



## Part B: Product group definition | Commercial urinals

<b>Initiators</b>	<b>TOTO USA</b> Visit an SM Transparency Report for commercial urinals: <a href="http://www.sustainableminds.com/showroom/toto/">http://www.sustainableminds.com/showroom/toto/</a>
<b>Other company(s) and organization(s) involved</b>	<b>TOTO USA, Kohler, and Sloan</b>

### Product group

<b>Name</b>	<b>Commercial Urinals</b>	<b>CSI MasterFormat® #(s) or UNCPC(s)</b>	22 42 13.16
<b>Description</b> Define the types of products included under this Part B	Commercial urinals intended for use with a flushometer valve to supply water volume and pressure necessary for proper function. Because urinals are used in conjunction with flushometer valve, only one use phase per valve-urinal combination should be used.		
<b>New Part B request?</b> Yes / No	No	<b>Is this an update to an existing Part B?</b> Yes / No	Yes
<b>Validity date</b>	07/03/2018 – 07/03/2023		
<b>Existing PCRs, EPDs, SM TRs or LCAs</b> This information will be used to identify additional rules for comparability and to substantiate the rationale for creating a Part B.	<p>This Part B is an update to: <a href="http://www.sustainableminds.com/files/transparency/pgds/Part_B_Product_Group_Definition_Commercial_Urinals_09132017.pdf">http://www.sustainableminds.com/files/transparency/pgds/Part_B_Product_Group_Definition_Commercial_Urinals_09132017.pdf</a></p> <p><b>Institut Bauen und Umwelt e.V.: PCR Guidance-Texts for Building-Related Products and Service From the range of Environmental Product Declarations of Institute Construction and Environment e.V. (IBU), Part B: Requirements on the EPD for Sanitary Ceramics. November 2011 <a href="http://www.bau-umwelt.de">www.bau-umwelt.de</a></b></p> <p>This European guidance document applies to vitreous china and fine fire clay ceramic sanitary ware. It does not contain any relevant additional rules specific to this product group.</p>		
<b>Any relevant literature and/or published material</b>	Updated according to new product cleaning assumptions and use phase data provided in the new PMI Product Category Rule (PCR) Guidance for Kitchen and Bath Vessel Fixtures [1] and Fixture Fittings [2].		

### Functional performance

Standard/certification	URL
Functional performance - <b>ASME A112.19.2</b>	<a href="https://www.asme.org/products/codes-standards/a112192csa-b451-2013-ceramic-plumbing-fixtures-(1)">https://www.asme.org/products/codes-standards/a112192csa-b451-2013-ceramic-plumbing-fixtures-(1)</a>
Flow rate - <b>EPAct 1992</b>	<a href="http://www.ferc.gov/legal/maj-ord-reg/epa.pdf">http://www.ferc.gov/legal/maj-ord-reg/epa.pdf</a>

### Functional / declared unit

<b>Unit</b>	<b>10 years of use of a commercial urinal in an average US commercial environment</b>
<b>Rationale</b>	<ul style="list-style-type: none"> <li>Product available and used in US market</li> <li>10 years is an industry accepted average lifespan that is based on the economic lifespan of a product. This is more limited than the technical lifespan of the product due to changes in consumer preferences and innovations in water usage. The ceramic will outlive the 10 years easily.</li> </ul>

### Additional rules for comparability

<b>1. Clarification</b> More product group specificity as needed	None
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<b>2. Additional rules to Part A</b>	Water and wastewater infrastructure are excluded																										
<b>3. Default life cycle stage scenario(s)</b>	<p><b><u>Default use phase scenario:</u></b></p> <p>The urinal is assumed to be used in an average US commercial environment over a 10-year time period with an average of 60 flushes per day, 260 days per year [2]. The vessel portion and valve portion of the urinal are assumed to be cleaned daily, 7 days a week, 52 weeks per year, each with 10mL of a 1% sodium lauryl sulfate solution for a total of 72.8L of SLS solution over the urinal’s lifetime [1, 2]. Any electricity used in flushometer valve operation is included. The volume of water per flush varies and depends on the specific product to which this Part B applies.</p> <p><b><u>Transportation assumptions:</u></b></p> <p>Primary data should be used for the transportation distances between the manufacturer and the distributor. Unless otherwise known, assume transportation distances of 500km from the distributor to the installation site and 100km from the installation site to waste processing, via diesel-powered truck/trailer [1, 2].</p> <p><b><u>Electricity consumption for water supply and treatment:</u></b></p> <p>Water usage in a commercial facility would also include electricity usage for acquisition, treatment, and distribution of water to facilities and collection, conveyance and wastewater treatment of domestic wastewater. The Electric Power Research Institute (EPRI) published this type of data in a study on water and sustainability. 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:</p> <p><b>Table: Average National Electricity Usage Factors</b></p> <table border="1" data-bbox="505 961 1450 1625"> <thead> <tr> <th>Activity</th> <th>EPRI factors: kWh / MMgal<sup>Note 1</sup></th> <th>Weighted avg composite factors: kWh / MMgal</th> </tr> </thead> <tbody> <tr> <td>Acquisition, treatment and distribution of surface water by a Public Water System (PWS)</td> <td>1,406</td> <td rowspan="2">1,540<sup>Note 2</sup></td> </tr> <tr> <td>Acquisition, treatment and distribution of ground water by a PWS</td> <td>1,824</td> </tr> <tr> <td>Self-supply of drinking water (typically pumping from private wells)</td> <td>700</td> <td>700</td> </tr> <tr> <td>Collection, conveyance and &lt; secondary treatment of domestic wastewater</td> <td>661</td> <td rowspan="4">1,399<sup>Note 3</sup></td> </tr> <tr> <td>Collection, conveyance and secondary treatment of domestic wastewater</td> <td>1,212</td> </tr> <tr> <td>Collection, conveyance and advanced treatment of domestic wastewater</td> <td>1,726</td> </tr> <tr> <td>Collection, conveyance and zero discharge/other treatment of domestic wastewater</td> <td>400</td> </tr> <tr> <td>Total electricity per million gallons →</td> <td></td> <td>3,639</td> </tr> <tr> <td><b>Total kWh electricity per 1 gallon →</b></td> <td></td> <td><b>0.0036</b></td> </tr> </tbody> </table> <p><b>Note 1:</b> Source: EPRI, Water &amp; Sustainability (Volume 4): U.S. Electricity Consumption for Water Supply &amp; Treatment -- The Next Half Century, March 2002.</p> <p><b>Note 2:</b> Source: U.S. Environmental Protection Agency (EPA), Office of Water (4606) Drinking Water Treatment, June 2004  <a href="http://water.epa.gov/lawsregs/guidance/sdwa/upload/2009_08_28_sdwa_fs_30ann_treatment_w eb.pdf">http://water.epa.gov/lawsregs/guidance/sdwa/upload/2009_08_28_sdwa_fs_30ann_treatment_w eb.pdf</a>. This document cites 68% of population served by PWSs relies on surface water while 32% relies on ground water.</p> <p><b>Note 3:</b> Source: U.S. Environmental Protection Agency (EPA), Clean Watersheds Needs Survey 2008 Report to Congress  <a href="http://water.epa.gov/scitech/datait/databases/cwns/upload/cwns2008rtc.pdf">http://water.epa.gov/scitech/datait/databases/cwns/upload/cwns2008rtc.pdf</a>. This report cites 1.7% of POTW-served population receives &lt; secondary treatment, 40.9% receives secondary treatment, 49.9% receives advanced treatment, and 7.5% receives zero discharge or other</p>	Activity	EPRI factors: kWh / MMgal <sup>Note 1</sup>	Weighted avg composite factors: kWh / MMgal	Acquisition, treatment and distribution of surface water by a Public Water System (PWS)	1,406	1,540 <sup>Note 2</sup>	Acquisition, treatment and distribution of ground water by a PWS	1,824	Self-supply of drinking water (typically pumping from private wells)	700	700	Collection, conveyance and < secondary treatment of domestic wastewater	661	1,399 <sup>Note 3</sup>	Collection, conveyance and secondary treatment of domestic wastewater	1,212	Collection, conveyance and advanced treatment of domestic wastewater	1,726	Collection, conveyance and zero discharge/other treatment of domestic wastewater	400	Total electricity per million gallons →		3,639	<b>Total kWh electricity per 1 gallon →</b>		<b>0.0036</b>
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	<p>treatment.</p> <p>[1] Plumbing Manufacturers International (PMI), Product Category Rule (PCR) Guidance for Kitchen and Bath Vessel Fixtures v1.1  <a href="https://www.safeplumbing.org/files/safeplumbing.org/documents/resources/PMI-Kitchen-and-Bath-Vessel-PCR-Guidance-Document-1-1.pdf">https://www.safeplumbing.org/files/safeplumbing.org/documents/resources/PMI-Kitchen-and-Bath-Vessel-PCR-Guidance-Document-1-1.pdf</a></p> <p>[2] Plumbing Manufacturers International (PMI), Product Category Rule (PCR) Guidance for Kitchen and Bath Fixture Fittings  <a href="https://www.safeplumbing.org/files/safeplumbing.org/documents/resources/PMI-Kitchen-and-Bath-Fixture-Fitting-PCR-Guidance-Document.pdf">https://www.safeplumbing.org/files/safeplumbing.org/documents/resources/PMI-Kitchen-and-Bath-Fixture-Fitting-PCR-Guidance-Document.pdf</a>.</p>	
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### Additional LCA calculation rules

N/A	Optional	Required	<i>Indicate whether conformance is the manufacturer's choice or required for EPD/TR. Refer to Part A: Compatibility appendices for content requirements.</i>
	<b>X</b>		<b>ISO 21930</b>