

Australian Standard®

Shower bases and shower modules

This Australian Standard was prepared by Committee WS/3, Sanitary Plumbing Fixtures. It was approved on behalf of the Council of Standards Australia on 4 December 1995 and published on 5 March 1996.

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This Standard was issued in draft form for comment as DR 95113.

STANDARDS AUSTRALIA

RECONFIRMATION

OF

AS 3588—1996

Shower bases and shower modules

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Technical Committee WS-003 has reviewed the content of this publication and in accordance with Standards Australia procedures for reconfirmation, it has been determined that the publication is still valid and does not require change.

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NOTES

Australian Standard[®]

Shower bases and shower modules

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee WS/3 on Sanitary Plumbing Fixtures to supersede AS 3588—1989.

This Standard is the result of a consensus among representatives on the Joint Committee to produce it as an Australian Standard.

The objective of this Standard is to provide essential design features, suitable materials and typical performance tests.

Acoustic levels have not been included as progress on a unified method of analysis has not been agreed upon and requires further research.

The term 'normative' has been used in this Standard to define the application of the appendix to which it applies. A 'normative' appendix is an integral part of a Standard.

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STANDARDS AUSTRALIA

Australian Standard

Shower bases and shower modules

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies requirements for materials, construction and finish of shower bases and shower modules and does not cover products which require further surface finishes.

1.2 APPLICATION Shower bases or shower modules shall comply with Section 1 and with Sections 2 to 5 as follows:

Section 2—Pressed steel vitreous enamelled shower bases and shower modules.

Section 3—Stainless steel shower bases and shower modules.

Section 4—Vitreous and non-vitreous china shower bases.

Section 5—Plastics and composite materials shower bases and shower modules.

1.3 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS

- | | |
|----------|--|
| 1234 | Recommendations for coordinated preferred dimensions in building |
| 1449 | Wrought alloy steels—Stainless and heat-resisting steel plate, sheet and strip |
| 1589 | Copper and copper alloy waste fittings |
| 1595 | Cold-rolled unalloyed low carbon steel sheet and strip |
| 1976 | Vitreous china used in sanitary appliances |
| 2219 | Methods of test for vitreous enamel coatings |
| 2219.1.5 | Method 1.5: Determination of resistance of vitreous enamel coatings to citric acid at room temperature |
| 2887 | Plastic waste fittings |
| 3558 | Methods of testing plastics and composite materials sanitary plumbing fixtures |
| 3558.2 | Method 2: Determination of chemical and stain resistance |
| 3558.3 | Method 3: Determination of colourfastness |
| 3558.4 | Method 4: Determination of resistance to surface scratching |
| 3558.6 | Method 6: Visual examination of surface finish for defects |
| 3558.17 | Method 17: Determination of impact resistance of shower bases and shower modules |
| 3558.18 | Method 18: Determination of resistance to thermal shock of shower bases and shower modules |
| 4023 | Non-vitreous china used in sanitary appliances |

AS/NZS

- | | |
|--------|-------------------------------------|
| 3500 | National Plumbing and Drainage Code |
| 3500.0 | Part 0: Glossary of terms |

ISO

105/AO1 Textiles—Tests for colour fastness

Part AO1: General principles of testing

1.4 DEFINITIONS For the purpose of this Standard, the definitions given in AS/NZS 3500.0 and those below apply.

1.4.1 Blister—a bubble formed during fusion of vitreous enamel or plastic or composite material which remains after solidification.

1.4.2 Chipping—removal of the enamel or plastic or composite coating of a shower base or module by impact.

1.4.3 Clickers—sharp raised black marks.

1.4.4 Crazing—a crack in the entire thickness of the enamel coating or finished surface of a plastic or composite material.

1.4.5 Dimples—slight depressions of the finished surface.

1.4.6 Kerb—upstand at the entrance to the shower base or shower module.

1.4.7 Lift—an area of the base from which the enamel or plastic or composite has lifted.

1.4.8 Lumps—raised portions of the finished surface.

1.4.9 Peeling—spontaneous detachment of pieces of enamel or plastic or composite from the base material.

1.4.10 Pinhole—a hole that extends through the enamel or plastic or composite to the base material.

1.4.11 Scale—raised piece of foreign matter on a finished surface.

1.4.12 Scratching—an elongated indentation penetrating the finished surface of a shower base or module.

1.4.13 Specks—particles of foreign matter producing a different colour on a surface.

1.4.14 Tiling flange or bead—upstand or roll on one or more sides of the shower base for flashing purposes (see Figure 1).

1.5 DESIGN

1.5.1 Preferred dimensions Modular dimensions are preferred for sizing as shown in AS 1234.

1.5.2 Walls When installed, the height of walls of shower modules above the floor shall be not less than 1800 mm.

1.5.3 Corner radii All corners within the shower base and shower recess and the junction of sides with the bottom shall have a radius of not less than 5 mm. Any other internal radii shall be not less than 3 mm.

1.5.4 Flashing Flashings shall comply with the following requirements (see Figure 1)—

- (a) The rims of shower bases to be installed, abutting a wall, shall be provided with a vertical tiling flange or bead not less than 10 mm in height.
- (b) The rims of shower bases and shower modules not abutting walls may be finished with a kerb and, where provided, the fascia designed to permit a watertight seal with the floor or coving. The fascia shall not have any sharp or obtrusive projections.

1.5.5 Drainage The bottom of the shower bases and modules shall have a continuous fall to the waste outlet.

Soap modules, steps and rims shall have a continuous fall to the inside of the shower base and recess.

1.5.6 Handgrips Any handgrips to be fitted to shower module walls shall be manufactured from stainless steel, chrome or nickel-coated brass or steel, enamelled steel, cast iron or plastic, or of other corrosion-resistant materials. When fitted, the handgrips and the shower module wall shall be capable of withstanding a steady force of 2.0 ± 0.1 , -0 kN at the grip area when the force is applied in any direction for a period of 60 ± 5 and -0 s to each handle without breaking or pulling out. When fitted there shall be a watertight seal between the handgrip and the shower module wall.

1.5.7 Support The shower base or shower module shall provide a means of support which shall ensure that, when it is installed, no load is placed on the waste pipe or water connections. Fittings and fixings supplied with the product shall be resistant to termites, fungus and corrosion.

1.5.8 Waste outlet The waste outlet hole and recess shall allow the fitting of a nut and washer complying with AS 1589 or AS 2887. When installed, the surface of the fitting shall be below the level of the general surface of the shower base (not including the fitting recess). If such fittings are not supplied with the product, then the surround of the outlet hole shall be recessed a minimum of 3.5 mm. Integral waste outlets are permitted provided that the outlet or grating does not project above the general surface of the shower base and that drainage is not impeded.

1.5.9 Strength and support test When a shower base or module is tested in accordance with Appendix A, it shall show no signs of cracks, fractures, leaking or any other failure.

1.6 INFORMATIVE LABELLING Shower bases or modules of all materials shall be supplied with a label giving detailed information on the prevention of damage and maintenance of the surface to the shower base or module. The label shall be firmly attached in a position readable after installation and shall be worded as follows, in English, in capital letters not less than 3 mm high. A typical labelling format is shown below.

<p style="text-align: center;">NOTICE</p> <p style="text-align: center;">Please leave this label in a position for the householder to read.</p> <hr style="width: 10%; margin: 10px auto;"/> <p style="text-align: center;">Cleaning and Maintenance Instructions</p> <ol style="list-style-type: none"> 1 To preserve its polished surface, the shower base or module should be cleaned with a soft cloth using warm soapy water or household detergent. 2 If accidental scratches, abrasions or burns occur, the surface finish can be restored by gentle polishing with a polish recommended by the manufacturer.

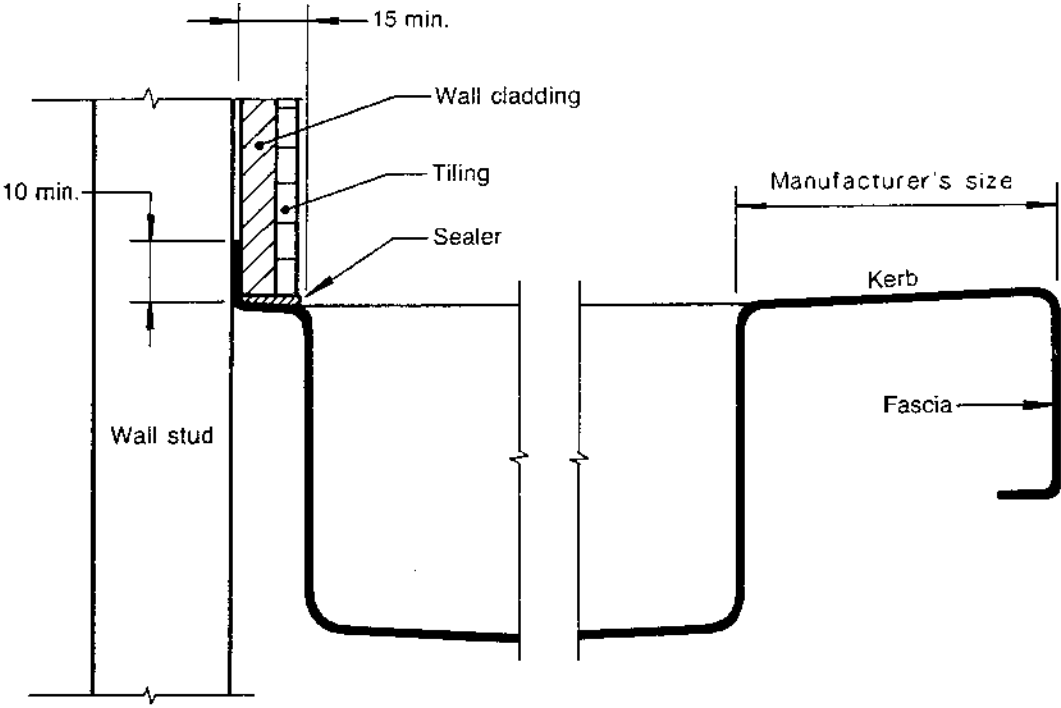
The label shall be capable of being removed after installation of the shower base or module.

1.7 INSTALLATION INSTRUCTIONS The manufacturer shall supply written details of methods of support and installation with each unit.

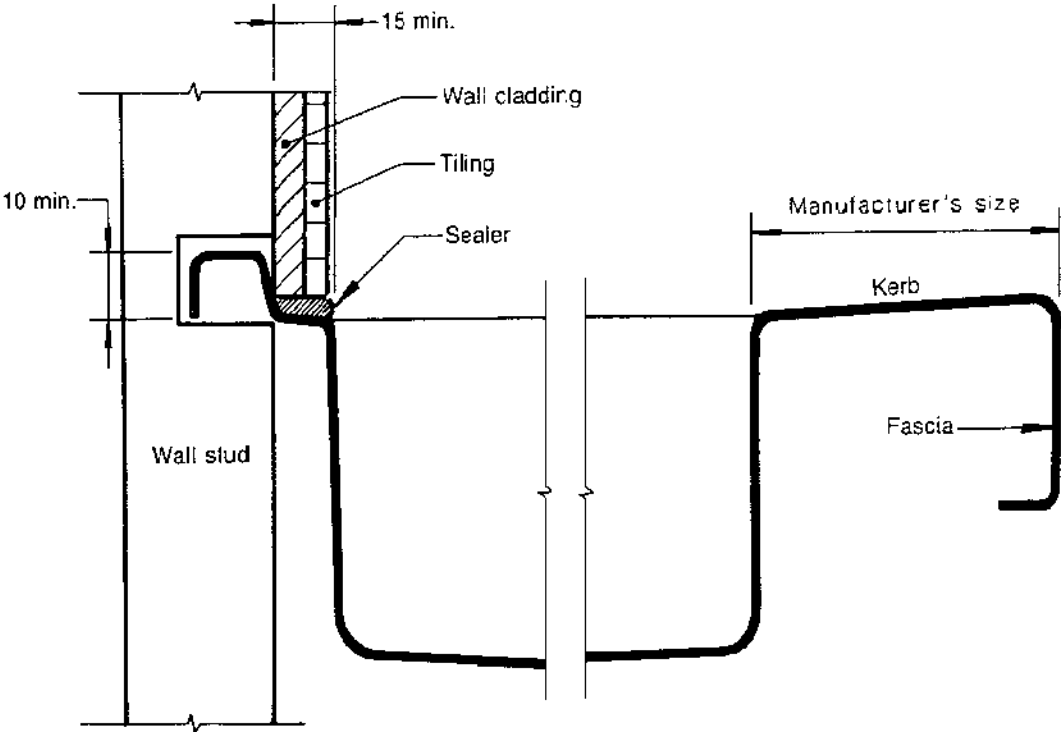
Support may be attained by the provision of a separate support structure which shall become part of the total shower base and shower module.

1.8 MARKING Showers, including those which form part of a modular unit, shall be suitably stamped or marked with the manufacturer's name or registered trademark.

NOTE: Manufacturers making a statement of compliance with this Australian Standard on a product, packaging or promotional material related to that product, are advised to ensure that such compliance is capable of being verified.



(a) Typical tiling flange-kerb-fascia



(b) Typical tiling bead-kerb-fascia

DIMENSIONS IN MILLIMETRES

FIGURE 1 TYPICAL FLASHINGS AND FASCIAS

SECTION 2 PRESSED STEEL VITREOUS ENAMELLED SHOWER BASES AND SHOWER MODULES

2.1 GENERAL Pressed steel vitreous enamelled shower bases and shower modules shall comply with this Section in addition to Section 1.

2.2 MATERIALS

2.2.1 Steel Shower bases and modules shall be manufactured from cold-rolled unalloyed low carbon steel sheet of Grade CV2S2 or CV4S1 of AS 1595.

2.2.2 Thickness The nominal thickness of steel sheets shall be not less than 1.2 mm.

2.2.3 Construction Shower bases and modules shall be formed by stamping, pressing or fabrication. Where welding is employed, the welding materials shall be compatible with the material to be welded. All welds shall be finished smooth without pitting or crevices.

2.2.4 Surface finish Shower bases and modules shall be wholly enamelled on the inside and over the exposed rim and apron areas. When tested in accordance with AS 2219.1.5, the enamel shall comply with the Class A requirements therein.

All other surfaces shall be fully coated with a corrosion-resistant bonding coat.

A matt surface finish, otherwise complying with the Standard, shall not be a cause for rejection.

2.3 SURFACE QUALITY When a shower base or shower module installed under normal conditions is viewed from a distance of 1000 to 1200 mm, with a surface illumination of not less than 300 lx and the enamel finish readily attracts attention, the enamel shall not exhibit the following:

- (a) Crazing.
- (b) Chipping.
- (c) Scratches.
- (d) Blisters.
- (e) Pinholes.
- (f) Lifting.
- (g) Peeling.
- (h) Exposed ground coat or exposed metal.
- (i) Clickers.
- (j) Scale.

2.4 BLEMISHES The number of blemishes in the exposed enamel finish of a shower base or module shall not exceed the numbers specified in Table 1.

2.5 INFORMATIVE LABELLING Shower bases or modules shall be supplied with a label giving detailed information on the prevention of damage and maintenance of the surface to the shower bases and modules (see Clause 1.6).

TABLE 1
PERMISSIBLE NUMBER OF BLEMISHES

Blemish	Limit of acceptance
Specks	5 and no groupings
Dimples	1
Lumps	1
Scale	2 and not exceeding 1 mm in diameter

SECTION 3 STAINLESS STEEL SHOWER BASES AND SHOWER MODULES

3.1 GENERAL Stainless steel shower bases and modules shall comply with this Section in addition to Section 1.

3.2 MATERIALS

3.2.1 Stainless steel Shower bases and modules shall be manufactured from chromium-nickel austenitic stainless steel of the 300 Series as specified in AS 1449.

3.2.2 Thickness The nominal thickness of the stainless steel shall be not less than 0.9 mm.

3.2.3 Construction Shower bases and modules shall be formed by stamping, pressing or fabrication. Where welding is employed, the welding materials shall be compatible with the material to be welded. Welds shall be free from cracks and pits, and shall be ground where exposed and polished to comply with surface finish requirements. Any joins shall be made so that their strength and corrosion resistance is not less than that of the parent material.

3.3 INFORMATIVE LABELLING Shower bases and modules shall be supplied with a label giving detailed information on the prevention of damage and maintenance of the surface to the shower bases and modules (see Clause 1.6).

SECTION 4 VITREOUS AND NON - VITREOUS CHINA SHOWER BASES

4.1 GENERAL Vitreous and non-vitreous china shower bases shall comply with this Section in addition to Section 1.

4.2 MATERIALS

4.2.1 Material Vitreous china shall comply with the requirements of AS 1976. Non-vitreous china shall comply with the requirements of AS 4023.

4.2.2 Thickness The thickness at any point of a shower base shall be not less than 10 mm.

4.2.3 Surface finish All external surfaces visible after installation shall be glazed.

4.3 SURFACE QUALITY A shower base shall comply with the requirements concerning defects and blemishes as specified in AS 1976 for vitreous china and AS 4023 for non-vitreous china.

4.4 INFORMATIVE LABELLING Shower bases shall be supplied with a label giving detailed information on the prevention of damage and maintenance of the surface to the shower bases (see Clause 1.6).

SECTION 5 PLASTIC AND COMPOSITE MATERIALS, SHOWER BASES AND SHOWER MODULES

5.1 GENERAL Shower bases and shower modules made from plastic and composite materials shall comply with this Section in addition to Section 1.

5.2 MATERIALS

5.2.1 Materials Shower bases and shower modules made from thermoset or thermoplastic materials in either pure or composite form shall comply with Clause 5.3.

5.2.2 Gel coat thickness Gel coat dry film thickness shall be not less than 0.4 mm.

5.3 PROPERTIES OF FINISHED SHOWER BASES AND SHOWER MODULES

5.3.1 General Tests shall be carried out on test specimens cut from a shower base or shower module or a complete shower base or shower module as specified in the relevant test clauses. New test specimens of shower base or shower modules may be used for each test.

5.3.2 Surface quality

5.3.2.1 Distortion and defects—when viewed from a distance of between 500 mm and 600 mm with a surface illumination of not less than 300 lx, the surface of the shower base and shower recess shall be without distortion, defects and blemishes, such as cracks, crazes, chipped areas, blisters, pinholes or print through. Any doubtful areas shall be tested in accordance with AS 3558.6.

5.3.2.2 Surface finish—shower bases and shower modules may have a lustrous or non-gloss finish.

5.3.3 Chemical and stain resistance When a test specimen is tested in accordance with AS 3558.2, the material shall be unaffected by the reagents listed except for removable stains as defined in AS 3558.2.

5.3.4 Colourfastness When test specimens are tested in accordance with AS 3558.3, the material shall not craze, crack or exhibit signs of any defects and any change in colour shall not register less than Grade 4 on the grey scale of Section A02 of ISO 105/A01.

5.3.5 Surface scratching When a test specimen is tested in accordance with AS 3558.4 using a 4H lead, there shall be no indentation or scratching deeper than 0.15 mm. Removable scratches, as defined in AS 3558.4, are acceptable.

5.3.6 Impact test When a test specimen is tested in accordance with AS 3558.17, it shall not crack, craze or show any signs of delamination.

5.3.7 Thermal shock test When tested in accordance with AS 3558.18, the material shall show no evidence of cracking, crazing, blistering, delamination or severe discoloration. Removable discoloration, as defined in AS 3558.2, is acceptable.

5.4 INFORMATIVE LABELLING Shower bases and shower modules of all materials shall be supplied with a label giving detailed information on the prevention of damage and maintenance of the surface to the shower bases or modules (see Clause 1.6).

APPENDIX A

RIGIDITY TESTS FOR SHOWER BASES AND SHOWER MODULES

(Normative)

A1 SCOPE This Appendix sets out a series of tests for determining the rigidity of shower bases and shower modules.

A2 APPARATUS The following apparatus is required:

- (a) A firm level floor to receive the shower base and shower module being tested.
- (b) Dial gauges capable of measuring linear deflection from 0 to 25 mm in 0.025 mm increments.
- (c) A minimum mass of 100 kg.
- (d) Clamps and stands, capable of holding the dial gauges independent of the shower base and shower module under test, to measure deflection at the points shown in Figure A1.
- (e) A 150 mm square load distribution pad covered by 12 mm of sponge rubber or other soft material.

A3 PREPARATION The preparation shall be as follows:

- (a) Support the base or module in accordance with the manufacturer's instructions. This shall not require the base or module to be fixed to the wall. The waste outlet fitting must not be used for support. Readings are not required at points B and C for shower modules (see Figure A1 (a)).
- (b) Apply a preload mass of not less than 100 kg at the centre point (A) of the freestanding base or module on the load distribution pad for at least 3 min to allow for initial settlement.

A4 TEST 1 The procedure shall be as follows:

- (a) Not less than 15 min after removing the preload mass, (see Paragraph A3(b)) set the dial gauges at the points marked A, B1, B2, B3, C1, C2 and C3 as shown in Figure A1(a).
- (b) Note the readings of the dial gauges.
- (c) Apply the 100 kg mass again to the load distribution pad.
- (d) Not less than 2 min after applying the mass, note the readings of the dial gauges. Record the deflection at each of the points.
- (e) Record the permanent deflection at point A within 10 min after removal of the 100 kg mass.

A5 TEST 2

A5.1 Requirements This test applies only if the waste outlet hole is in a position other than the centre point.

A5.2 Procedure The procedure shall be as follows:

- (a) Locate the load distribution pad over the waste outlet fitting or opening.

- (b) Not less than 15 min after removing the preload mass, set the dial gauges so that the plungers touch the points marked B1, B2, B3, C1, C2, C3 and F as shown on Figure A1.
- (c) Note the readings of the dial gauges.
- (d) Apply the 100 kg mass to the load distribution pad.
- (e) Not more than 2 min after applying the mass, note the readings of the dial gauges and record the deflection at each of the points.
- (f) Record the permanent deflection at point F 10 min after removal of the 100 kg mass.

A6 TEST 3 The procedure shall be as follows:

- (a) Utilizing the load distribution pad, apply the 100 kg test mass to the top of kerb, firstly at midpoint (D) and then at each end (E), as shown in Figure A1.
- (b) At least 2 min after applying the mass at each of the points (D) and (E) remove the mass and examine for any cracks, crazing or deformation.

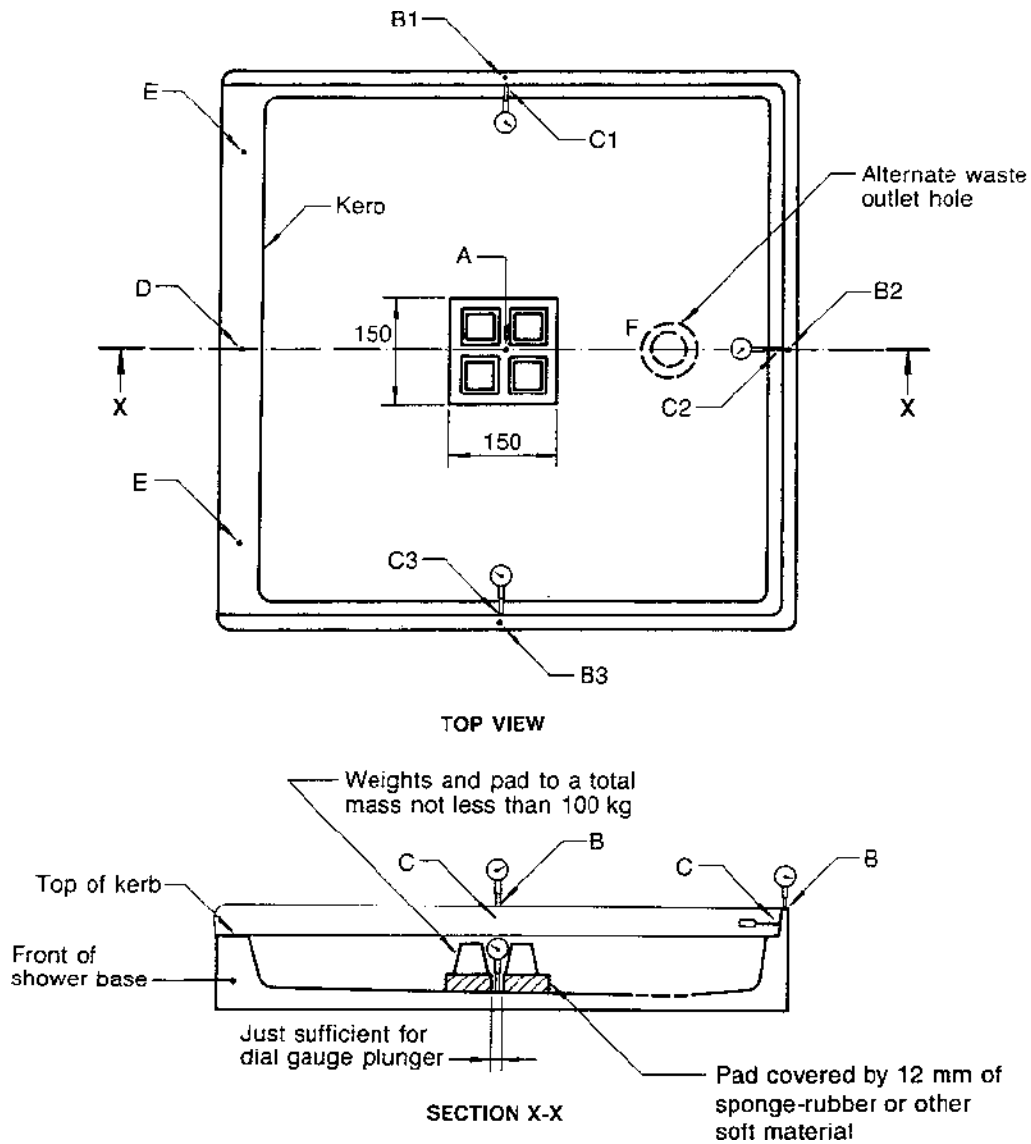
A7 REPORT The report shall include the following:

- (a) Identification of the test specimen.
- (b) The test applied, i.e. Test 1, Test 2 or Test 3.
- (c) Deflection after 2 min loading, in millimetres, and compared with Table A1 to determine compliance.
- (d) Permanent deflection, in millimetres.
- (e) The presence or absence of any cracking, crazing or deformation resulting from Test 3.
- (f) Compliance or noncompliance with the test criteria.
- (g) The number of this Australian Standard, i.e. AS 3588.

TABLE A1
MAXIMUM PERMISSIBLE DEFLECTIONS

Points marked	Deflection, mm
A, F	2.5
A *	0.2
B1, B2, B3	0.5
C1, C2, C3	0.5
D	2.5
D *	0.2

* Permanent deflection.



DIMENSIONS IN MILLIMETRES

FIGURE A1 RIGIDITY TEST

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