

September 9, 2006

Glenn Haege:

A SCORECARD IS NEEDED TO PICK THE BEST-FLUSHING TOILET



You flush a lot of water down the drain. According to the U.S Environmental Protection Agency, a conventional 3.5-gallon flush toilet accounts for 26 to 30 percent of all indoor water used by an average family of four.

The mechanics of flushing are very water intensive. A standard toilet tank in 1980 held 3.5 gallons, all of which went down the drain when you flushed the toilet. The amount of water used in a single flush is measured in gallons. Older toilets used 5, 6 and even 7 gallons of water for every single flush.

Congress mandated that toilets use no more than 1.6 gallons of water. Unfortunately, most of the new 1.6-gallon flushing toilets didn't work very well. Poorly flushing toilets became the No. 1 complaint in the housing industry.

My radio listeners got so angry nine years ago that they sent over 10,000 pieces of toilet tissue to their federal representatives with the message: "Get the government out of our toilets."

To be honest, the country did need to save water, but that did not change the fact that the darned toilets did not work very well. Because of that flaw, manufacturers started experimenting with different designs.

Residential toilets had always been gravity fed. Water released from the tank flowed down and flushed the toilet. On the commercial level, the Sloan Valve Co. invented a pressure-assisted tank that flushed the water down the drain of specially designed toilets with tremendous water pressure. The higher the pressure, the less water needed to successfully flush the toilet.

The technology was adapted to residential use and pressure-assisted units were among the first highly successful, high customer satisfaction 1.6-gallon (actually 1.5-gallon) flushing toilets made. Their only drawbacks were expense and noise level.

A great many research dollars went into solving the problem and noise level has been tremendously reduced. According to the manufacturer, approximately 50 percent of all pressure-assisted toilets are now residential.

A Japanese manufacturer, Toto, developed the very successful Drake gravity feed toilet. Among other attributes, the toilet had superior glazing and a 25 percent larger flush valve. The Toto was followed by the American Standard Champion and the Kohler Cimarron toilets. All three used slightly different flushing technologies. Other manufacturers also improved their toilet designs.

Because of the large number of poorly flushing 1.6-gallon toilets, a joint Canadian and American project was set up to test and publicize superior performing toilets. The report was first published in 2003 by Veritec Consulting Inc., Mississauga, Ont., and Koeller and Co., Yorba Linda, Calif. William Gauley, the head of Veritec, is the grandfather of modern flush capacity testing and developed many of the procedures used today.

Toilets are tested using soybean paste designed to resemble human waste in batches that are increased in 50 gram increments. Each flush also includes four loosely crumpled balls of six single-ply sheets of toilet paper.

All model toilets are tested at 250 to 1,000 grams and rated at its highest consistent gram flushing performance. The report is updated every four to six months.

The report is available free on the Web sites of the Canadian Water and Wastewater Association (CWWA, www.cwwa.ca/home_e.asp), the California Urban Water Conservation Council (CUWCC, www.cuwcc.org/MapTesting.lasso), and Veritec Consulting (veritec.ca). I also have a direct link to the latest edition on my help site, <http://www.masterhandyman.com/>.

Two even more efficient water-saving toilets were developed in the past few years: The dual-flush and the high-efficiency toilet. Although well established in Europe and Australia, Caroma introduced the first dual-flush toilets into the United States in 1998. Dual-flush toilets are based on the principle that it takes less water to flush urine than solid waste. The user pushes either a liquid or a solid flush button.

These vary from 0.8 to 1.1 gallons per flush for liquid flushing and 1.1 to 1.6 for solid waste. Some, but not all, dual-flush toilets qualify for the high-efficiency designation.

A high-efficiency toilet is defined as being at least 20 percent more efficient than the 1.6-gallon standard. This would mean that the toilet flushes no more than 1.3 gallons per flush. Some water departments give credits for installing high-efficiency toilets. A dual-flush, high-efficiency rated toilet is probably the most efficient water saving toilet available today.

The average American family of four with a standard 3.5 toilet flushes 26,000 gallons of water a year. Converting to a high-efficiency toilet would reduce that by 60 percent. Converting to a dual flush 1.1/0.8 gallons per flush toilet would save even more. It would also save the family a minimum of \$55 a year in water bills according to the EPA WaterSense Web site.

Today, every major toilet manufacturer makes all or most of these styles of toilets. Gerber has nine pressure-assisted, dual-flush and high-efficiency models that are rated by MaP testing at 1,000 grams flushing capacity. Caroma, Toto, and Vitra have gravity-feed, dual-flush, and high-efficiency models rated at 800 grams or above. American Standard has about 25 gravity-feed, low-flow toilets rated at 1,000 grams. Vitra and Western Pottery also have gravity-feed 1,000-gram flush models.

Manufacturers have high- and low-rated models. You can't tell the winners without a scorecard. That scorecard is the MaP testing report. If you are getting a new toilet, download a copy and become an informed consumer. Standing or sitting, you'll brag about the result.

If you would like to suggest a question for this column, write Ask Glenn, Master Handyman Press, P.O. Box 1498, Royal Oak, MI 48068-1498, or e-mail . If you want to talk to Glenn Haeger personally, call his "Handyman" radio show at (866) ASK GLENN. The show can be heard on over 160 stations nationwide.