

TOTO®

Ultramax®

MS854114E - Eco Ultramax
MS604114CEFG - Ultramax II
MS604114CUFG - Ultramax II 1G®

Beautifully engineered in a single unit, the Ultramax HET incorporates thoughtful innovation with simple elegant design and TOTO’s dedication to respecting water. The Ultramax HET offers sleek lines, is simple to install, and features performance design that focuses on your comfort. Choose the Eco Ultramax which utilizes TOTO’s E-max flushing system or the Universal Height Ultramax II with TOTO’s Tornado Flush™ system, available in 1.28gpf or 1G options.



Performance Dashboard

Features & functionality

- Wide 3” flush valve is 125% larger than conventional 2” flush valves
- Wide 2-1/8” computer designed, fully glazed trapway
- Sleek, high profile one-piece toilet
- Complete with SoftClose® seat, or upgrade to Washlet®
- ADA compliant (Ultramax II and Ultramax II 1G)

Visit TOTO for more product specifications:

- Eco Ultramax – [MS854114E](#), [MS854114EG](#)
- Ultramax II – [MS604114CEF](#), [MS604114CEFG](#), [MS604114CEFRG](#)
- Ultramax II 1G – [MS604114CUFG](#)

See ecomedes for water & energy calculations

Environmental performance

Improved by:

- Lower water use
- 50% of all electricity from renewable resources
- Kiln exhaust heat reused to power product dryers
- Upcycling of post industrial porcelain waste into ceramic floor tile

Certifications, rating systems & disclosures:

- WaterSense® certified
- CALGreen® compliant
- Declare™ label
- Contributes to earning credits in LEED®

See LCA results & interpretation

See material health results & interpretation



CSI MasterFormat™ #22 41 13.13
Check spec sheets for these products
[Eco Ultramax](#), [Ultramax II](#), [Ultramax II 1G](#)
For spec help call (888) 295-8134



TOTO PeoplePlanetWater Smart Fact:
TOTO donates all unusable, cracked ceramic tiles to Crossville Tile to be recycled and re-used as floor tiles.



SM Transparency Report™ + Material Health Overview™

VERIFICATION	LCA
3rd party reviewed	
Transparency Report	
Verified	
Material Health Evaluation	
Self-declared	
Validity: 09/14/18 – 09/14/23 TOT – 09/14/18 – 011	

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

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LCA & material health results & interpretation

Ultramax® MS854114E, MS604114CEFG, & MS604114CUFG

Life cycle assessment

Material health

Scope and summary

☐ Cradle to gate ☐ Cradle to gate with options ☒ Cradle to grave

Functional unit

One toilet in an average U.S. residential environment that functions for 20 years. The period of 20 years is an industry accepted average lifespan for residential tanks and their associated components; this is more limited due to changes in consumer preferences and innovations in water usage than the technical lifespan of the product. The vessel is assumed to be replaced at the same time as the tank. The implication is that the LCA model assumes that the application ends at year 20 and that the materials will be treated in an end-of-life scenario.

Data reporting period: 2017

Default use phase scenario

Eco Ultramax MS854114E and Ultramax II MS604114CEFG: 20 years of service in a U.S. household with 1.28 gallon/use and 5.05 flushes/day and 2.67 people resulting in 125,990 gallons.

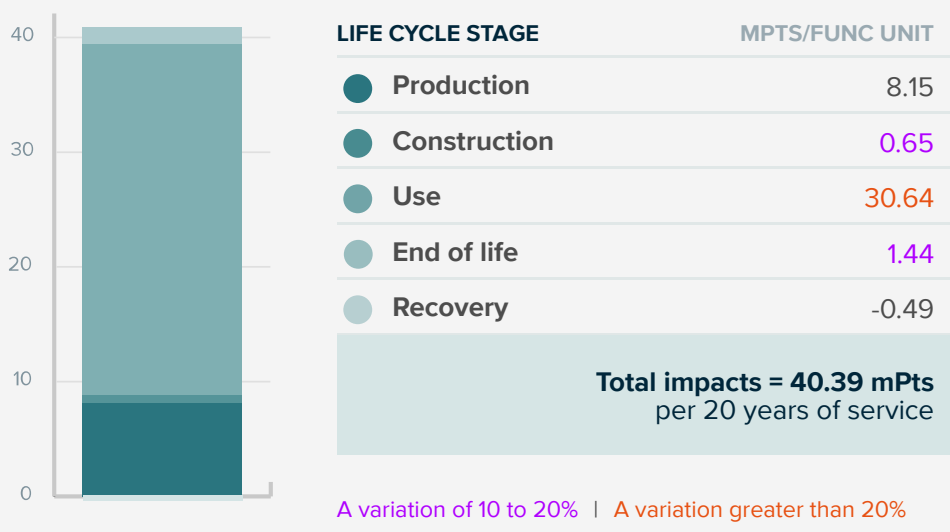
Ultramax II 1G MS604114CUFG: 20 years of service in a U.S. household with an average of 1.0 gallon/use and 5.05 flushes/day and 2.67 people resulting in approximately 98,430 gallons.

The toilet bowl is assumed to be cleaned weekly, 52 weeks per year, with 10mL of a 1% sodium lauryl sulfate solution.

Material composition greater than 1% by weight

PART	MATERIAL	AVG. % WT.
Ceramic	Ceramic	83.6%
Packaging	Cardboard	10.1%
Seat	Polypropylene	4.7%
	Other	1.6%

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



What's causing the greatest impacts

All life cycle stages

The use stage and the production stage are equally 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 operation of the product. The production stage has the most significant contributions to fossil fuel depletion (mostly defined by crude oil, hard coal and natural gas extraction activities as well as polypropylene manufacturing), non-carcinogenics (mostly defined by zinc production and processing, the natural gas used at the kiln and the disposal of hard coal ash) and ecotoxicity (mainly caused by electricity production, the disposal of slags and hard coal ash as well as zinc and copper production and processing).

The contributions covered under the construction/installation stage are mostly associated with the product delivery to the market and the disposal of packaging materials, mainly corrugated cardboard. 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 as well as the processes for dismantling the product and final waste treatment during the end of life stage are slightly relevant in the majority of the impact categories.

Production stage

The ceramic parts dominate the material contribution except for eutrophication and non-carcinogenics. Corrugated board has major contributions to the eutrophication and non-carcinogenics impact categories. The die casting of zinc has a significant contribution to the non-carcinogenic impact category. The injection molding process has a significant contribution to the carcinogenics impact category while the steel parts have a significant contribution to fossil fuel depletion. The remaining parts and processes contribute between 7% and 18% of the overall impacts in the rest of the categories.

Sensitivity analysis

The deviations at the production stage are a combination of the variation in amount of the ceramic component of the two products (10-20% deviation) caused by the differences in the firing yield and production efficiency. Use phase deviations (over 20%) are a result of differences in the product's water consumption and associated operational energy use. The Ultramax II 1G uses 22% less water than the other two Ultramax versions: The Eco Ultramax and Ultramax II. The deviations at the construction/installation and end of life stages are mainly due to the weight difference of the finished product after packaging, which is driven by the difference in the ceramic component weight in the two products.

Multi-product weighted average

Results represent the weighted average using production volumes for the products covered. Variations of specific products for differences of 10-20% against the average are indicated in **purple**; differences greater than 20% are indicated in **red**. A difference greater than 10% is considered significant.

TOTO PeoplePlanetWater™ programs improving environmental performance

- Dual-Max®, E-Max®, Tornado Flush™, 1G®, and EcoPower® technologies 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

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

SM 2013 [Learn about SM Single Score results](#)

Impacts per 20 years of service	8.15 mPts	0.65 mPts	30.64 mPts	1.44 mPts	-0.49 mPts
Materials or processes contributing >20% to total impacts in each life cycle stage	Ceramic parts production as well as raw materials transport.	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 v2.1 results per one toilet

A variation of 10 to 20% | A variation greater than 20%

Ecological damage

Impact Category	Unit					
Acidification	kg SO ₂ eq	<div></div> 4.01E-01	5.31E-02	2.28E+00	5.87E-03	-2.56E-02
Eutrophication	kg N eq	<div></div> 6.32E-02	6.35E-03	2.57E-01	5.46E-04	-7.07E-03
Global warming	kg CO ₂ eq	<div></div> 1.16E+02	8.50E+00	4.38E+02	1.12E+00	-3.03E+00
Ozone depletion	kg CFC-11 eq	<div></div> 5.91E-06	1.89E-08	3.32E-05	1.23E-07	-2.73E-07

Human health damage

Impact Category	Unit					
Carcinogenics	CTU _h	<div></div> 1.40E-06	9.20E-08	8.99E-06	1.21E-08	-1.43E-07
Non-carcinogenics	CTU _h	<div></div> 2.09E-05	8.59E-07	4.14E-05	9.90E-08	-1.06E-06
Respiratory effects	kg PM _{2.5} eq	<div></div> 3.38E-02	9.19E-04	1.56E-01	3.21E-04	-3.21E-03
Smog	kg O ₃ eq	<div></div> 6.50E+00	1.63E+00	2.13E+01	1.66E-01	-4.06E-01

Additional environmental information

Impact Category	Unit					
Ecotoxicity	CTU _e	<div></div> 6.90E+01	1.62E+01	1.55E+02	1.86E+00	-2.73E+00
Fossil fuel depletion	MJ surplus	<div></div> 1.95E+02	1.17E+01	2.75E+02	2.18E+00	-4.82E+00

References

LCA Background Report

TOTO Sanitary Ceramic Products - Ultramax LCA Background Report (public version), TOTO 2018

SM Transparency Report Framework

Part A: LCA Calculation Rules and Background Report Requirements | Version 2018 (compliant with ISO14040-44 and ISO14025)

Part B: Product Group Definition – Residential Toilets

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 MR Building product disclosure and optimization

Environmental product declarations

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

Collaborative for High Performance Schools National Criteria MW 7.1 – Environmental Product Declarations

- ☒ Third-party certified type III EPD 2 points



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Transparency Report

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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 (LFI).

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 ?

Click the label to see the full declaration.

● Eco Ultramax



● Ultramax II



● Ultramax II 1G



How this rating was achieved

Declare level

'Declared' is awarded to products when all the ingredients have been self-disclosed to promote transparency.

What's in the product and why

Manufacturing in the United States means that robust human labor, safety and environmental rules and regulations were followed. In addition, local sourcing of raw materials means that less smog and air pollution are generated as a result of transport. The ceramic body and glaze makes up ~92-93% of the total mass of the toilet. Therefore, manufacturing and transportation of the ceramic create the greatest human health impacts when compared to the overall manufacture of the entire toilet. By specifying an Ultramax toilet manufactured in the United States, the consumer helps mitigate these human health impacts.

Red List materials

The toilet trip lever handle 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 according to the OSHA Guidelines. 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 trip lever in the final form does not represent any hazards to the user.

TOTO continues to investigate alternative finishes in order to reduce and/or eliminate Chromium VI on the toilet trip levers. Standard versions of the Ultramax use parts containing PVC (Polyvinyl Chloride), a plastic commonly used within the plumbing industry. The primary health concern is during the production process when the raw material components are in a powder or pelletized form. If inhaled or ingested the results can be toxic and potentially carcinogenic. In the final form, materials are inert and not a hazard to the users of the toilet.

As part of TOTO's efforts to reduce health impacts, PVC-free versions of the Ultramax are available. PVC parts have been removed and replaced with materials of compatible functional strength and chemical resistance. These alternative parts are sourced within the continental United States. It should be noted that there are no legislative or regulatory mandates to remove this material from a product, however, as part of our goal to mitigate adverse health impacts, TOTO has decided to move beyond compliance by voluntarily eliminating this compound.

Where it goes at the end of its life

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

How we're making it healthier

Goals and plans for improvement:

- Utilize alternative materials to PVC, removing this compound from tank parts in all TOTO models.
- With no compromise to beauty, functionality, or durability, TOTO intends to offer alternative finishes for trip levers that do not require chromium VI.

[See how we make it greener](#)

References

Declare

TOTO USA, Declare label for Eco Ultramax MS854114E
TOTO USA, Declare label for Ultramax II MS604114CEFG
TOTO USA, Declare label for Ultramax II 1G® MS604114CUFG

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
<input checked="" type="radio"/> 1. Reporting <input type="radio"/> 2. Optimization <input type="radio"/> 3. Supply chain optimization	

Living Building Challenge 3.0 Materials petals imperatives

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

WELL Building Standard® Air and Mind Features

☐ **Air** 26. Enhanced Material Safety
☒ **Mind** 97. Material Transparency ☐ **Mind** 98. Organizational Transparency

Collaborative for High Performance Schools National Criteria MW 10.1 – Building Product Health Related Information Reporting

☒ Product Health Related Information Report 1 point

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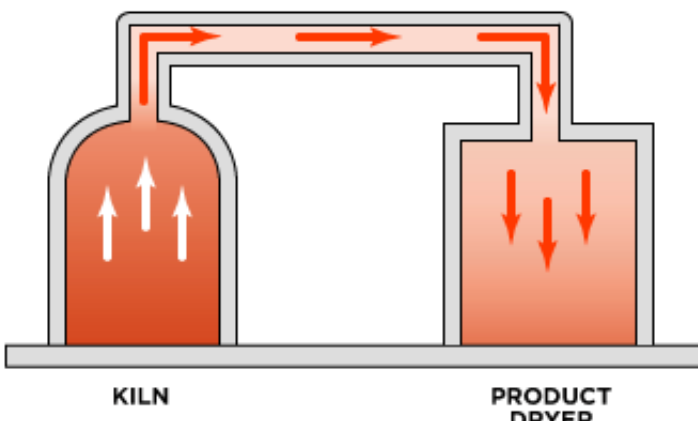
[Collapse all](#)

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

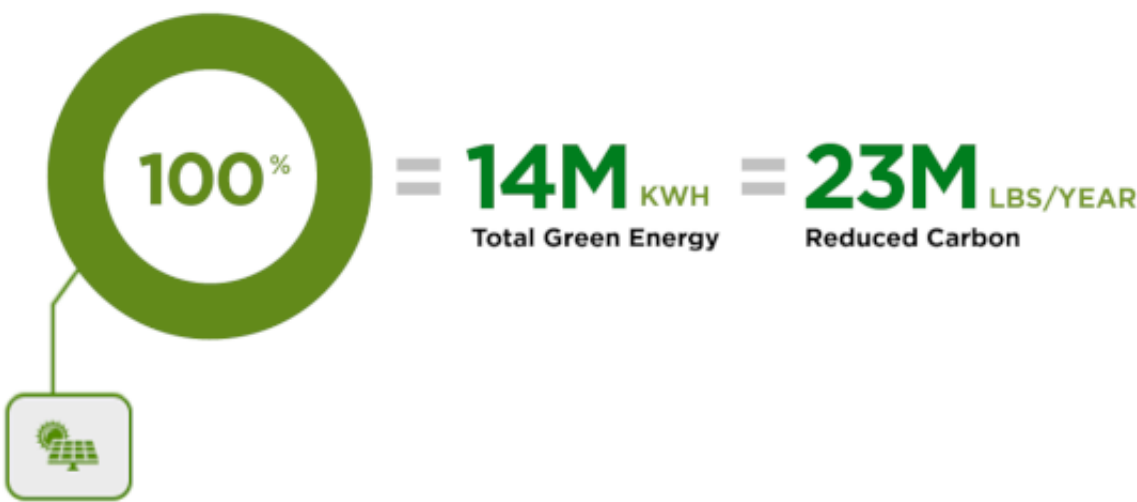
PRODUCTION



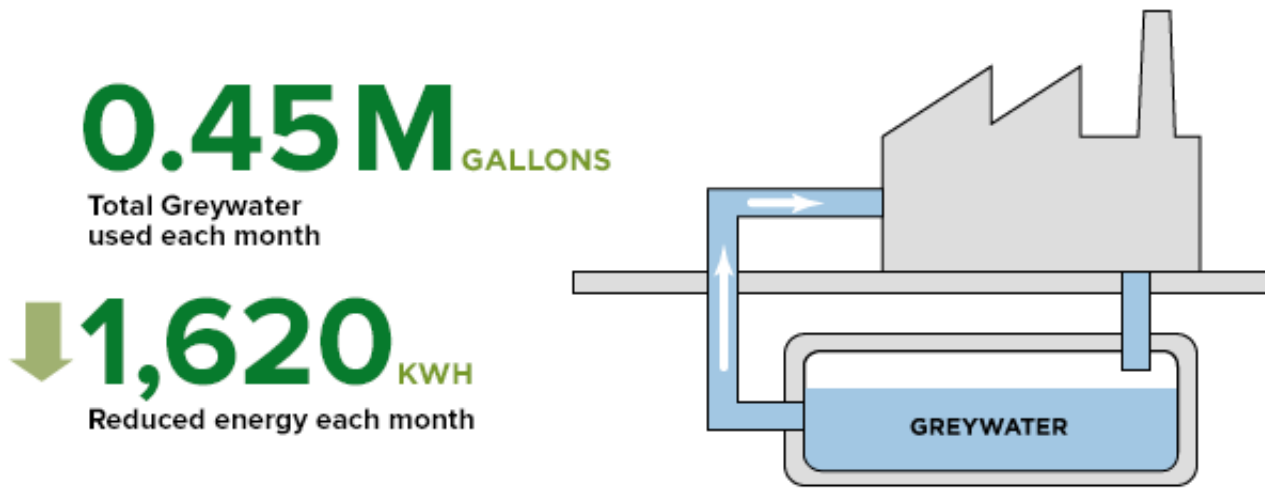
↓ 15%
Less Natural Gas



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



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 23 million pounds of carbon 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

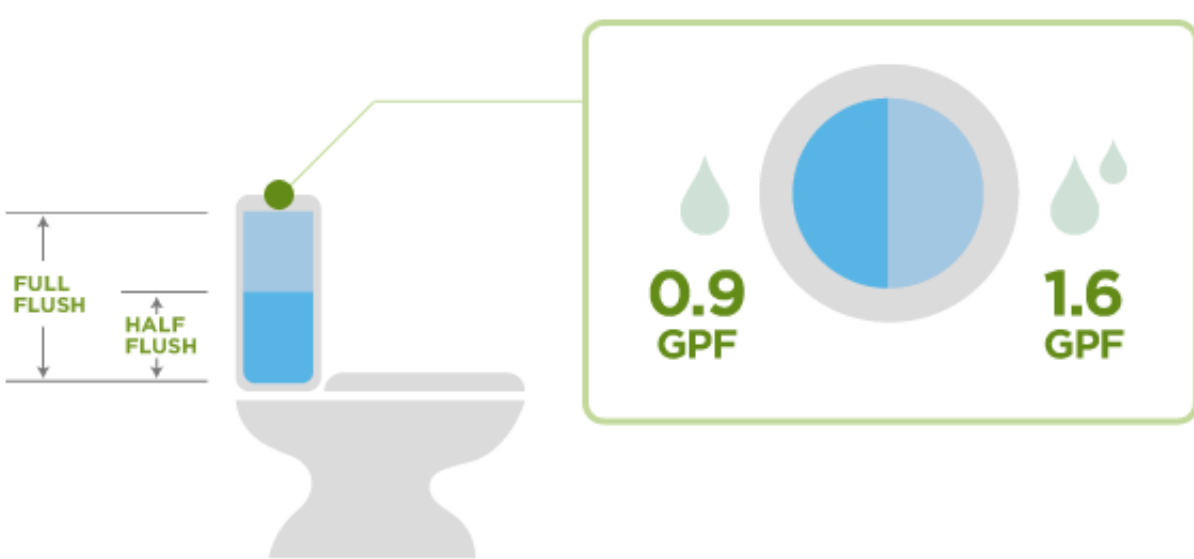


One-piece toilets are shipped with every other toilet upside down, increasing the fill rate of a truck trailer and cutting transportation cost in half.

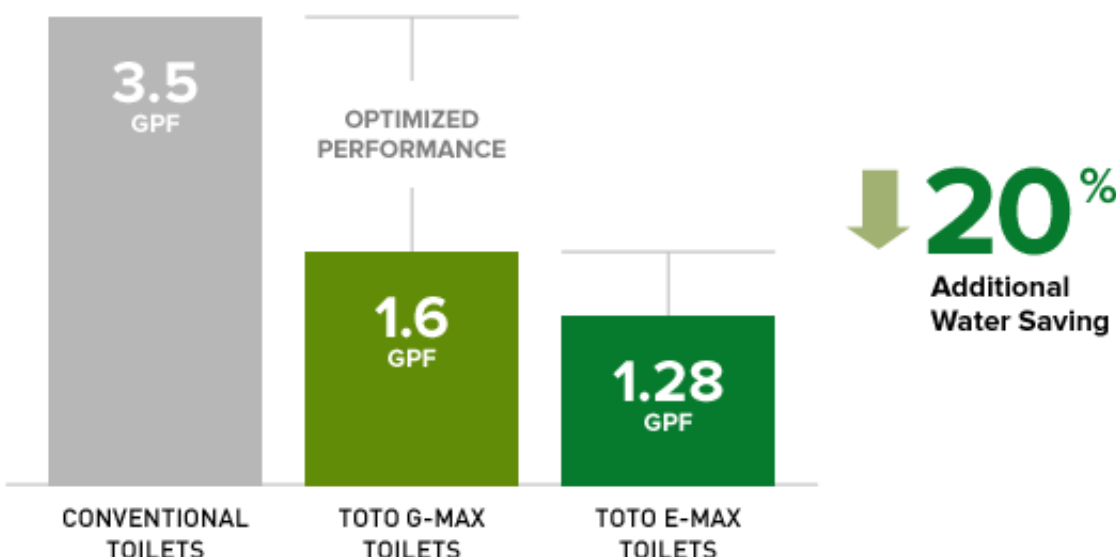


UPS parcel shipments are carbon neutral. TOTO is a registered SmartWay® Transport Partner.

USE



The dual flush system reduces water in the use phase.



Utilizing the same proven engineering as our legendary 1.6 GPF G-Max flushing system, the 1.28 GPF E-Max reinforces TOTO's performance reputation while offering an additional water savings of 20%.



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