Sustainable Minds®

Transparency Report

## TOTO<sub>®</sub>

### Large Profile High-Efficiency Urinal

#### UT445U(V)

The ADA compliant TOTO 0.125gpf urinal features a full size design complete with privacy shields. TOTO HEU's are engineered to work with the EcoPower® flush valves, offering the ultimate in water conservation and flushing performance. Using only one pint of water per flush when paired with a TOTO EcoPower 0.125gpf flush valve, the urinal saves 88% more water than a 1.0gpf urinal. The urinal is available in top spud and back spud installation options.



#### Performance Dashboard

#### Features & functionality

0.125gpf when paired with a TOTO 0.125gpf EcoPower flush valve

Washout flush action with 3/4" top or back spud inlet

Full size urinal with concealed integral trap Complete with low profile dome strainer

Wall-mounted ADA compliant

#### Visit TOTO for more product specifications for:

UT445U, UT445UV

CSI MasterFormat™ #22 42 13.16

#### **Environmental performance**

#### Improved by:

Saves 88% more water than standard 1.0gpf urinal

#### **Certifications & rating systems:**

WaterSense® certified

Declare<sup>™</sup> label

See LCA results & interpretation



#### WATERSENSE®

- Promotes water efficiency and enhances the market for water-efficient products, programs, and
- The WaterSense label helps consumers identify water-efficient products and programs.
- Products with the WaterSense label will perform well, help save money, and encourage innovation in manufacturing.









#### **SM Transparency Report™ + Material Health Overview**

**VERIFICATION** LCA 3rd party verified **NSE** Self-declared Transparency Report

**NSE** 

Self-declared

Certified

Material evaluation

3rd party verified

Self-declared

Validity: 08/16/17 - 08/16/22 TOT - 10/18/14 - 006

The LCA and Report are independently verified and certified to the SM Transparency Report Framework and ISO 14025.

**NSF** International P.O Box 130140 789 N.Dixboro Road Ann Arbor, MI 48105, USA www.nsf.org

+1 734 769 8010



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

**International Living Future** Institute 501 East Madison St.

Seattle, WA 98122 www.living-future.org 206 223 2028



#### **TOTO USA**

1155 Southern Road Morrow, GA 30260

Contact us

Large Profile High-Efficiency Urinal UT445U(V)

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## Life cycle assessment

#### Scope and summary

### **♥ Cradle to grave** ○ Cradle to gate with options ○ Cradle to gate

LCA & material health results & interpretation

#### **Functional unit**

10 years of use of a urinal in an average U.S. commmercial environment. One urinal in an average U.S. commercial environment. 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 commerical applications can be longer or lower 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.

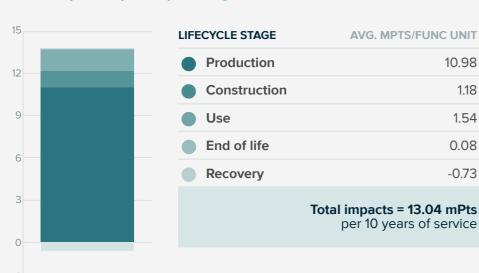
#### Default use phase scenario

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

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

PART	MATERIAL	AVG. % WT.
Ceramic	Ceramic	86%
Packaging	Corrugated Board	10%
Flange, spud, nut & hanger	Brass	3%
	Other	1%

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



#### What's causing the greatest impacts

#### All lifecycle stages

#### The production stage is dominating all impact categories.

Results show that the use stage is less dominant, yet it is still significant in most of the impact categories. This is mostly due to the embedded energy arising from acquisition, treatment and distribution of the water used during the operation of the product (4-22%). The contributions covered under the construction/installation stage are mostly associated with the product delivery to the market. This product is produced in Asia as opposed to another TOTO urinal UT105U(V)(G) which is produced in the US. The recovery stage includes recycling 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 as well as the processes for dismantling the product and final waste treatment during the end of life stage are slightly relevant in the global warming impact category.

#### Production stage

#### The ceramic parts dominate half of all impact categories.

Brass and stainless steel parts, the turning brass process and ocean freighter transportation dominate the other half of the impact categories. The remaining parts and processes contribute between 4% and 16% of the overall impacts in the rest of the categories.

#### Sensitivity analysis

There are no sensitivity results that lead to variations greater than 10% in the LCA results.

#### TOTO PeoplePlanetWater... programs improving environmental performance

- Dual-Max<sup>®</sup>, E-Max<sup>®</sup>, Tornado Flush<sup>™</sup>, 1G<sup>®</sup>, and EcoPower<sup>®</sup> reduce water consumption in the use phase
- Energy efficiency programs optimize the firing process
- 50% electricity from renewable energy
- 100% of post-industrial ceramic waste is recycled

See how we make it greener

#### **LCA results**

LIFECYCLE STAGE	PRODUCTION	CONSTRUCTION	USE	END OF LIFE	RECOVERY
Information modules: Included   Excluded*  *Installation and deconstruction/demolition	A1 Raw Materials	A4 Transportation/ Delivery	B1 Use	C1 Deconstruction/ Demolition	D1 Recycling
are mostly manual. The toilets and/or urinals should not need repair, maintenance or replacement during the	A2 Transportation	A5 Construction/ Installation	B2 Maintenance	C2 Transportation	D2 Reuse
modeled life time.	A3 Manufacturing		B3 Repair	C3 Waste processing	D3 Energy
Operational energy use is irrelevant to the			B4 Replacement	C4 Disposal	
life cycle of the modeled product.			B5 Refurbishment		
Reuse and energy recovery are not modeled for toilets and/or urinals.			B6 Operational energy use		
			B7 Operational water use		
	KILMA	O.CO.A.			

10.98

1.18

1.54

0.08

-0.73

## SM 2013 Learn about SM Single Score results

Impacts per 10 years of service	10.98 mPts	1.18 mPts	1.54 mPts	0.08 mPts	-0.73 mPts
Materials or processes contributing >20% to total impacts in each lifecycle stage	Ceramic parts production together with brass parts and injection molding process.	Transportation of the product to installation site or consumer and disposal of packaging.	Volume of water use during the operation of the product and the embedded energy use (such as electricity) 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**

LIFECYCLE STAGE

Ecological damage

Impact Category	Unit						
Acidification	kg SO₂ eq	?	9.02E-01	1.71E-O1	1.34E-01	4.14E-03	-2.86E-02
Ecotoxicity	CTU <sub>e</sub>	?	1.73E+02	2.74E+01	1.23E+01	1.02E+00	-9.20E+00
Eutrophication	kg N eq	?	1.88E-01	1.14E-02	1.13E-02	3.27E-04	-8.37E-03
Global warming	kg CO₂ eq	?	8.23E+01	1.25E+01	1.99E+01	1.91E+00	1.11E+OO
Ozone depletion	kg CFC-11 eq	?	3.06E-06	6.64E-099	8.39E-07	7.54E-08	-2.05E-07

## Human health damage

Impact Category	Unit						
Carcinogenics	CTU <sub>he</sub>	?	1.59E-06	1.48E-07	4.21E-07	1.05E-08	-1.30E-07
Non-carcinogenics	CTU <sub>h</sub>	3	5.01E-05	1.42E-06	1.87E-06	7.14E-08	-6.02E-06
Respiratory effects	kg PM <sub>2.5</sub> eq	?	6.68E-02	2.96E-03	8.88E-03	3.00E-04	-3.57E-03
Smog	kg O₃ eq	?	9.19E+00	5.07E+00	9.27E-01	1.13E-012	-3.47E-01

## **Resources depletion**

Impact Category	Unit					
Fossil fuel depletion	MJ surplus (2)	1.43E+02	1.95E+01	1.35E+01	1.29E+00	-2.62E+00

## References

## **LCA Background Report**

TOTO Sanitary Ceramic Products LCA Background Report (public version), **TOTO 2014** 

#### **SM Transparency Report Framework** Part A: Part A: LCA Calculation Rules and Background Report Requirements

(Draft V2) (based on ISO14040-44, ISO14025 and EN15804) Part B: Product Group Definition – Commercial Urinal

SM Transparency Reports enable purchasers and users to compare the environmental performance of products on a life cycle basis. They are designed to present information transparently to make the limitations of comparability more understandable. SM Transparency Reports of products that comply with the same Product Group Definition (PGD) 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.

LCA

**▼** NSF

## **Rating systems**

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

**END OF LIFE** 

**RECOVERY** 

LEED BD+C: New Construction | v4 - LEED v4 MR Building product disclosure and optimization

Environmental product declarations

#### **SM Transparency Report product credit values:** O I CA solf declared Dec

LCA verified, Report certified	1 product
CA verified, Report self-declared	1/4 product
LCA self-declared, Report self-declared	0 product

NC 3.5.1.2 Path B: Prescriptive Path from Building Core | NC 3.5.2.2 and SI 4.1.1 Path B: Prescriptive Path for Interior Fit-outs

**Green Globes for New Construction and Sustainable Interiors** 

**VERIFICATION** 

3rd party verified

# **SM Transparency Report™ + Material Health Overview**

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Self-declare	d
	Transparency Report
Certified	<b>⊘</b> NSI
Self-declare	d

Material evaluation 3rd party verified

Self-declared Validity: 08/16/17 - 08/16/22

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self-declared and done in accordance with the Manufacturers Guide to Declare.

The material health evaluation is

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206 223 2028



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Contact us

Sustainable Minds®

Transparency Report



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#### LCA & material health results & interpretation

Large Profile High-Efficiency Urinal UT445U(V)

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.

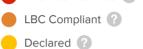
#### Assessment scope and results

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.







#### Large Profile High-Efficiency Urinal



Click on each label to see the full declaration

#### How this rating was achieved

#### **Declare level**

'Red List Free' means this product does not contain any ingredients on the LBC's Red List.

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

#### **Red List materials**

No red list materials are present in the urinal.

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

TOTO encourages consumers to recycle their used urinal and urinal parts. Contact your local municipality for recycling programs.

#### How we're making it healthier

The Commercial Urinal is designed to be used with the TOTO EcoPower® Urinal Flush Valve. 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.

Urinal models with a water consumption of 0.125gpf are engineered to utilize biomimicry, modeled after the oxbow affect 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. Superior performance reduces the need for extraneous cleaning and the associated use of cleaning substances.

See how we make it greener

#### References

## **Declare**

TOTO USA, Declare label for Large Profile High-Efficiency Urinal UT445U

#### 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 v4, Building product disclosure and optimization **Material Ingredients** 

#### **Credit values:**

Option 1. Material ingredient reporting

1 product

Option 2. Material ingredient optimization

1 product

Living Building Challenge **Living Building Challenge 3.0** 



#### Materials petal:

Imperative 10. Red List Free

Imperative 12. Responsible Industry

Imperative 13. Living Economy Sourcing

## **SM Transparency Report™ + Material Health Overview**

**VERIFICATION LCA** 3rd party verified **✓** NSF Self-declared Transparency Report Certified NSE. Self-declared

Material evaluation

3rd party verified

TOT - 10/18/14 - 006

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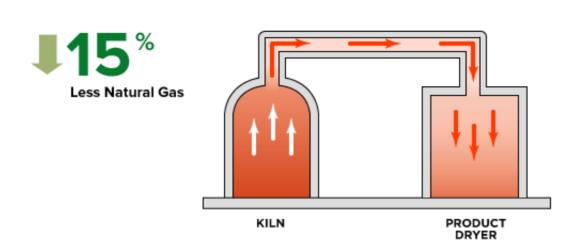


## How we make it greener

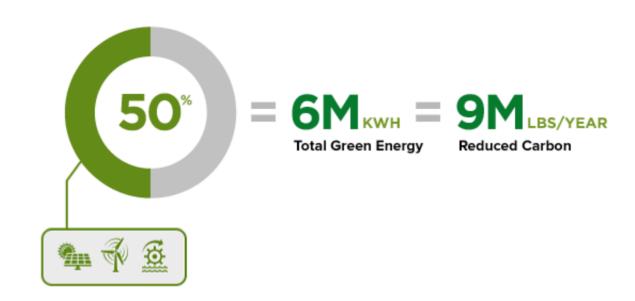
Large Profile High-Efficiency Urinal UT445U(V)

Collapse all **PRODUCTION**  See LCA results by lifecycle stage

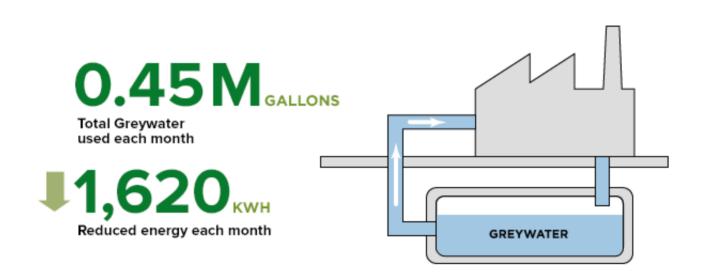




Waste heat from the kilns is routed to the product dryer. This reduces 15% natural gas consumption.



50% of the electricity that TOTO uses is based on renewable energy generation. It's 6 million kilowatt hours of green energy, which means over 9 million pounds of carbon reduced each year.



0.45 million gallons per month of greywater is used in TOTO's operations. 1,620 of kwh in energy is reduced due to less potable water.



65% of all cardboard used is 100% recycled content.

## **CONSTRUCTION**



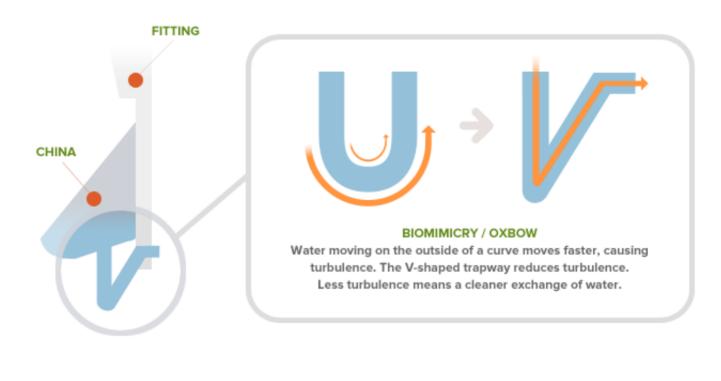




UPS parcel shipments are carbon neutral. TOTO is a registered SmartWay® Transport Partner.

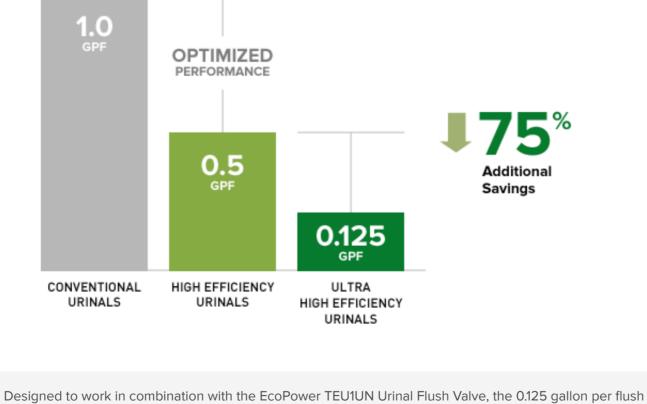
# USE





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.

Designed to work in combination with the EcoPower TEU1UN Urinal Flush Valve, the urinal was engineered to utilize biomimicry, modeled after the oxbow affect found in nature. Water moving on the outside of a



urinal reinforces TOTO's performance reputation while offering an additional water savings.



Contact us

1155 Southern Road

Morrow, GA 30260

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INTERNATIONAL LIVING FUTURE