ADA and Innovative Plumbing Products

Manufacturers will continue to use technology, sustainability and accessibility in their future fixture and flush control designs.

By Daniel Gleiberman

ADA is a well-known acronym among architects, engineers and designers. Yet, it can often conjure up concern or even panic.

No one wants to be far along in their project design only to be stopped for noncompliance or, worse, issued a correction notice or work stoppage for nonconformance after installation. The structure of the Americans with Disabilities Act (ADA), with a building blocks section (3) and constant references back to the plumbing section (6), can itself lead to confusion and unintended errors in design or implementation.

However, plumbing products are available that are aesthetic, sustainable and comply with these requirements.

Since its passage in 1990, the ADA has increased the accessibility of the nation's buildings and improved the lives of those living with disabilities, as well as the general population. While most ADA standards are primarily the architect's responsibility, manufacturers of plumbing products do incorporate critical design features with the intent of complying with the ADA.

A primary example of this is the ADA requirement that operable parts should be operable with one hand and not require tight grasping, pinching or twisting of the wrist. The maximum force required to activate operable parts is 5 pounds (22.2 N).

These criteria are established so that individuals with limited range of motion, dexterity or strength can have full and unencumbered ability to operate any device. This broad requirement also applies to plumbing products in Section 6 of the ADA.

In the commercial restroom, the flushometer is the most accepted and reliable means for water closet and urinal functionality. The ADA has a specific section detailing the requirements for flush controls as follows:

In the commercial restroom, the flushometer is the most accepted and reliable means for water closet and urinal functionality. Photo credit: Sloan Valve Co.

Almost any battery-powered sensor flushometer can be installed with an 11-inch plumbing rough-in and still provide the minimum ADA-required clearances above and below the grab bar. Photo credit: Sloan Valve Co.

"**604.6 Flush Controls.** Flush controls shall be hand-operated or automatic. Hand-operated flush controls shall comply with 309. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with 604.8.2."

The first sentence, which provides a choice between hand-operated or automatic flush controls, is significant to manufacturers, architects and designers. If hand-operated flush controls are selected, then the remaining sentences within this paragraph are operative and mandatory.

However, an *automatic* flush control is available as an option and offers multiple benefits for ADA compliance, safety and hygiene. In this instance, the flush is automatically activated after the use of the water closet. Therefore no touching, engaging or interacting with the flush mechanism is needed.

This can be seen as highly preferential to individuals with limited dexterity or strength, as no user interaction is necessary to activate the flush.

Many manufacturers provide a courtesy/maintenance flush control that can call into question the issue of compliance because of the second sentence of Section 604.6.

Where to Locate Flush Controls

All aspects of the ADA must be met at all times. For these same automatic flush controls, many manufacturers provide a courtesy/maintenance flush control that can call into question the issue of compliance because of the second sentence of Section 604.6: "Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments complying with 604.8.2."

To facilitate better understanding and uniform application of this section and many other aspects of the ADA, the U.S. Access Board recently provided the following question-and-answer format to assist with this exact issue. The U.S. Access Board is a federal agency that provides technical assistance and interpretation guidance to all aspects of the federal ADA.

The following is taken directly from the board's guidance document:

"Q. Are automatic (motion-sensor) flush controls required to be on the open side of the water closet?

"A. No. Motion-activated flush controls are not required to be on the open side of the water closet. If a water closet has a manual flush control in addition to a motion-activated one, it is recommended, but not required, that the manual control be located on the open side of the water closet. Manual flush controls, even those intended for custodian use, are helpful at water closets and urinals when the motion sensor fails to activate.

"Q. Are flush controls located on valves, walls or tanks that are centered on the fixture compliant (i.e., on the open side)?

"A. Manual flush controls, including push buttons, must be usable from a point between the centerline and the open side of the fixture. A portion of the control can be outside the range if it is usable without having to reach beyond the water closet centerline from the open side."

Therefore, sensor (automatic) flushometers are an excellent option for architects and designers to use in ADA commercial restrooms and applications. When these are proposed, it is also important to consider room dimensions, door swing clearances, maneuverability and grab bar requirements.

Flush Valves and Grab Bars

In the September 2015 edition of *Plumbing Engineer* (http://bit.ly/3kQFBkg), Timothy Allinson from Murray Plumbing in Southern California highlighted a frustrating and confusing aspect of the design of most battery-operated sensor flushometers as well as the rear grab bar requirements for water closets in ADA bathroom stalls.

The height requirement for ADA grab bars is 33 to 36 inches, measured from the floor to the top of the grab bar, not the centerline. The grab bar is 2 inches in diameter and requires 1 1/2-inch clearance all around.

In this article, Allinson mentioned that "on one recent project, all the ADA flush valves had a fractional interference with the grab bar clearance ranging between 1/8 and 3/4 inch. All the ADA flush valves had to be replaced with a shorter model to resolve the issue. It was a complete waste of money."

Allinson was frustrated because he was making the right choice to use an automatic flushometer to meet the ADA requirements, but this led to a conflict with the grab bar requirements in a different section of the code. He noted that even though there is a provision in the ADA code allowing for a split or offset grab bar, this option is not often desirable due to functionality and aesthetics.

With this in mind, what is an architect or designer supposed to do? Allinson questioned why manufacturers haven't addressed this in their designs.

Sloan addressed this issue on several design fronts. For example, the Sloan CX flush valve is a concealed, sensor-operated flushometer that does not require a building chase or rear access for installation or maintenance. The vertical

profile of the flushometer — from the finished floor to the entire installed assembly — is such that everything fits well below the 36-inch grab bar and provides at least the 1/2-inch clearance below the bottom of the grab bar.

While innovations and new products are always emerging in the plumbing industry, there is an inherent responsibility to design products that meet the requirements of the ADA.

The plumbing manufacturer also developed an offset adapter for water closet flushometers that lowers the installed profile of any flushometer by 1/2 inches without having to change the water supply rough-in piping. This means no walls need to be broken or pipe configurations changed.

Almost any battery-powered sensor flushometer can be installed with an 11-inch plumbing rough-in and still provide the minimum ADA-required clearances above and below the grab bar.

While innovations and new products are always emerging in the plumbing industry, there is an inherent responsibility to design products that meet the requirements of the ADA. The introduction and improvement of sensor-activated flushometers over the years is an indication that this is possible.

Plumbing product manufacturers will continue to use technology, sustainability and accessibility as the main factors in their future designs. ●

Daniel Gleiberman has been Sloan's manager of product compliance and government affairs since 2012. He remains active in all aspects of plumbing codes and standards development: ASME, ASSE, IAPMO, ICC, ASHRAE, NSF, NSPC, and the California Building Standards Commission and Accessibility Committee. Also, Gleiberman implemented an educational awareness campaign to highlight the environmental benefits of water-efficient commercial plumbing.