Superseded by AS/NZS 3188:1995

AS 3188—1982
UDC 621.315.221:621.315.613:621.315.68

Australian Standard 3188—1982

APPROVAL AND TEST SPECIFICATION FOR

TERMINATIONS AND GLANDS FOR MINERAL-INSULATED METAL-SHEATHED CABLES

PUBLISHED BY THE STANDARDS ASSOCIATION OF AUSTRALIA
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Incorporated by Royal Charter

This Australian standard was prepared by Committee EL/3, Electric Wires and Cables. It was approved on behalf of the Council of the Standards Association of Australia on 6 May 1982 and published on 9 August 1982.

The following interests were represented on the committee responsible for the preparation of this standard:

Australian Electrical and Electronic Manufacturers Association

Australian-British Trade Association

Confederation of Australian Industry

Department of Construction

Department of Defence

Department of Transport

Electrical Contractors Association of Australia

Electrical Testing Laboratories

Electricity Supply Association of Australia

Railways of Australia Committee

Statutory Electricity Authorities

Telecom Australia

First published (as AS C188) 1971
Revised and issued as AS 3188 1979
Second edition 1982

ISBN 0 7262 2611 4

PREFACE

This edition of this specification was prepared by Committee EL/3, Electric Wires and Cables.

It is one of the series of approval and test specifications issued by the Association. These specifications are accompanied by a general specification, AS 3100, containing definitions and general requirements for electrical materials and equipment. The purpose of these specifications is to outline the conditions which must be met to secure approval for the sale and use of electrical equipment in Australia. Only safety matters and conditions closely allied thereto are covered.

This edition differs from the 1979 edition by the establishment of a more flexible requirement for the length of conduit threads and by removing the requirement for a decimal point in the marking of sealing pots and glands, a requirement that proved impracticable in manufacturing. In addition, Clause 6.2, Dimensions, has been amended to allow for new types of glands which are designed to individually cover a range of cable sizes.

This specification is complementary to AS 3187, Approval and Test Specification for Mineral-insulated Metal-sheathed Cables. Since publication of AS C188, of which this specification is a 'soft' metric conversion, there have been many developments in the design of the types of terminations for MIMS cables with the result that, although the types of terminations specified herein are still in use, there are other types for which this specification makes no provision. It is intended therefore to further revise this specification to provide for all types of terminations. Such revision will emphasize only essential tests and criteria to prove the safety of terminations rather than refer to specific methods of construction. In the interim this specification has been prepared so that it is in accord with the metric cables specified in AS 3187.

The majority of requirements herein apply to terminations and glands irrespective of the type of metal on the cable sheath. Some requirements, however, are qualified as being applicable only to terminations or glands for cables with sheaths of a particular metal and, in these cases, it is intended that corresponding requirements will eventually be added for terminations or glands for cables with sheaths of other metal.

In preparing this specification, cognizance was taken of BS 4081, Fittings for Mineral Insulated Cables, Part 1: 1966, Terminations for Copper-sheathed Cables, and acknowledgement is expressed of the assistance received therefrom. It should be noted that, even apart from the limitation of this specification to safety matters, there are very significant differences between this specification and the British Standard.

This specification supersedes AS 3183-1979 from date of publication.

The Association desires to call attention to the fact that this specification does not purport to include all the necessary conditions of a contract.

STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
APPROVAL AND TEST SPECIFICATION FOR TERMINATIONS AND GLANDS FOR MINERAL-INSULATED METAL-SHEATHED CABLES

This specification shall be read in conjunction with AS 3100. (See also Clause 4, below.)

1 SCOPE. This specification applies to terminations for mineral-insulated metal-sheathed (MIMS) cables complying with AS 3187 and having a seal with a typical construction in accordance with Fig. A1 of Appendix A (see Note below).

The specification also applies to glands for MIMS cables complying with AS 3187, and which are intended to form part of the earthing system of an installation. Requirements for glands are therefore limited to their ability to establish an effective electrical connection with the cable sheath.

Requirements for ensuring that glands are suitable for use with flameproof enclosures are not included herein as they are covered by AS 1828.

NOTE: This specification is intended to apply only to terminations of the type illustrated in Fig. A1 of Appendix A and of sizes appropriate to the range of MIMS cables in AS 3187.

It is not intended, however, that the use of other types or sizes of terminations should be precluded and Approvals Authorities may give approval to new types and sizes as they are developed. Appropriate requirements for new types will eventually be included in this specification as the need arises, as will new sizes of cables in AS 3187.

In respect of glands, the specification is intended to apply to all types used for earthing purposes. One common form of construction is illustrated in Fig. A1 of Appendix A.

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

AS 1567	Wrought Copper and Copper Alloy Rods, Bars and Sections for General Engineering Purposes
AS 1721	General Purpose Metric Screw Threads
AS 1828	Cable Glands for Explosive Gas Atmospheres
AS 3100	Approval and Test Specification for Definitions and General Requirements for Electrical Materials and Equipment
AS 3187	Approval and Test Specification for Mineral-insulated Metal-sheathed Cables.

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

3.1 Termination—a complete end-fitting for an MIMS cable, comprising a seal and a means of insulating cable conductor(s) emerging from the seal.

3.2 Seal—the part of a termination designed to seal the end of an MIMS cable against entry of moisture.

3.3 Gland—a device for securing the metal sheath of a cable entry and ensuring earth continuity.

4 COMPLIANCE WITH SPECIFICATIONS.

4.1 General Requirements of AS 3100. This specification shall be read in conjunction with AS 3100, and the appropriate provisions of that specification shall apply to the construction of terminations and glands for MIMS cables.

4.2 Specific Requirements of This Specification. Terminations and glands for MIMS cables shall be deemed to comply with this specification only if they comply with all the appropriate requirements of this specification and satisfactorily pass the relevant tests specified herein.

5 TERMINATIONS.

5.1 Construction. Seals shall consist of—

(a) a seal pot arranged for attachment by screwing or other suitable means on to the end of an MIMS cable;

(b) an insulating moisture-proof filling for the pot;

(c) a closure for the mouth of the pot where necessary to retain the filling in position;

(d) provision for applying the conductor insulation (see following paragraph) to any closure; and

(e) provision for fixing any closure in the sealing pot.

The complete termination shall comprise the seal described in items (a) to (e) above together with a means of insulating the cable conductor(s) emerging from the seal.

5.2 Sealing Pots.

5.2.1 *General.* Sealing pots shall be arranged so that they can be securely attached to an MIMS cable. They shall provide adequate internal electrical clearances for cable conductor(s).

Where an earth continuity conductor is incorporated, it shall be of copper and securely attached to the pot by brazing or suitable crimping.

5.2.2 *Materials.* Materials for sealing pots shall comply with the following requirements, as appropriate:

(a) *Sealing pots for copper-sheathed cables.* Sealing pots for copper-sheathed cables and which are intended to form part of the earthing system of an installation shall be manufactured from suitable material having mechanical and electrical properties not inferior to those of 380C brass complying with AS 1567.