

EPD use levels are cumulative. Transparency is the baseline. To create a 'Data source' conformant PCR, all criteria in all checklists must be documented.

1. Program Operator (PO) checklist Version 1.0, May 25, 2022 | ACLCA PCR Open Standard 2022

Categories	#	Criteria	ISO reference	Supporting documentation	EPD use	3 Data source 2 Procurement 1 Transparency	
Organizational	Ground rules					How criteria were met	Due
	<input checked="" type="checkbox"/> 1	Prior to using the ACLCA PCR Guidance 2022 to develop PCRs, the PO shall use this guidance to develop and publish conformant program instructions that describe the process of PCR development aligned with ISO/TS 14027.	This guidance	General program instructions (governance document): • ACLCA PCR Guidance 2022 conformant statement with version number	1 Transparency	Updated program instructions published to SM website http://www.sustainableminds.com/files/transparency/SM_Governance_and_program_rules.pdf	Complete
	<input checked="" type="checkbox"/> 2	PO shall use this checklist to guide the creation of a PCR, identify how criteria were met, and provide the completed Program Operator Checklist and PCR Review Panel Checklist to the PCR Review Panel.	This guidance	PCR supporting documentation: • Completed checklist	1 Transparency	Completed checklists saved with the PCR supporting documentation.	Complete
	<input checked="" type="checkbox"/> 3	<p>PO shall be the secretariat of the PCR and manage an open and transparent process to develop or update a PCR. This process shall include public notices prior to PCR development and an open consultation process with interested parties while the PCR Committee remains active.</p> <p>PO shall publish the intention to develop (or update) a PCR on its website, in relevant industry and trade publications and/or news services, and through centralized notification mechanisms. The announcements shall include contact information that allows interested parties to request more information about participation in the PCR development or review process.</p> <p>Interested parties may include material suppliers, manufacturers, trade associations, purchasers (such as architects, designers, specifiers, contractors, and engineers), users, non-governmental organizations (NGOs), and public agencies.</p>	14027 Clause 6.4.1	PCR supporting documentation: • Date(s) announcement(s) were posted and where	1 Transparency	<p>PCR committee remains active for update from v3.0 to v3.1. Public consultation on the Sustainable Minds website for the updated Part Bs posted on July 11, 2025: http://www.sustainableminds.com/transparency-report-program/part-b</p> <p>Email blast on July 11, 2025 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).</p>	Complete
	<input checked="" type="checkbox"/> 4	PO shall determine whether to create a new PCR or to adapt an existing PCR from other geographic regions. The PO shall justify the determination in the PCR.	14027 Clause 6.4.2, 6.4.3	PCR: • Identify existing PCRs considered, and provide justification for creating a new PCR. • If new, identify the supporting LCA. • Describe how existing PCRs will be adapted.	2 Procurement	N/A	N/A
	<input checked="" type="checkbox"/> 5	PO shall evaluate upstream and downstream PCRs in the value chain to be considered for alignment. PO shall list relevant PCRs in the PCR. <i>Note: Also see Criterion 15 for the process of determining when a PCR may be updated.</i>	14044 14027 Clause 6.4.3 This guidance	PCR supporting documentation: • Identify existing upstream PCRs for the major inputs to the product(s) considered in the PCR. • Describe differences in allocation rules or other potential conflicts and how they were resolved. • Identify existing downstream PCRs that use products/materials from the PCR and how inconsistencies were resolved.	3 Data source	N/A	N/A
	<input checked="" type="checkbox"/> 6	PO shall harmonize PCR activities with other EPD programs to avoid unnecessary duplication and proliferation of similar PCRs, and align on mutual recognition agreement (MRA) requirements. PO shall list relevant PCRs in the PCR. <i>Note: Refer to both the ACLCA's PCR library and the North American PCR Catalog: Building & Construction Materials https://www.transparencycatalog.com/na-pcr-catalog-building-products</i>	14027 Clause 6.5.5 14029 Clause 7, 9.2	PCR supporting documentation: • Identify whether this criteria is applicable. • Identify other POs engaged to harmonize PCR activities and opportunities explored (joint development of new, merging, application of existing, or adaption of existing). • MRA between POs one exists.	1 Transparency	Addressed in Program operator responsibilities section of each Part B.	Complete
	<input checked="" type="checkbox"/> 7	PO shall publish and implement procedures for an appeals mechanism to ensure prompt and impartial handling of procedural complaints regarding any action or inaction of the PCR Committee, PCR Review Panel, or Program Operator.	14027 Clause 6.4.4	General program instructions (governance document): • Explanation of appeals process	1 Transparency	Addressed in section 10.0 of the governance document.	Complete
	<input checked="" type="checkbox"/> 8	PO should include a method for addressing data quality in its general program instructions. <i>Note: Refer to the addendum "Assessing Data Quality of Background Life Cycle Inventory Datasets" for an example data quality assessment method.</i>		General program instructions (governance document): • Method for Data Quality Assessment	2 Procurement	N/A	N/A
	PCR committee formation						How criteria were met

	<input checked="" type="checkbox"/>	9	PO shall actively reach out to interested parties (including parties outside the PO's country or region) to ensure that the PCR Committee is composed of independent members, making sure that the interests of one party do not dominate the PCR development process. No single interested party category (at individual, organizational, or sectoral levels) shall dominate the membership of a PCR Committee. Interested parties may include material suppliers, manufacturers, trade associations, purchasers (such as architects, designers, specifiers, contractors, and engineers), users, non-governmental organizations (NGOs), and public agencies.	14025 Clause 5.5, 6.5, & 9.3 14027 Clause 6.4.1 and 6.4.2	PCR: • List of PCR Committee members with employer and/or other entity on behalf of which they are participating. PCR supporting documentation: • Description of interested party outreach efforts and explanation of interested parties that did not participate.	1 Transparency	Working group members listed on page 1 of each Part B.	Complete
	<input checked="" type="checkbox"/>	10	PO shall address potential conflicts of interest developing the PCR and fully disclose funding sources for the management to interested parties. If significant external funding was made by one or more parties to support the development, the PO should put in place procedures to ensure that no conflict of interest occurs in the PCR process. 'Significant funding' is defined as more than \$10,000 or its in-kind equivalent, or 20% or more of the anticipated funding needs.	US EPA Environmentally Preferable Purchasing Program Framework for the Assessment of Environmental Performance Standards and Ecolabels for Federal Purchasing. https://www.epa.gov/system/files/documents/2022-02/updated-framework_020222.pdf	PCR supporting documentation: - The policy or procedure in use when the PCR was developed covering conflicts of interest, separation of organizational functions necessary to address any potential conflict of interest. - Attestation that this policy or procedure was followed during the development. The evidence must also include one of the following: - Documentation that original sources of funding were disclosed to interested parties, such as a disclosure statement, or in meeting minutes for relevant working groups.	1 Transparency	Conflict statement included in the Part B development information table of each Part B.	Complete
	Content of PCR						How criteria were met	Due
	<input checked="" type="checkbox"/>	11	The PCR shall report on the following items: • Name and registration number of the PCR • General information about the program: name of the program, contact information, logo, and website if applicable • PCR Committee members and affiliations • Publication date • Expiration date and renewal schedule • Types of product claims covered by the PCR, with references to standards • Product category • Geographical representativeness of the PCR • Original language and translations (if existing) • How to make comments to the PCR	14027 Clause 6.5	PCR: • Draft PCR that includes all items reported	1 Transparency	Part A section 1.1 addresses the use of SM PCRs to create ISO 14025 Type III environmental declarations, and also language availability. http://www.sustainableminds.com/files/transparency/SM_Part_A_LCA_calculation_rules_and_report_requirements_2023.pdf All other items are addressed in each Part B.	Complete
	<input checked="" type="checkbox"/>	12	The PCR shall report the following information about the review process and background of the PCR: • Review panel member information • Open consultation period and participants • Other existing PCRs for the product category and reasons for developing a new one • Reference to underlying LCAs • Confirmation statement that the PCR was created in conformance with this ACLCA PCR Guidance (including version number)	14025 Clause 5.5, 8.2 14027 Clause 5.2, 6.4.4 14025 Clause 6.7.1, 6.7.2 14027 Clause 6.1, 6.4.3, 6.5.3, 7.1d	PCR: • Draft PCR that includes all items except 'open consultation period' PCR supporting documentation: • Open consultation period and participants	1 Transparency	All items except open consultation participants addressed in Part B. Aggregated public comments spreadsheet, including commenter names and committee responses, created and made available to the review panel.	Complete
	PCR review process						How criteria were met	Due
	<input checked="" type="checkbox"/>	13	PO shall set up an independent third-party review panel composed of a minimum of three members (a chair and two members). The combined competencies of the panel shall include, at a minimum, expertise in LCA and in the relevant product sector. <i>Note: Refer to the PCR Review Panel Checklist for review panel expectations.</i>	14027 Clause 7.1, 7.2, 7.3, 14025 Clause 8.2.3	PCR: • List of review panel members	1 Transparency	Working group members listed on page 1 of each Part B.	Complete
	<input checked="" type="checkbox"/>	14	PO shall also set up an open consultation review.	14027 Clause 6.4.4, 7.3	PCR supporting documentation: • Date(s) open consultation period(s) announced, where/how; aggregated comments spreadsheet	1 Transparency	Aggregated public comments spreadsheet created and saved with the PCR supporting documentation.	Complete
	<input checked="" type="checkbox"/>	15	PO shall ensure the PCR Review Panel provides comments within a 90-day period.	This guidance	PCR supporting documentation: • Date(s) PCR review period	1 Transparency	Due date less than 90 days provided to PCR reviewer (Jun 12 - Jun 20).	Complete
	Publication, new and updated PCRs						How criteria were met	Due
	<input checked="" type="checkbox"/>	16	PO shall be responsible for publishing and maintaining the PCR. The published PCR shall be publicly available on the PO's website, free for any other PO to use. PO shall write out the publication date (e.g., June 25, 2022) and expiration date (e.g., June 24, 2027). PCRs shall have a validity period of no more than five years from the publication date. PCRs are invalid beyond the expiration date. PO shall provide the schedule for renewal, if applicable. PO should include a statement adjacent to the PCR Review Panel attribution to indicate conformance with this guidance (including version number) and the EPD use case level. PO should not act as a barrier to translating the PCR and should act as a facilitator for the translation.	14025 Clause 6.4, 6.7.1 14027 Clause 8.1.1 This guidance	PCR supporting documentation: • URL of PO's published PCRs page • URL PCR will be available at when published PCR: • Validity period of PCR • Conformance statement and EPD use case level	1 Transparency	A link to the SM Part Bs page is included in each Part B. Completed Part Bs are uploaded to that page when published. The URL of the Part B when published is as follows: http://www.sustainableminds.com/files/transparency/pgds/Part_B_Product_Group_Definition_Residential_Toilets_2024_3v-1.pdf The Part B contains validity period, conformance statement, and EPD use case level.	Complete

	<input checked="" type="checkbox"/>	<p>17</p> <p>To manage the expectations of PCR users, the PO shall post update information on its website at least four months in advance of the expiration date. The update options include: extending the current PCR, updating the PCR, or letting the PCR expire with no update.</p> <p>If information is not provided within this timeframe, other POs may proceed with the update and post PCR update information on their website.</p>	This guidance	<ul style="list-style-type: none"> • URL of PO's PCRs undergoing updates 	1 Transparency	<p>Public consultation period began well before 4 months prior to expiration, announced on the Sustainable Minds website on July 11, 2025: http://www.sustainableminds.com/transparency-report-program/part-b</p>	Complete
	<input checked="" type="checkbox"/>	<p>18</p> <p>To update a PCR during the validity period, the PO shall:</p> <ol style="list-style-type: none"> 1. Notify the original PCR Committee members and original Review Panel. 2. Consult ISO 14027 to confirm the reason to update is valid. 3. Create or update the ACLCA PCR Guidance Checklists for the PCR. 4. Open consultation to interested parties. 5. Update the PCR. 6. Obtain sign-off by PCR Review Panel. 7. Republish an updated version and include a change log at the start of the document. 8. Announce the updated version. 9. Update the ACLCA PCR Repository. <p>In the case that an existing PCR does not meet the requirements for creating EPDs for public or private procurement purposes, the PO shall make an effort to first engage the commissioner of the PCR to reconvene the PCR Committee in order to make the required updates. If the PCR commissioner does not reconvene the PCR Committee within 30 days of the PO's request, then the PO may proceed to develop a new PCR using the existing PCR as an informative input document.</p>	14027 Clause 9	<p>PCR:</p> <ul style="list-style-type: none"> • Valid update reason <p>PCR supporting documentation:</p> <ul style="list-style-type: none"> • Checklists 	1 Transparency	<p>The original PCR Committee members were notified on May 14, 2025. ISO 14027 Clause 9 reason i is the primary reason for updating to v3.1; an LCA practitioner provided evidence that v3.0 was too restrictive by not explicitly allowing separate reporting of impacts for bowl or tank only. The PCR and checklists were updated including the addition of a change log, signed off by the technical review panel, underwent public consultation, and the updated version was announced on the Sustainable Minds website. The ACLCA PCR Repository will be updated once it becomes live.</p>	Complete
	<input checked="" type="checkbox"/>	<p>19</p> <p>For substantial PCR updates (e.g., updates that impact the results of an EPD), the PO shall contact manufacturers in their program with valid EPDs and other POs to bring attention to the PCR changes and encourage that they update accordingly.</p>	14027 Clause 9	<p>PCR supporting documentation:</p> <ul style="list-style-type: none"> • Description of notification and dates of outreach 	1 Transparency	<p>TOTO was identified as the only manufacturer with valid EPDs in the SM program using the Part B being updated. TOTO and other POs were notified of updates via the committee outreach process.</p>	Complete
	EPD template					How criteria were met	Due
	<input checked="" type="checkbox"/>	<p>20</p> <p>PO shall create a standard EPD template to be used for all EPDs that can be customized per PCR to identify requirements unique to each. Consider both digital and print (PDF) publishing. <i>Note: Refer to the 'EPD Comparability and Digital EPDs / Open EPD addendum.</i></p> <p>PO shall include a statement adjacent to the PCR name to indicate conformance with this guidance and the EPD use case level.</p>	This guidance	<p>PCR:</p> <ul style="list-style-type: none"> • EPD template document prepared for this PCR • Statement text included in EPD template 	1 Transparency	<p>A standard EPD template is included in Appendix C of Part A.</p> <p>Under the name of each Part B is a statement indicating conformance to this guidance and the EPD use case level.</p>	Complete
	<input checked="" type="checkbox"/>	<p>21</p> <p>PO shall ensure that the type of EPD developed is clearly noted on the EPD. <i>Note: Refer the 'EPD Types' addendum.</i></p>	This guidance	<p>PCR:</p> <ul style="list-style-type: none"> • Statement text included in EPD template 	1 Transparency	<p>Requirement listed in the Verification statement section in Appendix C of Part A (EPD template).</p>	Complete
Goal and scope	<input checked="" type="checkbox"/>	<p>22</p> <p>Product categories shall be primarily defined and sufficiently described by product functionality, technical performance, and use. The PCR shall clearly define the product groups for which the rules apply, both by using descriptive language and by using the relevant codes for any of the existing classification systems relevant to the product category and region. Products NOT covered by the PCR shall be clearly listed (as a clarification when products are similar).</p> <p>PO should ensure that the product classification systems are not to be the single determining factor for defining the product category. The PCR is encouraged to provide sufficient information to clearly describe the scope of products and services for which the rules apply.</p>	14027 Clause 8.1.1	<p>PCR:</p> <ul style="list-style-type: none"> • Draft PCR which includes all the items 	2 Procurement	N/A	N/A

Part B for: residential toilets, v3.1 August 12, 2025 Sustainable Minds Contact Kim Hammer (kim@sustainableminds.com)				EPD use case goal:	1, 2 or 3	EPD use levels are cumulative. Transparency is the baseline. To create a 'Data source' conformant PCR, all criteria in all checklists must be documented.	
2. PCR Committee checklist <small>Version 1.0, May 25, 2022 ACLCA PCR Open Standard 2022</small>							
Categories	#	Criteria	ISO reference	Supporting documentation	EPD use		
Documentation	Ground rules					3 Data source	
						2 Procurement	
						1 Transparency	
						How criteria were met	Due
	<input checked="" type="checkbox"/> 1	PCR Committee shall use this checklist to guide the creation of a PCR, identify how criteria were met, and provide the completed checklist to the Program Operator to provide to the PCR Review Panel.	This guidance	PCR supporting documentation: • Completed checklist	1 Transparency	Completed checklists saved with the PCR supporting documentation.	Complete
<input checked="" type="checkbox"/> 2	PCR Committee shall thoroughly document the use of an existing PCR as an informative document in any adaptation to create a new PCR. Include the PO name, existing PCR name, product category classification, link to the existing PCR, and provide justification for adapting the existing PCR.	14027 Clause 6.4.3 and this guidance	PCR: • Link to PCR Committee's documentation of adaptation	2 Procurement	N/A	N/A	
<input checked="" type="checkbox"/> 3	PCR Committee shall respond to each comment from the PCR Review Panel and public consultation. Responses should address any conflicting comments provided by the PCR Review Panel.	This guidance	PCR supporting documentation: • Link to PCR Committee's documented public response to comments and consultation on PO's website (aggregated comments spreadsheet).	1 Transparency	Aggregated public comments and review panel comments, including committee responses, created and published on the SM website with the PCR supporting documentation.	Complete	
<input checked="" type="checkbox"/> 4	PCR Committee shall provide a limited description of the involvement of interested parties for open consultation. Specifically, the PCR should provide: • The name and/or affiliation of the stakeholders who participated in the open consultation. • The dates of the open consultation period. Public consultation should be utilized during the PCR review process. The public consultation of the completed draft PCR should include at a minimum a 30-calendar-day time period for comments to be submitted.	14025 Clause 5.5 14027 Clause 5.2, 6.4.4	PCR: • Draft PCR that includes list of participating interested parties and dates of consultation period.	1 Transparency	Open consultation period listed in 'Open consultation' section of the Part B development table. Aggregated public comments spreadsheet, including commenter names and committee responses, were created and made available to the review panel.	Complete	
Compliance	<input checked="" type="checkbox"/> 5	PCR Committee shall ensure that the underlying LCA meets the requirements of ISO 14044 and other pertinent standards and that, according to these standards, it has either been critically reviewed by a third party or has undergone an internal verification, either by the PCR Committee itself or appointed independent LCA expert.	14025 Clause 6.7.1, 6.7.2, 8.1.3, 8.2.1, 8.2.2 14027 Clause 5.1, 6.1, 6.5.3, 7.1d	PCR supporting documentation: • Link to documentation of LCA review or internal verification.	2 Procurement	N/A	N/A
	<input checked="" type="checkbox"/> 6	PCR Committee shall ensure that the PCR is compliant with any referenced standards and relevant program instructions under which it is developed.		PCR: • List of referenced standards and link to relevant program instructions.	1 Transparency	Use of each Part B in conjunction with SM Part A is addressed in Program operator responsibilities section of each Part B. SM Part A section 1.1. lists the standards required for conformance. The last section of each Part B contains a link to where to find the SM program instructions (governance document).	Complete
	<input checked="" type="checkbox"/> 7	PCR Committee shall establish LCA requirements that are consistent with ISO 14044. The PCR Committee is encouraged to develop end-use case scenarios for the PCR-compliant EPDs and to incorporate considerations for these use cases into the underlying LCA.	14025 Clause 6.7.1, 6.7.2 14027 Clause 5.1, 6.1, 6.5.3, 7.1d	PCR supporting documentation: • Third-party reviewed ISO 14040/44 conformant LCA of the product categories under consideration. The LCA will reflect cases in which the EPD may be interpreted in use.	1 Transparency	A link to the underlying LCA is included in the Program operator responsibilities section of each Part B.	Complete
Goal and scope	Ground rules					How criteria were met	Due
	<input checked="" type="checkbox"/> 8	PCR Committee shall ensure that all rules for LCA are specified and harmonized with upstream and downstream PCRs (if available) in conformance with relevant standards, including: specification of the functional unit, scope of the study, inventory collection, any allocation rules, impact assessment, and rules for additional information.	14044 14027 Clause 6.5.3	PCR: • Draft PCR with list of specifications	3 Data source	N/A	N/A
	<input checked="" type="checkbox"/> 9	PCR Committee shall ensure that the product category used in the underlying LCA supporting the PCR is directly applicable to the PCR.	14025 Clause 3.14, 6.6, 6.7.2 14027 Clause 6.5.2, 6.5.3	PCR: • Specification and justification of the product category and applicable functional unit.	2 Procurement	N/A	N/A
	<input checked="" type="checkbox"/> 10	PCR Committee shall define the study scope and EPD type for construction products and services.	21930 Clause 5.2.1, 5.2.2	PCR: • Draft PCR with specification of scope as cradle-to-gate or cradle-to-gate with options or cradle-to-grave.	1 Transparency	Part B specifies the scope as as cradle-to-grave.	Complete
	<input checked="" type="checkbox"/> 11	PCR Committee shall ensure that a clearly defined and measurable functional or declared unit is included in the PCR for construction products and services.	21930 Clause 7.1.2, 7.1.3	PCR: • Draft PCR with detailed description of the application and suitability of defining functional and declared units, respectively.	1 Transparency	Part B provides a description of the functional unit.	Complete
	<input checked="" type="checkbox"/> 12	The PCR Committee shall determine which EPD types may be developed (ex: product-specific, industry-wide) and state the specific data requirements for each type. Any other terminology describing types of EPDs should be discouraged. Note: Refer to the 'EPD Types' addendum for descriptions.	ISO 21930 Annex B and 'EPD Types' addendum	PCR: • Draft PCR with description of the EPD types with specific data requirements	1 Transparency	Part B specifies EPD type under the name of the Part B. Specific data requirements are listed in the Additional rules to Part A section of each Part B.	Complete

	System boundary				How criteria were met	Due
	<input checked="" type="checkbox"/> 13	PCR Committee shall determine the level of granularity of unit processes specified by the PCR to be included in the underlying LCA supporting the EPD and ensure that these are consistent with the study's goal of using well-identified and explained criteria.	14044 4.2.3.3 14027 Clause 6.5.3 21930 Clause 7.1.9 for construction products & services	PCR: • Draft PCR with list of all unit processes that include all service, material, and energy flows directly connected to the study project and its ability to perform its function.	3 Data source	N/A
	<input checked="" type="checkbox"/> 14	PCR Committee shall ensure that the PCR requires: 1) at minimum, a cradle-to-gate[1] system boundary and that any deviation is explicitly specified and justified; and 2) the use of the recycled content (i.e., cut-off) approach for end-of-life allocation of environmental burdens between product systems. [1] "Gate" represents the finished and packaged product at the manufacturing facility just prior to shipping.	14044 Clause 4.2.3.3.1 14025 6.7.2b, 6.7.2c, 6.7.2j, 7.2.5 14027 6.5.3b, 6.5.6	PCR: • Draft specification of the system boundary and justification of any system boundary minimum requirement deviations (where applicable).	2 Procurement	N/A
	<input checked="" type="checkbox"/> 15	PCR Committee shall ensure that the PCR specifies the capital goods and infrastructure to be included in cases whenever it is feasible. The PCR Committee is encouraged to specify lifetimes or standardized methods of computing lifetimes, as well as the depreciation method utilized to allocate the burden of capital goods over their service period, with any deviations from the default approach explicitly specified and justified.	This guidance	PCR: • Draft PCR that includes all items	2 Procurement	N/A
	<input checked="" type="checkbox"/> 16	PCR Committee shall develop scenarios representing a set of domain-specific standard guidelines for any and each life cycle stage to be included beyond cradle-to-gate (i.e., A1-A3) in the PCR scope and require LCA results for these be reported. The PCR shall also prescribe assumptions for scenarios in cases where there is no discernable difference between one product and another in the same category for use and end-of-life stages. The PCR Committee should include criteria in the PCR for deviation from the prescribed scenarios.	This guidance	PCR: • Where applicable, list of scenarios and associated assumptions.	2 Procurement	N/A
	<input checked="" type="checkbox"/> 17	PCR Committee shall specify whether the benefits and loads beyond the system boundary (i.e., Module D) are to be included in the EPD. If so, the PCR shall describe the specific scenario(s), benefits, and loads to be considered and reported separately in relevant EPDs communicating the full life cycle (cradle-to-grave) impacts of a product. <i>Note: Refer to the 'Circular Scenarios (Module D)' addendum.</i>	This guidance and 'Circular Scenarios (Module D)' addendum	PCR: • Where applicable, list of scenarios and concomitant benefits and loads to be included.	2 Procurement	N/A
Life cycle inventory	Data collection				How criteria were met	Due
	<input checked="" type="checkbox"/> 18	PCR Committee shall prescribe acceptable primary data collection practices and clearly specify the scope and data quality for secondary data with recommendations for use of specific datasets or databases facilitating this process. Datasets used for calculations shall have been updated within the last 10 years for background data and within the last 5 years for producer-specific (foreground) data; deviations shall be justified. Where databases are required, alternatives or modifications shall be proposed for geographic areas or technologies beyond the scope of the specified dataset(s). Any deviation from the recommended background (secondary) datasets in the PCR shall be clearly specified and justified. In addition, the PCR shall require EPDs to disclose the reporting period for primary and secondary data. <i>Note: Refer to the 'Assessing Data Quality of Background Life Cycle Inventory Datasets' addendum.</i>	ISO 21930 Clause 7.1.9 and 'Data Quality and Secondary Background Datasets' addendum	PCR: • Draft PCR that includes all items	2 Procurement	N/A
	<input checked="" type="checkbox"/> 19	PCR Committee shall identify and ensure that the PCR specifies the selected LCIA indicators or additional information requirements for which relevant inventory information shall be collected.	14025 Clause 7.2.2, 7.2.3 14027 Clause 6.5.4, 6.5.5, 6.6	PCR: • Draft PCR that includes all items	1 Transparency	SM Part A includes the list of selected LCIA indicators. Complete
	<input checked="" type="checkbox"/> 20	PCR Committee shall specify, based on the underlying LCA and/or additional studies informing the PCR, all the data that are to be collected (rather than specifying cut-off criteria for the inventory).	14025 Clause 7.2.3, 7.2.4 14027 Clause 6.6	PCR: • Draft PCR that includes all items	2 Procurement	N/A
	<input checked="" type="checkbox"/> 21	PCR Committee shall specify the type of data to be collected. The committee is encouraged to follow standard data collection examples for foreground (primary) data collection.	21930 Clause 7.1.9 14044 Annex A	PCR: • Draft PCR with data collection sheet example specific to PCR	2 Procurement	N/A
	Data quality				How criteria were met	Due
	<input checked="" type="checkbox"/> 22	PCR Committee shall refer to relevant guidance to consider parameters for assessing data quality of both foreground (primary) and background (secondary) data. <i>Note: Refer to the 'Assessing Data Quality of Background Life Cycle Inventory Datasets' addendum which provides a data quality assessment method.</i>	21930 Clause 7.1.9 14044 Clause 4.2.3.6 14025 Clause 6.7.2 14027 Clause 6.2	PCR supporting documentation: • Complete data quality assessment for both foreground (primary) and background (secondary) data. This information shall also be included in the underlying LCA, and reviewed.	1 Transparency	A data quality assessment of primary and secondary data is included in each underlying LCA and was reviewed by the PCR committee. Complete
Background/secondary data					How criteria were met	Due

	<input checked="" type="checkbox"/> 23 <p>PCR Committee shall ensure that the PCR specifies background (secondary) data quality requirements such that differences between claim results are rooted in actual technical differences, rather than artifacts of background data or the platform. If a secondary data source does not meet the required quality specified by the PCR, it shall be verified by the program operator that better data is not available. <i>Note: Refer to the 'Assessing Data Quality of Background Life Cycle Inventory Datasets' addendum which provides a data quality assessment method.</i></p> <p>For example, as detailed in this addendum, the most recent version of background data for baseline electricity from Federal LCA Commons met the data quality requirements and is recommended to be specified across PCRs (with the LCI and method compatible with the Federal Elementary Flow List (FEDEFL) from https://www.lcacommons.gov/).</p>	Assessing Data Quality of Background Life Cycle Inventory Datasets' addendum	PCR: <ul style="list-style-type: none"> Draft PCR with list of background (secondary) data sources and default LCIA method(s) 	2 Procurement	N/A	N/A
	Foreground/primary data				How criteria were met	Due
	<input checked="" type="checkbox"/> 24 <p>PCR Committee shall ensure that the PCR specifies primary data be collected for every process in the product system under the control of the organization making the product claim.</p> <p>The PCR Committee is encouraged to specify that data specific to the investigated product scope and supply chain are preferable to generic data, particularly in unit processes considered to have a significant contribution to the product life cycle.</p> <p>For EPDs seeking transparency-level conformance with this guidance, the PCR shall require the following: EPDs that use secondary data for any unit process that contributes 30% or more to any disclosed environmental impact category shall disclose the data source (database name and version, dataset name, dataset geography, and dataset allocation method).</p>	This guidance	PCR supporting documentation: <ul style="list-style-type: none"> Foreground (primary) data collected in conducting the underlying LCA, and the sensitivity of LCIA outcomes to variability in the foreground data. A facility-specific data collection protocol shall also be included. 	1 Transparency	<p>SM Part A section 7.6 states that primary data shall be collected for every process in the product system under the control of the organization(s) developing the LCA.</p> <p>Part B contains a statement in the Additional rules to Part A section which states: 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 (database name and version, dataset name, dataset geography, and dataset allocation method)</p> <p>The underlying LCA lists primary data collected and includes an analysis on sensitivity or variability.</p>	Complete
	<input checked="" type="checkbox"/> 25 <p>For EPDs seeking procurement-level conformance with this guidance, the PCR shall require that EPDs use facility-specific data for upstream unit processes that cumulatively contribute 50% or more to the disclosed global warming potential.</p> <p>In situations where facility-specific data is not available for the upstream unit processes, and such a facility is required to report to the EPA Greenhouse Gas Reporting Program (GHGRP), the PCR shall require the EPD to disclose in the Additional Environmental Information section: the carbon intensity of the manufacturing plant (carbon emitted per metric ton of product manufactured) from which these products, and/or the quartile in which in which the manufacturing plant resides where benchmarks have been published (https://www.epa.gov/ghgreporting/ghgrp-minerals). Carbon intensity shall be calculated by dividing the emissions reported to the EPA GHGRP by plant production. Emission and production data must be from the same reporting period using the most recent year of data.</p> <p>When a published ENERGY STAR Energy Performance Indicator is available for a product or constituent upstream product, the PCR shall require the EPD to disclose in the Additional Environmental Information section: the ENERGY STAR Energy Performance Score for the manufacturing plant in which the product or constituent upstream product was manufactured, and the reporting period of the underlying data. See https://www.energystar.gov/industrial_plants/energy_star_plant_certification/buy_clean_procurement_and_energy_star_0 for more information.</p>	This guidance	PCR: <ul style="list-style-type: none"> Draft PCR that includes all items 	2 Procurement	N/A	N/A
	<input checked="" type="checkbox"/> 26 <p>PCR Committee shall ensure that the PCR specifies the means by which primary data should be collected and may provide templates to facilitate harmonized data collection, metadata recording, and results reporting. If the specified data collection means are unachievable for a specific EPD developer, the PCR shall designate that the developer records the data collection method(s) utilized in the data description.</p>	14025 Clause 6.7.2	PCR: <ul style="list-style-type: none"> Specification of data collection methods (e.g., measured, calculated, estimated) 	1 Transparency	SM Part A section 7.6 states: The method of data collection shall be specified (e.g., measured, calculated, estimated).	Complete
	Data assumptions				How criteria were met	Due

	<input checked="" type="checkbox"/>	27	PCR Committee shall specify all parameters of assumed scenarios for use and end-of-life stages so as to ensure comparability and consistency of results. If a manufacturer wishes to define their own scenario(s), they shall be based on primary data.	This guidance and the 'Circular Scenarios (Module D)' and the 'Allocating Materials Shared Across Product Systems' addendum	PCR: • List of parameters for use and end-of-life stage scenarios	2 Procurement	N/A	N/A
	<input checked="" type="checkbox"/>	28	PCR Committee shall ensure that the PCR provides worst-case (i.e., 'conservative') default values for scenario data of the specified processes where no data are available for the EPD developer.	This guidance	PCR: • List of worst-case (i.e., 'conservative') default scenario values	2 Procurement	N/A	N/A
	Data compliance						How criteria were met	Due
	<input checked="" type="checkbox"/>	29	PCR Committee shall ensure that claims made in the PCR are based on the results of an LCIA, LCI, and/or substantiated and verifiable additional information modules relevant to the product category.	14027 Clause 6.6	PCR: • An underlying LCA with supporting LCIA and LCI for all PCR guidelines	1 Transparency	The underlying LCA contains relevant supporting LCA results.	Complete
	<input checked="" type="checkbox"/>	30	PCR Committee shall ensure that the PCR states data quality requirements for all data applicable for use in claims. These data shall be verified to be compliant with the established PCR data quality requirements and those for foreground (primary) and background (secondary) data. The PCR shall specify that a data quality assessment be performed on all collected foreground (primary) data and may provide templates to facilitate harmonized primary data collection, assessment, reporting, and verification. <i>Note: Refer to the 'Assessing Data Quality of Background Life Cycle Inventory Datasets' addendum.</i>	This guidance	PCR: • Data quality assessment criteria and/or template	3 Data source	N/A	N/A
	<input checked="" type="checkbox"/>	31	PCR Committee shall ensure that PCR-designated background (secondary) data sources be specified and verified such that: • Data for electricity, transportation, basic fuels, and heavy equipment operation are the most current versions from common public background data (e.g., for North America, LCI and method compatible with the Federal Elementary Flow List (FEDEFL) from https://www.lcacommons.gov/). • Temporal, geographical, and technological coverage of the secondary data is compatible with the scope of the PCR. • System boundaries are equivalent, and reference flows are adaptable to the product system specified in the PCR. • Sources of secondary data are cited. • Allocation procedures used for secondary data are appropriate for the system under study.	This guidance and 'Assessing Data Quality of Background Life Cycle Inventory Datasets' and the 'Allocating Materials Shared Across Product Systems' addenda	PCR: • Draft PCR with list of background (secondary) data sources and default LCIA method(s)	2 Procurement	N/A	N/A
	Allocation						How criteria were met	Due
	<input checked="" type="checkbox"/>	32	PCR Committee shall ensure that the PCR specifies which processes are to be subdivided if allocation can be avoided in this manner wherever feasible. The PCR shall also provide guidelines on how the subdivision should be performed.	14025 Clause 6.7.1c, 6.7.2c 14027 Clause 6.5.3	PCR • Draft PCR that lists processes and subdivision method	2 Procurement	N/A	N/A
	<input checked="" type="checkbox"/>	33	PCR Committee shall ensure the PCR specifies that where allocation by physical relationship is applied, the PCR shall specify the relevant underlying physical relationships to be considered and establish or refer to the relevant allocation rules.	14025 Clause 6.7.1c, 6.7.2c 14027 Clause 6.5.3	PCR • Draft PCR that includes specification	1 Transparency	Allocation rules are listed in section 8 of SM Part A.	Complete
	<input checked="" type="checkbox"/>	34	PCR Committee should refer to relevant standards for defining allocation procedures for reuse and recycling, as well as waste handling, and for scenarios for treating waste generation during the product life cycle.	14044 Clause 4.3.4 21930 Clause 7.1.7.2.7	PCR • Draft PCR that includes specification	1 Transparency	Allocation regarding output of waste per ISO standards is listed in section 8 of SM Part A.	Complete
	<input checked="" type="checkbox"/>	35	PCR Committee shall refer to rules for and prioritize stepwise allocation for industrial processes that produce more than one product or deliver more than one service. For example, the refining of crude oil produces more than one different product, such as liquefied petroleum gas, gasoline, naphtha, diesel, asphalt, and others. PCR Committee shall refer to rules prohibiting system expansion as a method for avoiding allocation for construction products that may involve the production of co-products; rather, the PCR shall prescribe an ISO-compliant method of allocation, or an allocation procedure if multiple methods are allowed.	14044 Clause 4.3.4.2 21930 Clause 7.2.5	PCR • Draft PCR including allocation method and procedure (where applicable)	2 Procurement	N/A	N/A
	End of life scenario						How criteria were met	Due
	<input checked="" type="checkbox"/>	36	PCR Committee shall prescribe ISO-compliant rules for allocation between product systems (across the system boundary) and designate whether Module D may be optionally reported in the EPD for construction products and services. If so, the PCR shall prescribe detailed calculation rules for any quantitative metrics reported therein. <i>Note: Refer to the 'Allocating Burdens and Benefits of Materials Shared Across Product Systems' addendum.</i>	21930 Clause 7.2.6	PCR: • Draft PCR with allocation rules and calculation rules	2 Procurement	N/A	N/A

Life cycle impact assessment	<input checked="" type="checkbox"/>	37	PCR Committee shall include all minimally required, core indicators for ISO-compliant EPDs; specifically bulleting the indicator with: 1) the LCA characterization methodology, and 2) reference in parenthesis. Additionally, the PCR is encouraged to specify at least one LCIA method that includes characterization factors for calculating category indicator results for each impact category and each geographical region covered by the PCR.	21930 Clause 9.5	PCR: • Draft PCR including all items	1 Transparency	Core indicators are listed in section 9 of SM Part A.	Complete
	<input checked="" type="checkbox"/>	38	PCR Committee shall identify the steps for interpreting the results of the underlying LCA study.	14044 Clause 4.5 21930 Clause 9	PCR: • Draft PCR including all items	1 Transparency	SM Part A section 9.3 includes steps for interpreting the results of a background LCA.	Complete
Interpretation	<input checked="" type="checkbox"/>	39	PCR Committee shall ensure that the PCR communicates requirements (either qualitative or quantitative) and reference the methods and format used to report additional environmental information.	21930 Clause 8.4 14025 Clause 7.2.3, 7.2.4	PCR: • Detailed specification on requirements and reference methods and format used to report additional environmental information.	1 Transparency	SM Part A section 10 includes a description of additional environmental information and the TR/EPD template in Appendix C showing placement of such information.	Complete
	<input checked="" type="checkbox"/>	40	PCR Committee shall ensure that the PCR lists assumptions and limitations associated with the underlying LCA results.	14044 Clause 4.5.2.1	PCR: • Draft PCR including all items	1 Transparency	SM Part A section 5.2 includes a description of assumptions and limitations associated with TR/EPD results.	Complete
	<input checked="" type="checkbox"/>	41	PCR Committee shall specify different types of uncertainties to be propagated in the underlying LCA study and is encouraged to ensure that the PCR describes procedures for reporting uncertainty of results.	14044 Clause 4.4.4.2 14025 6.7.1b	PCR: • Draft PCR including all items	1 Transparency	SM Part A states that uncertainty shall be addressed in the data quality assessment and may be addressed qualitatively or quantitatively.	Complete

Part B for: residential toilets, v3.1

August 12, 2025 | Sustainable Minds | Contact Kim Hammer (kim@sustainableminds.com)

EPD use case goal:1, 2 or 3

EPD use levels are cumulative. Transparency is the baseline. To create a 'Data source' conformant PCR, all criteria in all checklists must be documented.

3. PCR Review Panel checklistVersion 1.0, May 25, 2022 | ACLCA PCR Open Standard 2022

Categories	#	Criteria	ISO reference	Supporting documentation	EPD use	3 Data source	2 Procurement	1 Transparency	How criteria were met	Due	Comply (Y/N)	Comment
Organizational	<input type="checkbox"/> 1	The PCR Review Panel shall use this checklist to guide their process of reviewing the PCR.	This guidance	PCR supporting documentation: • Completed checklist	1 Transparency	Completed checklists saved with the PCR supporting documentation.	Complete	Y	N/A			
	<input type="checkbox"/> 2	PCR Review Panel members shall disclose any conflicts of interest using the conflict of interest form.	14027 Clause 7.2 14071	PCR supporting documentation: • Review panel completed conflict of interest forms	1 Transparency	Conflict of interest forms to be completed by review panel members.	Complete	Y	N/A			
	<input type="checkbox"/> 3	The PCR Review Panel shall meet with the Program Operator to discuss the PCR and how to perform their review. The PCR Review Panel shall investigate whether the PCR has been developed in accordance with relevant LCA-based claim standards, general program instructions, specifications, and guidelines, and ensure that it supports the creation of credible and consistent claims. The PCR Review Panel shall verify that the EPD template is consistent with the PCR guidelines. The PCR Review Panel shall generate and compile their comments in a review report. By the agreed upon date determined by the Program Operator, the review report shall be sent to the PCR Committee for consideration.	14027 Clause 7, 7.3, 7.5 14071	PCR supporting documentation: • Dated review report	1 Transparency	Aggregated review panel comments spreadsheet (i.e., detailed review report) sent to the PCR Committee on July 11, 2025	Complete	Y	N/A			
	<input type="checkbox"/> 4	The PCR Review Panel shall confirm that the PCR meets relevant EPD-related federal and/or state procurement requirements (e.g., Buy Clean Legislation) that are specifically referenced in the PCR.	This guidance and relevant EPD-related federal and/or state procurement requirements	PCR supporting documentation: • Reviewers' sign-off and/or list of any deviations from procurement requirements	2 Procurement	N/A	N/A	Y	N/A			
	<input type="checkbox"/> 5	The PCR Review Panel shall verify conformance the Program Operator and PCR Committee checklists and the appropriate category of EPD use is identified.	This guidance	PCR supporting documentation: • Reviewers' sign-off below and/or list of any deviations from this guidance. All three completed checklists returned to the PO.	1 Transparency	Section below completed by review panel chair, who confirmed sign-off from all review panel members.	Complete	Y	N/A			

Reviewer acceptance for EPD use case (1,2 or 3)Date | Reviewer names & email

Date	Revier name & email	Acceptance for EPD use case Level 1 (Y/N)
12-Aug-25	Jack Geibig - Ecoform - jgeibig@ecoform.com	Y
12-Aug-25	Hugues Imbeault-Tétreault - Groupe Ageco - hugues.i-tetreault@groupeageco.ca	Y
12-Aug-25	Rebe Feraldi - Pacific Northwest National Lab - rebe.feraldi@pnnl.gov	Y



Part B comments worksheet

SM Transparency Report™ Framework
Part B: Product group definition
Version 2023

Sustainable Minds, PCR Part B: Product group definition | Residential toilets, 2024. http://www.sustainableminds.com/files/transparency/pgds/Part_B_Product_Group_Definition_Residential_Toilets_2023.pdf.

Part B name:	Residential toilets, v3.0
Technical reviewers:	Huques Imbeault-Tétreault, Jack Geibig, Rebe Feraldi

Topic #	Page #	Section #	Type of comment (Technical/editorial/other)	Reviewer comment	Reviewer's proposed change/solution	Response	Rationale
1	1	New Part B?	Editorial	The part B version number is not specified.	Add version number.	Accept	Corrected typo.
2	1	Flow rate - EPAAct 1992	Editorial		Update link to standard.	Accept	Updated link to standard.
3	2	Functional unit	Technical	The functional unit is not consistent with the geographical representativeness of the part B specified on page 1.	Change the representativeness of the functional unit.	Accept	Updated to remove geographical reference within functional unit since geographic representative is detailed elsewhere.
4	3	ESL & RSL	Technical	The default RSL is 20 years, while the one of an electronic bidet is 10 years according to the corresponding part B.	Harmonize RSLs by specifying a RSL for the electronic bidet when applicable or update the the Repair section to include the replacement of the electronic bidet.	Accept	Updated RSLs as follows: 1) Increased bidet seat RSL to 15 years. 2) Changed RSL on ResToilet w/bidet seat to 15 years. 3) Maintained RSL on ResToilet w/o bidet seat at 20 years.
5	5	Operational energy use (B6)	Technical	Gallon is used.	Convert electricity consumption for water heating to kWh/m³ (or liter) since ISO 21930 compliance is sought.	Accept	SI units prioritized.
6	5	B6	Technical	What is the rationale behind a difference use rate for electronic bidet seats? It seems the use rate for bidet faucets from PMI was used.	Consider using the same use rate for toilets with or without electronic bidet seats.	Accept	Broke out usage for toilets without bidets and toilets with bidets. Kept 13 uses for both types, and for toilets with bidets we specified 4 of those uses to include the use of the electronic bidet seat (i.e., 13 toilet flushes + 4 bidet seat uses.) Also, moved assumption for dual flush toilets from the top of the comparability section to stage B7 with the rest of these assumptions.
7	5	Operational water use (B7)	Technical	What is the rationale behind a difference use rate for electronic bidet seats? It seems the use rate for bidet faucets from PMI was used.	Consider using the same use rate for toilets with or without electronic bidet seats.	Accept	Broke out usage for toilets without bidets and toilets with bidets. Kept 13 uses for both types, and for toilets with bidets we specified 4 of those uses to include the use of the electronic bidet seat (i.e., 13 toilet flushes + 4 bidet seat uses.) Also, moved assumption for dual flush toilets from the top of the comparability section to stage B7 with the rest of these assumptions.
8	6	B7	Technical	Note 3: the 2008 survey report does not seem to be available anymore.	Use 2012 survey report.	Accept	Referred to more recent survey report.
9	6	B7	Technical	Link to PMI PCR is broken.	Update link.	Accept	Broken link fixed.
10		General	Technical	The part B does not specify rules about industry-wide TR/EPD and benchmarking, although part A specifies that part B contains that information.	Add information or specify that the part B does not cover industry-wide TR/EPD.	Accept	Committee discussed possibility of industry-wide EPD creation and agreed that this set of Part Bs should not allow for their creation.
1	1		Edit	New Part B row has the word no 3 times. I think the middle one should be "Part B Version"	Make change	Accept	Corrected typo.
2	1		Tech	CSI code aligns with residential toilets. Given that combination units (toilets w bidet) are also included, should PCR title be modified to reflect the inclusion of these hybrid units? Exclusions were clearly written in PCR.	Consider modifying PCR title to include these residential hybrid units.	No change	The product group description appears to be unambiguous in this regard.

3	1		Tech	Product group description. It is unclear what is considered part of the toilet. Does the toilet include the seats, seat cover, inner float, etc?	A clear description of what is included in the product should be given. This comes into play for things like B3 repair, when this PCR claims none is needed over a 20 year use cycle, which seems odd when considering these replaceable parts are not widely available and need to be replaced.	Accept	Updated B3 to require replacement of 3 specific toilet parts and 6 specific bidet parts. Unfortunately no industry data is available to cite for this. It's based on the qualitative experiences of a single manufacturer of the top parts ordered separately.
4	1&2		Tech	Exclusions state "Residential toilets that are sold without flushing equipment (included in the UL Environment PCR for Sanitary Ceramics)" However, the UL PCR is listed as expired in next section under existing PCRs	Not sure my recommendation. I guess I would either include them here if UL has not indicated it is renewing the PCR, or b) modify the text under exclusions to clarify that the PCR given is expired to be consistent with the other section. If left as is, it leaves impression they are specifically excluded since they are covered by existing PCR, which they are not.	Accept	Removed from exclusions
5	2		General/Tech	Functional Performance- I assume these are a list of the nationally accepted standards describing performance described in 4.8 of Part A? It is unclear in the Part B that these are required reporting. Also, some of the links aren't active or even helpful. EPA link down. ASME link is to general catalog, etc.	Consider making clear whether reporting to these is required? Must all be reported? If not, how many must be, etc. As a reviewer I am not sure how to interpret this.	Accept	Added 'conformance not required for PCR conformance' to clarify reviewer expectations and to reflect Part A which says they 'can' be used to describe the application of the product
6	2		General	System boundary - references ISO 21930 directly for reqs and does not cite SM part A.	Why aren't you referencing the SM Part A? If you go beyond or deviate from 21930, these references will not pick up the differences. The Part A also contains a more detailed set of requirements specific to system boundaries that reference additional ISO 21930 reqs. Consider modifying these references.	Accept	SM Part A conformant to ISO 21930 plus more detailed.
7	2		Functional Unit	Functional Unit Section states "...with replacements..."	The term "with replacements" does not belong in a functional unit as the replacements are technically not part of the "function" of the product. In addition, the need for replacements is obvious given the disparity to the RSL to the 75 yr ESL, and are explicitly called out in the guidance for B5. Given the above, leaving this as is can lead to confusion.	Accept	Replacements detailed in other sections.
8			Functional Unit	Section states "...avg US residential environment..."	Honestly, I don't think this is needed in the functional unit either, but is fine if you choose to keep it. The use scenario is described in detail in the scenario details for each module. It should be noted that while the details are described sufficiently, they are not really present together as an Avg US residential environment. Instead they are kind of scattered around. For eg... # of uses per day is given in B6/B7, energy is given in B6, Breakdown of uses is given in Sec 1- Addl rules. Consider simplifying the Fcn unit to "One single or dual flush toilet with or without an electronic bidet seat over the estimated service life of the building". The PCR will define how that is dealt with, as it already does.	Accept	Updated to remove geographical reference within functional unit since geographic representative is detailed elsewhere.
9	all		General	The PCR could benefit from a few definitions related to function and product	Consider adding some definitions for key terms or product features (e.g. single flush vs dual flush), what a toilet incl, etc	Accept	Added definitions from ASME A112.19.2 to Product Group section.
10	3		Tech	RSL--PCR states that "If another RSL is used, justification shall include a guarantee by the signature of the most senior officer of the product manufacturer."	As a reviewer verifying to this language, it would take a signature of the CEO to meet this requirement. Is that the intention?	Clarification added.	Updated "another" to "longer". Otherwise kept as-is since this is a direct requirement from ISO 21930, 7.1.4.
11	4		Tech	Repair (B3) - Repair data is not widely available for this product category and is not expected as part of normal usage.	Hmm...my personal experience belies this somewhat. I think we have repaired every toilet in the house over 20 years, mostly the inner tank workings or replacing toilet seats (are these in scope?)	Accept	Updated B3 to require replacement of 3 specific toilet parts and 6 specific bidet parts. Unfortunately no industry data is available to cite for this. It's based on the qualitative experiences of a single manufacturer of the top parts ordered separately.
12	5		Tech	B6 Operational Energy: states that "The flow rate of water will be defined by each product. For residential toilets, the flush volume is product defined."	The hating of the volume of water used in the bidet makes sense, but is the actual water used to flush the toilet also heated? If not, then the flow rate of the toilet is irrelevant to this B6 module measuring energy use. If it is in fact heated, you may ignore this comment.	Accept	Deleted the sentence "For residential toilets, the flush volume is product defined." Also deleted the first bullet specifying residential toilet use assumptions.
13	5		Tech	Operational water use: States that bidet use is 4x per day. This appears inconsistent with the statement that of the days flushes, 3 are solids and the remainder liquids for dual flush toilets (see Sec 1 under additional rules for comparability)	I assume the bidet use is related to solids and not liquids. If not, then bidet use would be higher, wouldn't it? I don't own one, so forgive my ignorance. I also assume the need for the flush is independent of the toilet type (i.e. single flush vs dual flush...unless it is assumed dual flush toilet owners are likely environmentalists and eat better!) This same comment applies to the B6 module as well.	Clarification added.	Bidet seats are used for both solids and liquids. The committee recognizes that actual usage may vary. The assumption of 2 users/day and 2 uses/person is based on PMI's industry guidance. Residential toilets are assumed to be sometimes used without the use of the bidet function, so clarification was added to both the B6 and B3 modules.

14	5		Tech	Operational water use: Data from the U.S. Environmental Protection Agency (EPA) were used to establish weighted average composite factors, to obtain an electricity usage per gallon of water consumed. Use this table to calculate the electricity used for water supply and treatment.	Are users supposed to use the values to calculate their own value of energy per gal, or is the intention for users to use the value generated in the table? This should be clarified	Clarification added.	Edited to read: "Use the value generated in this table to calculate the electricity used for water supply and treatment."
1	2	1	Technical	Additional rules to Part A, 1st section: in light of recent interoperability analyses, gaps in LCI-LCIA connectivity and artificial variances in LCIA results on same datasets can occur depending on the implementation of data within a platform; thus, recommend also disclosing the platform and platform version in which the database was implemented (e.g., ecoinvent v 3.8 implemented in SimaPRO v9.3) such that common discrepancies at least in e.g., electricity, transport, and fuels can be identified. System boundaries: recommend including a diagram, e.g., such as that found in Fig 1. of: Lv et al. 2019: https://www.sciencedirect.com/science/article/pii/S0959652619328082 or Desole et al. 2023: https://link.springer.com/article/10.1007/s13762-023-05074-6#:~:text=As%20previously%20specified%2C%20the%20dataset%20used%20for%20the%20PCR,open%20standard	Recommend requiring disclosure of platform and platform version in which secondary data are implemented for secondary data disclosure, i.e., in addition to database name, version, dataset name, geography, allocation method, e.g., "...as implemented in [SimaPROvx.y/GaBiVx.y/lcacommons.gov + date/OpenLCA version x.y]."	Accept	Added software type and version implemented to list of descriptors.
2		1	Technical	or Desole et al. 2023: https://link.springer.com/article/10.1007/s13762-023-05074-6#:~:text=As%20previously%20specified%2C%20the%20dataset%20used%20for%20the%20PCR,open%20standard	Add system boundaries diagram and table of processes to be included by EPD module.	No change	Toilets commonly are made from ceramics, steel, or plastic, each of which is very different from a manufacturing perspective. A common industry diagram isn't currently available for inclusion in the PCR.
2	*	2	Technical	A1. The PCR should specify whether a generation or consumption mix for electricity should be utilized to represent the source country or region; note, if using public Fed Commons background data, consumption mixes can be specified to the level of balancing authority, which is more granular than country or region (i.e., eGRID) level. The PCR could specify a list of criteria for the various tiers and EPD compilers have the choice as to which tier criteria they meet, e.g., any electricity datasource for transparency, eLCI for public procurement, and eLCI harmonized across other supply chain data for data source.	More granularity in specifying electricity datasets (consumption mix and specific source in the case of complying with additional tier per ACLCA 2022 PCR Open Standard); also, refer to REC Addendum	No change	SM Part A specifies power mix selection for different regions. Committee does not intend for the Part B to comply with additional EPD use case tiers. REC Addendum being considered for incorporation into the next update of SM Part A.

3	3	2	Technical	A1: Upstream manufacturing should also reflect the source country or region to the extent possible (or more granular if takes place in US and PCR specifies public Fed Commons electricity baseline data); in other words, effort should be made to identify activity locations of upstream suppliers	More explicit guidance on including geographic scope for upstream suppliers and reflecting this in underlying LCA to the extent possible	Accept	Added to A1: the manufacturing activities should reflect the source country or region to the extent possible.
4	3	2	Technical	A2: Recommend adding in 5% by volume to the cutoff for transport (unlikely scenario but possible when items 'cube out' before they 'weight out' and can contribute significantly to overall transport). Also, this section is an opportunity to contribute to criteria for EPDs intended for higher tiers (e.g., public procurement or data source). E.g., using consistent secondary data/specifying secondary data such as public data for transport, e.g., USLCI for consistency in modeling transport and could even provide an example tonne-miles calculation such that the tonne-miles are consistently/correctly applied to transport legs (this aspect is the source of many misunderstandings and mistakes in LCAs). As with electricity, this is an opportunity to set precedent for other POs by specifying a list of criteria for the various tiers and EPD compilers have the choice as to which tier criteria they meet, e.g., any transport datasource for transparency, USLCI for public procurement, and USLCI consistently use to model transport (harmonized) across other relevant product categories for data source status.	Add 'by volume' to the 'by mass' criteria specified for cutoff for transport; add granularity to dataset specificity for tiers per the ACLCA 2022 Open Standard	Accept	Added 'by volume' to the criteria. Committee does not intend for the Part B to comply with additional EPD use case tiers.
5	3	2	Technical	Reference service life (RSL) here state to be 20 years should be explicitly differentiated from the service life of various parts of the entire product (e.g., seats, electronic devices/housing, filter tanks, handles, fill valves, valve seals, flappers, chains, etc.) that may need replacement/repair well before the end of the whole product RSL.	Recommend including other parts' default RSLs and/or specifying standards/certifications for parts or groups/types of parts to be utilized in declaring lifetimes such that production of parts with lifetimes shorter than ceramic tank/bowl can be incorporated into and normalized to the FU	Accept	Added new paragraph to the end of stage B3 to require inclusion of serviced/replaced parts if anticipated by the manufacturer.
4		2	Technical	Recommend that a caveat be included that if an EPD publisher elects to use a RSL other than default (20 years) is declared and justified that the comparability to other EPDs may be forfeited depending on the nature of the lifetime alternative to the default	Include example calculation showing how the LCI exchanges get normalized to the FU into reference flows such that EPD publishers understand how the RSL affects LCA outcomes such that they understand influence of deviating from the default RSL; also, include language regarding comparability for FU and RSL	No change	It's not clear why a different RSL would forfeit comparability. As long as the use scenarios and other specific items listed in ISO 21930 are the same, comparability can still be maintained if different RSLs are selected. If a product legitimately lasts longer than another, then performance over the 75-year ESL is appropriately calculated. The committee did change the RSL to 15 years to better align with the residential toilets that come with bidet seats (separate PCR), which is now also 15 years.
3		2	Technical	A4: Recommend including a justification (e.g., US Transportation Statistics) for the average default distance for land transport to final installation site; the amount default distance is 497 miles, which is ~ half what is indicated in the LCA of relevant products that the PCR references (947 miles based on actual shipment averages); also recommend that PCR offers guidance to report transport by modes; it seems likely transport figures significantly in the contribution analysis.	Include information on defensibility of the default installation distance and offer more examples and guidance of how transport are included in the underlying calculations	Accept	No actual data is available, and many distribution scenarios exist. We increased the default to 2,400 km, which is still somewhat arbitrary but reflects the larger distances across North America.

6	4	2	Technical	B3: Repair seems relevant to Module B and guidance for accounting for materials for replacements and waste produced during repairs should be provided drawing from the BOM and data/estimates on repair component frequencies over the lifetime of the whole product. These materials and waste can then be normalized to the functional unit and reported as impacts for Module B.	Include more guidance for how repair shall be factored into underlying calculations (example blank table showing repair frequencies for various parts over default RSL showing columns for material input mass and material waste mass generated per instance). Best is PCR specifying average repair frequencies and recommending deviations provide justification.	Accept	Added new paragraph to the end of stage B3 to require inclusion of serviced/replaced parts if anticipated by the manufacturer.
7	5	2	Technical	B6: It seems that this would be a place to reference REC addendum	Reference REC Addendum for electricity	No change	REC Addendum being considered for incorporation into the next update of SM Part A.
8	6	2	Technical	C14 and D1 regarding this EPD and for harmonizing across product categories as it may be relevant for those incorporating waste materials (e.g., concrete producers); Recommend additional guidance as preparation for and transport of wastes intended for recycling may differ from those destined for landfill, e.g., % level disassembly and material components separation, which can affect unit processes selected to reflect disposal; recommend more explicit guidance on how to model including specification of waste disposal processes in the case of material separation for recycling here for EPD producers.	More explicit guidance on reflecting recycling and landfilling processes and harmonizing across other building product categories (i.e., envelope material producers)	No change	Most manufacturers do not have take-back programs, and waste diversion data for building projects are not available. Further, residential toilets are typically sent to landfill at their end of life. We have maintained the 100% landfill assumption as the default. Any suggestions on toilet recycling data sources are welcome.
9	7	3	Technical	As per the Open Standard, this section is an opportunity for the PO/PCR Committee to compile and attach a DQ template such that EPD producers can easily and consistently provide DQ indices for process and flow level indicators; e.g., see EPA Data Quality Pedigree Matrix criteria as enhanced by Bhat & Mukherjee in FHWA's Pavement LCA Tool	Add DQ template and guidance.	No change	The SM Part A PCR requires the use of the suggested pedigree matrix for PCRs that conform to the Procurement or Data Source levels. This PCR committee decided to keep the PCRs at the Transparency level for now, but might consider upgrading in the future.
10	7	Additional LCA Calculation Rules	Technical	It seems per Lv et al. 2019 (mentioned above), that an example material and energy balance for sanitary ceramics LCA is publicly available; this is ~ half the work of creating an LCI data collection template, along with tools such as that created by PNNL (see DOE Model-Linked Lighting LCI Template: https://www.energy.gov/eere/ssl/life-cycle-inventory-template-luminaires); these materials provide fodder for creating an LCI template for sanitary ceramics that would be of great value to this MEP category; as recent case studies presented at the MEP 2040 Quarterly Forum indicate, MEPs may be much more significant contributors to whole building impacts than previously thought and would benefit greatly from LCA tools streamlining the EPD compilation and publishing process. EPA is about to launch industry grant program to facilitate IRA Section 60112 program implementation and industry associations creating templates that facilitate more participation in providing comparable LCAs/EPDs may be eligible for these types of grants.	Consider creation of LCI data collection template to facilitate implementation of IRA Section 60112 programs	No change	The PCR committee might decide to develop a data collection template in the future, but at this time declines to do so.
1			Technical	Do not agree with the names and/or scopes of these product groups	The commercial toilet PCR include toilets with or without flushometers, but there is another PCR for the flushometers. Suggest keeping the flushometers as a separate PCR and the commercial toilet PCR be only for the toilet without the flushometer.	No changes made.	As of November, the committee decided to separate flushometers from commercial toilets and the latest version of the commercial toilet PCR excludes flushometers. No change needed.
2			Technical	There are other relevant existing PCRs, EPDs, or SM Transparency Reports that should also be referenced and/or utilized	The flushometers and faucets are already covered under the UL PCR Part B for Kitchen and Bath Fixture Fittings, which doesn't expire for another year and a half. Do not agree with the exception noted for creating a duplicate PCR.	No changes made.	The committee has been informed that SM reached out to UL to address the overlap in scope. No response was received as of the writing of this response. We believe the intent for harmonization per the ACLCA Open Standard has been achieved.
3			Technical	Do not agree with the proposed estimated service life (ESL) and reference service lives (RSLs), and the supporting rationale	RSLs for the urinals and toilets do not align with previous PCRs. Rationale should be given for the revised RSLs.	Agree that rationale should be provided.	For the PCRs with updated RSLs (commercial toilets and urinals), we have added a description of the change, an explanation for why it was changed, the implication to the LCA results, and references for the new data sources used.

4			Technical	The additional rules to Part A are not sufficient for enhancing the comparability of products within these product groups	I do not see additional comparability rules listed in any of the Part Bs.	No changes made.	These are listed in the section titled "Additional rules to Part A". In the future, Sustainable Minds will add links to the Part Bs in each of the survey pages for ease of review.
5			Technical	Do not agree with the proposed default life cycle stage scenarios for C1-C4 and the supporting rationale	C2 scenarios are missing in all of the Part Bs.	Agree that C2 should be included.	Added scenario information to use 100 km via diesel-powered truck/trailer.
6			Other	Previous versions of these PCRs from other Program Operators allowed for a global market, yet these PCR restrict to North American market.	Suggest allowing global market applications.	No changes made.	The committee has considered expanding the scope, but for now will keep the focus on North America. The committee may decide to add other geographical assumptions later if data are available.
7			Other	These PCRs are listed as Transparency level PCRs for the Open Standard level, which would preclude a user of the EPDs from using these for procurement. Any architect or builder wanting to use these EPDs to meet their procurement requirements would not be able to use them.		No changes made.	The committee considered increasing the use case level, but for now will maintain conformance with Level 1. If the market changes, the committee may reconsider.
8			Other	As a member of the PCR drafting committee, the weekly meetings were difficult to accommodate. Following the new Open Standard as written was also difficult.		No changes made.	Updated meeting notes were distributed weekly with updated drafts of the Part B. A request for additional comments was included in the meeting notes and in the weekly emails. The weekly email also included a link to the folder with recordings of the meetings. SM is open to suggestions for improving these accommodations for any committee members who are unable to attend the live meetings.



Part B comments worksheet

SM Transparency Report™ Framework

Sustainable Minds, PCR Part B: Product group definition | Residential toilets, 2025. http://www.sustainableminds.com/files/transparency/pgds/Part_B_Product_Group_Definition_Commercial_Toilets_2024_v3-1.pdf.

Part B: Product group definition

Version 2023

Part B name:	Residential toilets, v3.1
Technical reviewers:	Hugues Imbeault-Tétreault, Jack Geibig, Rebe Feraldi

Topic #	Page #	Section #	Type of comment (Technical/editorial/other)	Reviewer comment	Reviewer's proposed change/solution	Response	Rationale
No technical or public comments received on update to v3.1.							