PCR development, provided that the LCA is successfully reviewed by an independent third party prior to the publication of the PCR. In any case, the PCR Committee shall ensure that the underlying LCA meets the requirements of ISO 14044[1] and other pertinent standards and that, according to these standards, it has either been critically reviewed by a third party or has undergone an internal verification, either by the PCR Committee itself or appointed independent LCA expert.

[11] CSI. 5034A Thoroughbred Lane, Brentwood, TN 37027. <csiresources.org>

7 PCR for LCA

7.1 Methodological framework

Each EPD developed in conformance to this Part A PCR shall be supported by a project report (LCA report) that conforms to the requirements of this Part A PCR. Underlying LCA reports that support the development of Part B PCRs shall conform to the requirements of this Part A PCR.

7.1.1 LCA modeling and calculation

Per ISO 21930:2017 [1] Clause 7.1.1.

7.1.2 Functional unit

Per ISO 21930:2017 [1] Clause 7.1.2 with the following clarification:

Part B PCRs shall specify the functional unit for EPDs covering cradle-to-grave, or cradle-to-gate with options that include the use phase.

7.1.3 Declared unit

Per ISO 21930:2017 [1] Clause 7.1.3 with the following clarifications.

EPDs covering the cradle-to-gate life-cycle stages (A1-A3) shall use a declared unit. EPDs covering cradle-to-gate with options shall use a declared unit only if the use phase is not included in scope. Part B PCRs shall specify the declared unit to be used, as well as any needed conversion factors.

7.1.4 Reference service life

Per ISO 21930:2017 [1] Clause 7.1.4, with the following clarifications.

Part B PCRs should specify the default RSL and any conditions, if applicable, for using a different RSL.

An RSL shall be defined according to the requirements of Clause 7.1.4 and Annex A of ISO 21930:2017. For products with an RSL longer than the ESL of the building, LCI and LCIA results reported in an EPD shall be reported for an RSL equal to the ESL of the building. However, the PCR may allow additional language that states that results calculated for the RSL that would apply to RSLs calculated at the longer duration.

The ESL shall be defined in subcategory PCRs developed under this Part A. The default value of 75 years, based on ASHRAE 189.1-2023 [3] (reference Sections 9.5/11.2.b) that serves as the complete technical content of the International Green Construction Code 2018® (IgCC) [5] (reference Section 901.5.2), shall be used unless specific justification is provided in the subcategory PCR.

7.1.5 System boundary with nature

Per ISO 21930:2017 [1] Clause 7.1.5, with the following additional rules for procurement level EPDs:

Capital goods and infrastructure shall be included whenever it is feasible to do so, as stipulated in the 2022 *ACLCA PCR Guidance – Process and Methods Toolkit*, [2] Part B: *PCR Committee* is encouraged to specify lifetimes or standardized methods of computing lifetimes, as well as the depreciation method utilized to allocate the burden of capital goods over their service period, with any deviations from the default approach explicitly specified and justified.

EPDs shall use facility-specific data for upstream unit processes, where available. Part B PCR Committees are encouraged to consider specification of a minimum threshold (%) of upstream data that are required to be facility-specific. The following requirements also apply:

- In situations where facility-specific data are not available for the upstream unit processes, and such a facility is required to report to the EPA GHGRP, the PCR shall require the EPD to disclose in the Additional Environmental Information section: the carbon intensity of the manufacturing plant (carbon emitted per metric ton of product manufactured) from which these products, and/or the quartile in which the manufacturing plant resides where benchmarks have been published. [12] Carbon intensity shall be calculated by dividing the emissions reported to the EPA GHGRP by plant production. Emission and production data shall be from the same reporting period using the most recent year of data.

- When a published ENERGY STAR Energy Performance Indicator is available for a product or constituent upstream product, the PCR shall require the EPD to disclose in the Additional Environmental Information section: the ENERGY STAR Energy Performance Score for the manufacturing plant in which the product or constituent upstream product was manufactured, and the reporting period of the underlying data. [13]

7.1.6 System boundary between products systems

Per ISO 21930:2017 [1] Clause 7.1.6, with the following additions.

Part B PCRs shall consider other upstream and downstream PCRs and develop defaults or guidance for assigning burdens of secondary materials, secondary fuels and recovered energy to the relevant system so as to accurately account for these inputs/outputs without data gaps or double counting. Refer to the ACLCA Open Standard *Allocating Burdens and Benefits of Materials Shared Across Product Systems* addendum for guidance.

For data-source level EPDs, Part B PCRs shall ensure that all rules for LCA are specified and harmonized with upstream and downstream PCRs (if available) in conformance with relevant standards, including specification of the functional unit, scope of the study, inventory collection, any allocation rules, impact assessment, and rules for additional information.

7.1.7 System boundaries and technical information for scenarios

7.1.7.1 General

Per ISO 21930:2017 [1] Clause 7.1.7.1, with the following additions.

Scenarios shall be provided for each module in scope beyond the manufacturing gate (A1-A3). Part B PCRs should include default scenarios to the extent possible.

7.1.7.2 A1-A3, production stage

Per ISO 21930:2017 [1] Clause 7.1.7.2, with the following clarifications given in subsections of this PCR.

7.1.7.2.1 General

Per ISO 21930:2017 [1] Clause 7.1.7.2.1.

[12] <epa.gov/ghgreporting/ghgrp-minerals>

[13] <energystar.gov>

7.1.7.2.2 A1, extraction and upstream production

Per ISO 21930:2017 [1] Clause 7.1.7.2.2, with the following addition.

Primary data shall be used for A1 where operations are owned or managed by the manufacturer.

7.1.7.2.3 A2, transport to factory

Per ISO 21930:2017 [1] Clause 7.1.7.2.2, with the additional clarification.

Primary data for the transport of raw materials, including recycled or secondary materials, shall be used if available. If primary data are not available, industry-average data may be used. If neither primary data nor industry-specific data are available, the US DOT BTS data should be used. [14] Transportation to the manufacturing facility shall include transport to any interim distribution centers or terminals. Empty backhauls shall be assumed unless justification is presented in the project report (LCA report). Where backhauls are not embedded in the LCI dataset, the calculation of transportation impacts shall include an additional 35% (multiply by a factor of 1.35) to account for the additional backhaul.

7.1.7.2.4 A3, manufacturing

Per ISO 21930:2017 [1] Clause 7.1.7.2.4, with the following clarifications.

Primary data shall be collected for every process in the product system under the control of the organization making the product claim.

Part B PCRs shall determine the data required for the manufacturing module using the underlying LCA and provide default information (i.e. product formulas, packaging materials, air emissions, etc.), as appropriate for the product category. Part B PCRs should provide a data collection sheet for required primary data.

This PCR allows the aggregation and reporting of Modules A1-A3 to a total for each indicator in the production stage for scopes other than cradle-to-gate and encourages the reporting of these modules separately to increase transparency. Raw materials for making the product shall be presented in Table 1.

Table 1

Material inputs per declared or functional unit

Material	Material Weight	Unit	Pre-consumer content (%) -	Postconsumer content (%)	Biogenic content (%)
raw material 1	product-specific or default value provided in a Part B PCR				
example: glass, tempered	0	kg	0%	0%	0%

[14] US Department of Transportation, Bureau of Transportation Statistics; and, US Department of Commerce, Census Bureau. (2020-08). 2017 Commodity Flow Survey Datasets: 2017 CFS Public Use File (PUF). <census.gov/programs-surveys/cfs/data/2017> (Accessed November 2025)

Materials for product packaging shall be presented for the product in Table 2 and shall be based on primary data specific to the product being evaluated.

Table 2
Materials for packaging

Material	Material Weight	Unit	Pre-consumer content (%)	Postconsumer content (%)	Biogenic content (%)
packaging material 1	product-specific or default value provided in a Part B PCR				
example: plastic, nylon	11.97	kg	30	0	0

7.1.7.2.5 Input of secondary materials or recovered energy

Per ISO 21930:2017 [1] Clause 7.1.7.2.5, with the following addition.

The cut-off allocation method (also referred to as the recycled content approach or the 100:0 approach) shall be applied when considering materials that cross the boundary of the product system. No burden shall be assigned to secondary material inputs until after the end-of-life stage for the first product system has been reached, and no benefits shall be gained from the export of materials for energy recovery, reclaim, or recycling. However, burdens and benefits beyond the product system may be assessed and reported in Module D. See also Section 7.1.7.6.

7.1.7.2.6 Co-products leaving the system

Per ISO 21930:2017 [1] Clause 7.1.7.2.6.

7.1.7.2.7 Output of waste

Per ISO 21930:2017 [1] Clause 7.1.7.2.7.

7.1.7.2.8 End-of-life scenarios for packaging

Per ISO 21930:2017 [1] Clause 7.1.7.2.8.

Refer to Section 7.1.7.3.4 for default packaging disposal assumptions.

7.1.7.3 A4 to A5, construction stage

7.1.7.3.1 General

Per ISO 21930:2017 [1] Clause 7.1.3.1.

Stages A4 and A5 may be included in EPDs covering cradle-to-gate with options and shall be included in EPDs covering cradle-to-grave. If product packaging includes more than 5% carbon content by mass, then A5 is required to be included at least to balance the biogenic carbon dioxide removals and emissions.

7.1.7.3.2 A4, Transport to construction site

Per ISO 21930:2017 [1] Clause 7.1.7.3.2, with the following clarification.

This module shall include transport from the manufacturing gate to a central warehouse or intermediate storage site, if relevant, and on to the construction site. Distribution of products from the manufacturing gate to the construction site may be estimated based on the weighted average distance to the market of the product. Any exceptions to this scenario shall be justified in the LCA report and noted in the EPD.

Where primary data are not available, the default values given in Table 3 for transportation to the construction site shall be used for EPDs declaring Module A4. Part B PCRs should adjust the values in Table 3 based on the underlying LCA.

Table 3
Transportation to the Building Site (A4)

Name	Value	Unit
fuel type	diesel	
liters of fuel [a]	1.67	liters/100 km-kg
vehicle type	combination truck	
transport distance	(specifiy) primary data or default from US DOT BTS data [b]	km
capacity utilization (including back hauls)	0.7 or default from selected LCI dataset	
gross density of products transported	(product-specific)	kg/m^3
weight of products transported	(product-specific)	kg
volume of products transported	(product-specific)	m^3
capacity utilization volume factor (equals 1, unless compressed or nested	< 1	

[a] <data.bts.gov/stories/s/Freight-Transportation-Energy-Use-Environmental-Im/f7sr-d4s8>

[b] US Department of Transportation, Bureau of Transportation Statistics; and, US Department of Commerce, Transportation Energy Use: Fuel consumption by transportation mode. census.gov/programs-surveys/cfs/data/2017 (Accessed November 2025)

Reported transportation impacts shall include an empty backhaul. Where backhauls are not embedded in the LCI dataset, the calculation of transportation impacts shall include an additional 35% (multiply by a factor of 1.35) to account for the additional backhaul.

7.1.7.3.3 A5, installation

Per ISO 21930:2017 [1] Clause 7.1.7.3.2, with the following additions.

The information module “Installation” covers the installation of the product into the construction works. Part B PCRs should provide default values for installation based on the underlying LCA.

7.1.7.3.4 End-of-life scenarios for Packaging (A5)

Per ISO 21930:2017 [1] Clause 7.1.7.4 with the following clarifications:

Per ISO 21930:2017 Clause 7.2.7, biogenic carbon emissions from product packaging materials shall be reported in information Module A5. If the A5 module is not declared in the EPD (e.g. cradle-to-gate), A5 shall be included in the EPD report to the extent that the packaging biogenic removals and emissions are balanced in the GWP_{bio} results, with any carbon not emitted as methane in landfills assumed to be emitted as biogenic CO_2.

The waste pathway assumptions by material and region shown in Table 4 should be used as a reference for Module A5, unless justified differently or specified differently in the Part B PCR. The recycling percentage shall only be used if the packaging material meets municipal or commercial recycling requirements and may therefore be recycled in the region of use. In all other cases, the material shall be assumed to be disposed of in the average regional mix of landfill and incineration.

Table 4
Packaging disposal assumptions by region

Region	Material Type	Recycling rate	Combustion rate	Landfilling rate
United States	paper and paperboard	68.2%	6.2%	25.6%
	glass	25%	13.4%	61.6%
	steel	33.1%	12%	54.9%
	aluminum	17.2%	14.4%	68.4%
	plastics	8.7%	15.8%	75.5%
	rubber and leather	18.2%	27.3%	54.5%
	textiles	14.7%	18.9%	66.4%
	wood	17.1%	15.7%	67.2%

7.1.7.4 B1 to B7, use stage

Per ISO 21930:2017 [1] Clause 7.1.7.4, with the following additions.

B1-B7 are optional for cradle-to-gate with options EPDs and are required for cradle-to-grave EPDs.
A description of the reference scenarios shall be part of the EPD.

For additional guidance on B4 replacement reporting, refer to the ACLCA Guidance for Calculating Non-LCA Inventory Metrics [2] in accordance with ISO 21930:2017.

Part B PCRs shall provide default reference scenarios based on the underlying LCA.

7.1.7.5 C1 to C4, end-of-life-stage.

Per ISO 21930:2017 [1] Clause 7.1.7.,5 with the following additions.

C1-C4 are optional for cradle-to-gate with options EPDs and are required for cradle-to-grave EPDs. A description of the reference scenarios shall be part of the EPD. The end-of-life stage of the construction product starts when it is replaced, dismantled or deconstructed from the construction works and does not

provide any further functionality. If primary data are not available, transportation (C2) of product at end-of-life to processing shall assume a 32 km distance based on the 2023 EPA WARM model [15] for the US.

Product not reclaimed for reuse enters the waste stream and is sent to recycle (C3) or disposal by landfill or incineration (C4). The most recent release of the US EPA *Municipal Solid Waste, Fact and Figures Fact Sheet* [16] shall be used to determine the percentages of the remaining (i.e. after reclaiming for reuse) products that are to be recycled, landfilled or incinerated.

Part B PCRs shall develop default end-of-life scenario data based on the underlying LCA. Table 5 is an example of a Part B PCR default end-of-life scenario. A default scenario for a product category that contains a mix of recovery and disposal options shall only be defined if the scenarios for each individual options (e.g. 100% disposal to landfill) are also provided.

If no Part B PCR is available, the product disposal assumptions by region guidance in the NSF GPI 2023 or latest version shall be used.

Table 5

Example end-of-life scenario for a product

Name		Value	Unit
assumptions for scenario development	Clay brick, clay brick pavers, and structural clay tiles are collected separately from mixed construction waste in the demolition stage. Demolition and collection requires no additional considerations from normal demolition; therefore, demolition impacts are de minimis. Upon collection, 13% of the product (by mass) is reused in the form of bulk aggregate to offset virgin material in the next product lifetime, with the remaining 87% being landfilled.		
collection process (specified by type)	collected separately	100%	kg
	collected with mixed construction waste	0%	kg
recovery (specified by type)	reuse	13%	kg
	recycling	0%	kg
	incineration	0%	kg
disposal (specified by type)	product or material for final disposal (landfill)	87%	kg

7.1.7.6 Module D, benefits and loads beyond the system boundary

Per ISO 21930:2017 [1] Clause 7.1.7.6, with the following additions.

Where relevant, Module D information declares potential loads and benefits of secondary material, secondary fuel, or recovered energy leaving the product system based on scenarios. Module D is optional. If provided, a description of the reference scenarios shall be documented in the EPD.

[15] <epa.gov/warm/versions-waste-reduction-model#v16>

[16] US EPA Advancing Sustainable Materials Management: Fact Sheet 2018, Table 1, <epa.gov/facts-and-figures-about-materials-waste-and-recycling/advancing-sustainable-materials-management> (Accessed November 2025)

Part B PCRs should specify whether the benefits and loads beyond the system boundary (i.e. Module D) are to be included in the EPD. If so, the PCR shall describe the specific scenario(s), benefits, and loads to be considered and reported separately in relevant EPDs communicating the full life cycle (cradle-to-grave) impacts of a product. Refer to the ACLCA Open Standard *Allocating Burdens and Benefits of Materials Shared Across Product Systems* [2] addendum for guidance.

7.1.8 Criteria for the inclusion and exclusion of inputs and outputs

Per ISO 21930:2017 [1] Clause 7.1.8, with the following clarification.

The "cut-off" procedure used to determine the inclusion and exclusion of material and energy inputs and product, coproduct, waste and emissions outputs shall be documented in the EPD as required in Section 9.3, as well as in the project report.

7.1.9 Selection of data and data quality requirements

Per ISO 21930:2017 [1] Clause 7.1.9, with the following additions and clarifications.

7.1.9.1 Foreground data

7.1.9.1.1 Time period

For all types of EPDs (industry-average, manufacturer-average and facility-specific), primary data collected for Module A3 shall include 12 consecutive months of data beginning within three years of the publication date of the EPD. Any exceptions to this scenario shall be justified in the project report (LCA report) and noted in the EPD.

For transparency, the time period for collection of foreground data should be reported in EPDs as specified in Table 9.

7.1.9.1.2 Documents on file

Foreground data shall be based on utility and energy bills, sales records, product designs, and similar records, all of which should be kept on file and easily accessible. Any exceptions shall be justified in the LCA report and noted in the EPD.

7.1.9.1.3 Geography

Foreground data for a facility-specific EPD shall be specific to the facility. Company averages are not allowed. Foreground data for manufacturer-average and industry-average EPDs shall be specific to the participating facilities and products that make up the average.

7.1.9.1.4 Data gaps in foreground data

Data gaps for foreground data shall be limited only to those items for which a predetermined parameter has been provided in a Part B PCR. Any exceptions to the Part B PCR provided scenario shall be justified in the project report (LCA report) and noted in the EPD.

7.1.9.2 Background data

7.1.9.2.1 Prioritization of data for upstream processes

Use of upstream data associated with production of commodities and raw materials shall follow this hierarchy. Deviations from this hierarchy shall be identified in the project report and justification provided:

1) Valid facility-specific and product-specific EPDs with impact categories modeled according to TRACI 2.25 [6] for the specific inputs associated with the EPD.
2) Either of the following:
   - valid industry-average EPDs with impact categories modeled according to TRACI 2.25
   - freely available public datasets as prescribed in this PCR, including critically reviewed LCA studies that are conformant with ISO 14040/14044 [1] that have been published to the Federal LCA Commons.
3) Publicly available, critically reviewed LCA studies that are conformant with ISO 14040/14044 that have not been published to the Federal LCA Commons. [17]
4) Either of the following:
   - commercial (proprietary) inventory data, when process or flow impacts are estimated to be greater than 1% total
   - declared data gap, when process or flow impacts are estimated to be less than 1% total, or when no data exists. Any estimations shall be justified.

7.1.9.2.2 Uniformity in use of life cycle inventories

When selecting background data, the following databases may be used:

- Agri-footprint (agri-footprint.com)
- AusLCI (auslci.com.au)
- Ecoinvent (ecoinvent.org)
- European/International Life Cycle Database (eplca.jrc.ec.europa.eu/LCDN/index.xhtml)
- Federal LCA Commons LCI Database – (lcacommons.gov)
- Managed LCA Content (MLC) databases – Associated with LCA for Experts (formerly GaBi) (lcadatabase.sphera.com)

Other databases may be used where relevant and with suitable justification, subject to the data requirements listed in Section 7.1.9.2.1.

7.1.9.2.3 Transparency of life cycle inventories

To improve the consistency and comparability of EPDs developed under this PCR, manufacturers who develop manufacturer-average, facility-specific EPDs, industry-average EPDs, or public datasets that could be used as upstream data for other products shall indicate the individual datasets used along with its source (e.g. name

[17] National Renewable Energy Laboratory/USLCI | LCA Collaboration Server <lcacommons.gov>

and version number of database), including the year for which the data set is representative consistent with the requirements of Annex A.

7.1.9.2.4 Geography and regionalization

The upstream data specified in Annex B are specific to North America, unless otherwise stated. US baseline inventories for electricity shall be regionalized at the balancing authority region. Canadian baseline inventories for electricity shall be regionalized at the provincial level.

7.1.9.2.5 Electricity use from the grid

Electrical energy data from local sources such as utility-specific or the balancing authority shall be used where available. When data are not available, NERC subregion or similar data shall be used to represent electrical energy production for the US and Canada. Preference shall be given to datasets that include transmission and distribution losses. For regions other than the United States and Canada, country or region-specific processes shall be used for the manufacturing stage provided they are representative. The sources for electricity and the calculation procedure shall be documented. The requirements in this section apply only when electrical energy is derived from the energy grid. For energy sourced from renewable sources and RECs, refer to Section 7.1.9.2.6.

7.1.9.2.6 Renewable energy usage and RECs

This PCR shall follow the most recent version of the *ACLCA Guidance for Quantifying Renewable Electricity Instruments in Environmental Product Declarations* [2]

7.1.9.2.7 Data gaps in background data

Data gap identification in background data shall be performed in accordance with the 2022 *ACLCA Guidance for Assessing Data Quality of Background Life Cycle Inventory (LCI) Datasets* [2] for background dataset selection, or most recent version. Data gaps shall be described in the EPD and the following statement should appear:

> *"Data for [list of materials] was not available at time of EPD preparation and may have significant effects on total impacts."*

Justified estimations of missing data are allowed. Potential significance to the EPD results shall be explained in the project report.

7.1.9.2.8 Updating prescribed inventory data

LCA practitioners and other users of this PCR are encouraged to notify NSF directly (ncss@nsf.org) of changes to available background datasets relevant to this PCR. This includes the release of newly available data, the expiration of previously available data, or significant updates to existing data. In such instances, NSF will evaluate the information and convene the PCR Data Subcommittee to consider if an update of the PCR is necessary. Any resulting revisions based on this review shall be summarized in the revision log for this PCR and shall include the date of revision. The PCR's date of expiry shall not be affected.

7.1.9.3 Data quality assessment

The quality of the data used to calculate an EPD shall be documented in the project report and summarized in the EPD as required in Table 9. The DQA is required for primary/ foreground data as well as for all background and generic data, including any data used for Module D. The DQA shall conform to ISO 14044:2006 [1] Clause 4.2.3.6 and include an evaluation of the temporal, geographical, technological representativeness, accuracy,

precision, and completeness of the datasets used. The project report shall list the database and dataset name and age for each background and generic dataset used in the LCA model.
Evaluation of the quality of the background data shall be based on the DQA guidelines given in UN Environment Global Guidance as referenced in EN 15804: 2012+A2:2019/AC:2021. If an alternative DQA method is used, justification shall be provided.

The DQA requirements shall apply to data making a major contribution, contributing together to at least 80% of the absolute impact of any core environmental indicator included in the EPD when considered over the full lifecycle, or across those modules assessed in the EPD. Where reported, the data quality of Module D shall also be assessed.

7.1.10 Units

Per ISO 21930:2017 [1] Clause 7.1.10, with the following additions.

All EPD values shall be reported using SI (metric) units. Optionally, EPDs may provide both SI units and US imperial units using the following conversion factors per Table 6, from NIST.

Table 6
Conversion factors to be used if reporting in IP units (Imperial)

Convert from	To	Multiply by
square meter (m^2)	square foot (ft^2)	1.076391E+01
kilogram (kg)	pound (lb)	2.204622
megajoule (MJ)	British Thermal Unit (BTU)	9.478170E+02
degree Celsius (°C)	degree Fahrenheit (°F)	(°C * 9/5) +32
cubic meter (m^3)	cubic foot (ft^3)	3.531466E+01
meter (m)	foot (ft)	3.281
$m^2 \cdot K/W$	$ft^2 \cdot hr/BTU$	5.6783
metric tonne (mt)	ton (t)	1.102

Source: NIST <physics.nist.gov/Pubs/SP811/appenB9.html>, <nist.gov/pml/wmd/metric/ temp.cfm>, and <nist.gov/pml/wmd/metric/common-conversion-b.cfm>

7.2 Inventory analysis

7.2.1 Data collection

Per ISO 21930:2017 [1] Clause 7.2.1 (which references ISO 14044:2006 [1] Clause 4.3.2) with additional guidance from Section 7.1.9, and the following clarification.

An EPD identified as facility-specific shall be calculated using specific (i.e. primary) data. Primary data shall, at a minimum, be collected for the processes over which the manufacturer has influence. A supply chain specificity score shall be calculated and reported for facility-specific EPDs as per the most recent version of the *ACLCA Guidance for Determining EPD Types.* [2]

7.2.2 Calculation procedures

Per ISO 21930:2017 [1] Clause 7.2.2 (which references ISO 14044 [1]).

7.2.3 Allocation situations

Per ISO 21930:2017 [1] Clause 7.2.3.

7.2.4 Principles for allocation both allocation situations

Per ISO 21930:2017 [1] Clause 7.2.4, with the following additions.

The project report shall identify the allocation methods used in key processes. Part B PCRs shall identify processes requiring further subdivision in order to avoid allocation and shall provide guidance on performing the subdivision. Part B PCRs shall identify the method of allocation and the underlying physical or other relationships for key processes, as applicable for the product category, based on the underlying LCA.

7.2.5 Allocation for co-products

Per ISO 21930:2017 [1] Clause 7.2.5, with the following addition.

Co-product allocation shall follow the step-based process described in ISO 21930 Clause 7.2.5.2 *System expansion* shall not be used to avoid allocation and is not allowed under this PCR.

7.2.6 Allocation across the system boundary

Per ISO 21930:2017 [1] Clause 7.2.6, with the following clarifications.

Part B PCRs shall consider allocation protocols used by related adjacent product categories in the value chain. For example, if a steel product's PCR defines slag to be a co-product and allocates a portion of environmental burdens to the slag, then PCRs for products that use slag shall define slag as an incoming raw material with environmental burdens. In this case, slag would not be defined as a recycled or recovered material entering the system impact-free. Refer to the 2022 *ACLCA PCR Open Standard* [2] addendum: *Allocating Burdens and Benefits of Materials Shared Across Product Systems* for additional guidance.

7.2.7 Accounting of biogenic carbon uptake and emissions during the life cycle

Per ISO 21930:2017 [1] Clause 7.2.7, with the following additions.

The flow of biogenic carbon to the technosphere from nature (i.e. uptake of carbon from the environment by plants and trees) shall be reported in the LCIA with -1 kg CO_2e/kg CO_2 of biogenic carbon in the calculation of the GWP. The flow of biogenic carbon exiting the system shall be characterized with +1 kg CO_2e/kg CO_2 of biogenic carbon in the calculation of the GWP. Biogenic carbon flows shall be reported in the modules in which they occur.

Bio-based raw materials will enter the system in Module A1 with a –1 kg CO_2e/kg CO_2 of biogenic carbon in the calculation of the GWP. At the end-of-life (Modules C3/C4), the biogenic content of the product will leave the system with +1 kg CO_2e/kg CO_2 of biogenic carbon, except for the carbon that is converted to methane in landfills, in the calculation of the GWP.

A notation shall be included for GWP results for cradle-to-gate or cradle-to-gate with options EPDs that do not include end-of-life Modules C3 or C4. The notation shall state:

> *"GWP results include biogenic carbon removals from nature that are not yet emitted back to nature. Emissions of biogenic carbon back to nature will occur at end-of-life of the product (Modules C3/C4) which is not included in these EPD results."*

For bio-based product packaging materials, the A5 module will be included at least to balance the biogenic CO2 removals and emissions. Bio-based product packaging materials will enter the system in Module A3 with a -1 kg CO_2e/kg CO_2 of biogenic carbon in the calculation of the GWP. Packaging removed during installation of the product in Module A5 shall leave the system with +1 kg CO_2e/kg CO_2 of biogenic carbon in the calculation of the GWP for Module A5.

- If packaging from Module A5 is landfilled, a portion of the landfilled packaging carbon will convert to biogenic methane per the landfill dataset used for GWP calculations and the remainder shall be assumed to exit the system within 100 years with a +1 kg CO_2e/kg CO_2 of biogenic carbon in the Module A5 calculation of the GWP.

- Accumulation or storage within the product system of biogenic carbon associated with product packaging is not allowed.

Similarly, any import of bio-based material into the product system as secondary fuel or secondary material is reported as an input of biogenic carbon removal(s) characterized with −1 kg CO_2e/kg CO_2 of biogenic carbon in the calculation of the GWP and an export characterized with +1 CO2e/kg CO_2 of biogenic carbon in the calculation of the GWP when the secondary fuel is combusted or the secondary material leaves the system.

Per ISO 21930:2017,[1] only wood originating from sustainably managed forests may be characterized with a -1 kg CO_2e/kg CO_2 biogenic carbon flow when entering the product system.

Part B PCRs should specify additional calculation procedures for biogenic carbon, as applicable.

Uptake and emissions of biogenic carbon shall be reported per Table 7 for each declared module in the EPD, as required by Section 9.5.2.

Table 7

Carbon emissions and removals

Parameter	Parameter acronym	Unit
biogenic carbon removal from product	BCRP	kg CO_2e
biogenic carbon emission from product	BCEP	kg CO_2e
biogenic carbon removal from packaging	BCRK	kg CO_2e
biogenic carbon emission from packaging	BCEK	kg CO_2e
biogenic carbon emission from combustion of waste from renewable sources used in production processes	BCEW	kg CO_2e
calcination carbon emissions	CCE	kg CO_2e
carbonation carbon removals	CCR	kg CO_2e
carbon emissions from combustion of waste from non-renewable sources used in production processes	CWNR	kg CO_2e

7.2.8 Carbonation and calcination

Per ISO 21930:2017[1] Clause 7.2.8, with the following clarification.

Part B PCRs should provide guidance on whether calcination carbon emissions and carbonation carbon removals should be included or excluded in the EPD.

7.2.9 Accounting of delayed emissions

Per ISO 21930:2017 [1] Clause 7.2.9, there is no consensus approach to reporting delayed emissions in the quantification of GWP, and therefore, such calculations shall not be part of the quantification of GWP. If a manufacturer wishes to declare qualitative or quantitative information on delayed emissions within the EPD, it shall be reported under Section 9.6.

7.2.10 Inventory Indicators describing resource use

Per ISO 21930:2017 [1] Clause 7.2.10. For additional guidance on inventory reporting, refer to the *ACLCA Guidance for Calculating Non-LCA Inventory Metrics* [2] in accordance with ISO 21930:2017.

7.2.11 Greenhouse gas emissions from land use change

Per ISO 21930:2017 [1] Clause 7.2.11, with these additions.

Part B PCRs shall consider whether land use change is relevant to the product category and shall provide guidance on inclusion of land use change results. For additional guidance on inventory reporting, refer to the *ACLCA Guidance for Calculating Non-LCA Inventory Metrics* [2] in accordance with ISO 21930:2017.

7.2.12 Additional inventory indicators describing emissions and removal of carbon

Per ISO 21930:2017 [1] Clause 7.2.12, with additional guidance in Sections 7.2.7 and 7.2.8. For additional guidance on inventory reporting, refer to the *ACLCA Guidance for Calculating Non-LCA Inventory Metrics* [2] in accordance with ISO 21930:2017.

7.2.13 Inventory indicator describing consumption of freshwater

Per ISO 21930:2017 [1] Clause 7.2.13. For additional guidance on inventory reporting, refer to the *ACLCA Guidance for Calculating Non-LCA Inventory Metrics* [2] in accordance with ISO 21930:2017.

7.2.14 Environmental information describing waste categories and output flows

Per ISO 21930:2017 [1] Clause 7.2.14. For additional guidance on inventory reporting, refer to the *ACLCA Guidance for Calculating Non-LCA Inventory Metrics* [2] in accordance with ISO 21930:2017.

7.3 Impact assessment indicators describing main environmental impacts derived from LCA

Per ISO 21930:2017 [1] Clause 7.3, with the following clarifications.

Table 8 presents the core environmental impact indicators that, at a minimum, shall be reported for each module declared in the EPD. The TRACI [6] version 2.2 methodology shall be used for all factors except GWP. The Environmental Footprint (EF) reference package v3.1, [18] which applies GWP factors specified in the IPCC 2021 Sixth Assessment Report (AR6), shall be used to calculate the GWP indicators. All GWP calculations shall use the 100-year time horizon GWP factors from the IPCC 2021 AR6, excluding feedbacks of carbon.

The characterization models used shall be reported in the EPD.

[18] <eplca.jrc.ec.europa.eu/LCDN/developerEF.html> (accessed November 2025)

Table 8
Mandatory impact categories – North America (TRACI 2.2)

Impact Category	Unit
Global Warming Potential - Total [a] (GWP_{total}), IPCC 2021 (AR6)	kg CO_2 eq
Global Warming Potential - Fossil (GWP_{fossil}), IPCC 2021 (AR6)	kg CO_2 eq
Global Warming Potential - Biogenic ($GWP_{biogenic}$), IPCC 2021 (AR6)	kg CO_2 eq
Global Warming Potential - Land Use and Land Use Change (GWP_{luluc}), IPCC 2021 (AR6)	kg CO_2 eq
Acidification Potential (AP)	kg SO_2 eq
Eutrophication – Marine (EP-marine)	kg N eq
Eutrophication – Freshwater (EP-fresh)	kg P eq
Ozone Depletion Potential (ODP)	kg CFC-11 eq
Smog Formation Potential (SFP)	kg O_3 eq

[a] GWP total is the sum of GWP_{fossil}, $GWP_{biogenic}$, and GWP_{luluc}

LCIA results reported in the EPD shall be preceded by the statement "LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins, or risks."

For European market EPDs developed with this document as the core PCR, the characterization methods included in the latest edition of EN 15804 shall be used. Optionally, impacts using the North American categories may also be reported.

8 Additional environmental information

Per ISO 21930:2017 [1] Clause 8, with the following additional requirements.

Additional information shall only be related to environmental aspects. Information and instructions on product safety unrelated to the environmental performance of the building product shall not be part of a Type III environmental declaration (ISO 14025:2006 [1]).

8.1 General

Per ISO 21930:2017 [1] Clause 8.1, with the following addition.

Part B PCRs shall include instructions or templates for reporting significant environmental aspects of the product that are not covered by the LCA. As stated in ISO 21930, the information shall be reported in the EPD and shall be verifiable per the requirements of ISO 14025:2006 [1] Clause 7.2.4.

8.2 Additional LCA related information not included in preset LCIA indicators

Per ISO 21930:2017 [1] Clause 8.2, with the following additions:

An EPD may also report additional environmental information as stipulated in ISO 21930:2017 Clause 8.2. When that information includes the reporting of impact categories that are still under development or have high levels

of uncertainty that preclude international acceptance, the reporting shall be accompanied by the following statement:

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

8.3 Additional environmental information not derived from or related to LCA

Per ISO 21930:2017 [1] Clause 8.3 with the following modifications.

Other characteristics or properties identified by a Part B PCR that are important to the function of the product may be reported here. See Section 9.2 for required statements.

If the market-based method for Scope 2 accounting is used to quantify potential GHG emission reductions associated with electricity consumption and reported as additional environmental information, documentation shall meet the Scope 2 Quality Criteria in the GHG Protocol Scope 2 Guidance. [19]

8.4 Mandatory additional environmental information

Per ISO 21930:2017 [1] Clause 8.4.

Regulated substances shall be reported in the EPD along with the product material content.

9 Content of an EPD

9.1 General

Per ISO 21930:2017 [1] Clause 9.1.

For B2C communication, the development and content of EPDs shall follow ISO 14025, [1] this Part A PCR and any relevant subcategory PCR that are in accordance with this document.

9.2 Declaration of general information

Per ISO 21930:2017 [1] Clause 9.2, with the following clarification and additions:

The manufacturer is responsible for the provision of all information in the following sections. An EPD developed under this PCR shall include the following information:

9.2.1 Owner and verification information

Table 9 of general product and verification information shall be presented on the page after the cover page of the EPD.

[19] <ghgprotocol.org/scope-2-guidance>

Table 9
Demonstration of verification

Product name	
Manufacturer name and address	
Program Operator	
General program instructions and version number	
Declaration number	
Reference PCR and version number (including Core PCR)	
EPD type and specificity type (as per Section 9.3)	e.g. industry-average, product-average
Defined functional or declared unit	
Product's intended application and use	
Product RSL	
Markets of applicability	
Date of issue	
Period of validity	
Year of reported manufacturer primary data	
LCA software and version number	
LCA tool verification conducted by (if applicable):	
LCI database and version number	
LCIA methodology and version number	
Overall EPD data quality assessment	
The sub-category PCR review was conducted by:	
This declaration was independently verified in accordance with ISO 14025. ISO 21930:2017 serves as the core PCR. Sub-category PCR: **NSF Part A v1 and NSF Part B** Product Category Rule [PCR name, if applicable] ☐ Internal ☐ External	Industrial Ecology Consultants, Thomas P. Gloria, PhD, t.gloria@industrial-ecology.com
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	
Explanatory material can be obtained from the following:	

9.2.2 Required statements

- The statement:

  "EPDs are only comparable if they comply with ISO 21930:2017, this Part A PCR and Part B PCR if applicable, include all relevant information modules and are based on equivalent scenarios with respect to the construction works context."

- The statement:

  "Environmental declarations from different programs may not be comparable. Comparison of the environmental performance of products using EPD information shall be based on the product's use and impacts at the building or construction works level, and therefore, EPDs may not be used for comparability purposes when not considering the whole building life cycle. EPD comparability is only possible when all stages of the life cycle have been considered. However, variations and deviations are possible. Example of variations: Different LCA software and background datasets may lead to differences in the results upstream or downstream of the life cycle stages declared."

- If the EPD is based on a declared unit, include the statement:

  "The environmental impact results of 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 product impact the precise function at the construction level. The environmental impact shall be converted to a functional unit basis before any comparison is attempted."

- The statement:

  "The EPD Owner has sole ownership, responsibility, and liability for the content of this EPD."

9.2.3 Product specifications

- Identification of the product name, unit size designation if applicable, and any applicable product code. A depiction of the product as sold shall be included.

- A description of the main product components or materials that make up the product shall be given both in mass and percent of total. A single list of components may be presented for all different sizes of products in the EPD if the material contents of the products vary by less than 5% by mass. If scaling factors are used to scale the declared or functional unit to various configurations or sizes of products, a table of the factors shall be presented in the EPD under Other Information.

- Description of the main product packaging materials, if applicable, shall be given in mass per functional or declared unit. Where multiple products are represented in a product-average EPD, the packaging may be given for a representative product by category. Packaging representative of a "worst-case" shall be used if packaging contributes more than 10% of any impact category result.

- Regulated hazardous materials or substances shall be identified, listed by CAS number, and identify the standard or regulation in the relevant market.

9.3 Declaration of the methodological framework

Per ISO 21930:2017 [1] Clause 9.3, with the following additions and clarifications.

The EPD shall specify the following:

- declared or functional unit
- product RSL and the ESL of the building
- scope of the EPD with respect to life-cycle stages covered (e.g. cradle-to-gate) as described in Section 5.2.2.
- life cycle stages covered and not covered, using Table 10. The table shall indicate by module whether that module is declared or not declared in the EPD. Modules A1-A3 are required for all EPD types
- The Type of EPD with regard to data specificity as indicated in Section 5.3:
    - industry-average, manufacturer-average, or facility-specific
    - product-specific or product-average.
- a table outlining the background sources of data used to complete the upstream material LCI, including the date or version number (EPDs that use secondary data for any unit process that contributes 30% or more to any disclosed environmental impact category shall disclose the database name and version, dataset name, dataset geography, and dataset allocation method)
- overall EPD data quality shall be qualitatively reported, based on the DQA method used in Section 7.1.9.3
- industry-average EPDs, shall include the date and source of industry data survey, including a list of all companies who participated in the EPD data.

Table 10
Description of EPD system boundary

	Production stage			Construction stage		Use stage							End of life stage				Benefits and loads beyond the system boundary
	Raw material extraction	Transport	Manufacturing	Transportation to site	Installation	Use	Maintenance	Repair	Replacement	Refurbishment	Operation energy use	Operation water use	De-construction	Transport	Waste processing	Disposal	Reuse/recycle
Module	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D
Modules declared	X	X	X	X	X	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	MND	optional
Geography	China, Inda, US	Global	US	Global	Global												
Share of specific data [a]	50%																
Variation – Products	0%																
Variation – Sites	0%																

Note. MND = module not declared, X = module declared

[a] Share of specific data is only applicable for facility-specific EPDs.

9.4 Declaration of technical information and scenarios

Per ISO 21930:2017 [1] Clause 9.4, with the following clarifications.

Modules A1-A3 are required under this PCR. All other information modules are optional, unless modified by a Part B PCR. If any information modules beyond the factory gate are included, technical information describing the declared information modules shall be provided in the EPD. The information provided shall describe the basis for the technical scenarios used to assess the performance of a product within the construction works. See Sections 7.1.7.3 through 7.1.7.6 for scenario tables and default values for each declared module to be reported. Additional information may be listed if necessary to describe the scenario. Irrelevant or non-applicable rows may be marked as not applicable (N/A).

9.5 Declaration of environmental indicators derived from LCA

9.5.1 LCA Results from the LCIA

Per ISO 21930:2017 [1] Clause 9.5.1 and Section 7.3 of this PCR, with the following additions.

Cradle-to-gate EPDs shall report LCIA results based on the declared unit for product in the impact categories defined in Section 7.3. For all other EPDs that include the use phase, LCIA results shall be reported in the EPD per applicable functional unit using the format of ISO 21930:2017 Table E1.

> *Note*. This PCR allows the aggregation and reporting of A1-A3 to a total for each indicator in the production stage for scopes other than cradle-to-gate but encourages the reporting of these modules separately to increase transparency.

LCIA results tables shall be preceded by the following statement:

> *"LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks."*

> *Note*. Part B PCRs may require a modification of the results tables format or accompanying statements to better explain the results.

9.5.2 LCA Results from the LCI

Per ISO 21930:2017 [1] Clause 9.5.2 and Sections 7.2.10, and 7.2.12 through 7.2.14 of this PCR for each information module.

9.6 Declaration of additional environmental information

Per ISO 21930:2017 [1] Clause 9.6 with additional guidance from Sections 8.2 and 8.3.

10 Project report

Per ISO 21930:2017 [1] Clause 10, with the following addition.

EPDs developed according to this PCR using a verified software tool do not require a complete individual project report for each EPD. Instead, the underlying project report for the software tool, in addition to product-specific information required for completion of a conformant EPD may serve as the project report for the EPD.

11 Verification and validity of an EPD

Per ISO 21930:2017 [1] Clause 11, with the following additions.

EPD calculations completed by software systems are permitted, provided the software and underlying LCA have been verified in a process similar to that of the verification of a project report and its associated EPD. The process used to verify the software calculations should be publicly accessible and referenced from the EPD. When a product-specific EPD is aligned with an industry-wide average EPD, the following additional item is required.

In order to evaluate the consistency of results between industry-average and manufacturer-average or facility-specific EPDs the same LCA background data set and characterization model shall be used to create the EPD; EPDs shall be recalculated when any of the following conditions apply:

- an EPD shall be recalculated when changes to manufacturing practices are reasonably expected to result in a significant change to the EPD results
- an EPD shall be recalculated when its period of validity is complete or when updates to the PCR result in significant changes to the EPD results
- significant changes are an increase or decrease of GWP 100, AP, EP, or POCP by greater than 10% of the previously reported result.

12 References

12.1 ISO Standards

ISO 14020:2022 *Environmental statements and programmes for products – Principles and general requirements* [1]

ISO 14021:2016/AMD 1:2021 *Environmental Labels and Declarations – Self-declared Environmental Claims (Type II Environmental Labeling)* [1]

ISO 14025:2006 *Environmental labels and declarations – Type III environmental declarations – Principles and procedures* [1]

ISO/TS 14027:2017 *Environmental labels and declarations – Development of product category rules* [1]

ISO/TS 14029:2022 *Environmental statements and programmes for products – Mutual recognition of environmental product declarations (EPDs) and footprint communication programmes* [1]

ISO 14040:2006/AMD 1:2020 *Environmental Management – Life Cycle Assessment – Principles and Framework* [1]

ISO 14044:2006/AMD 1:2007/AMD 2:2020 *Environmental Management – Life Cycle Assessment – Requirements and Guidelines* [1]

ISO 14050:*2020 Environmental Management – Vocabulary* [1]

ISO 14067:2018 *Greenhouse Gases – Carbon Footprint of Products – Requirements and Guidelines for Quantification* [1]

ISO 14071:2024 *Environmental management – Life cycle assessment – Critical review processes and reviewer competencies* [1]

ISO 15686-7: 2017 *Buildings and constructed assets – Service life planning, Parts -1, -2, -7 and -8* [1]

ISO 21930:2017 *Sustainability in buildings and civil engineering works – Core rules for environmental product declarations of construction products and services* [1]

12.2 Other references

ACLCA (2022) *Assessing Data Quality of Background Life Cycle Inventory (LCI) Datasets*. <aclca.org/initiatives#Skills-Framework>. (Accessed November 2025)

ACLCA (2019) *Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017*. <lcacenter.org/products/iso-21930-guidance>. (Accessed November 2025)

ACLCA (2025) *Guidance for Determining EPD Types and Calculating and Communicating Data Specificity Through the Supply Chain* [2]

ACLCA (2022) *Guidance for Quantifying Renewable Electricity Instruments in Environmental Product Declarations* [2]

US EPA (2020). *US EPA Municipal Solid Waste, 2018 Fact and Figures Fact Sheet*. <epa.gov/sites/default/files/2021-01/documents/2018_ff_fact_sheet_dec_2020_fnl_508.pdf>. (Accessed November 2025)

US EPA (2023). *Waste Reduction Model, v16.* <epa.gov/waste-reduction-model> (accessed November 2025)

Intergovernmental Panel on Climate Change (IPCC) [20]

EN 15804:2012+A2:2019/AC:2021, *Sustainability of construction works – Environmental product declarations – Core rules for the product category of construction products* [21]

US EPA, *Criteria for Product Category Rules (PCRs) to Support the Label Program for Low Embodied Carbon Construction Materials (EPA's PCR Criteria)* (v1, 2024) [4]

US EPA *Data Quality Assessment Method to Support the Label Program for Low Embodied Carbon Construction Materials* (v1) [4]

FTC, *Green Guides* [22]

Greenhouse Gas Protocol, *Product Life Cycle Accounting and Reporting Standard* [23]

[20] Intergovernmental Panel on Climate Change, UN Environment Programme. C/o World Meteorological Organization, 7 bis Avenue de la Paix, CP 2300, CH-1211 Geneva 2, Switzerland. <ipcc.ch>

[21] European Standards s.r.o. Krimicka 134, 318 00 Pilsen, Czech Republic. <en-standard.eu>

[22] Federal Trade Commission. 600 Pennsylvania Avenue, NW, Washington, DC 20580. <ftc.gov>

[23] World Resources Institute (WRI) and WBCSD. <ghgprotocol.org>

Annex A

Requirements and guidance on the RSL and ESL

Per ISO 21930:2017 [1] Annex A.

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Annex B

Default data sources

A subcategory PCR should define all default secondary data sources necessary for the calculation of all scenarios reported for optional modules as required in Section 7.1.9.3. Use of secondary data sources other than these default data sources shall be justified in the Project Report and noted in the EPD.

Materials

Category	Material/ process	Dataset name	Geography	Year	Source
e.g. Materials	*Clay and shale*	*See note below.*	*US*	*2023*	*Primary data*

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Annex C

PCR critical review checklist

The PCR development committee shall develop a checklist of PCR requirements for use in the critical review of documents produced to these PCR. The checklist shall conform with the format given in Table C.1 and include at a minimum all the mandatory criteria established in the subcategory PCR, which are typically represented by statements containing the words “shall.” The checklist shall also include all the criteria incorporated through reference to this Part A, and by extension those of ISO 21930.[1]

The checklist shall be made publicly available by NSF, per request, in excel or similar editable format under the conditions of confidentiality.

> *Note*. While the creation of the checklist is required when developing a Part B PCR under this document, use of the checklist when performing a critical review of an LCA or EPD to the Part B is suggested, but not required.

Table C.1
Example PCR checklist for Part B NSF PCRs

Company name:	**OFI**	Opportunity for improvement
Product name	**??**	Info needed to ascertain performance
Document/file:	**No**	Criterion not met
Date of review:	**Yes**	Criterion met
Date of final review:	**NA**	Criterion not applicable

NSF PCR for [product category name)
The following are a list of requirements for conducting a qualifying LCA or EPD in conformance with the NSF PCR for [Product Category], and its reporting in a background report.

PCR (Section 1) – General information					
Requirement	**PCR Sec**	**Comply: Yes/No**	**Sec**	**Comment**	**Responses**
The boundary of the LCA shall be cradle-to-grave	1.1				
The country of the material origin and/or construction facilities for the product shall be identified.	1.2				
Impacts shall be calculated and reported for each of the following life-cycle stages: materials acquisition and pre-processing, construction, installation, use, and end-of-life.	5.2				

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