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Australian Standard 2052–1977

METALLIC CONDUITS AND FITTINGS

STANDARDS ASSOCIATION OF AUSTRALIA
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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL organizations and departments were officially represented on the committee entrusted with the preparation of this standard:

Associated Chambers of Manufactures of Australia

Australian Electrical Manufacturers Association

Department of Construction

Department of Industry and Commerce

Department of Public Works, N.S.W.

Electrical Contractors Associations of Australia

Electricity Supply Association of Australia

Plastics Institute of Australia, Inc.

Railways of Australia Committee

Telecom Australia

This standard, prepared by Committee EL/4, Electrical Accessories, was approved on behalf of the Council of the Standards Association of Australia on 26 April 1977, and was published on 1 July 1977.

In order to keep abreast of progress in industry, Australian standards are regularly reviewed. Suggestions for improvement to published standards, addressed to the head office of the Association, are welcomed.

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AUSTRALIAN STANDARD SPECIFICATION

METALLIC CONDUITS AND FITTINGS

AS 2052—1977

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PREFACE

This standard was prepared by the Association's Committee on Electrical Accessories as a revision and metrication of AS C66, Part 1—1955, Rigid Metallic Conduit for Electrical Wiring, and AS C90—1963, Flexible Steel Conduit and Connectors, both of which it will supersede on 1 July 1978.

The provisions of this standard are generally in line with IEC 423, Outside Diameters of Conduits for Electrical Installations and Threads for Conduits and Fittings, for conduits up to 63 mm outside diameter. One of the major departures from a proposed IEC publication on general requirements for electrical conduits relates to wall thickness; the IEC publication will specify only outside diameter and minimum inside diameter, whereas this standard specifies outside diameter and minimum wall thickness. In the area of marking, however, the requirements in this standard are not as extensive as those in the proposed IEC publication.

For sizes in excess of 63 mm, the dimensions of 'medium' pipes for water and gas, as specified in AS 1074, Steel Tubes and Tubulars Threaded or Suitable for Threading with Pipe Threads of Whitworth Form, have been given.

Attention is drawn to the fact that the nominal sizes of conduit up to 63 mm refer to outside diameter, whereas for sizes 65 and above, the nominal sizes refer to approximate internal diameter.

For screwed conduit this standard covers only screwed conduit of the type referred to in AS C66 as 'Class B—Screwed Conduit'. The 'Class A—Plain' circular and flat types referred to in AS C66, are not covered since it was found that there was no longer a demand for these types. The other significant requirements which differ from those in AS C66 include the following:

- The scope has been expanded to include fittings used with metallic conduit.
- Three types of protection have been allowed for—'heavy protection' (galvanized to AS 1650), 'medium protection' (zinc coated or galvanized) and 'light protection' (painted or varnished).
- Metallic conduit is now required to be marked to indicate the manufacturer and the type of protection.
- Galvanized coatings for heavy protection and zinc coatings for medium protection are required to comply with AS 1650, Galvanized Coatings on Ferrous Articles, and AS 1789, Electroplated Coatings of Zinc on Iron and Steel, respectively.
- Values for 'mass per length' have not been specified—instead values for wall thicknesses have been stipulated, together with tolerances.

The significant requirements which differ from those in AS C90 include:

- The classification of flexible conduit as 'Type A—Unpacked' and 'Type B—Rubber-packed' has been abandoned; instead, three new classes have been introduced—unpacked, packed and plastics covered.
- Flexible metallic conduit is now required to be marked to indicate the manufacturer.
- Requirements for plastics covered flexible conduit have been included.

This standard may require reference to the following Australian standards:

AS 1074	Steel Tubes and Tubulars Threaded or Suitable for Threading with Pipe Threads of Whitworth Form
AS 1199	Sampling Procedures and Tables for Inspection by Attributes
AS 1397	Hot-dipped Zinc-coated or Aluminium/Zinc-coated Steel Sheet in Coil and Cut Lengths
AS 1399	Guide to AS 1199, Sampling Procedures and Tables for Inspection by Attributes
AS 1565	Copper Alloy Ingots and Copper and Copper Alloy Castings
AS 1595	Cold-rolled Unalloyed Low Carbon Steel Sheet and Strip
AS 1650	Galvanized Coatings on Ferrous Articles
AS 1721	General Purpose Metric Screw Threads
AS 1722	Pipe Threads of Whitworth Form
AS 1789	Electroplated Coatings of Zinc on Iron and Steel
AS 1791	Chromate Conversion Coatings on Zinc and Cadmium Electrodeposits
AS 1831	Spheroidal or Nodular Graphite Iron Castings
AS 1832	Malleable Iron Castings
AS 1852	International Electrotechnical Vocabulary
AS 3000	SAA Wiring Rules Part 1—Wiring Methods
AS B128	Methods for the Verification of Testing Machines

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Australian Standard Specification for METALLIC CONDUITS AND FITTINGS

PART 1. RIGID METALLIC CONDUITS AND FITTINGS

1.1 SCOPE. This Part of the specification applies to rigid metallic conduits and fittings manufactured from suitable metallic material and intended for the protection of cables in electrical installations.

1.2 DEFINITIONS. For the purpose of this Part, the following definitions, in addition to those listed in AS 1852* and AS 3000, Part 1†, apply:

1.2.1 Rigid conduit — a rigid welded or seamless metallic conduit, the ends of which are threaded for connection, and which can normally only be bent with the assistance of a mechanical aid, or after special treatment.

1.2.2 Conduit fittings — devices designed to join or terminate one or more lengths of a conduit installation.

Such fittings may also contain means for joining or terminating the conductors and/or cables contained therein.

For the purpose of this specification, the term 'fitting' shall include bushes, couplers, elbows, bends, junction boxes and tees.

1.2.3 Inspection fittings — conduit fittings provided with a removable cover or the like designed to provide access to and withdrawal of electrical conductors.

1.2.4 Conduit elbow — a fitting used for joining two lengths of conduit at a certain angle.

1.2.5 Conduit tee — a fitting shaped like a 'T' used for joining three lengths of conduit.

1.2.6 Knockouts — circular portions in the walls or base of a fitting which are easily removable to permit the entry of conduits or components of like diameter.

1.3 CONSTRUCTION.

1.3.1 Rigid Conduits. Rigid conduit shall be circular and shall be seamless (hot finished or cold drawn) or welded with a continuous longitudinal full-penetration weld.

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* AS 1852, International Electrotechnical Vocabulary.
† AS 3000, SAA Wiring Rules, Part 1—Wiring Methods.