

SM Transparency Catalog ► TOTO Showroom ► Urinal UT445U

# TOTO<sub>®</sub>

# **Ultra High Efficiency** Urinal, 0.125 GPF UT445U(V)

delivers TOTO's leadership in innovations TOTO Ultra High-Efficiency EcoPower® Flush



#### Performance dashboard



Ultra High efficiency, 0.125 GPF / 0.47 LPF, flushometer urinal

Washout urinal with integral trap

Design for use with TOTO ultra low-flow EcoPower® flushometer valve

Stainless steel urinal drain cover included

ADA compliant

Visit TOTO for more product specifications: Ultra High Efficiency Urinal, 0.125 GPF, UT445U(V)

MasterFormat® 22 42 13

#### **Environment & materials**

#### Improved by:

Saves 87% and 75% more water than standard 1.0 GPF and 0.5 GPF urinals

#### Certification & rating systems:

Contributes to earning credits in LEED®

CALGreen® compliant

Declare™ label, LBC Red list free

See LCA, interpretation & rating systems

See materials, interpretation & rating systems



### SM Transparency Report (EPD)™ + Material Health Overview™

**EPD** LCA 3rd-party reviewed Transparency Report (EPD) 3rd-party verified

Validity: 06/24/2024 - 06/24/2029 TOTO - 20240624 - 004

Material **MATERIAL HEALTH** evaluation

Self-declared

Ø

This environmental product declaration (EPD) was externally verified by Jack Geibig (Ecoform) on behalf of NSF according to ISO 14044; ISO 21930:2017; SM Part A: LCA calculation rules and report requirements, 2023; SM Part B: Commercial Urinals; and ISO 14025:2006.

In accordance with ISO 14044 and the referenced PCR, the life cycle assessment was conducted by Sustainable Minds and critically reviewed by Jack Geibig (Ecoform) on behalf of NSF.

**Ecoform, LLC** 11903 Black Road Knoxville, TN 37932 (865) 850-1883

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

734 769 8010

Certified **Environmental Product Declaration** www.nsf.org

#### **SUMMARY**

Reference PCR

Regions; system boundaries

North America; Cradle-to-grave

**Functional unit** One commercial urinal in an average

commercial environment

LCIA methodology; LCA software; LCI database

TRACI 2.1; SimaPro Analyst 9.5; ecoinvent and USLCI databases

**Public LCA** 

LCA background report of TOTO sanitary ceramic products - Urinal UT105 & UT445, 2024

**TOTO USA** 

1155 Southern Road Morrow, GA 30260

Contact us

**Urinal UT445U** 

# LCA results & interpretation

Sustainable Minds®

Transparency Report (EPD)

LCA results & interpretation

### Scope and summary

Cradle to gate Cradle to gate with options Cradle to grave

## **Functional unit**

One commercial urinal in an average commercial environment. The expected service life (ESL) of a building is 75 years, and all use stage activity and impacts are accounted for in that full ESL period. The reference service life (RSL) of the urinal is 30 years, which is an industry-accepted average lifespan based on the economic lifespan of the product.

Maintenance Regular cleaning is assumed to use 1.69 fl oz (50mL) of a 1% sodium lauryl sulfate (SLS) solution daily for 75 years, which is building estimated service life. The use of 50mL/day over 260days/year for 75 years gives a total of 975L of solution. Using a density of 1.01kg/L for a 1% SLS solution, 985kg of solution will be needed over the course of 75 years. Therefore, 9.8kg of SLS plus 975kg of

#### Replacement

6.00E+01

LCA results

An additional 1.5 products are included as replacements, with all life cycle modules considered, over the building's ESL of 75 years.

#### Manufacturing data Manufacturing data has been collected and compiled for TOTO Vietnam. Data

water were included in the model.

reporting period: 2023.

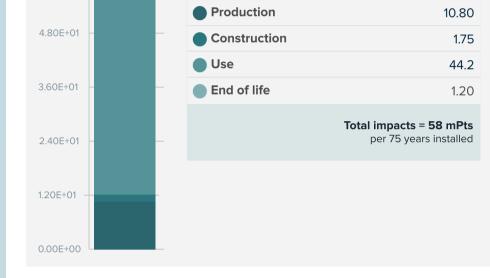
#### **PART** MATERIAL

Material composition greater than 1% by weight

Total impacts by life cycle stage [mPts/func unit]

Product	Ceramic	86%
Packaging	Corrugated board	9%
Product	Brass nut and flange	3%
Other	Misc components	3%

LIFE CYCLE STAGE



# All life cycle stages

What's causing the greatest impacts

The use stage [B1-B7] dominates the results for all impact categories. The replacements module [B4] is highly dominant in all categories because of the necessity to consider an additional 1.5 products as replacements. All life cycle modules are considered throughout the estimated service life (ESL) of the building, which is 75 years. The production stage [A1-A3] itself is slightly significant but does not dominate in any impact category. Additionally, the processes associated with dismantling the product and final waste treatment during the end-of-life stage do not have a significant impact.

Production stage [A1-A3]

The ceramic parts dominate all impact categories in the production stage except for ozone depletion, non-carcinogenics, and eutrophication. The brass parts together with the injection molding process have dominant contributions to the ozone depletion, non-carcinogenics, and eutrophication impact categories. The remaining parts and processes contribute between 4% and 23% of the overall impacts in the rest of the categories. The entire production stage itself accounts for 16% of the global warming potential impact category.

Construction stage [A4-A5]

Installation of the product dominates impacts in the construction stage. Transportation by truck for delivery to the installation site contributes the most, and this stage contributes to approximately 3% of the total global warming potential impacts throughout the product's life cycle.

# **Product replacements dominate impacts in the use stage.** The use stage

%WT.

MPTS/FUNC, UNIT

Use stage [B1-B7]

itself dominates all impact categories (>75%) due to the consideration of an additional 1.5 products as replacements. End-of-life stage [C1-C4]

The transportation to landfill dominates impacts in the end-of-life stage.

## Transportation and the processes for dismantling the product contribute to a

relatively low portion of global warming potential (~0.2%) but account for approximately 13% of smog formation.

**TOTO PeoplePlanetWater**™ programs improving environmental

### performance • EcoPower® reduces water consumption in the use phase

How we're making it greener

• Energy efficiency programs optimize the firing process 100% of post-industrial ceramic waste is recycled

- See how we make it greener

44.2 mPts

9.80E+01

1.92E-01

Cleaning agent and water

1.20 mPts

2.03E+01

6.13E-03

1 product

1.5 products

1 point

LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	USE	END OF LIFE
	(X) A1 Raw materials	(X) A4 Transportation/ Delivery	(X) B1 Use	(X) C1 Deconstruction/ Demolition
	(X) A2 Transportation	(X) A5 Construction/ Installation	(X) B2 Maintenance	(X) C2 Transportation
	(X) A3 Manufacturing		(X) B3 Repair	(X) C3 Waste processing
			(X) B4 Replacement	(X) C4 Disposal
Information modules: Included (X)   Excluded (MND)*			(X) B5 Refurbishment	
			(X) B6 Operational energy use	
			(X) B7 Operational water use	
	NILSO-T			

Impact category

**Smog** 

**SM Single Score** 

Materials or processes contributing >20% to total impacts in each life cycle stage	together with brass parts and injection molding process.	product to installation site or consumer and disposal of packaging.	used during maintenance and embedded energy used to treat cleaning water.	processing and disposal of material flows transported to a landfill.					
TRACI v2.1 results per functional unit									
LIFE CYCLE STAGE	PRODUCTION	CONSTRUCTION	USE	END OF LIFE					

**1.75 mPts** 

# **Ecological damage**

Unit

kg O₃ eq

Unit

kg PM<sub>2.5</sub> eq

Impacts per urinal

10.8 mPts

8.71E+00

4.25E-02

Human health damage  Impact category Unit									
Eutrophication	kg N eq	•	1.90E-01	2.90E-02	7.44E-01	3.62E-02			
Acidification	kg SO₂ eq	0	5.10E-01	4.45E-01	4.00E+00	5.71E-01			
Ozone depletion	kg CFC-11 eq	•	2.77E-06	6.45E-08	1.44E-05	8.16E-08			
Global warming	kg CO₂ eq	•	8.00E+01	1.24E+01	3.55E+02	7.29E-01			

1.49E+01

5.58E-03

# Additional environmental information

**Respiratory effects** 

Impact category

Carcinogenics	CTU <sub>h</sub>	•	1.66E-06	1.62E-07	7.04E-06	2.59E-08
Non-carcinogenics	CTU <sub>h</sub>	•	4.90E-05	1.52E-06	1.60E-04	2.26E-07
Ecotoxicity	CTU <sub>e</sub>	?	1.10E+02	2.89E+01	4.17E+02	3.98E+00
Fossil fuel depletion	MJ surplus	•	1.40E+02	2.09E+01	7.28E+02	3.41E+00

# Analyst 9.5; ecoinvent v3, Industry data 2.0, and US-EI 2.2 databases; TRACI 2.1.

References

ISO 14025, "Sustainability in buildings and civil engineering works -- Core rules for environmental product declarations of construction products and services"

Sustainable Minds Part A.

**LCA Background Report** 

ISO 21930:2017, "Sustainability in Building Construction — Environmental Declaration of Building Products" serves as the core PCR along with

LCA background report of TOTO sanitary ceramic products, 2024; SimaPro

August, 2023. PCR review conducted by the Sustainable Minds TAB, tab@sustainableminds.com.

AGÉCO); Rebe Feraldi, LCACP, CLAR (Pacific Northwest National Laboratory).

SM Part A: LCA calculation rules and report requirements, version 2023

March, 2024. PCR review conducted by Jack Geibig, Chair (Ecoform) Jgeibig@ecoform.com; Hugues Imbeault-Tétreault, ing., M.Sc.A. (Groupe

**Download PDF SM Transparency Report/EPD** SM Transparency Reports (TR) are ISO 14025 Type III environmental declarations (EPD) that

SM Part B: Commercial urinals, v3.0

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. Environmental declarations 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 as defined in ISO 14025 Section 6.7.2. 'Requirements for Comparability' are satisfied. In order to support comparative assertions, this

EPD meets all comparability requirements stated in ISO 14025:2006. However, differences in certain assumptions, data quality, and variability between LCA data sets may still exist. Any EPD

category PCR where applicable, include all relevant information modules, be limited to EPDs applying a functional unit, and be based on equivalent scenarios with respect to the context of

comparison must be carried out at the building level per ISO 21930 guidelines, use the same sub-

construction works. Some LCA impact categories and inventory items are still under development and can have high levels of uncertainty. To promote uniform guidance on the data collection, calculation, and reporting of results, the ACLCA methodology (ACLCA 2019) was used.

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

performance.

**Rating systems** 

**Environmental product declarations** Industry-wide (generic) EPD ½ product

The intent is to reward project teams for selecting products from

manufacturers who have verified improved life-cycle environmental

Product-specific Type III EPD

Building product disclosure and optimization

**Environmental product declarations** 1 product Industry-wide (generic) EPD

LEED BD+C: New Construction | v4.1 - LEED v4.1

# Collaborative for High Performance Schools National

Product-specific Type III EPD

Criteria

WW C5.1 – Environmental Product Declarations	
<b>▼</b> Third-party certified type III EPD	2 points

Environmental Draduct Declarations

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

**BREEAM New Construction 2018** 

NC 3.5.2.2 and SI 4.1.2 Path B: Prescriptive Path for Interior Fit-outs

Mat 02 - Environmental impacts from construction products

NC 3.5.1.2 Path B: Prescriptive Path for Building Core and Shell

**Environmental Product Declarations (EPD)** Industry-average EPD .5 points

Multi-product specific EPD .75 points ✓ Product-specific EPD

SM Transparency Report (EPD)™ + Material Health Overview™ **SUMMARY TOTO USA** 

LCI database Material TRACI 2.1; SimaPro Analyst 9.5; **MATERIAL HEALTH** evaluation the referenced PCR, the life cycle ecoinvent and USLCI databases assessment was conducted by Ø Sustainable Minds and critically **Public LCA** reviewed by Jack Geibig (Ecoform) on behalf of NSF.

Self-declared

Validity: 06/24/2024 - 06/24/2029

TOTO - 20240624 - 004

Transparency Report (EPD)

LCA

**EPD** 

3rd-party reviewed

3rd-party verified

LCA calculation rules and report requirements, 2023; SM Part B: Commercial Urinals; and ISO 14025:2006. In accordance with ISO 14044 and Ecoform, LLC

This environmental product

declaration (EPD) was externally

behalf of NSF according to ISO

verified by Jack Geibig (Ecoform) on

14044; ISO 21930:2017; SM Part A:

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Ann Arbor, MI 48105, USA 734 769 8010 Certified

789 N.Dixboro Road

 $@ 2024 \ | \ The \ SM \ Transparency \ Report \ [EPD]^{\underline{w}} \ Program \ is \ operated \ by \ Sustainable \ Minds^{\underline{o}} \ (www.sustainableminds.com) \ | \ Privacy \ policy \ policy \ | \ Privacy \ policy \ | \ Privacy \ policy \ policy \ | \ Privacy \ policy \ policy \ | \ Privacy \ policy \ policy \ policy \ | \ Privacy \ policy \ policy \ policy \ policy \ | \ Privacy \ policy \ policy \ policy \ policy \ | \ Privacy \ policy \ p$ 

LCA background report of TOTO sanitary ceramic products - Urinal UT105 & UT445, 2024

**Reference PCR** 

**Functional unit** 

Regions; system boundaries

commercial environment

North America; Cradle-to-grave

One commercial urinal in an average

LCIA methodology; LCA software;

1155 Southern Road

Morrow, GA 30260

Contact us

**Environmental Product Declaration** 

# EPD additional content

Sustainable Minds®

Transparency Report (EPD)

Urinal UT445U

**EPD** additional content

**Data** 

**Background** This product-specific plant-specific declaration was created by collecting production data from the Vietnam plant. All unit processes were modeled using primary data. Secondary data sources include those available in ecoinvent and USLCI databases. Literature data was used to fill any data gaps to complete the inventory.

In the manufacturing of the products, secondary materials such as scrap metals and metal bars used to hold the primary products in place were partially incorporated in the manufacturing of the primary products but were not considered due to a lack of background data in the LCA model.

based approach in the collected data, which is the most appropriate for the unit processes modeled. Allocation approaches in the background data follow the ecoinvent methodology. No co-product allocations were made in the model. Cut-off criteria for the inclusion of mass and energy flows are 1% of renewable

Allocation Allocations of multi-input and multi-output processes follow a mass-

primary resource (energy) usage, 1% nonrenewable primary resource (energy) usage, 1% of the total mass input of that unit process, and 1% of environmental impacts. The total of neglected input flows per module does not exceed 5% of energy usage, mass, and environmental impacts. The only exceptions to these criteria are substances with hazardous and toxic properties, which must be listed even when the given process unit is under the cut-off criterion of 1% of the total mass. Non-ceramic parts in urinals include strainers, hangers and spud nut kits. All

parts with a weight of >1% weight of the parts (excluding ceramic and packaging

materials) are included in the LCA model; no substances considered to be

hazardous or toxic according to local regulations are present in the product. A check has been performed to make sure that the completeness of the overall material use is >98.5wt% of the finished product after cut-off, including the ceramic and packaging materials. Data quality assessment **Precision:** The precision of the data is considered high. Product engineers

#### provided detailed bills of materials, and facility managers provided utility information for the manufacturing facilities. The raw material transportation

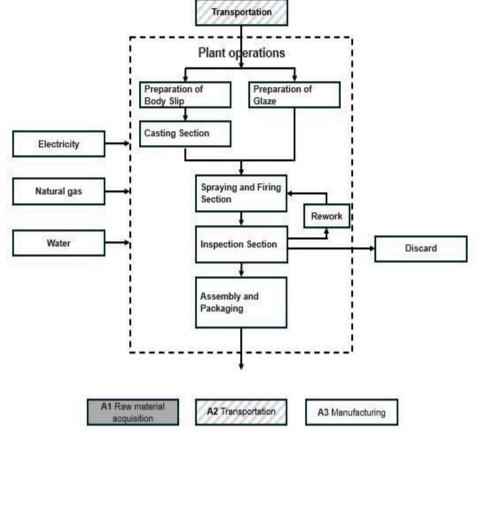
distances were calculated based on the raw material manufacturers' addresses, extracted from the relevant SDS's. Proxy datasets were utilized in the LCA model when secondary data were not available, as shown in Appendix A in the published LCA background report. Completeness: The data included is consider complete. The LCA model included all known material and energy flows. As pointed out in that section, no known flows above 1% were excluded and the sum of all excluded flows totals

Consistency: The consistency of the model is considered high. The bills of materials provided by the product engineers were developed for multiple internal departments use and are maintained regularly. The LCA practitioner also cross-referenced the installation documents and other relevant information to ensure consistency. Furthermore, modeling assumptions were consistent

less than 5%, whether evaluated by mass, energy, or potential environmental

across the model, with preference given towards SimaPro data, where available. Flow diagram Raw materials

impact.



# Distribution [A4]

Scenarios and additional technical information

## Plant location

Plant location		Fairburn, GA	Ontario, CA	
% urinals shipped from	plant	70%	30%	
	Oceanic	12,521 km	12,521 km	
Distance to plant	Rail	3,579 km	0 km	
from Vietnam	Diesel truck	33 km	185 km	
In 2023, outbound shipme	ents of UT445	U from Fairburn a	nd Ontario were	

average of 1,114 miles (1,7923 km) by rail. The quantity transported by truck is 95%, and by rail 5%. Installation [A5]

transported an average of 947 miles (1,524 km) by diesel truck and an

## creating a seal between the urinal outlet and drain line.

Use stage [B1-B5]

The urinals are assumed to have a useful life of 30 years. As a result, an

additional 1.5 products are included as replacements, with all life cycle

A 0.15kg wax ring was accounted for in this study. These are necessary for

### modules considered, over the building's ESL of 75 years.

End-of-life stage [C1-C4] The model reflects the assumptions that urinals are 100% landfilled. The

### product is assumed to be transported 100 km via truck to final disposal. However, it should be noted that many of the associated metal and plastic

components follow the waste scenarios as listed in the table below. TOTO ceramic materials can be recycled as aggregate in several applications,

that case, and no credits for material recovery are given.

although this is not currently common practice. Secondary materials, including

shredded and sorted metal waste, are valuable goods that lose their status as waste after the sorting process. No additional waste processing is needed in

**Potential waste Potential waste** Material scenario - Landfill scenario - Recycling Brass, zinc 70.5% 29.5% 0.00% 100% Ceramic

Silicone, silicone product 7.60% 92.4%  Product information									
Silicone, silicone product 7.60% 92.4%	Product information								
SBR, EPDM rubber, silicone rubber, ABS, POM 15.0% 85.0%									
Pallet 14.5% 85.5%									
PP, PVC, PET, polymer, HDPE 7.60% 92.4%									
Corrugated board, paper 66.5% 33.5%									

# Major system boundary exclusions

UT445U(V)

• Construction of major capital equipment Construction of water and wastewater infrastructure Maintenance and operation of support equipment Human labor and employee transport

Manufacture and transport of packaging materials not associated with final

ASME A112.19.2/CSA

B45.1

Vitreous china

plumbing fixture

Energy consumption in warehouses, distribution centers, and retail facilities

• Building operational energy and water use

- during the course of transport to the final customer Disposal of packaging materials not associated with final product
- Major assumptions and limitations
- cumulative mass of the model, products from vendors, is estimate based on rail lines, port information. The worst case scenario of the furthest distance

from each factory to the manufacturing facility to transport kaolin with

• Transportation of all raw materials with the mass above 1% of the

Water content of sludge was measured and reported; however, this measurement not performed routinely.

ocean freight method was considered.

## Pallet use is assumed based on the average numbers per unit of product and reported pallet quantity of specific models.

LCIA results, resource use, output and waste flows, and carbon emissions & removals per functional unit

Parameter	Unit	A1-A3	Α4	A5	B1	B2	В3	B4	B5- B7, C1	C2	C3	C4	Total
LCIA results													
Ozone depletion	kg CFC- 11 eq	2.77E-06	3.39E-08	3.06E-08	0	2.48E-06	0	1.19E-05	0	5.88E-10	9.02E-09	7.20E-08	1.73E-05
Global warming	kg CO2 eq	1.10E+02	2.73E+01	1.57E+00	0	1.89E+01	0	3.15E+02	0	8.20E-01	1.58E+00	1.58E+00	4.77E+02
Smog	kg O3	1.90E-01	9.31E-03	1.97E-02	0	2.49E-02	0	9.61E+01	0	1.20E-04	1.80E-02	1.81E-02	9.64E+01
Acidification	kg SO2	4.25E-02	2.59E-03	2.99E-03	0	1.89E-02	0	3.78E+00	0	2.88E-05	3.02E-03	3.08E-03	3.85E+00
Eutrophication	eq kg N eq	1.66E-06	1.53E-07	9.41E-09	0	7.87E-07	0	7.19E-01	0	4.61E-09	1.15E-08	9.74E-09	7.19E-01
Respiratory	kg PM2.5	5.10E-01	1.61E-01	2.84E-01	0	2.24E-01	0	1.73E-01	0	1.84E-03	2.84E-01	2.85E-01	1.92E+00
effects  Additional enviror	eq	ormation											
Carcinogenics	CTUh	1.66E-06	1.53E-07	9.41E-09	0	7.87E-07	0	6.25E-06	0	4.61E-09	1.15E-08	9.74E-09	8.89E-06
Non carcinogenics	CTUh	5.10E-01	1.61E-01	2.84E-01	0	2.24E-01	0	1.52E-04	0	1.84E-03	2.84E-01	2.85E-01	1.75E+00
Ecotoxicity	CTUe	4.90E-05	1.43E-06	8.76E-08	0	7.73E-06	0	3.15E+02	0	4.30E-08	9.40E-08	8.94E-08	3.15E+02
Fossil fuel depletion	MJ surplus	8.00E+01	1.11E+O1	1.28E+00	0	3.96E+01	0	6.19E+02	0	3.34E-01	1.15E-01	2.80E-01	7.52E+02
Resource use indic	cators												
primary energy used as energy carrier (fuel)	MJ, LHV	2.80E+01	-4.22E+01	-4.15E+01	0	2.98E+01	0	-2.01E+02	0	-4.20E+01	-1.92E+02	-4.25E+01	-5.03E+02
Renewable primary resources with energy content used as material	MJ, LHV	2.19E+02	4.25E+01	4.25E+01	0	4.25E+01	0	9.33E+02	0	4.20E+01	1.92E+02	4.25E+01	1.56E+03
Total use of renewable primary resources with energy content	MJ, LHV	2.47E+02	3.05E-01	1.02E+00	0	7.23E+01	0	7.32E+02	0	9.57E-03	3.04E-02	2.84E-02	1.05E+03
Non-renewable primary resources used as an energy carrier (fuel)	MJ, LHV	1.29E+03	1.46E+02	7.38E+00	0	1.00E+03	0	5.61E+03	0	1.51E+00	8.40E+00	1.01E+01	8.07E+03
Non-renewable primary resources with energy content used as material	MJ, LHV	1.54E+01	2.99E+00	2.99E+00	0	2.99E+00	0	4.55E+01	0	2.99E+00	0	2.99E+00	7.59E+01
Total use of non- renewable primary resources with energy content	MJ, LHV	1.30E+03	1.49E+02	1.04E+01	0	1.00E+03	0	5.65E+03	0	4.49E+00	8.40E+00	1.30E+01	8.14E+03
Secondary materials	kg	0	0	0	0	0	0	0	0	0	0	0	0
Renewable	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0	0
secondary fuels Non-renewable	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0	0
secondary fuels Recovered	ŕ	0	0	0	0	0	0	0	0	0	0	0	0
energy Use of net fresh	MJ, LHV												
water resources	m3	1.18E-05	1.33E-03	1.06E-02	0	8.37E-04	0	1.04E-02	0	3.94E-04	0	4.08E-04	2.40E-02
Output flows and Hazardous	waste categ	7.73E-03	ors O	0	0	0	0	0	0	0	0	0	7.73E-03
waste disposed Non-hazardous													
waste disposed High-level	kg	1.40E+01	1.20E+00	1.43E+00	0	2.93E+01	0	6.88E+01	0	5.40E-01	0	2.20E+01	1.37E+02
radioactive waste, conditioned, to final repository	kg	4.95E-03	4.06E-05	2.02E-04	0	3.81E-03	0	1.83E-02	0	8.74E-07	2.09E-05	3.50E-06	2.73E-02
Intermediate- and low-level radioactive waste, conditioned, to final repository	kg	1.63E-05	2.54E-07	1.03E-07	0	8.86E-06	0	6.13E-05	0	8.37E-09	4.64E-08	1.90E-08	8.69E-05
Components for re-use	kg	0	0	0	0	0	0	0	0	0	0	0	0
Materials for recycling	kg	0	0	0	0	2.93E+01	0	4.39E+01	0	9.80E-01	9.80E-01	9.80E-01	7.61E+01
Materials for	kg	0	0	0	0	0	0	0	0	0	0	0	0
energy recovery  Exported energy	MJ, LHV	0	0	0	0	0	0	0	0	0	0	0	0
Carbon emissions													
Biogenic Carbon Removal from Product	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0
Biogenic Carbon Emission from Product	kg CO2	0	0	0	0	0	0	0	0	0	0	0	0
Biogenic Carbon Removal from	kg CO2	2.43E+00	0	0	0	0	0	0	0	0	0	0	2.43E+00

0

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kg CO2

kg CO2

kg CO2

kg CO2

kg CO2

kg CO2

Removal from Packaging

Biogenic Carbon

Biogenic Carbon Emission from Combustion of Waste from

Emission from Packaging

Renewable Sources Used in Production **Processes** Calcination

Carbon **Emissions** Carbonation

Carbon Removals

Carbon

Emissions from Combustion of Waste from Renewable and Non-Renewable Sources used in 0

0

0

0

2.43E+00

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#### SM Transparency Report (EPD)™ + Material Health Overview™

**EPD** LCA

3rd-party reviewed

**Ø** 

Transparency Report (EPD)

3rd-party verified



Validity: 06/24/2024 – 06/24/2029 TOTO – 20240624 – 004

MATERIAL HEALTH

Material evaluation

**Self-declared** 



This environmental product declaration (EPD) was externally verified by Jack Geibig (Ecoform) on behalf of NSF according to ISO 14044; ISO 21930:2017; SM Part A: LCA calculation rules and report requirements, 2023; SM Part B: Commercial Urinals; and ISO 14025:2006.

In accordance with ISO 14044 and the referenced PCR, the life cycle assessment was conducted by Sustainable Minds and critically reviewed by Jack Geibig (Ecoform) on behalf of NSE.

Ecoform, LLC 11903 Black Road Knoxville, TN 37932 (865) 850-1883

#### **NSF** International

P.O Box 130140 789 N.Dixboro Road Ann Arbor, MI 48105, USA

734 769 8010

#### **SUMMARY**

**Reference PCR** 

SM Part B: Commercial urinals, v3.0

Regions; system boundaries

North America; Cradle-to-grave

**Functional unit** 

One commercial urinal in an average commercial environment

LCIA methodology; LCA software; LCI database

TRACI 2.1; SimaPro Analyst 9.5; ecoinvent and USLCI databases

#### **Public LCA**

LCA background report of TOTO sanitary ceramic products - Urina UT105 & UT445, 2024

#### **TOTO USA**

1155 Southern Road Morrow, GA 30260

Contact us



Material health

#### **Evaluation programs**

#### **Declare**

Declare labels are issued to products disclosing ingredient inventory,

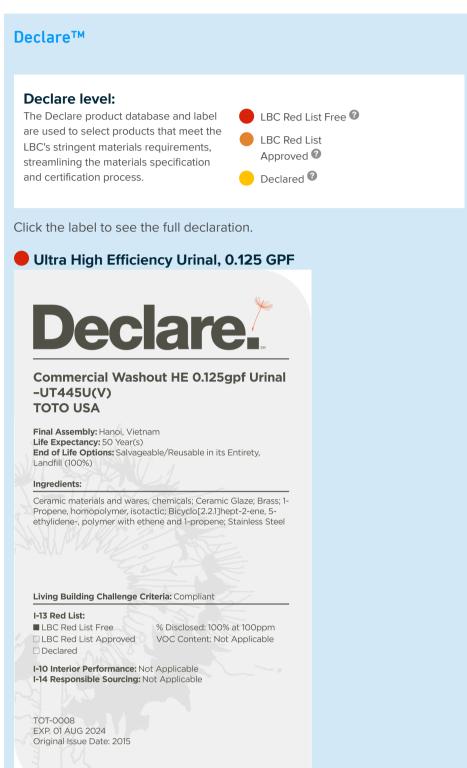
sourcing, and end of life options. Declare labels are based on the Manufacturers Guide to Declare, administered by the International Living Future Institute.

LCA & material health results & interpretation

#### 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.

#### Assessment scope and results



### What's in this product and why

#### **Declare level**

'Red List Free' is awarded to products when no materials on the Living Building Challenge's Red List are in the product.

#### **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

This 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 it 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**

COMMERCIAL WASHOUT HE 0.125GPF URINAL -UT445U(V)

INTERNATIONAL LIVING FUTURE INSTITUTE™ living-future.org/declare

# 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** 

2. Optimization

Credit value options

1 product each

LEED BD+C: New Construction | v4.1 - LEED v4.1

Materials and resources

**Material Ingredients** 

Credit value options 1 product each

1. Reporting

1. Reporting

2. Optimization

3. Supply Chain 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**

**X07** Materials Transparency

**X08** Materials Optimization

Collaborative for High Performance Schools National

#### Criteria **EQ C7.1 Material Health Disclosures**

Performance Approach

2 points

Prescriptive Approach

2 points

# SM Transparency Report (EPD)™ + Material Health Overview™

**EPD** LCA 3rd-party reviewed Transparency Report (EPD) 3rd-party verified

TOTO - 20240624 - 004 Material evaluation

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Certified **Product Declaration** www.nsf.org

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**Public LCA** 

**TOTO USA** 1155 Southern Road Morrow, GA 30260

Contact us

**Urinal UT445U** 

# How we make it greener

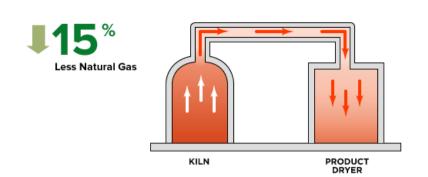
Sustainable Minds®

Transparency Report (EPD)

Collapse all

# PRODUCTION

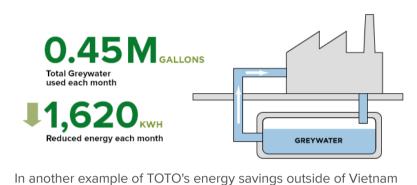




Waste heat from the kilns is routed to the product dryer. This reduces 15% natural gas consumption.



TOTO is taking additional steps at its other facilities, outside of Vietnam and Indonesia, to reduce potential environmental impacts. For example, TOTO's Morrow plant matches 100% of its electricity usage through Georgia Power Simple Solar and helps grow solar energy. 14 million kilowatt hours of green energy helps reduce 18.5 million pounds of carbon dioxide equivalents each year.



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



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

# CONSTRUCTION



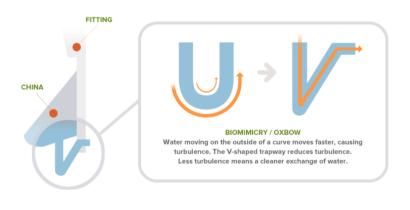




UPS parcel shipments are carbon neutral. TOTO is a registered SmartWay® Transport Partner.

# USE





Efficiency 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 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® Ultra High-



Designed to work in combination with the EcoPower® Ultra High-Efficiency Urinal Flush Valve, the 0.125gpf urinal reinforces TOTO's performance reputation while offering an additional water savings.



# SM Transparency Report (EPD)™ + Material Health Overview™

This environmental product



TOTO - 20240624 - 004 Material

Validity: 06/24/2024 - 06/24/2029

evaluation **MATERIAL HEALTH Self-declared** 

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(865) 850-1883 **NSF** International

P.O Box 130140 789 N.Dixboro Road





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1155 Southern Road

Morrow, GA 30260

**TOTO USA** 

**Environmental**