



**Part B: Product group definition | Commercial self-closing faucets**

<b>Initiators</b>	<b>TOTO USA</b> Visit an SM Transparency Report for commercial self-closing faucets: <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 and T&amp;S Brass and Bronze Works</b>

**Product group**

<b>Name</b>	<b>Commercial Self-Closing Faucets</b>	<b>CSI MasterFormat® #(s) or UNCPC(s)</b>	22 42 39
<b>Description</b> Define the types of products included under this Part B	Self-closing faucets intended for use with lavatory sinks as the dispensing unit for the water supplied, including sensor-operated and metering faucets		
<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>	xx/xx/2017 – xx/xx/2022		
<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_Commercial_Faucets_10.27.2015.pdf">http://www.sustainableminds.com/files/transparency/pgds/Part_B_Commercial_Faucets_10.27.2015.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 Bathroom fittings and showers. October 2013 <a href="http://www.bau-umwelt.de">www.bau-umwelt.de</a></b></p> <p>This European guidance document applies to bathroom fittings and showers. It does not contain any relevant additional rules specific to this product group.</p>		
<b>Relevant literature and published material</b>	Updated according to new research on the number of commercial lavatory faucet uses per year (in the Default life cycle stage scenario(s) section, reference 1)		

**Functional performance**

Standard/certification	URL
Functional performance - <b>ASME A112.18.1</b>	<a href="https://www.asme.org/products/codes-standards/a112181csa-b1251-2012-plumbing-supply-fittings">https://www.asme.org/products/codes-standards/a112181csa-b1251-2012-plumbing-supply-fittings</a>
Flow Rate - <b>EPA 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>3 years of use of a faucet in an average US commercial lavatory environment</b>
<b>Rationale</b>	<ul style="list-style-type: none"> <li>Product available and used in US market</li> <li>3 years is based on the warranty term for the average commercial faucet. The economical lifespan of commercial applications can be longer or shorter due to aesthetic replacements or more intense use. Electrical and other hardware components, especially those related to rubbers for water tight connections and moving parts, will require replacement beyond this timeframe as part of the proper maintenance.</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>	<ul style="list-style-type: none"> <li>Water and wastewater infrastructure are excluded</li> <li>Hot water use is not included within the scope of LCA and is not considered in the use phase scenario</li> </ul>																										
<b>3. Default life cycle stage scenario(s)</b>	<p><b><u>Default use phase scenario:</u></b></p> <p>The faucet is assumed to be used in an average US commercial lavatory environment over a 3-year time period with an average of <b>69 uses per day, 260 days per year</b>. The number of faucet uses is assumed to be the same as the number of the number of toilet and urinal flushes, so this number was derived by adding the number of toilet and urinal flushes as specified in the Part B for Commercial Flushometer Valves [1]. Any electricity used in faucet operation is included. The volume of water per use varies and depends on the <b>specific sensor-operated or metering faucet</b> 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 [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="500 972 1450 1640"> <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 colspan="2">Total electricity per million gallons →</td> <td>3,639</td> </tr> <tr> <td colspan="2"><b>Total kWh electricity per 1 gallon →</b></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_web.pdf">http://water.epa.gov/lawsregs/guidance/sdwa/upload/2009_08_28_sdwa_fs_30ann_treatment_web.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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	treatment.  [1] Sustainable Minds, Sustainable Minds Transparency Report™ / EPD Framework Part B: Commercial Flushometer Valves, December 13, 2016 <a href="http://www.sustainableminds.com/files/transparency/pgds/Part_B_Commercial_Flushometer_Valves_12.13.2016.pdf">http://www.sustainableminds.com/files/transparency/pgds/Part_B_Commercial_Flushometer_Valves_12.13.2016.pdf</a> . [2] Plumbing Manufacturers International (PMI), Product Category Rule (PCR) Guidance for Kitchen and Bath Vessel Fixtures <a href="https://www.safeplumbing.org/index/product-category-rules-pcr-documents/product-category-rules-document-for-kitchen-and-bath-vessel-fixtures?file=files/safeplumbing.org/documents/resources/PMI-Kitchen-and-Bath-Vessel-PCR-Guidance-Document.pdf">https://www.safeplumbing.org/index/product-category-rules-pcr-documents/product-category-rules-document-for-kitchen-and-bath-vessel-fixtures?file=files/safeplumbing.org/documents/resources/PMI-Kitchen-and-Bath-Vessel-PCR-Guidance-Document.pdf</a> .	
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### Additional LCA calculation rules

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