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Water Efficiency Labelling and Standards (WELS) scheme — Requirements for urinals

2008

The Water Efficiency Labelling and Standards (WELS) scheme is an Australian Government initiative in partnership with state and territory governments.



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Summary

The performance requirements for urinals, including those under the Water Efficiency Labelling and Standards (WELS) Scheme, are generally specified in Clauses 2.5 and 1.3.9, as well as Table 3.2, of *AS/NZS 6400 Water efficient products—Rating and labelling*. Unfortunately, some of these requirements and definitions are unclear, inadequate or simply inappropriate. These problems make it difficult for WELS applicants, testing laboratories and the WELS team to clearly and consistently meet the requirements for WELS labelling of urinals. These problems also need to be addressed before any potential minimum water efficiency standards or programs for urinal check testing could be introduced.

Broadly, the deficiencies can be categorised as:

- 1) deficiencies in specified definitions and performance requirements for urinals in AS/NZS 6400
- 2) deficiencies in the Standards cross-referenced under the urinal requirements in AS/NZS 6400
- 3) deficiencies in the manner that compliance with the urinal requirements is reported to WELS.

To address these deficiencies in the most efficient manner, it is recommended that appropriate amendments be drafted in consultation with key industry members and the draft proposals be presented for ratification to Standards Committees WS-032 and WS-003.

On the issue of minimum water efficiency standards (WES) for urinals, from an analysis of urinal products currently registered under WELS, a quarter of the registrations include products that are zero rated. Although this number of registrations for products that would not meet a minimum standard appears high, these products are generally of the type that could be readily redesigned if required. It is also believed that a number of products that would not meet a minimum standard would be reduced if the urinal requirements were aligned to cover urinal products that are acceptable under the Plumbing Code.

Further, as the Plumbing Code already limits water consumption for urinals, it is believed that the introduction of a WES scheme would not pose added difficulty for suppliers, especially if the urinal requirements were complementary with the installation requirements of the Plumbing Code.

The introduction of WES will not be possible until the deficiencies in AS/NZS 6400 and the supporting standards are first resolved, as applicants need clarity regarding minimum standards compliance requirements.

Introduction

In order to expedite addressing the deficiencies in the requirements for urinals, it is strongly suggested that draft proposals be prepared in consultation with key industry stakeholders. The draft proposals should address all deficient requirements in a form that would be sufficiently definitive for check testing purposes.

The draft proposals should then be presented for ratification by:

- Standards Committee WS-032 in respect of proposals relating to AS/NZS 6400
- Standards Committee WS-003 in respect of proposals relating to -
 - AS/NZS 3982 o ATS 5200.020 o ATS 5200.021 o ATS 5200.030.
- Test laboratories in respect of the need for the Test Report submitted to WELS to include -
 - product installation and assembly instructions
 - which options were used in testing the product if the installation or assembly instructions allow options (e.g. a range of plumbing heights, a range of pressures; etc)
 - detailed description of each of the component parts that were used to make up the urinal system as tested.

Examples of some deficiencies in the requirements for urinals

1. AS/NZS 6400: 2005, *Water efficient products—Rating and labelling*

- 1) Clause 2.5.1 of AS/NZS 6400 states that the Standard applies to urinal equipment as specified in AS 3982 *Urinals* or ATS 5200.004 *Technical Specification for plumbing and drainage products — Urinal flushing cisterns*.

Where 'urinal equipment' means:

- a) a urinal suite
- b) a urinal
- c) a urinal flushing control mechanism, or
- d) a combination (nominated by the applicant for registration) of a urinal and urinal flushing control mechanism.

Deficiency

Cisterns are not specifically addressed in the above list. The above list should include a reference to a urinal cistern as a separate item in the list and also as an item under (d), being a possible component of a combination.

A similar inclusion should be incorporated into Clause 2.5.2.

- 2) Clause 1.3.9 of AS/NZS 6400 defines a urinal flushing control mechanism as a device that controls the release of water to flush a urinal.

Such devices are classified by how they are operated, as follows:

- a) *Conscious operation*. Operated manually by the user.
- b) *Demand-driven operation*. Operates automatically on demand, rather than by conscious activation of a user, with an adjustable activation sensitivity field at the front of the urinal or a urine-sensing device.
- c) *Smart-demand operation*. Programmable operation with an adjustable activation sensitivity field at the front of the urinal or a urine-sensing device to control a predetermined flush cycle, with smart logic that detects users, and controls programmable delay and flushing modes of the device.

Deficiencies

- a) The distinction between a demand-driven operation and a smart-demand operation needs to be more clearly differentiated.
- b) In Table 3.2, the sensitivity of the activation device is only mentioned in the column for zero stars whereas this feature is of paramount importance for all ratings. Also, the sensitivity distance for zero stars is specified as a maximum whereas a range (i.e. a minimum and a maximum) should be specified for all ratings.

Most importantly a test procedure is required to assess sensitivity over the required distances.

- c) On the issue of zero stars, Table 3.2 indicates that if a single stall product uses more than 2.5 litres it will be rated at zero stars. However, Table 9.1 of AS/NZS 3500.1.2 *National Plumbing and drainage, Part 1.2: Water services— Acceptable solutions* specifies that the maximum volume of water that can be discharged by a single stall (or a 600 mm width of slab wall) is 2.5 litres.

WELS should therefore consider not issuing any label (not even a zero label) for any product that uses more than 2.5 litres as it is in direct contravention of the Plumbing Code.

Not issuing a zero label for such urinals would be directly analogous to the current requirement (in Table 3.2 of AS/NZS 6400) of not issuing a zero label for toilets that use excessive amounts of water for flushing.

Further, in the zero star column for a two stall or equivalent width of slab wall, the water consumption limit should read “more than 4 litres” not merely “4 litres”.

- d) Currently, in Table 3.2 of AS/NZS 6400, only the one star product allows for up to two stalls (or equivalent with a slab wall that is a 1200 mm width), whereas Table 9.1 of AS/NZS 3500.1.2 allows for a slab width of 2400 mm. Also, Table 9.2 of AS/NZS 3500.1.2, which relates to flush valves, allows for a maximum of three stalls with a slab width of 1800 mm. For consistency with the Plumbing Code, consideration should be given to allow slab widths greater than 1200 mm in AS/NZS 6400.

- 3) Clause 2.5.3 of AS/NZS 6400 states that urinal equipment shall comply with the following listed product performance requirements, or they shall be registered as a zero-rated product:
- a) AS/NZS 3982 *Urinals* -
 - i) Flushing test for slab and stall urinals
 - ii) Flushing test for single stall wall-hung urinals
 - iii) Splash test for urinals.
 - b) ATS 5200.004 Technical Specification for plumbing and drainage products — Urinal flushing cisterns -
 - i) Distortion and leakage tests
 - ii) Discharge test.

Deficiencies

Clause 2.5.3 should specify performance requirements for:

- Flushing valves as specified in ATS 5200.020—2004, Technical Specification for plumbing and drainage products, Part 020: Flushing valves for water closets and urinals—For use with mains supply
 - Flushing valves as specified in ATS 5200.021—2004, Technical Specification for plumbing and drainage products, Part 021: Flushing valves for water closets and urinals—For use with break tank supply
 - Solenoid valves as specified in ATS 5200.030—2004, Technical Specification for plumbing and drainage products, Part 030: Solenoid valves.
- 4) Clause 2.5.4 of AS/NZS 6400 states that the “water consumption of urinal equipment is the volume of discharge as determined in accordance with AS/NZS 3982.”

Deficiency

Although the test report for AS/NZS 3982 specifies that the volume of discharge is to be reported, the Standard does not specify how this is to be determined.

2. AS/NZS 3982: 1996, *Urinals*

Deficiency

As mentioned above, a test procedure for determining volume of discharge needs to be specified in the Standard.

3. ATS 5200.020—2004, *Technical Specification for plumbing and drainage products, Part 020: Flushing valves for water closets and urinals—For use with mains supply and*
ATS 5200.021—2004, *Technical Specification for plumbing and drainage products, Part 021: Flushing valves for water closets and urinals—For use with break tank supply*

Deficiency

The performance and water consumption requirements in each of these standards are inadequate and/or inappropriate.

The flushing performance in these ATs requires compliance with AS 1172.2, which relates to cisterns for toilets. As such, reference to this ATs, when assessing urinals, is inappropriate.

Also, each of these ATs specify that the flush volumes for these products are to be “suitable for the fixture”.

What is required is that these ATs be revised to outline a specific test procedure that can assess the performance and water consumption of flushing valves.

4. ATs 5200.030—2004, *Technical Specification for plumbing and drainage products, Part 030: Solenoid valves*

Deficiency

This ATs is even less specific than the previously mentioned flushing valve ATs as it does not specify any requirements for flush volumes.

This ATs also needs to be revised to clearly define how these products are to be assessed for performance as well as water consumption.

5. Test laboratories and test reports

Although Clause 2.5.6 (b) of AS/NZS 6400 requires that a list of components and appropriate assembly and installation instructions be provided, often the test laboratory does not have such instructions at the time of testing. As such, the laboratory then tests the product in accordance with the supplier’s verbal instructions, which aim to pass the product by allowing the broadest interpretation of the relevant requirements in AS/NZS 6400.

There is no guarantee that any subsequent installation instructions which may be included with the product reflect the manner that the product as sold was initially tested for WELS compliance. Therefore, it is strongly recommended that written instructions should be supplied to the test laboratory at the time of testing and these instructions be appended to the test report submitted to WELS.

Although it is recognised that such a requirement may be outside the scope of the WELS Act, it is believed it would be possible for WELS to require that test reports include assembly and installation instructions and the laboratory identify test conditions used if options are allowed (for example, if a range of pressures are permitted).

Details of the assembly, the test conditions, and a full description of each of the component parts that were used to make up the urinal system, should be recorded in the test report submitted to WELS.

This information is vital for product check testing.

Minimum water efficiency standards (WES)

The deficiencies noted above need to be addressed before a WES scheme for urinal products can be implemented.

There are 83 urinal products currently registered under WELS, 59 of which are held by 13 Australian manufacturers.

Of the 83 registrations:

- 39 are in respect of conscious operation devices (13 registrations being in respect of zero rated registrations)
- 6 registrations are in respect of demand driven operation devices (none of which are zero rated registrations)
- 26 registrations are in respect of smart demand operation devices (none of which are zero rated registrations)
- 4 registrations are in respect of smart demand operation devices with a urine detector (none of which are zero rated registrations)
- 8 registrations are in respect of “other” devices, all of which are zero rated registrations.

That is, 21 registrations include products which are zero rated. However, these products are generally of the type that could readily be redesigned to comply if a WES scheme was introduced.

For a WES scheme to be introduced, the WELS requirements for urinals would need to be extended to cover urinal walls wider than 1200mm, as these are permissible under the Plumbing Code. That is, to obviate a conflict with the Plumbing Code and prevent excluding products that are acceptable for installation, the urinal requirements in AS/NZS 6400 would need to be aligned with AS/NZS 3500.1.2.

With the appropriate amendments to AS/NZS 6400 addressing the deficiencies in the requirements for urinals and the alignment of these with the Plumbing Code, it is believed that a WES scheme is possible. Such a scheme would not be onerous on suppliers and would certainly be beneficial in terms of water conservation.