

InsideICC ICC Evaluation Service (ICC-ES)

High-Efficiency Plumbing Fixtures: Smart for the Environment, Smart for Business



There are many fixtures to choose from that help save billions of gallons of water without compromising performance, based on the EPA's WaterSense® Program specifications.

PHOTO CREDIT: FOTOLIA

More and more, designers, builders and even tenants are specifying resource-efficient plumbing products for new construction and renovations.

Greater water efficiency is an important aspect of sustainability and is relatively easy to implement. Beyond conserving water, additional benefits include reduced water payments; minimized effect on ecosystems; reduced infrastructure costs from rainwater harvest, offsetting treatment and pumping costs; and less runoff/overwatering.

There are many fixtures to choose from that help save billions of gallons of water without compromising performance. Based on the Environmental Protection Agency's (EPA) [WaterSense® Program specifications](#), products must meet certain water-efficiency criteria, highlights of which are as follows:

For *tank-type toilets*:

- Effective flush volume shall not exceed 1.28 gallons.
- Solid waste removal must be 350 grams or greater.
- Toilet must conform to adjustability and other requirements.





For high-efficiency lavatory faucets:

- Lavatory faucets and accessories must conform to applicable code references.
- Lavatory faucet accessory flow rate needs to be tested per code references:
 - Maximum flow rate cannot exceed 1.5 gallons per minute (gpm), 60 pounds of pressure per square inch (psi) at inlet when water is flowing;

- Minimum flow rate must be 0.8 gpm or greater and 20 psi of pressure at inlet, when water is flowing;
- As long as the lavatory faucet is equipped with an accessory meeting these requirements, the faucet also meets the requirement.
- When tested per applicable code reference, the flow rate meets the testing verification protocol.

For flushing urinals:

- No greater than 0.5 gallon of water per flush.
- Fixture and flushing device must conform to specified requirements.

For showerheads:

- For multi-mode units, no mode can exceed maximum flow rate.
- Instructions cannot suggest alternate water-use setting to override maximum flow rate. Conversely, maintenance instructions must direct user to set maximum flow rate.

For weather-based irrigation controllers:

- Irrigation adequacy for each zone must be 80 percent or greater.
- Excess irrigation cannot exceed 10 percent per zone; average excess across all zones cannot exceed five percent.

Code-related organizations, such as the International Code Council (ICC), have published provisions devoted

to sustainable building practices, many of which focus on water efficiency. The *International Green Construction Code™ (IgCC)* includes comprehensive provisions for water efficiency covering virtually every water conservation-related area of construction.

Evaluated Products for Greater Peace of Mind and Efficiency

The ICC Evaluation Service (ICC-ES) Plumbing, Mechanical and Fuel Gas Listing (PMG) Program is a subsidiary of ICC and is devoted to certifying PMG products. Green plumbing products that are evaluated and listed by ICC-ES PMG make selecting, specifying and approving water-efficient products and solutions faster and easier.

Building departments prefer the [ICC-ES PMG listing program](#) because the program is the most widely accepted and recognized PMG listing service. This gives code officials and inspectors a higher level of confidence that a product is code compliant. **bsj**

This article originally appeared in the June 2012 issue of the Building Safety Journal Online, copyright International Code Council, and is reprinted with permission.