Australian Standard®

Plastics piping systems—Glass-reinforced thermoplastics (GRP) systems based on unsaturated polyester (UP) resin

Part 2: Pressure and non-pressure water supply (ISO 10639:2004, MOD)

This Australian Standard® was prepared by Committee PL-044, Reinforced Plastics Pipe Systems, Tanks and Vessels. It was approved on behalf of the Council of Standards Australia on 3 April 2009.
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The following are represented on Committee PL-044:

- Australian Chamber of Commerce and Industry
- Business New Zealand
- Certification Interests, Australia
- Composites Australia
- Engineers Australia
- Plastics Industry Pipe Association of Australia
- Water Industry Alliance
- Water Services Association of Australia

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Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

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AS 3571.2—2009
(Incorporating Amendment No. 1)

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PREFACE

This Standard was prepared by the Standards Australia Committee PL-044, Reinforced Plastics Pipe Systems, Tanks and Vessels to supersede (in part) AS 3571—1989, *Glass filament reinforced thermosetting plastics (GRP)—Polyester based—Water supply, sewerage and drainage applications*.

This Standard incorporates Amendment No. 1 (November 2009). 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.

The objective of this Standard is to provide designers, manufacturers, operators and regulating authorities of pressure and non-pressure water supply systems with the requirements for glass-reinforced thermoplastics (GRP) systems.

This Standard is an adoption with national modifications and has been reproduced from, ISO 10639:2004, *Plastics piping systems for pressure and non-pressure water supply—Glass-reinforced thermosetting plastics (GRP) systems based on unsaturated polyester (UP) resin.*

The Australian modifications are listed in Appendix ZZ.

Methods of demonstrating compliance with this Standard are specified in Appendix ZA.

Enquiry, tendering and ordering guidelines for purchasers and suppliers are given in Appendix ZB.

The terms ‘normative’ and ‘informative’ are used to define the application of the Annex or Appendix to which it applies. A normative Annex or Appendix is an integral part of a Standard, whereas an informative Annex or Appendix is only for information and guidance.

As this Standard is reproduced from an international standard, the following applies:

(a) Its number appears on the cover and title page while the international standard number appears only on the cover

(b) In the source text ‘this International Standard’ should read ‘this Australian Standard’.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian or Australian/New Zealand Standard*	
ISO		AS/NZS	
2531	Ductile iron pipes, fittings, accessories and their joints for water or gas applications	2280	Ductile iron pipes and fittings
3126	Plastics piping systems—Plastics components—Determination of dimensions	1477	PVC pipes and fittings for pressure applications; or
		4765	Modified PVC (PVC-M) pipes for pressure applications; or
		4441	Oriented PVC (PVC-O) pipes for pressure applications, as applicable

ISO		AS/NZS	
11922	Thermoplastics pipes for the conveyance of fluids—Dimensions and tolerances	1477	PVC pipes and fittings for pressure applications; or
11922-1	Part 1: Metric series	4765	Modified PVC (PVC-M) pipes for pressure applications; or
		4441	Oriented PVC (PVC-O) pipes for pressure applications, as applicable
		AS	
4200	Plain end steel tubes, welded and seamless—General tables of dimensions and masses per unit length	1579	Arc welded steel pipes and fittings for water and waste water
ISO/TR		AS/NZS	
10465	Underground installation of flexible glass-reinforced thermosetting resin (GRP) pipes	2566	Buried flexible pipelines
10465-3	Part 3: Installation parameters and application limits	2566.1	Part 1: Structural design; and
		2566.2	Part 2: Installation

The following documents are referred to in Appendices ZZ and ZA:

AS	
1199	Sampling procedures for inspection by attributes
1199.1	Part 1: Sampling schemes indexed by acceptance quality limit (AQL) for lot-by-lot inspection
1646	Elastomeric seals for waterworks purposes
3572	Plastics—Glass filament reinforced plastics (GRP)—Methods of test
3572.4	Part 4: Determination of the dimensions of glass filament reinforced plastics pipes
HB 18.28	Conformity assessment—Guidance on a third-party certification system for products
AS/NZS	
4020	Testing of products for use in contact with drinking water

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this standard. Other notes are for information only and guidance only.

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AUSTRALIAN STANDARD

Plastics piping systems—Glass-reinforced thermoplastics (GRP) systems based on unsaturated polyester (UP) resin

Part 2:
Pressure and non-pressure water supply
(ISO 10639:2004, MOD)

1 Scope

This International Standard specifies the properties of piping system components made from glass-reinforced thermosetting plastics (GRP) based on unsaturated polyester resin (UP) for water supply with or without pressure, as well as the properties of the system itself.

This International Standard is applicable to GRP-UP piping systems, with flexible or rigid joints with or without end thrust load-bearing capability, primarily intended for use in buried installations.

NOTE Piping systems conforming to this International Standard can also be used for non-buried applications provided the influence of the environment and the supports are considered in the design of the pipes, fittings and joints.

This International Standard is applicable to pipes, fittings and their joints of nominal sizes from DN 50 to DN 4000 which are intended to be used for the conveyance of water at temperatures up to 50 °C, with or without pressure. In a pipework system, pipes and fittings of different nominal pressure and stiffness ratings may be used together.

Clause 4 specifies the general aspects of GRP-UP piping systems intended to be used in the field of water supply with or without pressure.

Clause 5 specifies the characteristics of pipes made from GRP-UP with or without aggregates and/or fillers. The pipes may have a thermoplastics or thermosetting resin liner. Clause 5 also specifies the test parameters for the test methods referred to in this International Standard.

Clause 6 specifies the characteristics of fittings made from GRP-UP, with or without a thermoplastics or thermosetting resin liner, intended to be used in the field of water supply. Clause 6 specifies the dimensional and performance requirements for bends, branches, reducers, saddles and flanged adaptors. Clause 6 is applicable to fittings made using any of the following techniques:

a) fabrication from straight pipes;

b) moulding by

   1) filament winding,

   2) tape winding,

   3) contact moulding,

   4) hot or cold compression moulding.