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POLYBUTYLENE PIPE SYSTEMS

Part 3—MECHANICAL JOINTING FITTINGS

FOR USE WITH POLYBUTYLENE (PB) PIPES FOR HOT AND COLD WATER APPLICATIONS

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Confederation of Australian Industry

Department of Local Government, Qld

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Melbourne and Metropolitan Board of Works

Metropolitan Water Sewerage and Drainage Board, N.S.W.

Plastics Institute of Australia Inc.

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AUSTRALIAN STANDARD

POLYBUTYLENE PIPE SYSTEMS
Part 3
MECHANICAL JOINTING FITTINGS
FOR USE WITH POLYBUTYLENE (PB) PIPES FOR HOT AND COLD WATER APPLICATIONS

AS 2642, Part 3—1983

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PREFACE

This standard was prepared by the Association's Committee on Polybutylene (PB) Pipe Systems, acting under the authority of the Plastics Standards Board, in conjunction with the Standards Association of New Zealand drafting committee for polybutylene pipe. It is one of a series of standards for polybutylene pipe systems; other standards apply to pipe extrusion compounds (AS 2642, Part 1) and to pipes (AS 2642, Part 2*).

The standard specifies requirements for composition, design, pressure loss, fastening, porosity, toxicity, resistance to pressure and leakage, and thermal and pressure cycling tests.

This standard is based on AS 1460, Mechanical Jointing Fittings for Use with Polyethylene Pressure Pipes, but has been modified to cover criteria and testing of fittings for hot water applications. Hence, most testing is conducted at 95°C.

Significant changes from AS 1460 include the requirement that brass fitting components designed to be in contact with reticulated water be dezincification-resistant and the adoption of the ISO 4059 method for determining pressure loss through fittings. This latter method has been found to give far more reproducible results than previously obtained with the AS 1460 method.

*In course of preparation.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
POLYBUTYLENE PIPE SYSTEMS

PART 3—MECHANICAL JOINTING FITTINGS FOR USE WITH POLYBUTYLENE (PB) PIPES FOR HOT AND COLD WATER APPLICATIONS

1 SCOPE. This standard specifies requirements for mechanical jointing fittings suitable for use as fixed joints, with polybutylene pipes manufactured in accordance with AS 2642, Part 2.

NOTE: Advisory information on alternative methods of determining compliance with a 'lot' with this standard is given in Appendix A.

2 REFERENCED DOCUMENTS. The following standards are referred to in this standard:

AS 1199	Sampling Procedures and Tables for Inspection by Attributes
AS 1349	Bourdon Tube Pressure and Vacuum Gauges
AS 1399	Guide to AS 1199, Sampling Procedures and Tables for Inspection by Attributes
AS 1460	Mechanical Jointing Fittings for Use with Polyethylene Pressure Pipes
AS 1477	Unplasticized PVC (UPVC) Pipes and Fittings for Pressure Applications
AS 1585	Capillary and Brazing Fittings of Copper and Copper Alloy
AS 1590	Copper Alloy Threaded Pipe Fittings for Use with Tubes Threaded with Pipe Threads of Whitworth Form
AS 1645	Copper and Copper Alloy Compression Fittings for Use in Water Supply and Hot Water Services
AS 1722	Pipe Threads of Whitworth Form
AS 1821-1823	Suppliers Quality Control Systems, Levels 1, 2 and 3
AS 2000	Guide to AS 1821-23, Suppliers Quality Control Systems
AS 2345	An Accelerated Laboratory Test Method for Assessment of the Susceptibility of Brass to Dezincification
AS 2490	Sampling Procedures and Charts for Inspection by Variables for Percent Defective
AS 2642	Polybutylene Pipe Systems Part 2—Polybutylene (PB) Pipe for Hot and Cold Water Applications*
ISO 4059	Polyethylene (PE) Pipes—Pressure Drop in Mechanical Pipe-jointing Systems—Method of Test and Requirements

3 DEFINITIONS. For the purpose of this standard, the following definitions apply:

3.1 Hoop stress—the stress in a pipe or fitting under pressure acting tangentially to the perimeter of a transverse section.

3.2 Long-term hydrostatic stress—the continuously applied hoop stress which is estimated will cause failure at a specified time and temperature.

3.3 Hydrostatic design stress—the estimated hoop stress due to internal hydrostatic pressure that can be applied continuously with a high degree of certainty that failure will not occur. It is obtained by the application of a safety factor to the extrapolated 100 000 h long-term hydrostatic stress value.

3.4 Working pressure—the maximum pressure that can be sustained by the type and class of pipe or fitting for its estimated useful life under the anticipated working conditions.

3.5 Test pressure—the pressure applied internally to pipes and fittings when being tested for strength and watertightness.

3.6 Pipe material temperature—the average temperature estimated as applying through the full wall thickness.

3.7 Type test—a test intended to prove the suitability and performance of a new composition, a new compounding or processing technique, or a new design or size of pipe, joint or fitting. Type tests are generally carried out when a change is made in polymer composition or method of manufacture.

3.8 Quality control test—a test carried out during or after manufacture to prove the quality of a production run of pipe or fittings.

3.9 Stringer—an elongated string of beta phase brass which occurs in an otherwise alpha or alpha/dispersed beta matrix.

4 CLASSIFICATION. Insert type fittings shall be classified according to their pressure class at 20°C, viz class 6, 10, 16, 20, 25, 32 or 40, for use with pipe complying with AS 2642, Part 2. Other fittings shall be classified as the maximum pressure class for which they are suitable.

5 PRESSURE RATING ACCORDING TO TEMPERATURE. The working pressure of polybutylene pipe according to pipe material temperature is given in Table 1, in order that the appropriate pressure for a particular class of pipe can be used in the testing of fittings for compliance with this standard.

*In course of preparation.