Australian/New Zealand Standard™

Performance of showers for bathing

STANDARDS Australia

STANDARDS NEW ZEALAND
PAEREWA AOTEAROA

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The following are represented on Committee WS-038:

Australian Chamber of Commerce and Industry
Australian Industry Group
Consumers Federation of Australia
CSIRO
Department of Sustainability, Environment, Water, Population and Communities
Master Plumbers and Mechanical Services Association of Australia
National Association of Testing Authorities
Plumbing Distributors Association of New Zealand
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WS-038, Water Efficient Showers, to supersede AS/NZS 3662:2005.

This Standard incorporates Amendment No. 1 (August 2017). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

A1 ‘**Text deleted**’

The *Plumbing Code of Australia* requires that showers be certified to WaterMark Level 2.

The objective of this Standard is to specify the requirements for showers for bathing purposes. Shower types include—

(a) showerhead(s) fastened to fixed arm(s);

(b) showerhead(s) fastened to pivot arm(s);

(c) showerheads with integral mixing valves;

(d) handheld showers connected to flexible hoses—

  (i) supported by a fixed wall handset holder;

  (ii) attached to a slide rail; or

  (ii) mounted on a holder attached to a bath/shower mixer.

Where showers are supplied together with other components (e.g. a fixed or pivot arm, a flexible hose with or without a flow controller or mixing valve), which could affect the performance of the shower, such components will need to be attached to the shower for testing. Where showers are supplied together with components that would not affect their performance (e.g. tap top assemblies, diverter components), such additional components need not be attached to the shower for testing.

For prefabricated bathroom modules that include showerheads(s), see ATS 5200.050, *Technical Specification for plumbing and drainage products,* Part 050: *Prefabricated bathroom modules*.

Showers, when supplied as an assembly with tapware, may be WaterMark approved under AS/NZS 3718, *Water supply—Tap ware*.

This revision includes—

(A) amended procedures to meet requirements of the Water Efficiency Labelling and Standards (WELS) scheme for greater consistency of test results across recognized testing laboratories;

(B) new performance test for shower spray force and shower spray coverage.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

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FOREWORD

A1 As showers are significant consumers of water, this Standard has been revised to encourage the development of showers that will give a comfortable and effective shower at lower flow rates—more than 4.5 L/min and less than 7.5 L/min.

A shower is essentially a tactile experience and what may look like a good shower may not be confirmed by use. The following factors, among others, influence the quality of a shower:

(a) *Water flow rate*.

(b) *Temperature drop* Showers with significant temperature drops, which increase with distance from the head, could present a scalding hazard and may require greater heated water usage to achieve acceptable water temperatures. The ability of water to rinse soap is temperature sensitive; therefore, showers with a minimum temperature drop (drop in water temperature from the showerhead to the lower limbs) are more effective for ablution purposes.

The criterion for temperature drop in this Standard is based on what can be readily achieved by many showers currently on the market.

(c) *Temperature stability* Showers with restriction in unequal pressure installations are more susceptible to fluctuations in supply pressure, which could present a scalding or thermal shock hazard to the bather.

(d) *Spray pattern* The spray pattern of a shower has two main features—the first is the shape of the cone of water emitted and the second is the distribution of spray within the cross-sections of the cone. Showers with wide cones can display two undesirable features:

(i) If the water spray is evenly distributed throughout the cone, a significant temperature drop may be felt with increasing distance from the shower spray head.

(ii) If the spray is concentrated around the perimeter of the cone, the shower may have a hollow feel.

In either case, the shower may present difficulties when washing and rinsing the lower body extremities.

This Standard maintains a requirement for the angle of spread from the shower spray head to form a cone. Consumer acceptance tests on different showerheads indicated a preference for shower spray heads with a mean spray spread angle of between 3° and 7°.

A1 (e) *Comfort and effectiveness* Optional additional testing procedures in Appendices H and I for shower spray force and shower spray coverage are only applicable to showers with flow rates of more than 4.5 L/min and less than 7.5 L/min. The spray coverage test is for determining uniform spray distribution. The spray force test is to provide a functional cleansing performance. The spray force and spray coverage performance requirements were determined specifically for showers in this flow rate range and are not intended to be used to assess showers with higher flow rates.

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1 SCOPE

This Standard specifies requirements for the performance of showers for bathing.

2 COMPLIANCE WITH THIS STANDARD

Demonstration of compliance with the requirements of this Standard shall be in accordance with Appendix A.

3 NORMATIVE REFERENCES

The following are the normative documents referenced in this Standard:

AS	
5200	Plumbing and drainage products
5200.037.2	Part 037.2: Flow controllers for use with heated or cold water systems
AS/NZS	
3500	Plumbing and drainage (series)
6400	Water efficient products—Rating and labelling
EN	
1113	Sanitary Tapware—Shower Hoses for Sanitary Tapware for Water Supply Systems of Type 1 and Type 2—General Technical Specification

Plumbing Code of Australia

New Zealand Building Code

4 DEFINITIONS

For the purpose of this Standard, the definitions in AS/NZS 3500.0 and the ones below apply.

4.1 High pressure shower

A shower where both the heated water and cold water static supply pressures are at 150 kPa or above.

4.2 Low pressure shower

A shower where either—

(a) both the heated water and cold water static supply pressures are below 120 kPa; or

(b) the heated water static supply pressure is below 120 kPa and the static cold supply pressure is at or above 150 kPa.

4.3 Nominal flow rate

The water consumption of a shower at the maximum flow setting, which is measured in litres per minute, using a dynamic water pressure of—

(a) 35 kPa in accordance with Appendix G; or

(b) the average of 150 kPa, 250 kPa and 350 kPa in accordance with Appendix B.