Part B: Product group definition | Commercial lavatories | Part B #24-001

This Part B conforms to the ACLCA PCR Open Standard version 1.0 (May 2022) at the following level:
☒ 1 – Transparency ☐ 2 – Procurement ☐ 3 – Data source

Initiated by	TOTO USA - https://www.totousa.com/		
Working group members	Jim Mellentine, Thrive ESG (PCR committee chair) Fernando Fernandez, TOTO USA Gary Soe, TOTO USA Kyle Thompson, Plumbing Manufacturers International (PMI) Cambria McLeod, International Association of Plumbing and Mechanical Officials (IAPMO) Ben Perreault, Bradley Corporation Olivia Tsamparlis, Watts Water Riley Tesman, SCS Global Services Paul Sambanis, Sloan Tracy Sernau, Bobrick Washroom Equipment		
Public notices of development/ outreach	• Public notice on the Sustainable Minds website announcing the creation of a Part B on June 11, 2024: http://www.sustainableminds.com/transparency-report-program/part-b • Email blast on June 11, 2024 to mailing lists of LCA professionals, building and construction industry and trade associations, and manufacturers with published transparency documentation listed in the Transparency Catalog under the plumbing CSI MasterFormat Division (22 00 00), requesting participation on the PCR committee. • Email blast on August 27, 2024 to the same mailing lists requesting public comment.		
Non-participating parties	No interested parties were identified who did not participate in the working group.		
New Part B?	Yes	**Part B version number**	1.1
Publication date	October 7, 2024		
Validity period	10/07/2024 – 10/06/2029		
Expected renewal schedule	Sustainable Minds intends to notify the working group and post update/renewal information on its website approximately four months prior to expiration to determine update, extension, or expiration options for this Part B.		

Product group

Name	Commercial lavatories	**CSI MasterFormat® #**	22 42 16.13 22 42 33
Description	Commercial lavatories (including wash fountains) without a faucet or drain and commercial lavatory systems (including wash fountains) with one or more integrated faucets (metering, self-closing, or manual) and/or drains to supply the water volume and pressure necessary for proper function. Any parts/components not integrated and sold with the lavatory or wash fountain shall be excluded from the system boundary.		
Exclusions	This product group does not include: • Faucets that are sold without a lavatory (these are covered in the Sustainable Minds Part B for commercial/public metered and manual lavatory faucets) • Drains that are sold without a lavatory • Lavatories intended for use in a residential setting • Sinks intended for use outside a bathroom, toilet room, or bathing facility		
Geographic representativeness	North America		
Product-specific terms	Lavatory: a washbowl or basin used in a bathroom, toilet room, or bathing facility Lavatory system: A lavatory sold with additional components such as one or more faucets, valves, drains, soap dispensers, etc. The additional components may or may not be physically attached to the lavatory at the point of sale.		

Program operator responsibilities

Existing PCRs, EPDs, TRs, or LCAs	• This Part B shall be used in conjunction with the latest version of Sustainable Minds Part A: LCA calculation rules and report requirements (version 2023 at the time of publication of this Part B) • Existing guidance: Plumbing Manufacturers International, 2018. Product Category Rule (PCR) Guidance for Kitchen and Bath Vessel Fixtures v1.1 • Existing guidance: Plumbing Manufacturers International, 2018. Product Category Rule (PCR) Guidance for Kitchen and Bath Fixture Fittings v1.0 • Relevant study: Plumbing Manufacturers International, 2022. California Market Penetration of Water-Efficient Plumbing Products Study • Relevant PCR: UL Environment: Product Category Rules (PCR) Guidance for Building-Related Products and Services Part B: Kitchen and Bath Fixture Fittings and Accessory Products (Version 1.0) (see harmonization activities pursued) • Expired PCR: UL Environment: Product Category Rules (PCR) Guidance for Building-Related Products and Services Part B: Sanitary Ceramic EPD Requirements (Version 2.1) (expired Jan 31, 2023) • Underlying LCA: TOTO Sanitary Ceramic Products LCA Background Report (public version), September 2014, https://transparencycatalog.com/assets/uploads/files/TOTO_Sanitary_Ceramic_Products_LCA_Background_Report_public_version_TOTO_2014.pdf
Justification for new Part B if relevant non-expired PCR exists	Not applicable. At the time of publication of this Part B, an active PCR for commercial lavatories was not identified.
Harmonization activities pursued	Sustainable Minds announced the creation of this product group definition to other program operators, LCA analysts, and manufacturers via email, and posted an update on its website. An expired PCR for sanitary ceramics was found to include some product use information for a commercial lavatory, which also aligned with the PMI PCR Guidance. Sustainable Minds reached out to the program operator to inquire whether that PCR would be updated and whether we could harmonize so as not to overlap on the inclusion of commercial lavatories. During a discussion between UL and Sustainable Minds on June 25, 2024, both program operators aligned on their general intention not to overlap in PCR scope and agreed to create detailed tables showing where overlap was occurring and to prevent it going forward.

Functional performance

Standard/certification (most recent edition, conformance not required for PCR conformance)	**URL**
Functional performance – **ASME A112.18.1/CSA B125.1**	https://www.asme.org/codes-standards/find-codes-standards/plumbing-supply-fittings-(with-10-18-errata)/2018/pdf
Functional performance – **ASME A112.19.1/CSA B45.2-2024**	https://www.asme.org/codes-standards/find-codes-standards/enamelled-cast-iron-and-enamelled-steel-plumbing-fixtures/2024/nondrm-enabled-pdf
Functional performance – **ASME A112.19.2/CSA B45.1-2018**	https://www.asme.org/codes-standards/find-codes-standards/ceramic-plumbing-fixtures-(with-10-18-errata)/2018/nondrm-enabled-pdf
Functional performance – **ASME A112.19.3/CSA B45.4-2022**	https://www.asme.org/codes-standards/find-codes-standards/stainless-steel-plumbing-fixtures/2022/pdf
Functional performance – **ASME A112.19.4M-1994(R2009)**	https://www.asme.org/codes-standards/find-codes-standards/a112-19-4m-porcelain-enameled-formed-steel-plumbing-fixtures/1994/nondrm-enabled-pdf
Functional performance – **ASME A112.19.9M-1991(R2008)**	https://www.asme.org/codes-standards/find-codes-standards/a112-19-9m-non-vitreous-ceramic-plmb-fxtr/1991/nondrm-enabled-pdf
Functional performance – **IAPMO IGC 156-2023**	https://www.iapmo.org/standards-development/current-standards/igc
Functional performance – **CSA B45.5:22/IAPMO Z124-2022**	https://www.csagroup.org/store/product/CSA%20B45.5:22-IAPMO%20Z124-2022/
Functional performance – **CSA B45.8:23/IAPMO Z403-2023**	https://www.csagroup.org/store/product/CSA_B45.8%3A23-IAPMO_Z403-2023/
Functional performance – **CSA B45.11:17/IAPMO Z401-2017 (R2021)**	https://www.csagroup.org/store/product/CSA%20B45.11-17-IAPMO%20Z401-2017/
Functional performance – **CSA B45.12:23/IAPMO Z402-2023**	https://www.csagroup.org/store/product/CSA_B45.12%3A23-IAPMO_Z402-2023/

System boundary

System boundary	The type of EPD shall be specified as cradle to grave. The modules considered in the LCA shall be described in brief as per "System boundaries" outlined in ISO 21930:2017 section 5.2. Module D may be optionally declared. It should be apparent as to what processes are considered in each module per the module descriptions in SM Part A section 6. While it is unclear whether capital goods and infrastructure are significant to the overall impacts of the products, it is known that they are quantified inconsistently, varying based on the secondary data sets used and the database used. To reduce possible artificial variation in EPD results across the product group, capital goods and system infrastructure flows shall be excluded from the system boundary by default, with justification required for alternative assumptions.

Functional unit

Unit	**One commercial lavatory in an average commercial environment over the estimated service life of the building**
Rationale	Products are available and used in the North American commercial market

Additional rules for comparability

1. Additional rules to Part A	• The construction of water and wastewater infrastructure are excluded • EPDs that use secondary data for any unit process that contributes 5% or more to any disclosed environmental impact category shall disclose the data source (LCI database name and version, LCA modeling software type and version implemented, dataset name, dataset geography, and dataset allocation method). This criterion applies to the LCI being used, and not the actual unit process data being reported by the manufacturer. Materials considered confidential may be reported as "proprietary ingredient" along with the database name and version.
2. Default life cycle stage scenario(s)	**Extraction and upstream production (A1)** When materials used in the product are represented by secondary data, the electricity grid profile of the data set shall be adapted to the source country or region, if known and possible with the selected data set. Average data sets with "Global" or "Rest of World" average electricity profiles may only be used if the material source location is unknown or adapting the electricity grid is not possible. In cases when the EPD owner purchases manufactured components, the manufacturing process activity at the upstream supplier shall be counted in this stage, in addition to the upstream raw material extraction. For example, if a manufacturer purchases a steel fastener that is used for installing the lavatory, the steel cannot simply be represented by raw steel alone. Additional manufacturing must be added to represent the manufacturing of raw steel into the fastener. **Transport to factory (A2)** In cases when the EPD owner maintains multiple suppliers for the same material or part, the life cycle inventory and impact assessment results shall reflect a weighted average transportation distance from the multiple suppliers for each mode of transport used. To simplify the calculation for those with many suppliers for the same material or part, suppliers which provide less than 5%, by mass or by volume, of a particular material or part may be excluded from the calculation of weighted average transport distance, subject to existing cut-off requirements in SM Part A. If the location of a material/part supplier is unknown, a default distance of 1,243 miles (2,000 km) by truck (class 8 as defined by the US Federal Highway Administration[1]) must be assumed unless otherwise justified. **Transport to site (A4)** Land transport If primary data are unavailable, assume that the land transport distance in the destination country is 497 miles (800 km) by truck (class 8 as defined by the US Federal Highway Administration[1]) with an empty return trip of the same distance (for a total of 994 miles (1,600

[1] US Department of Energy. Vehicle Weight Classes & Categories. Available at https://afdc.energy.gov/data/10380. Accessed 06 August 2024.

km) round trip). This includes transport to the final installation site if multiple transport legs are needed.

Warehouse/distribution center and retail

Energy consumption in warehouses, distribution centers, and retail facilities during the course of transport to the final customer shall be omitted from the analysis.

Installation (A5)

The installation stage shall include, as applicable, any ancillary materials, electricity and/or water consumption (e.g., from tools or initial product testing by customer prior to first use), and disposal of product packaging waste and other waste materials directly related to installation of the product.

Building estimated service life and product reference service life

This Part B uses a building estimated service life (ESL) of 75 years. All use stage activity and impacts shall be counted for the full ESL period.

The default reference service life (RSL) for a commercial lavatory shall be 20 years unless otherwise justified. Justification shall include a guarantee by the signature of the most senior officer of the product manufacturer. The default 20-year RSL for the commercial lavatory aligns with the underlying LCA used to inform this PCR, the expired UL PCR for sanitary ceramics, and existing North American product EPDs for lavatories.

Use or application of the installed product (B1)

Any activity related to product use and not included in stages B2-B7 shall be included in this stage.

Maintenance (B2)

Commercial lavatories require periodic cleaning, and the following schedule of maintenance and corresponding quantities shall be used unless primary data or product usage guides are available to justify alternative assumptions.

Table 1. Maintenance activities for commercial lavatory

Activity (as applicable)	Frequency	Assumptions per event
Lavatory cleaning	Daily, 260 days per year	0.338 fl oz (10 mL) of a 1% sodium lauryl sulfate solution.

For commercial lavatories sold with an integrated faucet, the maintenance requirements from the Sustainable Minds Part B for commercial/public metered and manual lavatory faucets shall be additionally considered:

Table 2. Additional maintenance activities for commercial lavatories sold with an integrated faucet (if applicable)

Activity (as applicable)	Frequency	Assumptions per event
Cleaning of lavatory faucet	Daily, 260 days per year	0.338 fl oz (10 mL) of a 1% sodium lauryl sulfate solution.

Repair (B3)

For the vast majority of commercial lavatories sold without a faucet or drain, repair is not expected to occur in the normal operation of the product, and zero activity may be assumed for this stage unless otherwise justified.

Over the RSL, lavatories with integrated faucets may have serviceable components that will likely need to be replaced. If the lavatory is sold with an integrated faucet, the LCA shall assume that all faucet components, including seals, are replaced every 10 years.

If the lavatory is sold with an integrated drain, the LCA may assume the drain lasts the full duration of the lavatory RSL unless other data is available to justify a deviation.

Replacement (B4)

Replacements for the duration of the ESL for the commercial lavatory must be counted proportionally to the nearest hundredth of a product. For example, if the default RSL of 20 years

	is used, then 2.75 replacement products (55 remaining years in the ESL divided by 20-year RSL) must be included. Replacements must include the sum of impacts from stages A1-A5 and C1-C4 multiplied by the number of replacements. **Refurbishment (B5)** Refurbishment is not expected to occur in the normal operation of the product. Zero activity may be assumed for this stage unless otherwise justified. **Operational energy use (B6) and water use (B7)** This PCR considers any operational energy and water use to be considered within the system boundary of the faucet product. For the vast majority of commercial lavatories sold without a faucet, no operational energy or water use is considered since it lies outside the system boundary of the lavatory fixture. For commercial lavatories sold with an integrated faucet, the operational energy and water use requirements from the 'Default life cycle stage scenario(s)' section of the Sustainable Minds Part B for commercial/public metered and manual lavatory faucets shall be used. The operational energy and water use requirements for additional components sold with the lavatory as part of a lavatory system shall be defined and disclosed in the LCA and EPD. **Deconstruction/demolition (C1)** In the absence of primary data, the EPD owner may assume that the commercial lavatory reaches its end of life separately from the building and is manually removed using common hand tools. As such, energy or material inputs may be assumed zero for this stage unless otherwise justified. **Transport to waste processing or disposal (C2)** In the absence of primary data, EPD owners shall assume the product is transported 100 km via diesel-powered truck/trailer from the building site to the waste processing/disposal site. **Waste processing (C3)** In the absence of primary data, the default assumption is that 100% of products are disposed in a sanitary landfill at end of life. In that case no waste processing activity is applicable in this stage. Justifications for other end-of-life pathways, such as recycling, refurbishment, or other pathway in a product take-back program require evidence such as documentation of the program and documented number or share of units sold that participate in the take-back program. **Waste disposal (C4)** The EPD owner shall assume 100% disposal in a sanitary landfill in North America unless otherwise justified as described in C3 above. Landfill processes shall be modeled based on the mass of distinct materials in the commercial lavatory and availability of secondary data to model those materials. **Benefits and loads beyond the system boundary (D), Optional** Since the default end-of-life assumption is 100% landfill, there are no anticipated burdens or benefits beyond the system boundary. However, if alternative end-of-life pathways are justified, such benefits and burdens may be reasonably quantified or qualitatively described in this stage.
3. Additional data quality requirements	No additional data collection specifications or data quality requirements were identified.

Additional LCA calculation rules

N/A	Optional	Required	*Indicate whether conformance is the manufacturer's choice or required for TRs/EPDs.*
		X	ISO 21930:2017: conformance is required by construction product manufacturers

Industry-average EPD requirements

Requirements	Industry-average EPDs shall not be developed using this PCR.

Part B development information

Part B review panel	This Part B was reviewed for conformance to ISO 14025, ISO 21930:2017, and ACLCA PCR Open Standard v1.0 by the following parties: Thomas P. Gloria, Ph. D., Chair Industrial Ecology Consultants t.gloria@industrial-ecology.com Jack Geibig Ecoform Jgeibig@ecoform.com Rifat Karim Independent Consultant rifat.chimique@gmail.com
Open consultation	Sustainable Minds solicited public comments on this Part B from August 27, 2024 – September 27, 2024. This consultation period and list of parties to submit comments were made available to the review panel.
Conflict statement	Funding sources used to develop this Part B were disclosed to the working group during the development process. The policies identified in Sustainable Minds' Program Governance were followed to identify and resolve any potential conflicts of interest.
Sustainable Minds information	This Part B was developed by Sustainable Minds and participating interested parties according to the Sustainable Minds Program Governance available at http://www.sustainableminds.com/transparency-report-program/how-it-works. For questions about this or another Part B, to submit comments on this Part B, or to obtain a template for developing a transparency report, contact us using the information on the following page: http://www.sustainableminds.com/contact-us.

Part B revision history

Version	Change log
1.0	October 7, 2024: Original
1.1	August 26, 2026: Minor clarification regarding use phase requirements for additional components, with no change to original validity period. • Added soap dispensers as an example of an additional component sold with the lavatory as part of a lavatory system • Added text to life cycle stage scenarios B6 and B7: "The operational energy and water use requirements for additional components sold with the lavatory as part of a lavatory system shall be defined and disclosed in the LCA and EPD."