

Choosing Water-Efficient Products

A Specifier's Guide to the WELS Scheme

Methven Kiri MK2 Low Flow Shower with Satinjet® technology.

METHVEN



Methven Shower with Satinjet® technology.

Introduction

Water is Earth's most precious commodity. The need to preserve and protect our limited water resources is at the forefront of the global consciousness, requiring a range of approaches for saving water at all levels of society.

The Water Efficiency Labelling and Standards (WELS) scheme is a key component of Australia's urban water saving strategy. Established in 2005, the WELS scheme is a mandatory labelling scheme that allows consumers to compare the water efficiency of products at a glance. The scheme regulates a variety of products, including taps, flow regulators, toilets, washing machines, and more.

The University of Technology Sydney's Institute for Sustainable Futures recently finished an assessment of the financial and environmental effects of WELS.¹ According to the research, the WELS programme has enabled homes and companies to save over \$1 billion annually on their utility costs.²

While the WELS scheme has embedded itself within the industry as a key factor in identifying more efficient products, the exact details of what WELS provides and how it works are less well known. The impact of recent regulatory changes can also be overlooked, particularly how they impact the design and specification process.

In this whitepaper, we discuss how the WELS scheme operates with useful information on ensuring products are compliant and meet the best WELS rating possible, navigating the risks of non-compliance, and recent changes to the WELS scheme.

The overarching intent of the WELS scheme is to provide a level playing field to compare the water efficiency of products via an easy-to-understand star rating and water consumption value.

How does WELS work?

WELS is a mandatory system established in Australia under the national Water Efficiency Labelling and Standards Act of 2005 that has the goal of promoting the creation and sale of water-efficient products. The nationwide programme provides a performance standard that mandates that specific items be registered and labelled with a water efficiency label. New Zealand has a similar WELS scheme.

WELS is applied to various water-efficient products including: tapware; shower outlets used for personal bathing; toilet equipment; urinal equipment that use water; flow controllers; washing machines (including washing machine and dryer combos); and dishwashing machines.³ There are some notable exclusions, for example, bidet

taps; tap equipment that is for use exclusively over a bath or spa; taps that are part of an appliance (such as a chilled or boiling water dispenser); thermostatic taps; emergency deluge showers; and safety showers.⁴

The overarching intent of the WELS scheme is to provide a level playing field to compare the water efficiency of products via an easy-to-understand star rating and water consumption value. Anyone who supplies the regulated products must ensure they are registered under WELS and labelled with the relevant water efficiency information. This includes manufacturers, importers, wholesalers, retailers, and builders or developers who supply products as part of a new building.

How are products tested?

Each product type has its own standard including how to determine water consumption. These requirements are outlined in the WELS standard, AS/NZS 6400, which is referenced in the AS/NZS 3500 group of standards. This forms, in part, the basis of the Plumbing Code of Australia (PCA), which comprises Vol. 3 of the National Construction Code.

All products covered by the WELS scheme are subjected to extensive testing. Testing guarantees that goods are suitable for their intended use and adhere to Australian water efficiency standards.⁵ Testing must be conducted at an accredited laboratory in accordance with the requirements in the Australian standard relevant to the product.

Depending on the type of product, different features and functions are tested. For example, showers are tested for:⁶

- angle at which water sprays from the head (to be between 0° and 8°);
- drop in temperature between 150 mm and 750 mm below the shower head (no more than 3°C);
- endurance of the flow controller by being turned on and off around 50,000 times;
- spray force and coverage (four/five-star showers only);
- watertightness; and
- water consumption.



Methven Maku MK2 Shower with Satinjet® technology.

Understanding the label

All regulated products under the WELS scheme must be registered and labelled with the correct water rating information. This means displaying the water rating label or text advice with products in store or online.⁷ The water rating label should include the following:

- **Star rating.** Similar to the Australian Energy Ratings, WELS uses a scale of one to six stars (one being the least water efficient, six being the most). Six-star water ratings are achievable for everything except showers, which currently can only achieve up to five stars. You can use the star rating to compare the water efficiency of different products.⁸
- **Rate of water consumption.** This section provides the amount of water used by the product and is conveyed in litres per minute for taps, showers and flow controllers. For toilets and urinals this is displayed as litres per flush while for washing and dish washing machines it is as litres per wash. You can use this information to estimate how much water the product

will use.⁹ When comparing products at the time of specification or purchase, note that WELS only provides an indicative water consumption figure based on a standard product testing procedure; it should not be taken at face value. The water pressure conditions at the installation site, among other things, could affect actual performance. Also, the manufacturer or supplier has the option to use their calculated rate (rounded up to the nearest 0.5L/min) or use the highest rate within the respective star rating's allowable band. So, for example, while the rate for a four-star rated shower could fall anywhere between 6L/min and 7.5L/min, a shower with an actual rate of say 6.1L/min could very well be displayed as having a rate of 7.5L/min on the label, the maximum rate allowed for that star rating.

- **Registration and product details.** This section provides the company that registered the product, the licence number; and standards that guide how products are tested.¹⁰

Table 1. WELS Labels: Australia vs. New Zealand

AU	NZ
Star rating and a water consumption value (nominal flow rate) or if a product is not water efficient	
Company identification and a searchable licence number associating the product to the company	Company/Brand identification and product code - no searchable database
Relevant information website www.waterrating.gov.au	Relevant information website www.waterefficiency.govt.nz
Applicable standard - AS/NZS 6400	

How to compare the water efficiency of products

Confirm product requirements. The first step is understanding the objectives of the owner in relation to water efficiency for their building. At this stage, you can begin research to find suppliers of a particular product or products that meet a specific water rating to meet these objectives.

Check the label. When assessing different products, the water rating label will help you make an informed decision about water efficiency and allow you to compare the efficiency of products in the same category.

Check the WELS product database. To check if the product is registered and the water label is correct,

you can search the WELS product database using the information on the label (e.g. the model name or registration) before purchasing the product. If the product is not in the database, it may not be registered, deliver the indicated performance nor meet other requirements such as WaterMark certification.

Check for WaterMark certification. Before they may be registered under the WELS scheme, plumbing products must first receive a WaterMark certification. If items are listed in the WELS product database, it implies they have received the WaterMark certification. A licenced plumber can install regulated plumbing products only if they are WaterMark certified.

Recent changes to the WELS scheme

Last year, the WELS scheme implemented several amendments across a range of areas. Below are some of the most notable changes relevant to architects, designers and specifiers.

Provisions for registering five-star showers. Recent changes increase the star ratings available for showers to five stars.¹¹ This applies to high-pressure showers with a nominal flow rate of more than 4.5L/min and not more than 6.0L/min, which are eligible for a five-star rating.¹² Note that AS/NZS 6400 currently views showers with a flow rate of less than 4.5L/min to be ineffective because they are below the recommended flow rate, even if they pass extra spray force and coverage tests.¹³ While the highest WELS rating for showers is currently five-star, this does not limit where shower technologies will go and it is possible six-star showers will be made available in future amendments.

Labelling for combination showers. New requirements for combination showers to display flow rate and star rating for both shower outlets.¹⁴

Risks of non-compliance

Every time regulated products are supplied or offered for supply in Australia, they must be registered with WELS and labelled with information about their water efficiency.¹⁷ This includes when such products are offered as a fixture or fitting in a new building unit.

Plumbers, architects, developers, and builders all have water-saving obligations under the WELS scheme, therefore they are all required to adhere to the same standards as retailers who sell directly to customers.¹⁸ If you do not meet the requirements under the WELS scheme, penalties can be imposed including infringement notices, civil penalties or criminal prosecution.¹⁹

Those involved in the planning, design, and construction of buildings, such as architects, designers, engineers, and other specialists, are required to make sure that any products they specify or are given approval to use in their designs are approved, "fit for purpose," and meet

Minimum water efficiency for WELS products.

The following minimum water efficiency requirements applied to WELS products from June 17, 2022:¹⁵

- tapware – 3 Stars;
- showers – 3 Stars;
- dual flush toilets – 3 Stars;
- single stall/wall hung urinals – 2 Stars;
- dishwashers with less than nine place settings – 2.5 Stars; and
- dishwashers with nine or more place settings – 3 Stars.

Building development WELS information provisions.

Building developers must disclose the water efficiency of WELS products included in the building to prospective buyers.¹⁶

the necessary performance standards.

Choosing non-compliant products opens up each stakeholder in the construction supply chain to a variety of risks. For examples, using the wrong products can cause significant additional cost – ranging from repairing and replacing products, to safety risks and product failure.

In the current market, green buildings are viewed favourably and have higher commercial value compared to traditional buildings.²⁰ Accordingly, building owners are demanding more sustainable fitouts and seeking certification under sustainability measurement schemes such as GreenStar and NABERS. Typically, such schemes award points for the use of water-efficient products. Using non-compliant products increases the risk that they will not be as water-efficient as expected, which could result in a building failing to achieve certification.

While the highest WELS rating for showers is currently five-star, this does not limit where shower technologies will go and it is possible six-star showers will be made available in future amendments.

A highly-efficient, luxurious showering experience

WELS-rated Showers by Methven

Methven is world renowned for their beautifully designed and award-winning showers. Their love of water began back in 1886, in Dunedin, New Zealand. Ever since, the company has devoted itself to harnessing the power of water to cleanse, calm, refresh and invigorate. It is this expertise, combined with their passion for design and innovation that fuels their ongoing mission to create amazing water experiences.

There is a historical perception that low-flow showers do not perform well and do not provide an adequate showering experience. This subpar level of performance was often achieved by adding a more restrictive flow controller to an existing high-flow shower. A poor performing shower means a user may require longer to rinse, and potentially end up using more water than a higher flow shower.

Methven shower technologies achieve high WELS star ratings without compromising the showering experience. The company's showers are specially designed to operate efficiently while meeting the additional conformity testing of minimum spray force and greater resolution for coverage requirements. These test requirements are designed to show a shower is deemed to have sufficient force and uniformity of coverage to rinse efficiently.

Methven's award-winning collections bring together world-leading technology, intelligent water engineering and beautiful design. The Kiri MK2 Low Flow Shower with Satinjet® technology is five-star WELS water rated with a lifetime warranty. The combination of clean lines and solid architectural style makes a strong presence in the bathroom but not on the environment. The Futura MK2, also with Satinjet® technology, offers streamlined styling that allows you to combine everyday luxury with water efficiency. Methven's patented Satinjet® technology, unlike conventional showering, uses unique twin-jet technology to create optimum water droplet sizes for a truly immersive, full-body experience.

All Methven products undergo rigorous testing for compliance, including WELS results that surpass the minimum standards. The company is committed to investing in innovation and continues to deliver the ultimate in water experiences, while remaining committed to the environment. Their devotion to intelligent design, quality material and precision engineering is supported by a lifetime warranty on all Methven showers.



REFERENCES

- ¹ Institute for Sustainable Futures. "Evaluation of the environmental and economic impacts of the WELS scheme." <https://www.uts.edu.au/research-and-teaching/our-research/institute-sustainable-futures> (accessed 6 February 2023).
- ² Ibid.
- ³ Australian Government. "Products that must be registered." Water Rating. <https://www.waterrating.gov.au/register/regulated-products> (accessed 6 February 2023).
- ⁴ Ibid.
- ⁵ Australian Government. "How regulated products are tested." Water Rating. <https://www.waterrating.gov.au/choose/product-testing> (accessed 6 February 2023).
- ⁶ Ibid.
- ⁷ Australian Government. "Water rating label." Water Rating. <https://www.waterrating.gov.au/choose/water-rating-label> (accessed 6 February 2023).
- ⁸ Ibid.
- ⁹ Ibid.
- ¹⁰ Ibid.
- ¹¹ Australian Government. "InkWELS newsletter – Issue 1, 2022." Water Rating. <https://www.waterrating.gov.au/news/inkwels-issue-1-2022> (accessed 6 February 2023).
- ¹² Australian Government. "Transitioning to new standard amendments." Water Rating. <https://www.waterrating.gov.au/about/standards/transition> (accessed 6 February 2023).
- ¹³ This statement is paraphrased from AS/NZS 6400:2016 "Water Efficient Products". Table 3.1 of the Standard notes: "Showers in flow rate Range G [4.5 or less] shall be rated as Not Star rated as they are below the recommended minimum flow rate for an effective shower."
- ¹⁴ Australian Government. "WELS Regulator Communication – Standard amendments." Water Rating. <https://www.waterrating.gov.au/sites/default/files/documents/regulator-statement-june-2022.docx> (accessed 6 February 2023).
- ¹⁵ Above n 12.
- ¹⁶ Ibid.
- ¹⁷ Australian Building Codes Board. "Water efficiency labelling requirements for builders." ABCB. <https://www.abcb.gov.au/news/2022/water-efficiency-labelling-requirements-builders> (accessed 6 February 2023).
- ¹⁸ Ibid.
- ¹⁹ Ibid.
- ²⁰ Liu, T, Lin Chen, Mingyu Yang, Malinda Sandanayake, Pengyun Miao, Yang Shi and Pow-Seng-Yap. "Sustainability Considerations of Green Buildings: A Detailed Overview on Current Advancements and Future Considerations." Sustainability, Vol. 14, No. 21 (2022): 14393.

All information provided correct as of February 2023

METHVEN