AS 1838:2021

Australian STANDARD®

STANDARDS Australia

Swimming pools — Premoulded fibre-reinforced plastics — Design and fabrication

AS 1838:2021

This Australian Standard® was prepared by PL-041, Glass Reinforced Swimming Pools. It was approved on behalf of the Council of Standards Australia on 1 March 2021.

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The following are represented on Committee PL-041:

Australian Fibreglass Manufacturers Group
Australian Institute of Building Surveyors
Composites Australia
Engineers Australia
Swimming Pool and Spa Association of Australia
University of Southern Queensland

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Originated as AS 1838—1975.
Second edition 1989.
Jointly revised and designated as AS/NZS 1838:1994.
Revised and redesignated as AS 1838:2021.

Preface

This Standard was prepared by the Standards Australia Committee PL-041, Glass Reinforced Swimming Pools, to supersede AS/NZS 1838:1994.

After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this document as an Australian Standard rather than an Australian/New Zealand Standard.

The objective of this document is to set out procedures for the design and fabrication of premoulded fibre-reinforced plastics (FRP) swimming pools.

The major changes in this edition are as follows:

(a) Additions and amendments to scope (see Clause 1.1), normative references (see Clause 1.2) and to terms and definitions, see Clause 1.3.

(b) Additions and amendments to materials, see Clause 2.

(c) Additions and amendments to design (see Clause 3), including the addition of hydrodynamic loads.

(d) Additions and amendments to construction requirements (see Clause 4), including the addition of clear and textured gelcoats.

(e) Significant changes to performance requirements (see Clause 5) in conjunction with Appendices E and F.

(f) Addition of a new appendix providing external factors that affect in-service performance, see Appendix G.

The terms “normative” and “informative” are used in Standards 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.

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Section 1 Scope and general

1.1 Scope

This document specifies requirements for premoulded plastic swimming pools exceeding 300 mm in depth and constructed from fibre-reinforced plastics (FRP) based on thermosetting resin systems. It covers materials, design and performance requirements.

NOTE For installation of fibre-reinforced plastic pools and swimming pools conforming to this document, refer to AS 1839.

1.2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements in this document.

AS 1170.4, *Structural design actions, Part 4: Earthquake actions in Australia*

AS 1839, *Swimming pools — Premoulded fibre-reinforced plastics — Installation*

AS 1926.3, *Swimming pool safety, Part 3: Water recirculation systems*

AS 3600, *Concrete structures*

ISO 178, *Plastics — Determination of flexural properties*

ASTM D 2583, *Test method for indentation hardness of rigid plastics by means of a Barcol impressor*

1.3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

1.3.1
at rest
state of soil condition prior to disturbance

1.3.2
bond beam
structural member that supports the coping

Note 1 to entry: See Clause 3.5.

1.3.3
competent person
person who has acquired, through education, training, qualification or experience or a combination of these, the knowledge and skill enabling that person to perform the task required

Note 1 to entry: An example would be a professional engineer who is —

(i) a corporate member of the Institution of Engineers, Australia; or

(ii) eligible to become a corporate member of the Institution of Engineers, Australia, and has appropriate experience and competence in the relevant field.