

# TOTO®

## EcoPower® Urinal Flush Valve

TEU2UA - 0.125gpf

Planet-friendly, superior flushing performance is easy to achieve with the EcoPower Ultra High Efficiency Urinal Flushometer Valve. Engineered to require no electricity or routine battery replacement, the EcoPower Flushometer Valve saves energy and water while providing maximum performance in even the most demanding commercial spaces.



### Performance Dashboard

#### Features & functionality

- 0.125gpf EcoPower® Ultra High-Efficiency Urinal (HEU) electronic flushometer valve
- Hydropower self-generating system
- Automatic sensor activated
- 12 hour automatic flush for trap seal protection
- Piston valve technology
- Manual override button
- ADA compliant

Visit TOTO for more product specifications for:

[TEU2UA](#)

CSI MasterFormat™ #22 42 43



- ECO-POWER® VALVES**
- Powered by water to create an electrical current that is stored in rechargeable cells to power the Smart Sensor System of the faucet or valve.
  - Reduces electricity use, lower maintenance costs and hands-free, automatic-shut-off functionality.

#### Environmental performance

##### Improved by:

- Powered by the sheer force of running water
- Saves 88% more water than standard 1.0gpf valve
- Metal parts and electric components are recyclable at the end of service

##### Certifications & rating systems:

- Contributes to earning credits in LEED®
- Declare™ Label, LBC Compliant

[See LCA results & interpretation](#)

[See material health results & interpretation](#)



## SM Transparency Report™ + Material Health Overview™

#### VERIFICATION

LCA

3rd party reviewed



Transparency Report

Verified



Material evaluation

Self-declared



Validity: 07/19/17 – 07/19/22  
TOT – 07/19/17 – 024

This declaration was independently verified to the SM Transparency Report / EPD Framework and ISO 14025.

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The material health evaluation is self-declared and done in accordance with the Manufacturers Guide to Declare.

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## LCA results & interpretation

## EcoPower® Urinal Flush Valve TEU2UA

### Life cycle assessment

### Material health

#### Scope and summary

- Cradle to grave  Cradle to gate with options  Cradle to gate

#### Functional unit

One flush valve for urinals in an average U.S. commercial environment for 10 years. The period of 10 years is modeled as the period of application based on the average technical lifespan for commercial applications. The economical lifespan of commercial applications can be longer or shorter due to aesthetic replacements or more intense use. The implication is that the LCA model assumes that the application ends at year 10 and that the materials will be treated in an end-of-life scenario.

Reference service life: 10 years

Data reporting period: 2016

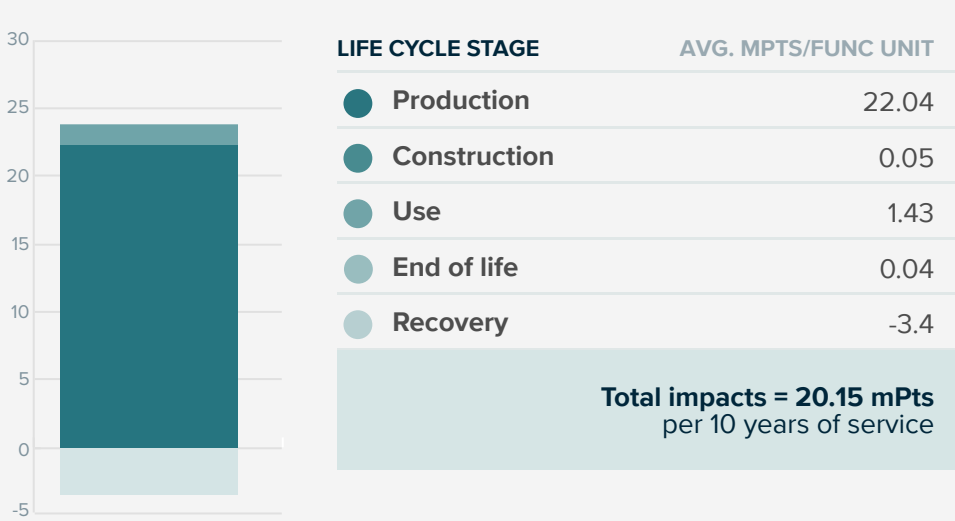
#### Default use phase scenario

10 years of service in an average U.S. commercial environment in combination with a urinal with 0.125 gallon/use, 18 uses/day, and 260 days/year resulting in 5,850 gallons of water.

#### Material composition greater than 1% by weight

PART	MATERIAL	AVG. % WT.
Valve body	Bronze	33.8%
Packaging	Cardboard	21.5%
Top cover	Stainless steel	19.5%
Frame	ABS	5.2%
Valve tailpiece	Bronze	4.1%
Tailpiece nut	Brass	1.5%
Solenoid coil	Copper	1.3%
	Other	13.0%

#### Total impacts by life cycle stages [mPts/func unit]



#### What's causing the greatest impacts

##### All life cycle stages

The use and production stages are both important and dominate the results for all impact categories. The impact of the use stage is mostly due to the embedded energy arising from acquisition, treatment and distribution of the water used during the use of the product (i.e. a Urinal or a urinal) to which the valves are installed. The production stage itself has a significant contribution to eutrophication (mostly from emissions from copper mining), non-carcinogens (emissions from the production of coal, copper and zinc) and ecotoxicity (mostly from the disposal of steel slags and bottom ashes, as well as from barium emissions to water due to the extraction processes of natural gas).

The recovery stage includes recycling processes and benefits by preventing the need to produce primary materials. Recycling is a relevant factor for some of the impact categories, offsetting a portion of the impacts caused by production. Additionally, the delivery of the product to the construction/installation site, the construction/installation processes, the processes for dismantling the product and final waste treatment during the end of life stage do not have a significant impact.

##### Production stage

Bronze and stainless steel parts, together with the printed wiring board, have significant contributions to the impact categories. The stainless steel material is relevant to the carcinogenics category. The electroplating process is a major contributor to the ozone depletion category while the die casting process is relevant to the ecotoxicity and non-carcinogenics categories. Additionally, polishing and potting have somewhat significant processing contribution to the results. Transport via oceanic freighter appears as a relevant contributor to the fossil fuel depletion and smog categories. The remaining parts and processes contribute between 3% and 15% to the overall impacts in the rest of the categories.

#### TOTO PeoplePlanetWater. programs improving environmental performance

- TOTO's EcoPower® products are powered by the force of running water.
- The electronic and mechanical components are programmed and designed to allow water flow and accurate flush volume only when needed.
- Water consumption is reduced in the use phase due to superior flushing performance.

[See how we make it greener](#)

## LCA results

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	USE	END OF LIFE	RECOVERY
<b>Information modules: Included   Excluded*</b>	<b>A1 Raw Materials</b>	<b>A4 Transportation/Delivery</b>	<b>B1 Use</b>	<b>C1 Deconstruction/Demolition</b>	<b>D Reuse, recovery and/or recycling</b>
*Installation and deconstruction/demolition are mostly manual. The sanitary fittings should not need repair, maintenance or replacement during the modeled life time.	<b>A2 Transportation</b>	<b>A5 Construction/Installation</b>	<b>B2 Maintenance</b>	<b>C2 Transportation</b>	
Reuse and energy recovery are not modeled for sanitary fittings.	<b>A3 Manufacturing</b>		<b>B3 Repair</b>	<b>C3 Waste processing</b>	
			<b>B4 Replacement</b>	<b>C4 Disposal</b>	
			<b>B5 Refurbishment</b>		
			<b>B6 Operational energy use</b>		
			<b>B7 Operational water use</b>		

#### SM 2013 Learn about SM Single Score results

Impacts per 10 years of service	22.04 mPts	0.05 mPts	1.43 mPts	0.04 mPts	-3.4 mPts
<b>Materials or processes contributing &gt;20% to total impacts in each life cycle stage</b>	Bronze and zinc parts together with the printed wiring board in addition to manufacturing processes such as die casting and electroplating.	Transportation of the product to the installation site or consumer and disposal of packaging.	Volume of water use during the operation of the product and the embedded energy use in the water used.	Transport to waste processing, waste processing and disposal of material flows transported to a landfill.	Plastic and metal components' recycling processes.

#### TRACI v2.1 results per one flush valve

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	USE	END OF LIFE	RECOVERY	
<b>Ecological damage</b>						
Impact Category	Unit					
<b>Acidification</b>	kg SO <sub>2</sub> eq	1.32E+00	3.07E-03	1.03E-01	2.31E-03	-1.07E-01
<b>Eutrophication</b>	kg N eq	9.02E-01	6.73E-04	1.14E-02	3.42E-04	-2.60E-02
<b>Global warming</b>	kg CO <sub>2</sub> eq	7.18E+01	7.87E-01	1.98E+01	3.37E-01	-8.08E+00
<b>Ozone depletion</b>	kg CFC-11 eq	2.81E-06	2.00E-09	8.97E-07	3.60E-08	-5.07E-07
<b>Human health damage</b>						
Impact Category	Unit					
<b>Carcinogenics</b>	CTU <sub>h</sub>	4.57E-06	6.74E-09	4.07E-07	5.66E-09	-8.81E-07
<b>Non-carcinogenics</b>	CTU <sub>h</sub>	9.12E-05	6.31E-08	1.68E-06	2.60E-07	-1.87E-05
<b>Respiratory effects</b>	kg PM <sub>2.5</sub> eq	1.83E-01	5.42E-05	6.95E-03	2.68E-04	-2.04E-02
<b>Smog</b>	kg O <sub>3</sub> eq	8.99E+00	8.92E-02	9.44E-01	4.86E-02	-8.71E-01
<b>Additional environmental information</b>						
Impact Category	Unit					
<b>Ecotoxicity</b>	CTU <sub>e</sub>	2.87E+02	1.18E+00	6.82E+00	4.93E-01	-3.36E+01
<b>Fossil fuel depletion</b>	MJ surplus	4.35E+01	8.54E-01	1.19E+01	4.52E-01	-6.74E+00

## References

#### LCA Background Report

TOTO Sanitary Fittings Products LCA Background Report, May 2017

#### SM Transparency Report Framework

**Part A:** LCA Calculation Rules and Background Report Requirements v2017 (compliant with ISO14040-44 and ISO14025)

**Part B:** Product Group Definition – Commercial Flushometer Valves

Transparency Reports™ / environmental product declarations enable purchasers and users to compare the potential environmental performance of products on a life cycle basis. They are designed to present information transparently to make the limitations of comparability more understandable. TRs/EPDs of products that conform to the same PCR and include the same life cycle stages, but are made by different manufacturers, may not sufficiently align to support direct comparisons. They therefore, cannot be used as comparative assertions unless the conditions defined in ISO 14025 Section 6.7.2. 'Requirements for Comparability' are satisfied.

## Rating systems

The intent is to reward project teams for selecting products from manufacturers who have verified improved life-cycle environmental performance.

#### LEED BD+C: New Construction | v4 - LEED v4

Building product disclosure and optimization

#### Environmental product declarations

- Industry-wide (generic) EPD 1/2 product
- Product-specific Type III EPD 1 product

#### Green Globes for New Construction and Sustainable Interiors Materials and resources

- NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell
- C 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

## SM Transparency Report™+ Material Health Overview™

VERIFICATION	LCA
3rd party reviewed	<input checked="" type="checkbox"/> NSF
Transparency Report	
Verified	<input checked="" type="checkbox"/> NSF
Material evaluation	
Self-declared	<input checked="" type="checkbox"/>

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## LCA & material health results & interpretation

## EcoPower® Urinal Flush Valve TEU2UA

Life cycle assessment

Material health

### Evaluation program: Declare

**Declare** labels are issued to products disclosing ingredient inventory, sourcing and end of life options. Declare labels are based on the Manufacturers Guide to Declare, administered by the International Living Future Institute.

#### How it works

Material ingredients are inventoried and screened against the [Living Building Challenge](#) (LBC) Red List which represents the 'worst in class' materials, chemicals, and elements known to pose serious risks to human health and the greater ecosystem.

The Declare product database and label are used to select products that meet the Living Building Challenge's stringent materials requirements, streamlining the materials specification and certification process.

### Assessment scope and results

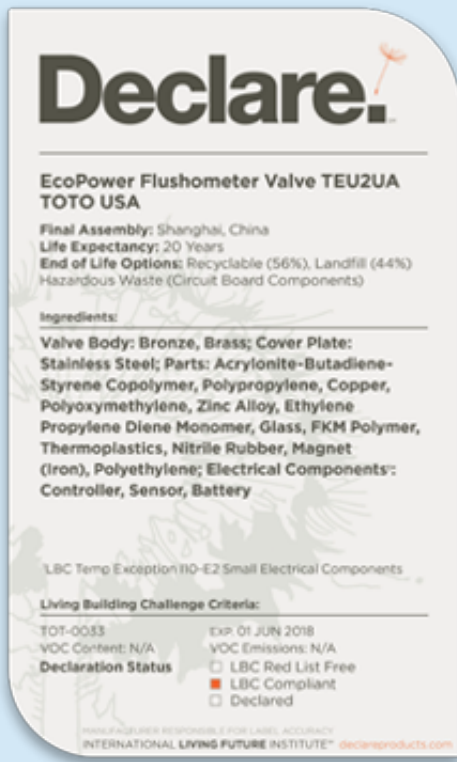
**Content inventory:** All ingredients identified by name and CAS #  
**Inventory threshold:** 100 ppm

#### Declaration status:

The Declare product database and label are used to select products that meet the LBC's stringent materials requirements, streamlining the materials specification and certification process.

- LBC Red List Free [?](#)
- LBC Compliant [?](#)
- Declared [?](#)

#### ● EcoPower Flushometer Valve TEU2UA



[Click on each label to see the full declaration](#)

### How this rating was achieved

#### Declare level

'Living Building Challenge Compliant' is achieved when the product contains Red List ingredients that have been given a temporary exception by the Living Building Challenge due to current market limitations.

#### What's in the product and why

The flush valve cover is plated with chrome (Hexavalent Chromium VI). Chromium material is used as a decorative finish in applications where corrosion-resistance and durability are required. During the chrome plating process health hazards have been identified and are managed. Process controls are used to protect the environment and the production workers wear personal protection equipment. After the plating process the chrome surface is inert and does not pose any health risks. The cover in its final form does not represent any hazards to the user.

The TOTO facility in which the faucet is manufactured is ISO 14001 certified. This means that the facility has implemented an environmental management system as part of TOTO's commitment to the health of the environment.

#### Where it goes at the end of its life

TOTO encourages consumers to recycle their used flush valves. Contact your local municipality for recycling programs.

### How we're making it healthier

The EcoPower technology enables the flush valve to operate off the energy grid and requires no routine battery replacement. This technology helps to reduce pollution and hazardous waste, thereby mitigating human health impacts.

[See how we make it greener](#)

### References

#### Declare

Declare TOTO USA, Declare label for EcoPower Flushometer Valve TEU2UA

#### Manufacturer's Guide to Declare

A comprehensive guide providing information about the program, the assessment methodology, how to submit material data to obtain a Declare label and how they are used to meet the Health & Happiness and Materials Petals of the Living Building Challenge.

### Rating systems

#### LEED BD+C: New Construction | v4 - LEED v4

Building product disclosure and optimization

#### Material ingredients

Credit value options 1 product each

1. Reporting  2. Optimization  3. Supply chain optimization

#### Living Building Challenge

##### Materials petals imperatives

10. Red List Free  12. Responsible Industry  13. Living Economy Sourcing

#### WELL Building Standard®

##### Air and Mind Features

- Air 4. VOC reduction  Air 26. Enhanced Material Safety

- Mind 97. Material Transparency  Mind 98. Organizational Transparency

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## How we make it greener

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[Collapse all](#)

[See LCA results by life cycle stage](#)

### CONSTRUCTION

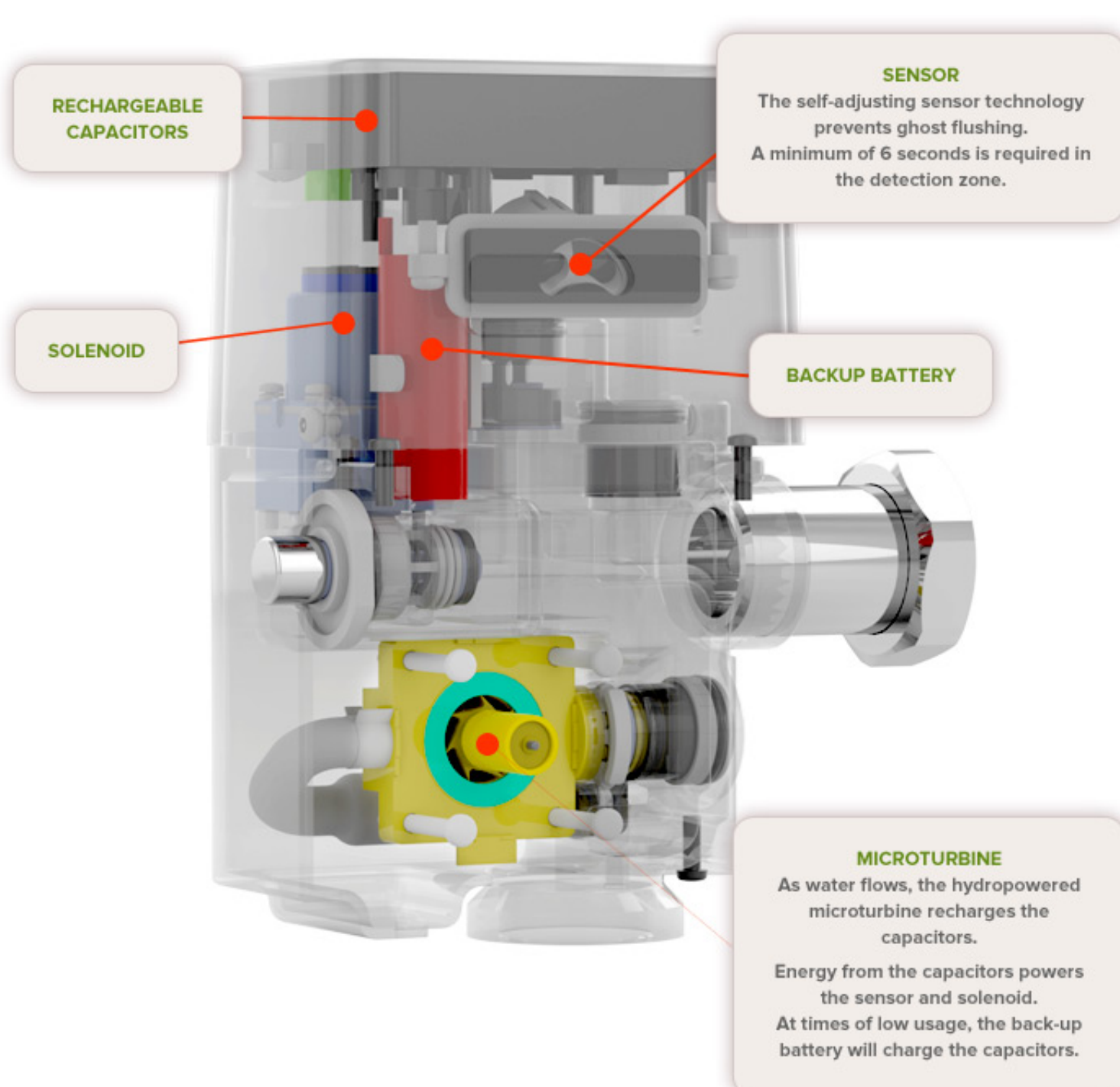


TOTO participates in the UPS Carbon Neutral program. TOTO is a certified SmartWay partner.

### USE

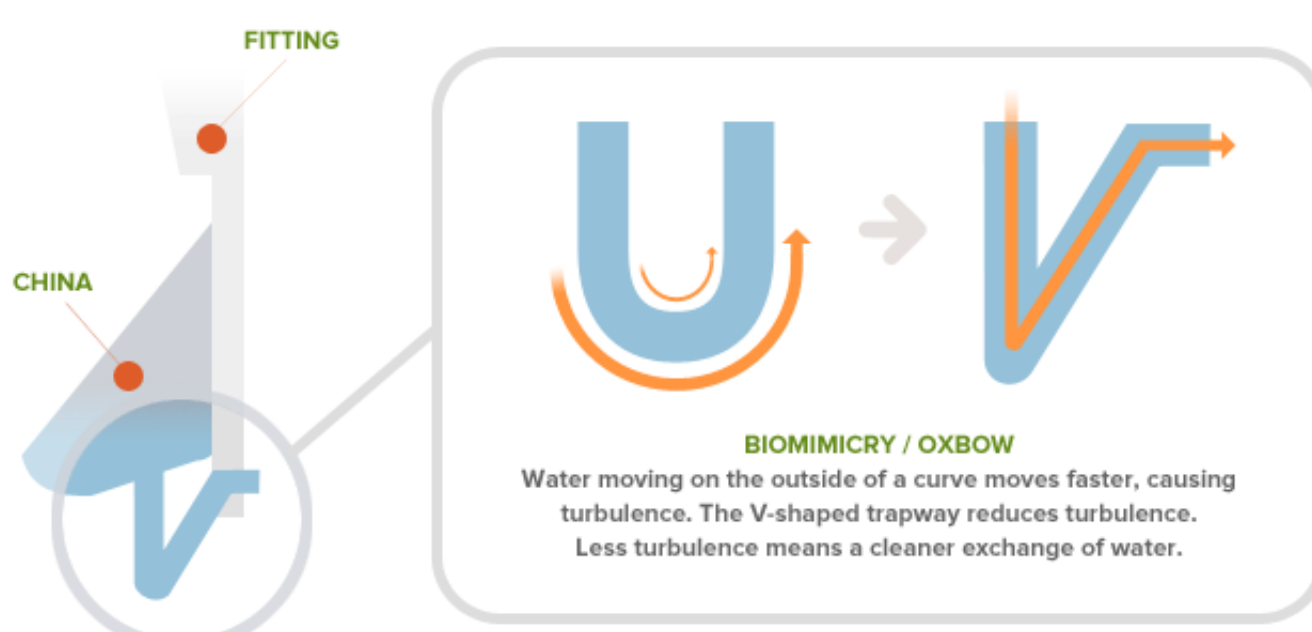


TOTO's EcoPower® Urinal Flush Valves feature the highly regarded EcoPower technology. Engineered to reduce environmental impacts, TOTO's EcoPower products offer water and energy savings without sacrificing performance. Below are some of the features of TOTO's EcoPower technology.

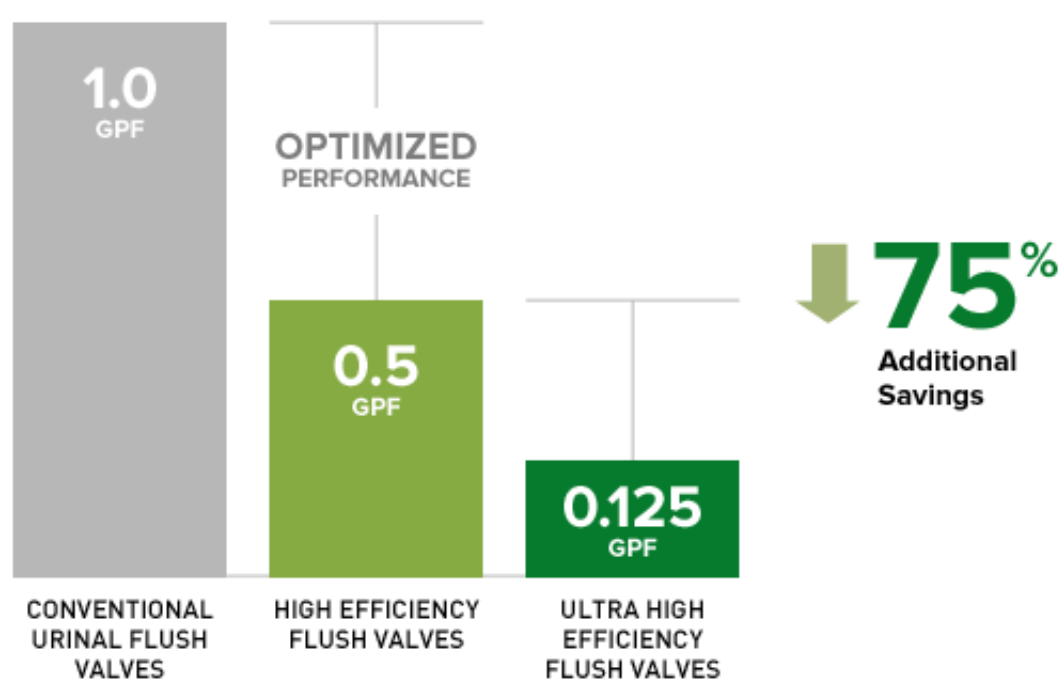


**SENSOR:**  
Ensuring that water flows only when needed, the self-adjusting EcoPower sensor eliminates "ghost" flushing that wastes water. A minimum of six seconds presence in front of the sensor is required to receive acknowledgment, preventing excessive flushing.

**MICROTURBINE:**  
TOTO's EcoPower technology enables the product to operate 100% off grid. As water flows, the microturbine recharges the capacitor for the sensor and solenoid. Less reliance on the back-up battery results in much less battery waste.



Designed to work in combination with the 0.125gpf urinal, the flush valve is engineered to utilize biomimicry, modeled after the oxbow effect found in nature. Water moving on the outside of a curve will move faster, causing turbulence. The 0.125gpf urinal utilizes a V-shaped trap to reduce turbulent flow, resulting in lower water use without compromising performance.



Using our proven EcoPower engineering, the 0.125 gallon per flush urinal flush valve reinforces TOTO's performance reputation while offering an additional water savings.



Metal and electronic parts can be recycled at the end of life.

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