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A toilet newsletter for California's water conservation community

Sponsored by the California Urban Water Conservation Council

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Welcome to the first edition of what we hope becomes an important communication vehicle for the Council. As new water conservation programs, technologies, and equipment are developed and evolve, it is critical that our members are kept fully and frequently informed on all fronts. This newsletter is only the first step in what we see as broad coverage of all areas of urban water conservation. So, although we are dealing with ULF toilets in this first version, I hope that soon we can expand in future issues to include all of the areas of interest to you. This includes the BMPs, technology development, program experiences, specialized studies, and much more!

If you have questions, comments and (especially) contributions to the newsletter, please contact John Koeller....NOT just about ULF toilets, but other topics as well.

We anticipate that our Council newsletter will be a twice-per-month publication, provided to you by e-mail, and subsequently posted on our website. Please watch for future issues in your inbox!

Mary Ann

This month.....

1. ASME/ANSI Performance Standards for ULFTs - Progress or not?

A proposed new national standard for toilets has passed the first hurdle, having been approved for balloting by the ASME A112.19.2 standards team. This new standard includes provisions for additional testing of toilets, but an area of disagreement still exists over one specific requirement, that of the maximum flush volume. This disagreement is very significant to the water conservation community, because without the establishment of a maximum flush volume, some toilets will

continue to be adjustable by the end-user (or a plumber) to flush volumes much greater than 1.6 gallons.

2. Los Angeles Supplementary Purchase Specification (SPS) - What does the plumbing industry think?

Some manufacturers initially raised objections to Los Angeles' plan to add special requirements to its toilet purchases. However, when the dust settled and after Tom Gackstetter of Los Angeles incorporated some changes into his specification, only a small minority of manufacturers continued to oppose the spec.

3. Flappers (oh, no, not again!) - Bad news for water conservers!

Flapper durability has become a priority issue for the A112.19.5 standards team, which is now positioned to address this problem with a national standard that would apply to all OEM flappers. Unfortunately, as positive as this news is, the bad news is that the latest tests of flappers immersed in a solution of the in-tank drop-in bowl cleaner Vanish have shown that no flapper is able to stand up to this product, even the very best that now exist!

4. New Products and Other News

New products are currently in development or already on the market for both residential and commercial applications.....Ultra-ultra low flush toilets, vacuum-assist toilets, qualified flappers, and price changes.

Full Details

1. ASME/ANSI Performance Standards for ULFTs

Many of you have called and emailed me to ask about the outcome of the Standards meetings held recently in Washington D.C. As the current representative from the water conservation community, I participate as a member of the Project Teams (committees) dealing with the ASME A112.19.2, 19.5, and 19.6 national standards. Over the past six years, the focus for water conservation has been upon getting the industry to agree to new and/or tighter standards for:

Toilet Performance (A112.19.2 and A112.19.6) and
Flapper Durability and Standardization (A112.9.5)
(see Item 3 below)

Through the cooperative efforts of many individuals (manufacturers, labs, and others), a proposed new standard was developed that added a series of new tests and requirements to the existing protocols as follows:

Performance

These two tests comprise the current requirement within the standard for removal of solids from the toilet bowl:

1. Ball Test: 100-polypropylene balls (3/4-inch diameter) placed in the bowl, of which a minimum of 75 must be flushed out of the bowl.
2. Granule Test: 2,500 polyethylene granules (approx 1/6-inch diameter) placed in the bowl, equating to a total of about 6-cubic inches of material that floats on the water. No more than 125 granules may be visible in the bowl after flushing.

The proposed standard would add the following to the test protocols:

1. Granule Test: In addition to the 2,500 granules, add 100 nylon balls (1/4-inch diameter) with a density greater than water such that they sink. No nylon balls may be visible in the bowl after flushing.
2. Test Using Mixed Media With Neutrally Buoyant Wastes: 12 sponges (each sized at 19 by 19 by 59 mm) saturated with water and 10 paper balls each made of a sheet of Kraft paper (6 inches by 7.5 inches) crumpled by hand and also saturated with water and placed in the bowl. All of the sponges and paper must be flushed out of the fixture on the initial flush.

Adjustability

Currently, the performance standard contains no provisions for maximum flush volume. Rather, it sets the *average* flush volume at 1.6 gallons. Adjustability is required within the operating mechanism (tank trim) to allow for setting the water level under various water pressure conditions. However, the existing standard does not limit this adjustability. Therefore, in some cases, field adjustments to a flush volume much higher than 1.6 gallons could be made. The proposed standard would establish criteria setting maximum flush volume:

The proposed standard would have set the maximum flush volume of a toilet at 2.4 gallons when all adjustments were fixed at their maximum setting and the static water pressure in the supply line was set to 80 pounds per square inch.

Repair Parts Information

The proposed standard would add a section requiring the manufacturer to supply information (with each new toilet) to the consumer that would enable them to secure the correct repair parts needed to maintain the original flush volume.

Other changes to the standard are also proposed that are of less interest to water conservation professionals, so descriptions of these changes are not included here.

These proposed changes represent a significant step forward in making the standard more responsive to the demands of the water industry. Yet, in the voting meeting of August 17, a small number of manufacturers objected to the more stringent Maximum Flush Volume requirement in Los Angeles' SPS, presenting an argument that the two requirements were contradictory, a position which we strongly disagree with. However, after much discussion, the committee voted to remove the Maximum Flush Volume section by a somewhat strange margin: 7 in favor, 4 opposed, and 6 abstentions.

After this vote to remove that section, they approved the rest of the proposed new standard. Balloting amongst all of the members will now take place, at which time comments will be received and addressed. A final decision will be made on adoption in

the January 2001 series of meetings. Those opposed to the removal of the Maximum Flush Volume section expect that it can and will be re-inserted into the standard up for adoption.

For more written information on the discussions within the meetings and a copy of pertinent sections of the proposed standard itself, please contact me: koeller@earthlink.net or call 800-382-4407.

2. Los Angeles Supplementary Purchase Specification (SPS)

The Los Angeles SPS circulated on June 16 created a tidal wave of interest and comment by the plumbing industry! As you may know, the SPS was created by Los Angeles to add another set of requirements (over and above the national standard) to the ULFT purchases made in support of the city's toilet distribution program. These requirements are centered around two issues pertaining to his purchases: (a) requiring that his ULFTs be equipped with durable flappers and (b) requiring that ULFTs flush at no more than 2.4 gallons even when equipped with a standard flapper. These requirements are supplemental to the national standards.

The SPS is directed primarily at beginning to resolve the problems with flapper degradation and flapper replacement. Flapper degradation and durability has been addressed very successfully by a number of flapper manufacturers, and a significant number of toilet manufacturers have voluntarily begun to install the more durable flappers in their new toilets. However, the national standards have not yet been amended to MANDATE that durable flappers be installed in toilets sold in the U.S. (See Item 3 below.)

The SPS was a prime (and somewhat contentious) discussion topic at the ASME/ANSI standards meetings on August 16 and 17. At the meetings in August, Tom reminded the manufacturers and others in attendance that he had been accepting comments on the SPS from the plumbing industry and others, would consider those comments, and would amend the SPS where justified. Major changes to the original version already include the elimination of the labeling requirement and permitting any laboratory approved by the Los Angeles Department of Building and Safety to certify compliance with the SPS. His original effective date of July 1, 2000 stands, although he plans to implement it over a one-year period as ULFTs are certified and become available.

Tom reports that an updated version of Los Angeles' SPS for ULFTs will be released by September 15. It will be sent to all those individuals in California that received the original version on June 16. If you were not on that list and wish to receive the SPS, contact Tom at: Thomas.Gackstetter@water.ladwp.com or call him at 213-367-0936.

3. Flappers

Those of you familiar with the concerns over flapper durability (when a resident uses a drop-in bowl cleaning tablet in the tank) have been largely satisfied that the flapper manufacturers have finally developed improved products that withstand the attack of

these chemically based cleaners (2000 Flushes and Clorox). This was based largely upon extensive lab tests conducted by MWD in 1999.

A second round of tests with a third product, Vanish[®], began earlier this year. Unfortunately, the first results of these new tests indicate that NONE of these improved flappers are withstanding Vanish[®]. (That is, they all failed quite dramatically, according to these early reports!) This very disappointing development has flapper manufacturers back "at the drawing boards" to develop new compounds that will do the job. Stay tuned as we follow the progress of this important topic!

At the same time, the recently re-activated ASME/ANSI committee charged with flapper and other toilet trim national standards (A112.19.5) is now working very hard to get its arms around the durability issue and develop a national durability standard. Under the leadership of Burt Preston, Mansfield Plumbing Products, the committee has begun critical and direct dialog with the manufacturers of bowl cleaners. On August 16, five representatives of that industry joined with members of the standards committee in Washington D.C. to begin investigating possible solutions to the flapper failure problem. The second meeting with these two groups took place on September 19 in Chicago, where technical representatives of Clorox and Lysol participated along with flapper manufacturers and others. The first steps toward a set of test protocols and standards took place.....a complete report on the meetings will be available later in September. We will keep you informed.

For more flapper information, contact me: koeller@earthlink.net or call 800-382-4407.

4. New Products and Other News

- *New 1.0 to 1.2 gpf toilets*

Two manufacturers will soon announce new 4-liter and 4.5-liter toilet for the U.S. market! One of these new models is now at MWD for testing...the other will arrive before the end of the year. Will these new products meet the expectations of the American consumer? Will their reduced flush volume be offset by increased double-flushing? Are any water agencies interested in testing these units in the field? If so, contact me.

Other manufacturers are also developing the Ultra-ULFTs (we call them the "You-You's")---largely for the Singapore market.....again, stay with us for more info as we learn more.

- *Crane's new Vacuum-Assisted Toilet*

Those of you familiar with the Briggs Vacuity know that this vacuum technology is licensed by Fluidmaster to Briggs. Unfortunately, Briggs seems to have never improved on its original design, which is years old. Now, Crane has also become a licensee and is marketing its own toilet employing the same vacuum-assist technology. If you have commercial programs where pressure-assisted tank toilets are the norm, check this one out....quieter than a P-A, and (hopefully) a better performer than the Vacuity. Things that we may never have answered: Why did

Mansfield, American Standard, and Kohler all decline the opportunity to use the vacuum-assist technology?

- *Flapper Qualifies for SPS*

In addition to the Coast Ultra-Blue, the Fluidmaster Bullseye products, and the Mansfield Red, the Hoov-R-Line Clear flapper has just been added to the list of qualified (durable) flappers in the SPS. (Remember, however, that none of the "durable" flappers are yet able to stand up to Vanish®) Certification was granted after testing by IAPMO (International Association of Plumbing and Mechanical Officials) Research and Testing. If you wish further information, contact either Tom Gackstetter - Thomas.Gackstetter@water.ladwp.com or call him at 213-367-0936 - or me.

- *Cheaper ULFTs coming?*

Expect to see some significant price cuts on certain models of pressure-assisted toilets, with retail price reductions by as much as \$70! These new units may now make pressure-assisted ULFTs more affordable to some agencies' commercial programs. Further information as it becomes available.....

Upcoming Issues: look for.....

- Preliminary results of the mechanical durability lab tests at MWD
- Information on the water saving possibilities of dual-flush toilets
- An update on flapper durability standards
- An update on ongoing toilet testing at the Stevens Institute - sponsored by the water conservation community
- Information on some new technologies about to make their entrance into the marketplace
- The latest on factory delivery problems. Are certain toilet models really hard to get? What is happening in the marketplace to cause this?
- ...and more

Funded under a project by the U.S. Bureau of Reclamation