

# Toilets

## **Covered Products:**

Wall-hung and tank-type toilets with connection to water supply and discharge.

## **Goal:**

To reduce the amount of water used per flush without depleting the effectiveness of the water flow.

- Toilets replaced as part of normal maintenance of buildings shall be upgraded to high-efficiency toilets.
- Entities are encouraged to upgrade all existing toilets to high-efficiency when possible.

## **Background:**

A very small percentage of the total water on the planet is suitable for human consumption. Using potable water to flush human waste down the drain is a poor use of water that is typically highly treated and prepared for consumption. Low flow toilets use less water than standard toilets and will help to reduce use of treated water for flushing wastes.

The Energy Policy Act of 1992 mandated the use of water-conserving plumbing fixtures to reduce water use in residential, commercial, and institutional buildings. Using water efficiently can reduce costs through lower water use fees, lower sewage volumes to treat (with associated energy and chemical usage), and lower capacity charges.

## **Definitions:**

**gpf** – gallons per flush

**Low flow toilets** are toilets that use 1.6 gpf or less.

**Standard toilets** use more than 1.6 gpf. Typically, the range is 3 to 5 gpf. These are no longer being produced and are not allowed by code, however, many existing installed toilets are older and use this high level of water for flushing.

**Dual-flush toilets** are low flow toilets that have a bi-directional handle or a handle or push-button options that allows a choice of flush capacity for solids or liquids. Pushing the handle down dispenses the maximum flow to flush solid waste whereas pulling the handle up dispenses a smaller flow to flush liquid waste.

**High efficiency toilets** are low flow toilets that use 1.28 gpf or less.

**Tank-type toilets** have a separate or integral water storage tank. The water in the tank drains by gravity into the bowl to flush out the waste.

**Pressure-assist toilets** use air pressure to force the water to the bowl at a higher velocity than a gravity tank. Typically, a pre-charged tank is used to maintain the air pressure.

**Flushometer (or flush valve)** is a valve attached to a pressurized water supply that directs flow into the toilet to adequately flush out all waste. The valve may be manually or electrically operated. Electrically operated valves are interlocked with a sensor that determines when to flush.

**Potable water** is water which is suitable for human consumption.

**Gray water** is waste water discharged from lavatories, bathtubs, showers, clothes washers, and laundry sinks.

**ADA** is the Americans with Disabilities Act. Compliance with the act typically requires conformance to ICC/ANSI Standard A117.1, Accessible and Usable Buildings and Facilities.

**LEED** (Leadership in Energy and Environmental Design) is an internationally recognized green building certification system, providing third-party verification that a building or community was designed and built using strategies intended to improve performance in metrics such as energy savings, water efficiency, CO<sub>2</sub> emissions reduction, improved indoor environmental quality, and stewardship of resources and sensitivity to their impacts.

### **Standard Setting and Certifying Programs:**

**American Society of Mechanical Engineers (ASME)** is a not-for-profit professional organization that enables collaboration, knowledge sharing and skill development across all engineering disciplines, while promoting the vital role of the engineer in society. ASME codes and standards, publications, conferences, continuing education and professional development programs provide a foundation for advancing technical knowledge and a safer world. ASME sets the standards for fixture construction. For additional information on ASME, visit the organization website at <http://www.asme.org/>.

**American National Standards Institute (ANSI)** is a not-for-profit organization whose mission is to enhance both the global competitiveness of U.S. business and the U.S. quality of life by promoting and facilitating voluntary consensus standards and conformity assessment systems, and safeguarding their integrity. The Institute oversees the creation, promulgation and use of thousands of standards and guidelines that directly impact businesses in nearly every sector: from acoustical devices to construction equipment, from dairy and livestock production to energy distribution, and many more. ANSI is also actively engaged in accrediting programs that assess conformance to standards – including globally-recognized cross-sector programs such as the ISO 9000 (quality) and ISO 14000 (environmental) management systems. For additional information on ANSI, visit the organization website at <http://www.ansi.org/default.aspx>

**WaterSense®** is an EPA-sponsored partnership program that provides water efficiency and performance criteria for products and helps consumers identify water-efficient products and programs that meet WaterSense criteria. For additional information on WaterSense, visit the website at <http://www.epa.gov/watersense/>.

#### **Affected entities shall:**

Provide toilets meeting the following specifications, in addition to meeting all applicable laws, codes, rules and regulations:

- Vandal resistant design features.
- Certification by the American Society of Mechanical Engineers (ASME), indicating the toilet and flush mechanism is constructed per standards and complies with current code.
- Compliance with ADA requirements.
- Ability to effectively flush solid and liquid waste using 1.28 gpf (average) or less.

#### **Affected entities are encouraged to:**

- Provide signage that explains the features that add to the desirability of use.
- Provide routine inspection (recommended yearly at a minimum) as well as cleaning and servicing per manufacturer's recommendations.

- Replace or retrofit all standard toilets with toilets, flushometers, or dual flush devices that would ensure use of 1.28 gpf average or less.
- Provide **WaterSense®** labeled toilets in appropriate residential applications.
- Choose flushometers before tank-type toilets for increased durability and ease of maintenance.
- Utilize gray water to serve toilets wherever possible.
- Reduce the State's carbon footprint by procuring local or regional products.
  - For projects registered with a LEED rating system, some contribution to achievement of credits may be realized in purchasing units that are manufactured within 500 miles of the project site.

**Toxics in Packaging:**

- In accordance with Environmental Conservation Law section 37-0205, packaging shall not contain inks, dyes, pigments, adhesives, stabilizers, or any other additives to which any lead, cadmium, mercury or hexavalent chromium exceed the following concentration level: 100 parts per million by weight (0.01%).