Product Category Rules (PCR) for Building-Related Products and Services Part B: Builders Hardware EPD Requirements, UL PCR 10010–13

Second Version, Published TBD 2025

Summary of Topics

This is the Second Edition of the Product Category Rules (PCR) for Building-Related Products and Services Part B: Builders Hardware EPD Requirements, UL 10010–13, dated XX.XX.2025.
The First Edition of the Part B: Builders Hardware EPD Requirements, UL 10010–13 was published on November 15, 2019.

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UL LLC

Tracking of versions

Version	Comments	History
1.0	Creation of PCR Part B for Builders Hardware Products to conform with ISO 21930: 2017 and UL PCR Part A v3.2 Dec 2018. This PCR has been updated to align with international standards with the intent of allowing manufacturers to create EPDs which are global in scope.	November 15, 2019
2.0	Update of PCR Part B for Builders Hardware Products due to expiration of Version 1.0. Updated for compliance with UL PCR Part A v4.0 2022 and corrected any outdated references.	TBD

Detailed changes are listed in Section 8. This PCR is valid for a period of five (5) years, set to expire in TBD.

Contents

I. Background Information and Acknowledgements

This sub-category Product Category Rules (PCR), e.g. Part B was developed to address the product specific rules for the creation of Environmental Product Declarations (EPD) for “Builders Hardware” and includes all commercially available products under the ANSI/BHMA A156 series of standards except those listed as “Non-Applicable Products”, collectively referenced throughout this PCR as “Builders Hardware”. When used to self-reference this document, “PCR” refers to “sub-category PCR.”

Other PCRs and documents considered in the development of this PCR update include:

- Part A: Life Cycle Assessment Calculation Rules and Report Requirements UL Solutions March 2022, version 4.0).
- ISO 21930 2017 - Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services.
- EN 15804+A2:2019 - Sustainability of construction works - Environmental Product Declarations - Core rules for the product category of construction product.
- PCR Guidance-Texts for Building-Related Products and Services, From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU), Part B: Requirements on the EPD for locks and fittings, July 2013.
- Life Cycle Assessment for ASSA ABLOY Corbin Russwin CL3300 Series Lock. ThinkStep, May 2015.

This PCR assumes a 75 year building service life to be consistent with ASHRAE 189.1:2020, Section 9.5.2.2.

Interested Parties

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

Trade associations

- Builders Hardware Manufacturing Association (BHMA)

Governance

There are a number of representatives of building hardware manufacturers who participated in the creation of this Product Category Rule (“PCR”) for Builders Hardware, including the Builders Hardware Manufacturing Association (BHMA). These parties represent a majority of the companies in their particular sector of the Builders Hardware industry. Moreover, the manufacturing parties participating in the PCR update represent the vast majority of the building hardware systems sold in North America in the product categories included in this PCR. 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 Builders Hardware industry is represented in the effort to renew the PCR for Builders Hardware products.

In the development of this document, Part B, participants are responsible for ensuring alignment with Part A and conformance with the scoped standards: ISO 21930, EN 15804+A2, and ISO 14025.

Involvement of Interested Parties

UL Solutions was responsible for gauging the interest of the industry to maintain this PCR and to determine if any changes to the content of the PCR were necessary. After no comments were received during the extended call for public feedback, it was determined that no significant changes to the PCR were necessary. The PCR was then updated by UL to correct any outdated references and to be in compliance with UL PCR Part A v4.0. The updated PCR then went through a second round of public comments and a panel review prior to publication.

BHMA informed their memberships of the PCR update through their regularly scheduled association committee meetings, newsletters, e-mail messages, and similar methods of communication..

Update Process

The PCR is valid for a duration of five (5) years from the publication date, at which time it may be revised at the request of industry stakeholders. The PCR may be revised before the five-year date if the following occurs in the industry:

- The industry desires an updated PCR and/or-
- Core governing standards ISO 14040, 14044, 14025, 21930, or EN 15804 are updated with substantial material changes

Note: When the PCR is updated, the Program Operator shall communicate with the original committee members, any new EPD participants, and initiate a new public call for interested parties.

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 Solutions. 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.

Review

The review process of this Part B PCR included a review through public consultation in TBD (this is the second round of public comments that has not yet taken place) and a panel review, comprised of the following individuals:

Daniel Picard	**Jim Mellentine**	**Chair: Lindita Bushi**
ASSA ABLOY Openings Solutions	**Ramboll**	**Athena Sustainable Materials Institute**

II. Scope

This document contains the Product Category Rule (PCR) requirements for Builder Hardware System Product Environmental Product Declarations (EPDs) published in coordination 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 Solution'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+A2, and ISO 14025 sustainability standards for EPD reporting in addition to the US Green Building Council PCR Guidance.

This PCR has been developed to align with international standards with the intent of allowing manufacturers to create EPDs which are global in scope.

General Guidance

The scope of this PCR applies to the product group “Builders Hardware” and includes a collection of products that are used to secure, control access, control motion, protect openings from damage, provide safe passage to users, seal, and provide functional or non-functional decorative elements allowing code-compliant solutions for swing- and sliding-door openings in buildings. A sub-category of Builders Hardware also addresses the needs of cabinet hardware. The following list includes 31 product categories and their corresponding reference standard covered under the reporting scope of this PCR.

TABLE 1. BUILDERS HARDWARE PRODUCT SUBCATEGORIES, REFERENCE STANDARDS AND CSI CODES

Builders Hardware product sub-category	Reference standard	CSI code
Butts & Hinges	ANSI/BHMA A156.1-2021	08 71 00
Locks and Latches	ANSI/BHMA A156.2-2022	08 71 00
Exit Devices	ANSI/BHMA A156.3-2025	08 71 00
Door Closers and Pivots	ANSI/BHMA A156.4-2024	08 71 00
Cylinders and Input Devices for Locks	ANSI/BHMA A156.5-2020	08 71 00 (or 28 15 XX for card readers, etc.)
Architectural Door Trim	ANSI/BHMA A156.6-2021	08 71 00
Door Controls - Overhead Stops and Holders	ANSI/BHMA A156.8-2021	08 71 00
Cabinet Hardware	ANSI/BHMA A156.9-2020	06 41 93
Cabinet Locks	ANSI/BHMA A156.11-2024	06 41 93

Interconnected Locks	ANSI/BHMA A156.12-2022	08 71 00
Mortise Locks	ANSI/BHMA A156.13-2022	08 71 00
Sliding and Folding Door Hardware	ANSI/BHMA A156.14-2024	08 71 00
Release Devices: Closer Holder, Electromagnetic and Electromechanical	ANSI/BHMA A156.15-2021	08 71 00 or 28 15 15
Auxiliary Hardware	ANSI/BHMA A156.16-2023	08 71 00
Self-Closing Hinges & Pivots	ANSI/BHMA A156.17-2025	08 71 00
Strap and Tee Hinges and Hasps	ANSI/BHMA A156.20-2021	08 71 00
Thresholds	ANSI/BHMA A156.21-2025	08 71 00
Door Gasketing	ANSI/BHMA A156.22-2021	08 71 00
Electromagnetic Locks	ANSI/BHMA A156.23-2022	08 71 00 or 28 15 15
Delayed Egress Locking Systems	ANSI/BHMA A156.24-2022	08 71 00 or 28 15 17
Electrified Locking Devices	ANSI/BHMA A156.25-2023	08 71 00 or 28 15 15
Continuous Hinges	ANSI/BHMA A156.26-2021	08 71 00
Exit Locks, Exit Locks with Exit Alarms, Exit Alarms, Alarms for Exit Devices	ANSI/BHMA A156.29-2022	08 71 00
High Security Cylinders	ANSI/BHMA A156.30-2020	08 71 53
Electric Strikes and Frame Mounted Actuators	ANSI/BHMA A156.31-2024	08 71 00 or 28 15 15
Internally Powered Architectural Hardware Devices	ANSI/BHMA A156.33	28 15 15
Auxiliary Locks	ANSI/BHMA A156.36-2020	08 71 00
Multipoint Locks	ANSI/BHMA A156.37-2020	08 71 00
Residential Locksets and Latches	ANSI/BHMA A156.39-2025	08 71 00
Residential Deadbolts	ANSI/BHMA A156.40-2025	08 71 00
Integrated Sliding Door Opening Assemblies	ANSI/BHMA A156.43-2023	08 71 00
Hardware for Architectural Glass Openings	ANSI/BHMA A156.44-2021	08 71 00

Non-Applicable Products

Products that may provide the same function in a different application are not within the scope of this PCR. These excluded products are:

- ANSI/BHMA A156.10 – Power Operated Pedestrian Doors
- ANSI/BHMA A156.18 – Materials and Finishes
- ANSI/BHMA A156.27 – Power and Manual Operated Revolving Pedestrian Doors
- ANSI/BHMA A156.28 – Mechanical Keying Systems
- ANSI/BHMA A156.32 – Integrated Swinging Door Opening Assemblies
- ANSI/BHMA A156.41 – Single Motion to Egress

System Boundary

The system boundary for EPDs created using this PCR is either cradle to gate with end of life, cradle to gate with options, or cradle to grave. Cradle-to-grave EPDs (A1 to C4) are intended for BtoB and/or BtoC communications. The rest of EPDs are intended for BtoB communication. BtoB and BtoC stand for “business to business” and “business to consumer”, respectively (ISO 14025, Clause 9).

At this time, there is no industry consensus for assumptions behind the reported scenarios for information modules A4, A5, B1 – B7, or C1 – C4 across each of the subcategories of products included in this PCR.

The EPD requirements include:

- ISO 21930:2017 standard
- EN 15804+A2 standard (optional)
- UL Solutions General Program Instructions v 2.7, March 2022 (available upon request)
- The calculation rules for the Life Cycle Assessment and Requirements on the Project Report are specified in a separate document as UL Part A PCR v4.0 March 2022

III. Industry-Average EPD Requirements

UL PCR Part A contains guidance for the development of industry-average EPDs. The guidance within this document should be used in addition to the requirements listed in UL Part A.

Industry-Average EPD Scope
The products represented within a single industry-average EPD created using this PCR are limited to the primary materials defined in the product specification standards in Table 1 that characterize the specific product in commerce.

Involvement of Interested Parties

A call for involvement of interested parties in the creation of an industry-average EPD shall be published in at least one industry trade publication. At a minimum, at least three (3) different manufacturing locations from no less than three (3) companies should be involved and represented in an industry-average EPD. The method for determining representativeness shall be justified and described per the requirements listed in Section 2.3.

Industry-Average EPD Participation

A manufacturer qualifies for participation in an industry-average EPD created using this PCR if the manufacturer provides LCA data used to calculate the EPD average.

Retroactive participation:

When determining a manufacturer's participation eligibility, the EPD Program Operator shall follow the rules and recommendations of the primary sponsor(s) of the industry average EPD and participating manufacturers unless the Program Operator has information to the contrary, in which case the Program Operator, LCA practitioner, primary sponsor of the industry average EPD, and manufacturer shall confer in an effort to reach consensus.

Pending all criteria set forth by the primary sponsor of the industry average EPD are met, a manufacturer desiring retroactive inclusion in the industry average EPD shall provide manufacturing and product data information of the same representativeness submitted in the original industry average EPD to the LCA practitioner. The LCA practitioner will then recommend to the Program Operator a determination for inclusion in the industry average on the basis of results falling within a reasonable range for any impact category. The maximum and minimum should be reported in the LCA background report for each impact category based on the highest and lowest impact product or facility within the original industry-wide LCA.

Governance

An industry organization, such as a trade association, shall inform possible industry participants through association meetings, newsletters, e-mail messages, and similar types of outreach, including public notices in the trade press publications. Confidential business information shall be collected by a third party. Data from the third party shall be provided to the facilitator as aggregated data with no trace to the original source of data.

The development of an industry-average EPD and or update of an EPD should involve a series of meetings and exchanges in which all participants are invited and kept apprised of the developments. Notices of these meetings should be given to all possible participants regardless of their commitment to active involvement. Minutes of meetings, along with meeting notices, should be preserved as documentation of the process and due diligence observed in the creation or renewal of the EPD.

Data Responsibility/Ownership

Trade associations that lead the development of industry-average EPDs may need to collect confidential business information from individual members. This data can include proprietary chemical formulations and processes or other confidential information. In this case, a designated third-party entity such as an LCA practitioner shall be identified as the "industry agent". The industry agent shall be responsible for activities including collection, secure storage and analysis of such data needed for the EPD development, and will preserve the privacy of individual company information while executing these duties.

Per ISO 21930 Section 5.4, 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 the PCR. Only the manufacturer or group of manufacturers is authorized to declare the environmental performance of the construction product using an EPD.

The group of manufacturers responsible for developing an industry-average EPD shall be responsible for, including but not limited to, ensuring industry-average EPD updates are made based on the most recent LCA modeling software version and impact assessment version available.

Industry-Average EPD Updates

Industry-average EPDs created using this PCR shall expire five (5) years after publication. An update to the existing EPD, or new EPD, may need to be developed prior to the five years if: 1) significant[1] changes have occurred in the manufacturing process; 2) new industry participants; 3) significant[2] changes or alterations in raw materials; 4) major regulatory changes that mandate or trigger changes to operational procedures[3]; or 5) major technological changes[4] would also justify creation of an updated EPD.

Additional companies may be added to an existing industry-average EPD at the scheduled review by submitting data required for retroactive participation. However, this shall not automatically trigger a recalculation of the industry average impacts.

[1] Here, significance refers to +10% changes to the total mass of inputs or outputs to the manufacturing process(es) in the form of raw materials, energy, and/or emissions
[2] Refers to +10% changes to the total mass of inputs in the form of raw materials
[3] E.g. Safe Drinking Water and Toxic Enforcement Act (Proposition 65), 1986
[4] E.g. Changes to chrome plating over copper processes, such as switching from hexavalent to trivalent chrome

1. Content of an EPD

EPD Program and Program Operator Name, Address, Logo, and Website	Program Operator Provided
General Program Instructions and Version Number	Program Operator Provided
Manufacturer Name and Address	
Declaration Number	Program Operator Provided
Declared Product & Functional Unit or Declared Unit	
Reference PCR and Version Number	
Description of product's intended application and use (as identified when determining Product RSL)	
Product RSL Description (if appl.)	
Markets of Applicability	
Date of Issue	Program Operator Provided
Period of Validity	Program Operator Provided
EPD Type	[Industry-average or product-specific]
Range of Dataset Variability	[Industry-average only; mean, median, standard deviation]
EPD Scope	[Cradle to gate with end of life, Cradle to gate with options (specify options), Cradle to grave]
Year(s) of reported manufacturer primary data	
LCA Software & Version Number	
LCI Database(s) & Version Number	
LCIA Methodology & Version Number	

The sub-category PCR review was conducted by:	Program Operator Provided Program Operator Provided Program Operator Provided
This declaration was independently verified in accordance with ISO 14025: 2006. The UL Solutions "Part A: Calculation Rules for the Life Cycle Assessment and Requirements on the Project Report," v4.0 (March 2022), based on ISO 21930:2017, serves as the core PCR, with additional considerations from CEN Norm EN 15804+A2 (2019) and the USGBC/UL Solutions Part A Enhancement (2017) ☐ INTERNAL ☐ EXTERNAL	Program Operator Provided
This life cycle assessment was conducted in accordance with ISO 14044 and the reference PCR by:	Program Operator Provided
This life cycle assessment was independently verified in accordance with ISO 14044 and the reference PCR by:	Program Operator Provided

LIMITATIONS

Environmental declarations from different programs (ISO 14025) 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 construction works level, and therefore EPDs may not be used for comparability purposes when not considering the construction works energy use phase as instructed under this PCR.

Full conformance with this PCR allows EPD comparability only when all stages of a life cycle have been considered. However, variations and deviations are possible. Example of variations: Different LCA software and background LCI datasets may lead to differences in results for upstream or downstream of the life cycle stages declared.

2. General Information

The comprehensive requirements for EPD content are specified in Part A, Section 7 and ISO 21930:2017, Section 9 (Clause 9). Below are additional requirements for EPD content specifically for this product category. These are to be used in conjunction with those requirements specified in Part A.

2.1. Description of Company/Organization

2.1.1. Industry Average EPD

The name of the sponsoring organization as well as participating manufacturers shall be provided.

2.1.2. Product Specific EPD

The name of the manufacturing entity(ies) as well as the place(s) of production shall be provided. General information about the manufacturing entity(ies) may be provided, such as the existence of quality systems or environmental management systems, according to ISO 14001 or any other environmental management system in place.

2.2. Product Description

A narrative description of the product shall be provided that enables clear identification of the product. This description will include:

2.2.1 Product Identification

The declared products shall be identified by brand name(s), by material type(s), by production code(s) (if applicable), and by simple visual representation, which may be by photograph or graphic illustration.

2.2.2 Product Specification

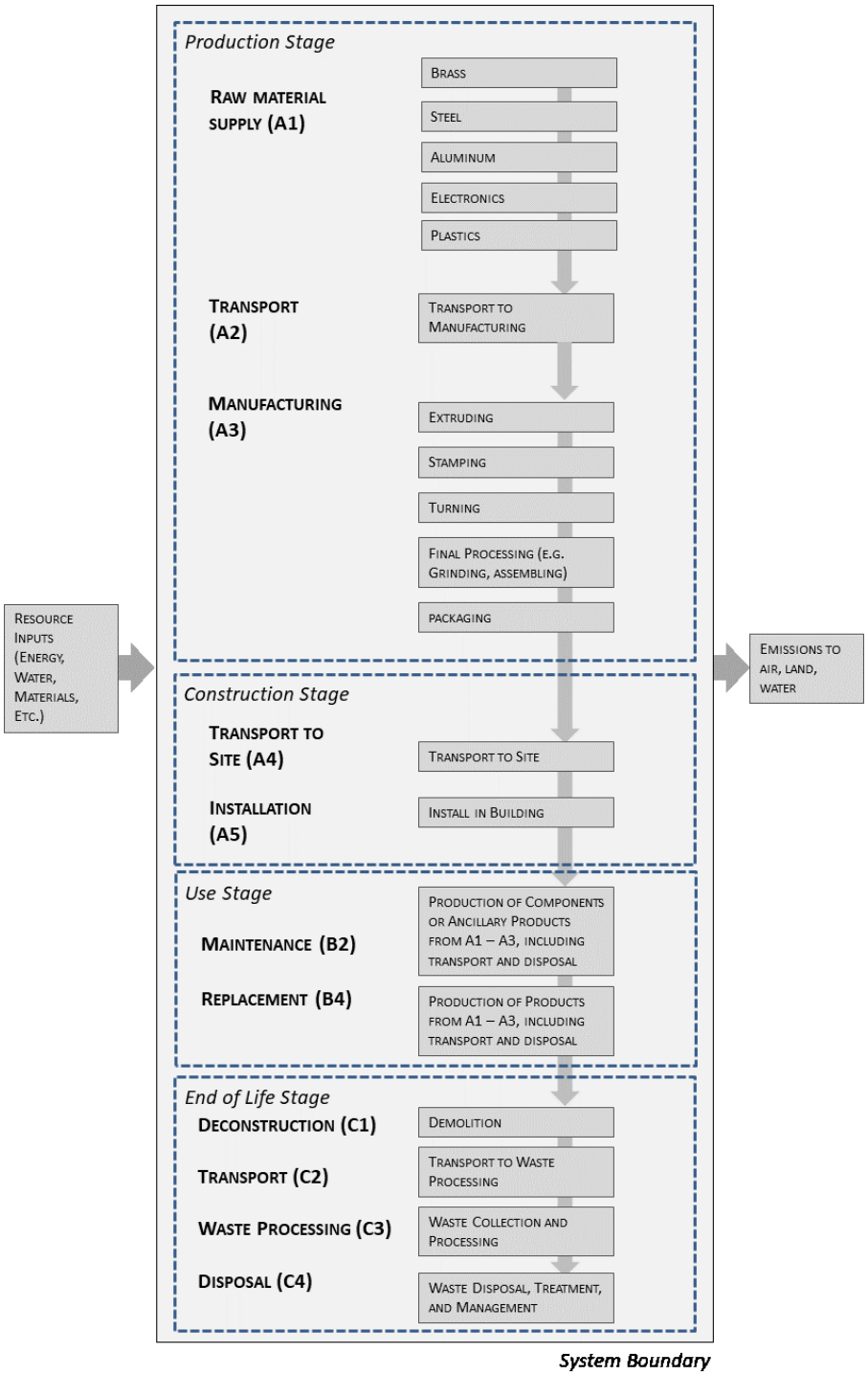
Similar products grouped and reported as an average product in the same EPD satisfying the variation criteria of Part A, Section 2.5 shall constitute an individual declared product. For each declared product, list the physical characteristics defined by the standards in Section 2.5 – in the form that the product would be installed – along with the reference to the test standard for each. Provide a description of the Builders Hardware product. Other relevant product specification values may be provided here.

The appropriate ASTM or CSA product specification shall be provided, including additional pertinent physical properties and technical information.

2.2.3 Flow Diagram

A graphical depiction of a flow diagram illustrating main production processes according to the scope of the declaration shall be included such as the examples in Figure 1.

FIGURE 1. EXAMPLE PRODUCT FLOW DIAGRAM[5]



[5] This is an example flow diagram and other product types covered in this PCR will differ. Null burden is assumed for B1, B3, B5, B6, and B7 in this example.

2.3. PRODUCT AVERAGE

2.3.1 Industry-Average EPD (if relevant)

The method for creating an industry-average EPD shall be described per Part A, Section 2.5.1, with additional requirements as described in Section III.

2.3.2 Product Specific EPD

The method for creating a company specific individual product/product group EPD shall be described, including the method for determining a weighted average across products based on production volume as described in Part A, Section 2.5.2.

2.4. APPLICATION

The designated applications for the referenced product(s) shall be specified. The applications of the declared product(s) shall be described.

2.5. MATERIAL COMPOSITION

The material composition of Builders Hardware products shall be disclosed and will include components as percentages or ranges of percentages of total mass as required by product Safety Data Sheet (SDS) rules, if relevant.

Statements of material non-inclusion, such as "… is free of …" shall not be used.

Regulated Hazardous substances and dangerous substances shall be reported per Part A, Section 4.11.

With the possible exception of the Safe Drinking Water and Toxic Enforcement Act (Proposition 65) in CA (1986), there are no testing and reporting requirements on the release of dangerous substances during the use phase of Builder's Hardware products.

Note: This disclosure is intended to enable the user of the EPD to understand the composition of the product in delivery condition and support a safe and effective installation, use and disposal of the product. With appropriate justification, this requirement does not apply to confidential or proprietary information relating to materials and substances that apply due to a competitive business environment or covered by intellectual property rights or similar legal restrictions. It also might not be appropriate for information concerning intangible products.

2.6. TECHNICAL REQUIREMENTS

A listing of all standards required for the specification of the declared product shall be provided. A listing of all standards required for the testing, evaluation, and approval of the declared product and its application in building assemblies for building code and other regulation compliance shall also be provided and quoted as shown in Section 2.6.

Note: Compliance with model building codes does not always ensure compliance with state or local building codes, which may be amended versions of these model codes. Always check with local building code officials to confirm compliance.

The final evaluation report/certification/registration is available at: Spot.ul.com

2.7. PROPERTIES OF DECLARED PRODUCT AS SHIPPED

The dimensions/quantities of the declared product(s) as shipped by the manufacturer shall be indicated.

3. Methodological Framework

The following items shall be specified: the type of EPD with respect to life cycle stages, and the life cycle stages covered and not covered (i.e. cradle to gate with end of life, cradle to gate with options, including modules A1-A5 and C1-C4, or cradle-to-grave).

The reference conditions for achieving the declared technical and functional performance and the Reference Service Life (RSL) shall be included, per Part A, Section 2.8.2.

3.1. Declared Unit

For EPDs not covering the complete life cycle, e.g. leaving out the use stage, a declared unit is defined. A declared unit shall be applied if the precise function of the product is not stated or not known. Conversion factors (e.g. density, thickness, surface area etc.) shall be provided in order to allow the users to conduct further calculations (e.g. transport impacts, energy simulations). The declared unit shall be one (1) product unit. A weighted average mass or other applicable aspects of the product shall be stated when the EPD deals with a generic or representative product group. The weights shall reflect the relative production volumes for the relevant materials.

3.2. Functional Unit

For EPDs covering the complete life cycle, a functional unit shall be defined based on the functional use or performance characteristics of the product integrated into a building or other type of construction in the use phase. A product unit is defined as the set of fewest elements, together with the fasteners required to affix the product to the building, which comprise one complete Builders Hardware product. More than one unit may be required in use to perform the required function(s), but less than one unit cannot perform the required function(s). Explanation of the selected functional unit shall be stated clearly, including the reference service life, installation methods and all ancillary materials such as, but not limited to, fasteners and adhesives.

The functional unit of a Builders Hardware product must be defined on a case-by-case basis. For example, where the product is a door hinge, the function may be defined as “securing a North American standard 3’x7’ door, installed in a North American standard building with an Estimated Service Life of 75 years, with selected Builders Hardware hinges having a Reference Service Life of 25 years.

Typical installed usage of the products listed in Table 2 is for a standard 3’x7’ single-leaf door; for Sliding and Folding Door Hardware or Integrated Sliding Door Opening Assemblies, refer to Table 2.The manufacturer of the Builders Hardware product must complete Table 3.The mass to achieve the functional or declared unit shall be indicated in Table 3 as declared.

Table 2. Builders Hardware Product Subcategories and Declared Units[6,7]

Builders Hardware product sub-category	Reference standard	Declared Unit	Comments supporting definition of Reference Flow (Reference Unit) for a standard 3’x7’ single-leaf door application
Butts & Hinges	ANSI/BHMA A156.1-2021	1 Unit	Typical usage is 3 Units per standard door leaf.
Locks and Latches	ANSI/BHMA A156.2-2022	1 Unit	Typical usage is one Unit per standard door leaf.
Exit Devices	ANSI/BHMA A156.3-2025	1 Unit	Typical usage is one Unit per standard door leaf. This subcategory does contain some products besides exit devices that could be used in addition to exit devices so that there could be more than one Unit per door leaf or opening. These other products would still be declared on a Units basis. *Specify length per Unit and per door opening, in meters.*

Door Closers and Pivots	ANSI/BHMA A156.4-2024	1 Unit	Typical usage is one Unit per standard door leaf.
Cylinders and Input Devices for Locks	ANSI/BHMA A156.5-2020	1 Unit	Typical usage is one Unit per standard door leaf.
Architectural Door Trim	ANSI/BHMA A156.6-2021	1 Unit	One or more Units per standard door leaf. *Specify length and width per Unit and per door opening, in meters*.
Door Controls - Overhead Stops and Holders	ANSI/BHMA A156.8-2021	1 Unit	Typical usage is one Unit per standard door leaf.
Cabinet Hardware	ANSI/BHMA A156.9-2020	1 Unit	Specify the number of Units per cabinet door or per cabinet shelf, or per other cabinet element.
Cabinet Locks	ANSI/BHMA A156.11-2024	1 Unit	Specify the number of Units per cabinet door or per other cabinet lockable element.
Interconnected Locks	ANSI/BHMA A156.12-2022	1 Unit	Typical usage is one Unit per standard door leaf.
Mortise Locks	ANSI/BHMA A156.13-2022	1 Unit	Typical usage is one Unit per standard door leaf.
Sliding and Folding Door Hardware	ANSI/BHMA A156.14-2024	1 Unit	Typical usage is one Unit per standard 6'0" x 6'8".
Release Devices: Closer Holder, Electromagnetic and Electromechanical	ANSI/BHMA A156.15-2021	1 Unit	Typical usage is one Unit per standard door leaf.
Auxiliary Hardware	ANSI/BHMA A156.16-2023	1 Unit	Products in this sub-category are sold per Unit. More than one Unit may be used per standard door leaf, standard door opening, or cabinet element. Some components are used in applications not associated with door openings or cabinets. These external applications are not covered by this PCR.
Self-Closing Hinges & Pivots	ANSI/BHMA A156.17-2025	1 Unit	Typical usage is 3 Units per standard door leaf.
Strap and Tee Hinges and Hasps	ANSI/BHMA A156.20-2021	1 Unit	Typical usage is 3 Units per standard door leaf.
Thresholds	ANSI/BHMA A156.21-2025	1 Unit	Specify length in meters.
Door Gasketing	ANSI/BHMA A156.22-2021	1 Unit	Specify length in meters.
Electromagnetic Locks	ANSI/BHMA A156.23-2022	1 Unit	Typical usage is one Unit per standard door leaf.
Delayed Egress Locking Systems	ANSI/BHMA A156.24-2022	1 Unit	Typical usage is one Unit per standard door leaf.

Electrified Locking Devices	ANSI/BHMA A156.25-2023	1 Unit	Products complying to this standard typically must comply with other standards too. Typical usage is one Unit per standard door leaf.
Continuous Hinges	ANSI/BHMA A156.26-2021	1 Unit	One Unit is used per door leaf. *Specify length in meters*
Exit Locks, Exit Locks with Exit Alarms, Exit Alarms, Alarms for Exit Devices	ANSI/BHMA A156.29-2022	1 Unit	Typical usage is one Unit per standard door leaf.
High Security Cylinders	ANSI/BHMA A156.30-2020	1 Unit	Typical usage is one Unit per standard door leaf.
Electric Strikes and Frame Mounted Actuators	ANSI/BHMA A156.31-2024	1 Unit	Typical usage is one Unit per standard door leaf.
Internally Powered Architectural Hardware Devices	ANSI/BHMA A156.33	1 Unit	Typical usage is one Unit per standard door leaf.
Auxiliary Locks	ANSI/BHMA A156.36-2020	1 Unit	Typical usage is one Unit per standard door leaf.
Multipoint Locks	ANSI/BHMA A156.37-2020	1 Unit	Typical usage is one Unit per standard door leaf.
Residential Locksets and Latches	ANSI/BHMA A156.39-2025	1 Unit	Typical usage is one Unit per standard door leaf.
Residential Deadbolts	ANSI/BHMA A156.40-2025	1 Unit	Typical usage is one Unit per standard door leaf.
Integrated Sliding Door Opening Assemblies	ANSI/BHMA A156.43-23	1 Unit	Typical usage is one Unit per manufacturer “nominal” door size to provide 36” clear opening width.
Hardware for Architectural Glass Openings	ANSI/BHMA A156.44-2021	1 Unit	Typical usage is one Unit per standard glass opening.

[6] For the Cabinet Hardware, Cabinet Locks, and Auxiliary (Cabinet) Hardware Builders Hardware sub-categories, column four, provides comments to support the definition of the specific reference unit, and is not related to a 3’x7’ door leaf or a 6’8” door opening.

[7] For the Sliding and Folding Door Hardware sub-category, column four provides comments to support the definition of the reference unit for a 6’8” door opening.

TABLE 3. FUNCTIONAL OR DECLARED UNIT PROPERTIES

Name	Value	Unit
Name of Functional or Declared Unit[1]		
Mass per Functional or Declared Unit, excluding fasteners		kg
Fasteners (pieces x mass/piece)[2]		kg

Note 1: Specify length per Unit, if applicable (see Table 2, column 4);
Note 2: Do not duplicate Fasteners in (optional) Module A5 (Installation)

3.3. SYSTEM BOUNDARY

The type of EPD shall be specified as either cradle to gate with end of life, cradle to gate with options, or cradle to grave. The modules considered in the LCA shall be described in brief as per “System boundaries” outlined in Part A, Section 2.8. It should be apparent as to what processes are considered in what modules per the module descriptions in Part A, Section 2.8. Any relevant aspects or impacts not included in an information module shall be supported with relevant additional environmental information and the omissions shall be justified. Module D shall be reported separately if included in the EPD.

At this time, there is no industry consensus for assumptions behind the reported scenarios for information modules A4, A5, B1 – B7, or C1 – C4 across each of the subcategories of products included in this PCR.
The inclusion of capital goods and infrastructure flows shall conform with Part A, Section 2.9. If included, the LCA report should specify lifetimes of capital goods and infrastructure. The impact burden from capital goods and infrastructure shall be allocated to the product(s) in the LCA by either a) proportional to the specified lifetime of the asset, or b) proportional to the production output of the asset. Any deviation shall be explicitly specified and justified.

3.4. PRODUCT SPECIFIC CALCULATIONS FOR USE PHASE (MODULES B1-B7)

Use-stage environmental impacts of Builders Hardware products during building operations depend on product maintenance. Guidance for determining use phase impacts should be included in this section.

3.4.1. PRODUCT MAINTENANCE

Information on maintenance shall be provided based on the manufacturer’s recommendations.

3.5. REFERENCE SERVICE LIFE AND ESTIMATED BUILDING SERVICE LIFE

The reference service life (RSL) and building estimated service life shall be indicated according to Part A, Section 2.8.2. For an average product with different RSLs, a weighted-average RSL shall be estimated based on annual production.

In the absence of primary data, building hardware products shall be assumed to have a 25 year RSL.

The assumptions upon which the designated RSL is based and for which the RSL exclusively applies shall be provided in Section 4, **Table 7**. Influences on ageing, when applied, shall be in accordance with the state of the art.

3.6. ALLOCATION

Part A, Section 3.3 shall be used as the basis for allocation decisions, and mass should be used as the primary basis for co-product allocation in this Part B. Allocation methods deemed more appropriate than on the basis of mass may be used but only when justified. The allocations of relevance for calculation (appropriation of impacts across various products) shall be indicated, at least:

- Allocation in the use of recycled and/or secondary raw materials
- Allocation of energy, ancillary and operating materials used for individual products in a factory

whereby reference shall be made to the modules in which the allocations are performed.

3.7. CUT-OFF RULES

Cut-off rules as specified per the Part A, Section 2.9 shall be used and documented. All known mass and energy flows shall be reported. No known flows should be deliberately excluded.

3.8. DATA SOURCES

Data sources shall be documented per Part A, Section 3.1.

3.9. DATA QUALITY

An evaluation shall be provided regarding data quality, including temporal, geographical, technological

representativeness, and completeness and shall follow the requirements outlined in Part A, Section 3.1.1.

3.10. PERIOD UNDER REVIEW

The period under review and ensuing averages shall be documented.

3.11. COMPARABILITY AND BENCHMARKING

Comparison of EPD results between non-competitive products may be included in this section per the requirements in Part A, Section 10.

3.12. ESTIMATES AND ASSUMPTIONS

Key assumptions and estimates for interpretation of the Life Cycle Assessment should be referred to here, provided that they are not addressed elsewhere in this PCR.

Transport, installation, and deconstruction procedures are common to all products within the category. In the absence of primary data, the following assumptions should be used for products sold in North America. Any deviations from these assumptions (e.g. different geographies) shall be justified and explained.

TABLE 4. TRANSPORT, INSTALLATION, AND DECONSTRUCTION PROCEDURES[8]

Product transport from point of manufacturing to building site	Product transport from building site to waste processing	Installation & deconstruction procedures
Mode: Diesel-powered truck/trailer Distance: 1000 km	Mode: Diesel-powered truck/trailer Distance: 200 km	Manual (no operational energy use)

Operational energy use in externally powered Builder's Hardware products shall follow the calculation outlined below. Energy consumption shall be accounted for in each of the three modes of typical operation of the locking mechanism:

- NSME = Non-Secure Mode Energy (energy consumption that occurs when the device is in the un-locked state)
- SME = Secure Mode Energy (energy consumption that occurs when the device is in the locked state)
- AME = Actuation Mode Energy (energy consumption that occurs upon presentation of a credential, upon receipt of a remotely generated unlock signal or upon transition from the locked to unlocked state)

Operational energy consumption shall reflect real-use power-consuming operations that include primary and secondary functions, function actuations, standby, and transitions. Energy use shall be reported in units of kilowatt hours (kWh) consumed over the products reference service life (RSL), assuming 24 hours of operation per day.

$$OperationalEnergy(kWh) = \frac{((P_{NSME} \times T_{NSME}) + (P_{SME} \times T_{SME}) + (P_{AME} \times T_{AME}))}{1000}$$

P_{NSME} = The energy use in watts over a one-hour period when the unit is set to Unlocked or Non-Secure mode.
P_{SME} = The energy use in watts over a one-hour period when the unit is set to Locked or Secure mode.

P_{AME} = The energy use in watts over a one-hour period when the unit is set to its expected normal operating mode (either Locked/Secure or Unlocked/Secure) and actuated the number of times shown in table 1.

TABLE 4. Operational Energy Use (B6) Traffic Assumptions

Use	Non-Secure Mode (NSME)	Secure Mode (SME)	Actuation Mode (AME)	
	T_{NSME}	T_{SME}	T_{AME}	Actuations per Hour
High Traffic (961-1920 openings/day)	16	0	8	80
Medium Traffic (241-960 openings/day)	8	8	8	40
Low Traffic (0-240 openings/day)	0	16	8	10

Example:

Electric strike, Fail Secure per rating draws 0.45A at 12 VDC. When in secure mode, no power is consumed. Evaluated in a High Traffic use case.

P_{NSME} = 5.4W over a one-hour measurement cycle.

P_{SME} = 0W over a one-hour measurement cycle.

P_{AME} = 2.4W over a one-hour measurement cycle with 80 actuations performed.

T_{NSME}= 16 hours per Table 1.

T_{SME}= 0 hours per Table 1.

T_{AME}= 8 hours per Table 1.

$$OperationalEnergy(kWh) = \frac{(5.4W \times 16hours) + (0W \times 0hours) + (2.4W \times 8hours)}{1000} \Longrightarrow 0.106kWh$$

3.13. UNITS

SI units are required for all LCA results. Other units commonly used in a regional market may be optionally included in addition to the required SI units.

4. Technical Information and Scenarios

The following information shall be reported for declared modules. Irrelevant or non-applicable modules and tables may be excluded in the EPD; additional information may also be listed if necessary

The following technical information is a basis for the declared modules or may be used for developing specific scenarios in the context of a building assessment if modules are not declared (MND).

Results reported in Table 8 through Table 11 shall be reported over the entire estimated building service life (ESL).

4.1. MANUFACTURING

The manufacturing process and locations shall be described and illustrated using a simple flow-chart. If the EPD applies to several locations, the production processes for all locations shall be described and reference to quality management systems may be included.

4.2. PACKAGING

Information on product-specific packaging: type, composition and possible reuse of packaging materials (paper, strapping, pallets, foils, drums, etc.) shall be included in this Section. The EPD shall describe specific packaging scenario assumptions, including disposition pathways for each packaging material by reuse, recycling, or landfill disposal based on packaging type.

In the absence of specific primary data, the data assumptions from Part A, Section 2.8.5, Table 3 shall be used.

In the case of reusable packaging designed to last for multiple reuse cycles, one reuse shall be assumed in the absence of primary manufacturer data. At the end of its reuse cycle, reusable packaging shall be assumed to go to landfill.

4.3. TRANSPORTATION

The following information should be provided to specify any transport after the manufacturing gate: type of transport, type of vehicle, distance, type and amount of energy carrier.

For estimates and assumptions related to transportation to the building site (A4), see details in section 2.8.4.2 in Part A Version 4.

TABLE 5. TRANSPORT TO THE BUILDING SITE (A4)

Name	Value	Unit
Fuel type		
Liters of fuel		l/100km
Vehicle type		
Transport distance		km
Capacity utilization (including empty runs, specify whether mass or volume based)		%
Gross density of products transported		kg/m^3
Weight of products transported (if gross density not reported)		kg
Volume of products transported (if gross density not reported)		m^3
Capacity utilization volume factor (factor: =1 or <1 or ≥ 1 for compressed or nested packaging products)		-

[8] Based on industry data.

4.4. PRODUCT INSTALLATION

A description of the type of processing, machinery, tools, dust extraction equipment, ancillary materials, etc. to be used during installation and measures for reducing noise shall be included. Information on industrial and environmental protection may be included in this section.

Any waste treatment included within the system boundary of installation waste should be specified.

TABLE 6. INSTALLATION INTO THE BUILDING (A5)

Name	Value	Unit
Ancillary materials		kg
Net freshwater consumption specified by water source and fate (e.g., X m3 river water evaporated, X m3 city water disposed to sewer)		m^3
Other resources		kg
Electricity consumption		kWh
Other energy carriers		MJ
Product loss per functional unit		kg
Waste materials at the construction site before waste processing, generated by product installation		kg
Output materials resulting from on-site waste processing (specified by route; e.g. for recycling, energy recovery and/or disposal)		kg
Mass of packaging waste specified by type		kg
Biogenic carbon contained in packaging		kg CO_2
Direct emissions to ambient air, soil and water		kg
VOC emissions		µg/m3

Industry average scrap rates are currently not available, and industry has committed to develop values representative of practice in the field.

The VOC emissions shall be determined in accordance to “Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers- version 1.2” CA Specification 01350 (2017).

TABLE 7. REFERENCE SERVICE LIFE

A product’s RSL depends on the product properties and reference in-use conditions. These conditions shall be declared with a RSL and it shall be stated that the RSL only applies to these reference in-use conditions. The reference in-use conditions for achieving the declared technical and functional performance of the product and the declared RSL shall include the following, where relevant:

Name	Value	Unit
RSL		Years
Declared product properties (at the gate) and finishes, etc. e.g. The ANSI grade of the product (e.g. ANSI Grade 1, 2 or 3) based on the ANSI verified cycle count testing and the number of the cycles per grade; e.g. ANSI Grade 1; 1,000,000 cycles.		Units as appropriate
Design application parameters (if instructed by the manufacturer), including references to the appropriate practices and application codes)		Units as appropriate
An assumed quality of work, when installed in accordance with the manufacturer’s instructions		Units as appropriate
Outdoor environment, (if relevant for outdoor applications), e.g. weathering, pollutants, UV and wind exposure, building orientation, shading, temperature		Units as appropriate
Indoor environment, (if relevant for indoor applications), e.g. temperature, moisture, chemical exposure)		Units as appropriate
Use conditions, e.g. frequency of use, mechanical exposure. e.g. The number of cycles/per year for the selected product application, e.g., 40,000 cycles/year, which defines the reference set of in-use conditions for the RSL.		Units as appropriate
Maintenance, e.g. required frequency, type and quality of replacement components		Units as appropriate

4.5. USE

Any relevant information may be provided in this section regarding specific product use conditions and/or limitations relevant to product use, including a description of any maintenance, repair, replacement or refurbishment processes and/or a reference to where a description can be found. Refer to Section 2.8.4.3 in Part A Version 4**.** for optional reporting of energy savings during use.

TABLE 8. MAINTENANCE (B2)

Name	Value	Unit
Maintenance process information (cite source in report)		-
Maintenance cycle		Cycles/ RSL
Maintenance cycle		Cycles/ ESL
Net freshwater consumption specified by water source and fate (e.g., X m3 river water evaporated, X m3 city water disposed to sewer)		m^3
Ancillary materials specified by type (e.g. cleaning agent)		kg
Other resources		kg
Energy input, specified by activity, type and amount		kWh
Other energy carriers specified by type		kWh
Power output of equipment		kW
Waste materials from maintenance (specify materials)		kg
Direct emissions to ambient air, soil and water		kg
Further assumptions for scenario development (e.g. frequency and time period of use, number of occupants)		

TABLE 9. REPAIR (B3)

Name	Value	Unit
Repair process information (cite source in report)		-
Inspection process information (cite source in report)		-
Repair cycle		Cycles/ RSL
Repair cycle		Cycles/ ESL
Net freshwater consumption specified by water source and fate (e.g., X m3 river water evaporated, X m3 city water disposed to sewer)		m^3
Ancillary materials specified by type (e.g. cleaning agent)		kg
Energy input, specified by activity, type and amount		kWh
Waste materials from repair (specify materials)		kg
Direct emissions to ambient air, soil and water		kg
Further assumptions for scenario development (e.g. frequency and time period of use, number of occupants);		

REPLACEMENT (B4) / REFURBISHMENT (B5)

The number of replacements of product expected during the building ESL of 75 years shall be declared. Required or expected maintenance are to be modelled according to manufacturer's guidelines. Assumptions and key parameters shall be clearly stated and the manufacturer is to submit supporting documentation to justify the assumptions made.

If the RSL is less than the building's ESL of 75 years, the number of replacements that will be necessary to fulfil the required performance and functionality over the building ESL shall be identified.

Replacements should be rounded up to the nearest tenths of the ESL of the building; e.g., 1.47 rounded to 1.5.

TABLE 10. REPLACEMENT (B4)

Name	Value	Unit
Reference Service Life		Years
Replacement cycle		(ESL/RSL) - 1
Energy input, specified by activity, type and amount		kWh
Net freshwater consumption specified by water source and fate (e.g., X m3 river water evaporated, X m3 city water disposed to sewer)		m^3
Ancillary materials specified by type and amount (e.g. cleaning agent)		kg
Replacement of worn parts, specify parts/materials		kg
Direct emissions to ambient air, soil and water		kg
Further assumptions for scenario development, e.g. frequency and time period of use		As appropriate

TABLE 11. REFURBISHMENT (B5)

Name	Value	Unit
Refurbishment process description (cite source in report)		
Replacement cycle		Cycles/ RSL
Replacement cycle		Cycles/ ESL
Energy input, specified by activity, type and amount		kWh
Net freshwater consumption specified by water source and fate (e.g., X m3 river water evaporated, X m3 city water disposed to sewer)		m^3
Material input for refurbishment, including ancillary materials specified by type (e.g. cleaning agent)		kg
Waste material(s), specified by material		kg
Direct emissions to ambient air, soil and water		kg

Further assumptions for scenario development (e.g. frequency and time period of use, number of occupants);		

For estimates and assumptions related to operational energy use (B6), see details in section 2.8.4.4 in Part A Version 4

TABLE 12. OPERATIONAL ENERGY USE (B6) AND OPERATIONAL WATER USE (B7)

Name	Value	Unit
Net freshwater consumption specified by water source and fate (e.g., X m3 river water evaporated, X m3 city water disposed to sewer)		m^3
Ancillary materials		kg
Energy input, specified by activity, type and amount		kWh
Equipment power output		kW
Characteristic performance (e.g. energy efficiency, variation of performance with capacity utilization)		Units as appropriate
Direct emissions to ambient air, soil and water		kg
Further assumptions for scenario development (e.g. frequency and time period of use, number of occupants);		As appropriate

4.6. DISPOSAL

The possible disposal channels shall be indicated in accordance with disposal routes and waste classification referenced in Part A, Section 2.8.5 and 2.8.6.

TABLE 13. END OF LIFE (C1-C4)

Name		Value	Unit
Assumptions for scenario development (description of deconstruction, collection, recovery, disposal method and transportation)			
Collection process (specified by type)	Collected separately		kg
	Collected with mixed construction waste		kg
Recovery (specified by type)	Reuse		kg
	Recycling		kg
	Landfill		kg
	Incineration		kg
	Incineration with energy recovery		kg
	Energy conversion (specify efficiency rate)		
Disposal (specified by type)	Product or material for final deposition		kg
Removals of biogenic carbon (excluding packaging)			kg CO_2

4.7. RE-USE PHASE

The possibilities of re-use, recycling and energy recovery shall be described.

TABLE 14. REUSE, RECOVERY AND/OR RECYCLING POTENTIALS (D), RELEVANT SCENARIO INFORMATION

Name	Value	Unit
Net energy benefit from energy recovery from waste treatment declared as exported energy in C3 (R>0.6)		MJ
Net energy benefit from thermal energy due to treatment of waste declared as exported energy in C4 (R<0.6)		MJ
Net energy benefit from material flow declared in C3 for energy recovery		MJ
Process and conversion efficiencies		
Further assumptions for scenario development (e.g. further processing technologies, assumptions on correction factors);		

5. Environmental Indicators Derived from LCA

5.1. LCA Results from LCIA

In **Section 3.3** "Description of the system boundary modules," all declared modules shall be indicated with an "X".

Modules A1, A2, and A3 may be declared as one aggregated module A1-A3.

Per Part A, life cycle impact assessment (LCIA) results shall be declared using scientific notation with three significant digits (e.g. 1.23E-5 = 0.0000123) for each module. Uniform formatting shall be used for all indicator values.

- North America (Part A, Section 4.7, Table 9, TRACI indicators, IPCC 2013, and CML-baseline v4.7 August 2016)
- EU (Part A, Annex A)
- Rest of World (Part A, Section 4.9, Table 10, indicators as provided)

Table 15. Description of the System Boundary Modules

	PRODUCTION			CONSTRUCTION		USE							END OF LIFE				BENEFITS & LOADS BEYOND SYSTEM BOUNDARY	
	A1	A2	A3	A4	A5	B1	B2	B3	B4	B5	B6	B7	C1	C2	C3	C4	D	
EPD Type	Raw material supply	Transport	Manufacturing	Transport to site	Assembly/Install	Use	Maintenance	Repair	Replacement	Refurbishment	Operational Energy Use	Operational Water Use	Deconstruction	Transport	Waste processing	Disposal	Reuse, Recovery, Recycling Potential	Reference Service Life
Cradle to gate w/ EOL	*Required*			*Excluded*									*Required, Depending on Part A, Section 2.8.4.5*				*Optional*	Optional
Cradle to gate with options	*Required*			*Optional*		*Optional*							*Required, Depending on Part A, Section 2.8.4.5*				*Optional*	Optional
Cradle to grave	*Required*																*Optional*	Required
Declared Modules (Indicate with "X")																		

5.2. LCA Results from LCI

Results derived from the product LCI shall be reported as follows:

- Resource use indicators (Part A, Section 4.1, Table 6)
- Output flows and waste category indicators (Part A, Section 4.1.2, Table 7)
- Carbon emissions and removals (Part A, Section 4.6, Table 8)

LCI indicators for EU region can be found in Part A Annex A.

6. LCA: Interpretation

Interpretation requirements for the Project Report are provided in Part A, Section 5.

An interpretation shall be provided in the EPD which discusses the assumptions and limitations associated with the interpretation of results as declared in the EPD, both methodology and data related.

This interpretation shall also include a description of the time frame and/or variance of the LCIA results if the EPD is valid for several products. An illustration of the results with figures is recommended in the EPD, e.g. for the dominance analysis, the distribution of impacts across the modules, the CO_2-balance, etc. as appropriate for a reader's understanding of the environmental profile of the declared product.

7. Additional Environmental Information

7.1. Environment and Health During Manufacturing

Measures relating to environmental and health protection during the product manufacturing process extending beyond national guidelines (of the production country) may be described, e.g. reference to a product safety data sheet (SDS), description of Environmental Management Systems or similar, programs addressing air emissions, wastewater, noise, etc.

7.2. Environment and Health During Installation

Information should be provided in this section on the relationship between the product, the environment and health, including any possible harmful substances or emissions e.g. reference to a product safety data sheet (SDS). Any recommendations concerning cleaning, maintenance, etc. of the declared product should be listed in Section 4 “Technical information on scenarios”.

7.3. Extraordinary Effects

Fire

Information should be included on the product’s fire performance and possible impacts on the environment e.g. reaction-to-fire, other relevant fire tests as applicable, and emissions to air, including smoke toxicity.

Water

Information should be included on the product’s performance and possible impacts on the environment following unforeseeable influence of water, e.g. flooding.

Mechanical destruction

Information should be included on the product’s performance and possible impacts on the environment following unforeseeable mechanical destruction.

7.4. Delayed Emissions

If a manufacturer wishes to declare quantitative or qualitative information on delayed emissions used to calculate Global Warming Potential within the EPD, information may be provided here. See Part A, Section 4.4 for more information.

7.5. Environmental Activities and Certifications

Other environmental activities, such as participation in recycling or recovery programs along with the details of these programs and contact information, may be provided.

For certifications applied to the product and listed in the EPD, a statement shall be included on where an interested party can find details of the certification program.

7.7. FURTHER INFORMATION

A reference source for additional information may be provided here, e.g. homepage, reference source for safety data sheet. Additional environmental information may be provided here according to Part A, Section 4.10.

8. Supporting Documentation

The Project Report Content, Structure, and Accessibility requirements to support an EPD created using this document are provided in Part A, Section 2. Project Report elements include general information (Part A, Section 2.1), study goal (Part A, Section 2.2), study scope (Part A, Section 2.8), and the life cycle inventory analysis, impact assessment, and interpretation (Part A, Section 3, 4, and 5). Additionally, the Project Report shall include additional required supporting documentation specified in this sub-category Part B and according to Part A, Section 6.

If relevant to the scope of the declared product, or due to the product material composition, it is recommended to provide sufficient supporting documentation in the EPD and Project Report. When providing documentation, testing protocols and other relevant information shall be indicated. If supporting documentation is not provided, the reasons shall be indicated in the EPD and Project Report.

As a general rule, all statements shall be documented with measured data (presented by the corresponding test certificates). In the case of non-verifiable substances, the limit of detection shall be included in the declaration. Interpreting statements such as "… free of …" or "… are entirely harmless …" are not permissible.

Table 16. Detailed changes from PCR Version 1 made in creation of Version 2.

Name	Change	Page/ note
PCR Program Operator	UL Environment is now UL Solutions or UL LLC as referenced throughout the document	Throughout document
PCR Publisher	ULSE is the Non-Profit UL Entity that will publish the PCR	V2 only
Reference to UL Part A	Minor changes/ typos addressed to refer to v4 of the Part A PCR	Throughout document/ minor
Reference Standard	Minor changes to update reference standard numbers	Table 2, pp. 16
Section references	Call outs on pages 22 and 25 for reference changes (to section numbers)	Highlighted in yellow pp. 22 and 25
References were missing or outdated	Fixed reference data to ensure reference to document PCR	-

9. References

The literature referred to in the Environmental Product Declaration shall be quoted in full from the following sources. Standards and standards relating to evidence and/or technical features already fully quoted in the EPD do not need to be listed here. This Part B PCR document shall be referenced.

UL Solutions

UL Solutions General Program Instructions, March 2022, version 2.7.

PCR Part A: Life Cycle Assessment Calculation Rules and Report Requirements UL Solutions (March, 2022, version 4.0)

Sustainability Reporting Standards

EN 15804 + A2:2019, Sustainability of construction works. Environmental Product Declarations. Core rules for the product category of construction products.

ISO 14025: 2006 - Environmental labels and declarations — Type III environmental declarations — Principles and procedures

ISO 14040: 2006 - Environmental management – Life cycle assessment – Principles and framework

ISO 14044:2006 - Environmental management – Life cycle assessment – Requirements and guidelines

ISO 21930: 2017 - Sustainability in buildings and civil engineering works — Core rules for environmental product declarations of construction products and services

Testing and Classification References

Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers- version 1.2, January 2017.

Relevant Standards and SOPs

ASHRAE 189.1 2020 Standard for the Design of High-Performance Green Buildings. (https://www.ashrae.org/technical-resources/standards-and-guidelines/read-only-versions-of-ashrae-standards) Accessed 3 February 2025.

Environment Canada, National Pollutant Release Inventory (NPRI) (http://www.ec.gc.ca/inrp-npri/). Accessed 3 February 202517 October 2019.

EPCRA 313 Toxic Release Inventory Reporting (U.S.) (https://www.epa.gov/toxics-release-inventory-tri-program) Accessed 3 February 2025.

US EPA, ORD/NRMRL/Sustainable Technology Division, Systems Analysis Branch, SOP No. S-10637-OP-1-0- Tool for the Reduction and Assessment of Chemical and other Environmental Impacts (TRACI), Software Name and Version Number: TRACI version 2.1, USER'S MANUAL, 24 July, 2012

US: Resource Conservation and Recovery Act (RCRA), Clause C (https://www.epa.gov/rcra) Accessed 3 February 2025.

40 CFR 50 Protection of Environment - Part 50: National Primary and Secondary Ambient Air Quality Standards (U.S.) (https://www.epa.gov/criteria-air-pollutants/naaqs-table) Accessed 3 February 2025.

Clean Air Act (CAA) Section 112(r): Accidental Release Prevention/Public Management Rule (https://www.epa.gov/sites/production/files/2013-10/documents/caa112_rmp_factsheet.pdf) Accessed 3 February 2025.

CERCLA Hazardous Substances (U.S.) (https://www.epa.gov/epcra/epcracerclacaa-ss112r-consolidated-list-lists- march-2015-version) 3 February 2025.

OEHHA, California Office of Environmental Health Hazard Assessment. Safe Drinking Water and Toxic Enforcement Act

of 1986 (Proposition 65). (https://oehha.ca.gov/proposition-65) 3 February 2025.

U.S. Department of Labor, Occupational Safety & Health Administration (OSHA 1910.1200 Hazard Communication Standard—Toxic and Hazardous Substances (U.S) (http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=10099) 3 February 2025.

RELEVANT PCRS

Part B: Requirements on the EPD for Locks and Fittings. Institute of Construction and Environment e.V., Königswinter (July 2013, version 1.5)

ANSI STANDARDS

ANSI/BHMA A156.1-2021 Butts & Hinges
ANSI/BHMA A156.2-2022 Bored and Preassembled Locks and Latches
ANSI/BHMA A156.3-2025 Exit Devices
ANSI/BHMA A156.4-2024 Door Controls - Closers
ANSI/BHMA A156.5-2020 Cylinders and Input Devices for Locks
ANSI/BHMA A156.6-2021 Architectural Door Trim
ANSI/BHMA A156.8-2021 Door Controls - Overhead Stops and Holders
ANSI/BHMA A156.9-2020 Cabinet Hardware
ANSI/BHMA A156.11-2024 Cabinet Locks
ANSI/BHMA A156.12-2022 Interconnected Locks & Latches
ANSI/BHMA A156.13-2022 Mortise Locks & Latches
ANSI/BHMA A156.14-2024 Sliding and Folding Door Hardware
ANSI/BHMA A156.15-2021 Release Devices: Closer Holder, Electromagnetic and Electromechanical
ANSI/BHMA A156.16-2023 Auxiliary Hardware
ANSI/BHMA A156.17-2025 Self Closing Hinges & Pivots
ANSI/BHMA A156.20-2025 Strap and Tee Hinges and Hasps
ANSI/BHMA A156.21-2019 Thresholds
ANSI/BHMA A156.22-2021 Door Gasketing and Edge Seal Systems
ANSI/BHMA A156.23-2022 Electromagnetic Locks
ANSI/BHMA A156.24-2022 Delayed Egress Locking Systems
ANSI/BHMA A156.25-2023 Electrified Locking Devices
ANSI/BHMA A156.26-2021 Continuous Hinges
ANSI/BHMA A156.29-2022 Exit Locks, Exit Locks with Exit Alarms, Exit Alarms, Alarms for Exit Devices
ANSI/BHMA A156.30-2020 High Security Cylinders
ANSI/BHMA A156.33-2024 Internally Powered Architectural Hardware Devices
ANSI/BHMA A156.31-2024 Electric Strikes and Frame Mounted Actuators
ANSI/BHMA A156.36-2020 Auxiliary Locks
ANSI/BHMA A156.37-2020 Multipoint Locks
ANSI/BHMA A156.39-2025 Residential Locksets and Latches
ANSI/BHMA A156.40-2025 Residential Deadbolts
ANSI/BHMA A156.43-2023 Integrated Sliding Door Openings Assemblies
ANSI/BHMA A156.44-2021 Hardware for Architectural Glass Openings