AS 1828—1984

Australian Standard®

Electrical equipment for explosive atmospheres—Cable glands

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Electrical equipment for explosive atmospheres—Cable glands

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PREFACE

This edition of this standard was prepared by the Association's Committee on Electrical Equipment in Hazardous Locations to supersede AS 1828—1980, Cable Glands for Explosive Atmospheres. It is intended for the guidance of manufacturers, users and Regulatory Authorities, and for use with the SAA Wiring Rules (AS 3000) and relevant mining regulations. It prescribes requirements in respect of design, construction and marking of the equipment specified, and includes a section on testing.

In its terminology, definitions and general treatment of the subject, this standard has taken into account the following standards:

BS 542 Cable Glands and Sealing Boxes for Association with Apparatus for Use at Mines and Quarries

IEC 79-1 Electrical Apparatus for Explosive Gas Atmospheres
Part 1—Construction and Test of Flameproof Enclosures of Electrical Apparatus.

Acknowledgement is made of the assistance received from these sources.

The major changes in this edition are:

(a) Reference is made to AS 2380, Part 1 for grouping of apparatus, temperature classification, requirements for enclosures and marking.

(b) Group II glands are now required to be of a sealed type (spigot joints are not permitted). In practice, this will mean that all Group II glands will be suitable for use in dust areas without the need for complying with AS 2260.

(c) Glands intended for Group I applications are now required to have a wall thickness of at least 3 mm at any point or pass the impact test with an impact energy of 30 J.

(d) The addition of requirements to cover the use of hardsetting compound in place of a sealing bush.

(e) All references to 'weatherproofness' have been deleted and instead, reference is made to AS 1939.

(f) Reference is made to AS 2380, Part 1 for the impact test.

(g) A new requirement has been added for the fit between the gland and cable sheath.

(h) The deletion of the requirement for positive means to be provided to prevent over-compression of the bush.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

ELECTRICAL EQUIPMENT FOR EXPLOSIVE ATMOSPHERES—CABLE GLANDS

FOREWORD

The purpose of this standard is to establish requirements for cable glands which will enable their use in flammable or explosive atmospheres without risk of fire or explosion, i.e. for the termination of electrical cables and cords as required by mining regulations, and by the SAA Wiring Rules (AS 3000) for certain hazardous locations.

The standard acknowledges the practical difficulty of specifying standard dimensions for the bore of glands other than those intended for use with mineral-insulated metal-sheathed (MIMS) cable because of the relatively wide tolerances which apply to cable and cord diameters. Hence while special attention must be paid to cable diameter tolerances in respect of fit in the gland, provision is made for the use of a sealing bush of suitable type for the maintenance of the type of equipment protection for which the gland forms a component part. In such instances it is required that the cable be a close fit into the gland, ensuring adequate support of the cable on either side of the sealing bush and preserving mechanical soundness and strength.

The standard sets out requirements for adequate strength of the structure, and includes provisions for connecting screen wires and for effectively clamping armour where used, compliance with specified tension forces for attachment of cables and flexible cords, selection of material to minimize abrasive sparking, close attention is given to the treatment of joints.

The classification of hazardous areas is dealt with in AS 2430, Parts 1 and 2. Part 1 applies to explosive gas atmospheres and recognizes the following zones:

Zone 0— an area in which an explosive gas atmosphere is present continuously, or is expected to be present for long periods or for short periods which occur with high frequency.

Zone 1— an area in which an explosive gas atmosphere can be expected to occur periodically or occasionally during normal operation.

Zone 2— an area in which an explosive gas atmosphere is not expected to occur in normal operation and if it occurs is likely to be present only infrequently and for short duration.

Glands marked Group I and complying with this standard will normally be suitable for use in underground coal mines.

Glands marked Group II and complying with this standard will normally be suitable for use in a Zone 1 or Zone 2 area and in areas classified as Class II in AS 3000.

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