



Product Category Rule (PCR) Guidance for Building-Related Products and Services

Part B: Structural and Architectural Wood Products EPD Requirements

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Product Category Rules for Part B: Structural and Architectural Wood Products EPD Requirements, UL 10010–09

Version 1.1, Dated May 29, 2020

Summary of Topics

Version 1.1 of the Part B: Structural and Architectural Wood Products EPD Requirements, UL 10010–09 has been issued.

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Tracking of versions

Version	Comments	History
1.0	UL Environment with input from a committee	10/21/2019
1.1	Addition of Appendix A : Guidance on Landfill Modeling for Biogenic Carbon	05/29/2020

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I. Background Information and Acknowledgements

These sub-category Product Category Rules (PCR) were developed to address the rules for the creation of Environmental Product Declarations (EPD) for Structural and Architectural Wood Products. When used to self-reference this document, "PCR" refers to "sub-category PCR." This PCR is intended for creation of business-to-business (B2B) EPDs.

This PCR is consistent with and conforms with the mandatory requirements contained within the following normative references:

- ISO 21930:2017 - Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services
- EN 15804:2012+A1:2013 - Sustainability of construction works. Environmental product declarations. Core rules for the product category of construction products
- Part A: Life Cycle Assessment Calculation Rules and Report Requirements UL Environment (December 2018, version 3.2)
- ISO 14025: 2006, Environmental labeling and declarations – Type III environmental declarations – Principles and procedures.
- ISO 14044: 2006, Environmental management — Life cycle assessment — Requirements and guidelines.
- ISO 14040: 2006, Environmental management – Life cycle assessment – Principles and framework.

In addition to the above normative references, the following are noted guidance references used in the development of this PCR:

- Product Category Rules (PCR) for preparing an Environmental Product Declaration (EPD) for North American Structural and Architectural Wood Products. FP Innovations. Version 2, June 2015.
- Product Category Rules (PCR) for preparing an Environmental Product Declaration (EPD) for Product Group: North American Pressure-treated Wood Products, UN CPC 313. ASTM and ICC Evaluation Service. June 2016.
- EN 16485:2014, Round and sawn timber – Environmental Product Declarations – Product category rules for wood and wood-based products for use in construction

Period of Validity

This PCR is valid for a period of five (5) years, set to expire in October, 2024.

Interested Parties

This Part B has been prepared with input from the following stakeholders:

- American Wood Council, Kenneth Bland and Kuma Sumathipala
- Arup, Frances Yang
- Building Materials Reuse Association, Joe Connell
- Canadian Forest Service
- Canadian Wood Council, Rodney McPhee and Adam Robertson
- Coldstream Consulting, James Salazar
- CORRIM, Maureen Puettmann and Elaine Oneil

- Georgia-Pacific Company, Alison Brady
- Magnusson Klemencic Associates, Leif Johnson
- Roseburg Company, Dawn Garcia
- SCS Global Services, Jeremie Hakian
- University of Calgary, Getachew Assefa
- University of Georgia, Puneet Dwivedi
- University of Tennessee Knoxville, Adam Taylor
- University of Washington, Kathrina Simonen
- US Forest Service, Rick Bergman
- Weyerhaeuser, Ara Erickson

Governance

There are a number of trade associations and representatives of wood product manufacturers participating in the update of this Product Category Rule (“PCR”) for structural and architectural wood products. These parties represent a majority of the companies within the structural and architectural wood industry. Moreover, the parties with a manufacturing interest participating in the PCR update represent the vast majority of the structural and architectural wood sold in North America. The very purpose and function of a trade association is to inform its members of important industry developments and to represent their interests in projects such as the update of a PCR affecting their products. This is important because it effectively demonstrates that a large percentage of the structural and architectural wood industry is represented in the effort to renew the PCR for structural and architectural wood products.

The role of participants is to establish requirements and procedures to be applied in the development of EPDs for structural and architectural wood products. This is an update to an existing PCR, and therefore, this effort begins with the vetting of suggested changes in scope and structure. Where potential conflicts exist, ISO 14025:2006 and ISO 21930:2017 shall apply.

Involvement of Interested Parties

UL Environment is responsible for producing the PCR document by establishing an open consultation process that includes the involvement of interested parties and “reasonable efforts to achieve a consensus throughout the process” have been made (ISO 14027, Section 5.2).

UL Environment posted an open call for participation in this PCR May 2018 via its standards website, social media outlets, and outreach to original committee stakeholders.

Update Process

The PCR shall be revised five (5) years from the publication date. The PCR shall be revised before the five year date if the following occurs in the industry: major regulatory change that alters the requirements for structural and architectural wood products; major shift in the markets such that a new material or system predominates that can no longer be characterized adequately by the definitions in this PCR.

Review

The review process of this Part B PCR included a review through public consultation from December 2018 - January 2019 and a panel review.

This Part B was reviewed by the following panel:

Dr. Thomas Gloria (chair)
Industrial Ecology Consultants

Dr. Indro Ganguly
University of Washington

Dr. Sahoo
University of Georgia

Public Consultation

Public consultation was utilized during the PCR review process. The public consultation of the completed draft PCR included a minimum 30-calendar-day period for comments to be submitted to UL Environment. After public comments were submitted, the PCR committee reviewed and developed responses for all comments. All comments from the review panel and public consultation were addressed and satisfactorily resolved by the PCR committee prior to the publication of this PCR.

II. Terms and Definitions

For the purposes of this document, the definitions given in ISO 6707-1, ISO 14025, ISO 14044, ISO 14050, ISO 15686-1, ISO 21930 and the following apply.

ALLOCATION

Partitioning the environmental flows (input and output flows) of a process or a product system between the product system under study and one or more other product systems (adapted from ISO 14044).

ANCILLARY MATERIAL

Material input that is used by the unit process producing the product or during the construction or use stage, but does not constitute part of the product (adapted from ISO 14044).

BUILDING PRODUCT

Item used during the life cycle of a building or any other type of construction works (adapted from ISO 6707-1 and ISO 14021).

CHARACTERIZATION FACTOR

Factor derived from a characterization model which is applied to convert an assigned life-cycle inventory analysis (LCI) to the common unit of the impact category indicator (adapted from ISO 21930).

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).

DECLARED UNIT

Quantity of a wood building product for use as a reference unit, e.g. mass (kilogram), volume (cubic metre), for the expression of environmental information needed in information modules. Note: The declared unit is used in instances where the function and the reference scenario for the whole life cycle of a wood building product cannot be stated (adapted from ISO 21930).

ENVIRONMENTAL DECLARATION/LABEL

A claim that indicates the environmental aspects of a wood product (adapted from ISO 14020:2000).

FEEDSTOCK ENERGY

Heat of combustion of a material input that is not used as an energy source to a product system, expressed in terms of lower heater value (net calorific value) (adapted from ISO 14044).

FUNCTION

Purpose for which a building product is designed, used or required to be used (adapted from ISO 15686-10).

FUNCTIONAL UNIT (FU)

Quantified performance of a product system for a wood building product for use as a reference unit (adapted from ISO 14044).

IMPACT CATEGORY

A class representing environmental issues of concern to which life cycle inventory analysis results may be assigned (ISO 14044).

IMPACT CATEGORY INDICATOR

A quantifiable representation of an impact category (ISO 14044).

INFORMATION MODULE

Compilation of data to be used as a basis for an EPD covering a unit process or a combination of unit processes that are part of the life cycle of a product (ISO 21930).

INTERESTED PARTY

An individual or group concerned with or affected by the environmental performance of a product system, or by the results of the life cycle assessment (ISO 14044).

LIFE CYCLE

Consecutive and interlinked stages related to a product, from raw material acquisition or generation from natural resources to end-of-life (adapted from ISO 14044).

LIFE CYCLE ASSESSMENT (LCA)

Assessment aimed at compiling and evaluating the inputs, outputs and the potential environmental impacts of a product system throughout the life cycle of a product (adapted from ISO 14044).

LIFE CYCLE INVENTORY ANALYSIS (LCI)

Phase of LCA involving the compilation and quantification of input and output flows for a product throughout its life cycle (ISO 14044).

NOTE In the case of 'input flows', products and materials include raw materials, intermediate products and co-products, while in the case of 'output flows' it also includes releases (emissions to air and discharges to water and soil).

LIFE CYCLE IMPACT ASSESSMENT (LCIA)

Phase of LCA aimed at understanding and evaluating the magnitude and significance of the potential environmental impacts for a product system throughout the life cycle of a product (ISO 14044).

PRODUCT CATEGORY

Group of wood building products that can fulfill equivalent functions (adapted from ISO 14025).

PRODUCT CATEGORY RULES (PCR)

Set of specific rules, requirements and guidelines for developing of type III environmental declarations for one or more product categories (ISO 14025).

PCR REVIEW

Verification of the PCR by a third party panel (adapted from ISO 21930).

PRODUCT SYSTEM

Collection of unit processes with elementary and product flows (i.e., smallest element considered in the life cycle inventory analysis), performing one or more defined functions, and which models the life cycle of a product (adapted from ISO 14044).

TYPE III ENVIRONMENTAL DECLARATION/ENVIRONMENTAL PRODUCT DECLARATION (EPD)

Environmental declaration that provides quantified environmental data of a product, using predetermined parameters and, where relevant, additional environmental information (adapted from ISO 14025).

III. Scope

This document contains the Product Category Rule (PCR) requirements for Structural and Architectural Wood Products Environmental Product Declaration (EPD) published in accordance with the ISO 21930 and EN 15804 standards. The requirements for the background Life Cycle Assessment (LCA) project report used to inform the EPD are contained in UL Environment's Part A: Life Cycle Assessment Calculation Rules and Report Requirements. This Part B document, coupled with the Part A, conforms to the ISO 21930, EN 15804, and ISO 14025 European and international standards for EPD reporting.

General Guidance

The scope of this PCR applies to the product group "structural and architectural wood products" and includes the primary wood building products manufactured from wood harvested in North American forests and produced in North American facilities. The applicable products are shown in Table 1; other applicable products are those similar to the products in Table 1 as well as secondary building products made from those products.

This PCR covers all commercially available structural and architectural wood products according to the standards or technical approvals shown under Section 9.

Applicable Products

Table 1 describes the building products covered within the scope of this Part B, along with their relevant Construction Specification Institute (CSI) MasterFormat codes. This list is non-exhaustive, and the CSI codes provided reflect common applications, which can include multiple uses; other applications may exist. This PCR may also be applicable to the wood component of pre-fabricated building assemblies. Applicable UNSPSC codes include:

- 30103601 Wood beams
- 30103602 Wood composite beams
- 30103604 Wood sheathing or sheets
- 30103605 Wood planks
- 30103606 Wood trusses
- 30103607 Wood joists
- 30151515 Wooden roof tile
- 30152002 Wood fencing

TABLE 1. WOOD PRODUCT CATEGORIES, CSI CODES AND DESCRIPTIONS

Building product	CSI code(s) ¹	CSI descriptions
Battens ^{1a}	06 40 00	Architectural Woodwork
Cellulosic fiber insulating board ^{1b}	06 16 13	Insulating Sheathing
Cellulosic fiberboard ^{1c}	06 16 00 06 40 23	Sheathing Interior Architectural Woodwork
Cross-laminated timber ^{1d}	06 13 00 06 15 00 06 17 19	Heavy Timber Construction Wood Decking Cross-Laminated Timber
End-jointed lumber/Finger-jointed lumber ^{1e}	06 11 00 06 11 13 06 22 00 06 46 00	Wood Framing Engineered Wood Products Millwork Wood Trim
Glued-laminated timber ^{1a} (glulam)	06 13 00 06 15 00 06 18 00	Heavy Timber Construction Wood Decking Glued-Laminated Construction

¹ Bold headings correspond with major CSI categories; non-bold are sub-categories.

		06 18 13 06 18 16	Glued-Laminated Beams Glued-Laminated Columns
Hardboard ^{1c}		06 16 36 06 20 00 06 22 00 06 25 13 06 42 00 07 46 26 08 14 23.19	Wood Panel Product Sheathing Finish Carpentry Millwork Prefinished Hardboard Paneling Wood Paneling Hardboard Siding Molded-Hardboard-Faced Wood Doors
Laminated strand lumber (LSL) ^{1a}		06 11 00 06 11 13 06 13 23	Wood Framing Engineered Wood Products Heavy Timber Framing
Laminated veneer lumber (LVL) ^{1a}		06 11 00 06 11 13 06 13 23 06 17 13	Wood Framing Engineered Wood Products Heavy Timber Framing Laminated Veneer Lumber
Mass Plywood Panels (MPP)		06 13 00 06 15 00	Heavy Timber Construction Wood Decking
Medium-density fiberboard (MDF) ^{1c}		06 16 00 06 22 00 06 40 23 06 46 00	Sheathing Millwork Interior Architectural Woodwork Wood Trim
Moulding ^{1a}		06 22 00 06 46 00 06 48 00 06 49 00	Millwork Wood Trim Wood Frames Wood Screens and Shutters
Nail Laminated Timber		06 13 00 06 15 00	Heavy Timber Construction Wood Decking
Oriented strand board (OSB) ^{1f}		06 10 00 06 16 00 06 16 23 06 16 36	Rough Carpentry Sheathing Subflooring Wood Panel Product Sheathing
Oriented strand lumber (OSL) ^{1a}		06 11 00 06 11 13 06 13 23 06 17 00	Wood Framing Engineered Wood Products Heavy Timber Framing Shop-Fabricated Structural Wood
Parallel strand lumber (PSL) ^{1g}		06 11 00 06 11 13 06 13 23 06 17 23	Wood Framing Engineered Wood Products Heavy Timber Framing Parallel Strand Lumber
Particleboard ^{1c}		06 16 26 06 40 23 06 41 00	Underlayment Interior Architectural Woodwork Architectural Wood Casework
Plywood ^{1h}	Softwood	06 10 00 06 16 00 06 16 23 06 16 26 06 16 36 06 20 00	Rough Carpentry Sheathing Subflooring Underlayment Wood Panel Product Sheathing Finish Carpentry

		06 25 16 06 40 00 07 46 29	Prefinished Plywood Paneling Architectural Woodwork Plywood Siding
	Hardwood	06 20 00 06 22 00 06 25 16 06 40 23	Finish Carpentry Millwork Prefinished Plywood Paneling Interior Architectural Woodwork
Sawn timber (Lumber) ^{1a}		06 10 00 06 11 00 06 15 00 06 16 23 06 16 33 06 17 43 06 20 00 06 22 00 06 26 00 06 42 13 06 43 00 06 48 00 09 64 29	Rough Carpentry Wood Framing Wood Decking Subflooring Wood Board Sheathing Rim Boards Finish Carpentry Millwork Board Paneling Wood Board Paneling Wood Stairs and Railings Wood Frames Wood Strip and Plank Flooring
Shakes ¹ⁱ		07 31 29.16 07 46 24.16	Wood Shakes Wood Shake Siding
Shingles ^{1a}		07 31 29.13 07 46 24.13	Wood Shingles Wood Shingle Siding
Structural composite lumber ^{1a}		06 11 00 06 11 13 06 13 23 06 17 00	Wood Framing Engineered Wood Products Heavy Timber Framing Shop-Fabricated Structural Wood
Veneer ^{1h}		06 41 13 06 48 26 09 74 16 12 32 13	Wood-Veneer-Faced Architectural Cabinets Wood-Veneer Frames Flexible Wood Veneers Manufactured Wood-Veneer-Faced Casework
Wood I-joist/Pre-fabricated wood I-joist ^{1a}		06 11 13 06 17 33	Engineered Wood Products Wood I-Joists

For standard definitions/descriptions of the different types of wood products, refer to the following:

- 1a ASTM D9-12: Standard Terminology Relating to Wood and Wood-Based Products
- 1b ASTM C208-12(2017)e1: Standard Specification for Cellulosic Fiber Insulating Board
- 1c ASTM D1554-10(2016): Standard Terminology Relating to Wood-Base Fiber and Particle Panel Materials
- 1d ANSI/APA PRG 320-2018: Standard for Performance-Rated Cross-Laminated Timber
- 1e ASTM D7470 - 08(2015): Standard Practice for Evaluating Elevated Temperature Performance of End-Jointed Lumber Studs
- 1f ASTM D7033-14: Standard Practice for Establishing Design Capacities for Oriented Strand Board (OSB) Wood-Based Structural-Use Panels
- 1g ASTM D5456-18: Standard Specification for Evaluation of Structural Composite Lumber Products
- 1h ASTM D1038-11: Standard Terminology Relating to Veneer and Plywood
- 1i CSA O118.1-08 (R2013): Western Red Cedar Shakes and Shingles

Non-Applicable Products

Products excluded from the scope of this PCR include:

- Treated Wood
 - Covered under Product Category Rules for North American Pressure-treated Wood Products by ASTM and ICC Evaluation Service (ASTM/ICC-ES PCR 2016v01).
- Furniture

- Covered under Product Category Rule for Environmental Product Declarations: BIFMA PCR for Office Workspace Products UNCPC 3814. NSF, August 2020.
- Casegoods
 - Covered under Product Category Rule for Environmental Product Declarations: BIFMA PCR for Storage UNCPC 3812. NSF, June 2019.
- Wood pallets
 - Covered under Product Category Rules (PCR) Guidance for Wood Pallets. Standard 10003, Edition. 1. UL Environment, June 2019.
- Floor coverings
 - Covered under Product Category Rules (PCR) Guidance for Building-Related Products and Services Part B: Flooring EPD Requirements. Standard 10010-7, Edition 1. UL Environment, September 2018.

NOTE: This PCR may be used for wood feedstock used in these products.

System Boundary

The system boundary for EPDs created using this PCR is either cradle to gate (modules A1-A3), cradle to gate with options (modules A1-A3, optional modules A4, A5, B2, and/or C1-C4), or cradle to grave (modules A1-C4). See Part A, Section 2.8 for further discussion of the required and optional information modules included in each EPD type. Module D is not a life cycle stage like the information modules A1 to C4 and is outside the system boundary of the studied product system and construction works system. Supplementary environmental information may be provided in Module D that addresses potential loads and benefits beyond the product system boundary.

At this time, there is no industry consensus for assumptions behind the reported scenarios for information modules A4, A5, B2, or C1 – C4 across each of the subcategories of wood products included in this PCR.

The EPD requirements include:

- Requirements of the ISO 21930:2017 standard
- Requirements of the EN 15804 standard for consistency between declarations in Europe and the United States.
- The calculation rules for the Life Cycle Assessment and Requirements on the Project Report are specified in a separate document as Part A of the Product Category Rules, available at <https://ul.com/offering/product-category-rules-pcrs>. At the time of writing this document, version 3.2 is the most current.