Australian Standard®

Electrical equipment for explosive atmospheres—Explosion-protection techniques

Part 4: Pressurized rooms or pressurized enclosures

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The following interests are represented on Committee EL/14:

Auckland Regional Chamber of Commerce New Zealand

Australian Chamber of Commerce and Industry

Australian Coal Association

Australian Electrical and Electronics Manufacturers Association

Australian Gas Association

Australian Institute of Petroleum

Coal-mining interests

Confederation of Australian Industry

Department of Mineral Resources, N.S.W.

Department of Minerals and Energy, Qld

Electricity Supply Association of Australia

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Insurance Council of Australia

Metal Trades Industry Association of Australia

Ministry of Commerce New Zealand

National Electrical Contractors Association of Australia

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee on Electrical Equipment in Hazardous Areas, to supersede AS 1021—1980, *Protection by purging of electrical equipment for explosive atmospheres* and AS 1825—1982, *Electrical equipment for explosive atmospheres—Pressurized enclosures—Type of protection p*. Under the terms of the Active Cooperation Agreement, this Standard is the result of a consensus among Australian and New Zealand representatives on the Joint Committee to produce this document as an Australian Standard.

The scope of the Standard has also been expanded to include pressurized rooms, and pressurized rooms and enclosures for use in Class II (dust) areas.

This Standard is intended for the guidance of manufacturers, designers, installers, users, statutory authorities and associated interests. It is part of a series of Standards dealing with the explosion-protection of electrical equipment intended for use in potentially explosive atmospheres.

In its terminology, definitions and general treatment of the subject, this Standard is similar to IEC 79, *Electrical apparatus for explosive gas atmospheres*, Part 2: *Electrical apparatus—Type of protection ''p''* and Part 13: *Construction and use of rooms or buildings protected by pressurization*.

Acknowledgment is made of the assistance received from these sources.

Some of the more significant changes to AS 1021 and AS 1825 included in this Standard are:

(a) The inclusion of requirements for pressurized rooms and enclosures suitable for use in Class II combustible dust areas.

(b) Definitions and terminology have been revised to align with other Australian and IEC Standards.

(c) Reference to IEC 79-16 for analyser houses has been included.

(d) Requirements for shutdown of electrical supply have been clarified.

(e) The inclusion of a clause detailing the pressurization principle.

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STANDARDS AUSTRALIA

Australian Standard

Electrical equipment for explosive atmospheres—Explosion-protection techniques

Part 4: Pressurized rooms or pressurized enclosures

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE This Standard specifies requirements for the design, construction and testing of pressurized rooms or pressurized enclosures, type of protection 'p', intended for use in Class I, Zone 1 and Zone 2 or Class II explosive atmospheres. While this standard covers enclosures with an internal release of flammable gas or vapour, it does not cover rooms with such a release, e.g. analyser houses nor rooms or enclosures with an internal release of combustible dust.

The requirements contained in this Standard are supplementary to those in AS 2380.1.

NOTES:

1 The classification of explosive atmospheres, termed hazardous areas, is dealt with in AS 2430. Further guidance may be obtained from Handbook SAA HB13.

2 Equipment with large areas which are subjected to pressures in excess of 1 kPa (e.g. sheet metal switchboard enclosures) may require approval from the relevant authority responsible for pressure vessel legislation in the State or Territory in which the enclosure is to be installed.

3 Rooms in which there is an internal release of flammable gas or vapour e.g. analyser houses are covered by IEC 79-16.

4 Areas not covered by this standard may be treated by protection by ventilation in accordance with AS 1482.

5 To minimise the risk of failure of an enclosure due to rupturing arc faults safeguarding against potential fault currents of an installation, especially where levels exceed 6 KA, should be provided.

1.2 REFERENCED DOCUMENTS The following documents are referred to in this Standard:

AS
1939 Degrees of protection provided by enclosures for electrical equipment (IP Code)
2380 Electrical equipment for explosive atmospheres—Explosion-protection techniques
2380.1 Part 1: General requirements
2381 Electrical equipment for explosive atmospheres—Selection, installation and maintenance
2381.1 Part 1: General requirements
2430 Classification of hazardous areas
HB13 Electrical equipment for hazardous areas

IEC
79-16 Electrical apparatus for explosive gas atmospheres, Part 16: Artificial ventilation for the protection of analyzer(s) houses