AS/NZS 3800:2005
(Incorporating Amendment Nos. 1 and 2)

AS/NZS 3800:2005

Australian/New Zealand Standard™

Electrical equipment for explosive atmospheres—Repair and overhaul

STANDARDS AUSTRALIA

STANDARDS NEW ZEALAND
Paerewa Aotearoa

A1 This Joint Australian/New Zealand Standard was prepared by Joint Technical Committees EL-023, Electrical Equipment in Coal Mines and EL-014, Electrical Equipment in Hazardous Areas. It was approved on behalf of the Council of Standards Australia on 3 February 2005 and on behalf of the Council of Standards New Zealand on 11 February 2005.
This Standard was published on 4 April 2005.

A1 The following interests are represented on Committees EL-023 and EL-014:

Auckland Regional Chamber of Commerce
Australian Chamber of Commerce and Industry
Australian Coal Association
Australian Gas Association
Australian Electrical and Electronic Manufacturers Association
Australian Industry Group
Australian Institute of Petroleum
Certification interests (Australia)
Department of Natural Resources and Mines (Qld)
Department of Primary Industries, Mine Safety (NSW)
Electrical Apparatus Service Association
Electrical Regulatory Authorities Council
Energy Networks Association
Engineers Australia
Gas Association of New Zealand
Institute of Electrical Inspectors
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Mining Electrical and Mining Mechanical Engineering Society
Ministry of Economic Development (New Zealand)
National Association of Testing Authorities Australia
National Electrical and Communications Association
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New Zealand Hazardous Areas Electrical Coordinating Committee
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Electrical equipment for explosive atmospheres—Repair and overhaul

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committees, EL-023, Electrical Equipment in Coal Mines, and EL-014, Electrical Equipment in Hazardous Areas, to supersede AS/NZS 3800:1997, *Electrical equipment for explosive atmospheres—Overhaul and repair*.

*This Standard incorporates Amendment No. 1 (*April 2005*) and Amendment No. 2 (*June 2005*). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.*

This Standard covers repair and overhaul of Group I and Group II electrical equipment and also includes equipment to be used in the presence of combustible dusts.

The objective of this Standard is to provide users and relevant regulatory authorities concerned with the repair and maintenance of electrical equipment in hazardous areas with guidance to ensure safety and compliance with the relevant existing Standards.

Each section of this Standard deals with the repair and overhaul requirements appropriate to one of the types of explosion-protection which may be used to achieve electrical safety or with basic requirements and considerations which are fundamental to the safe use of electrical equipment in hazardous areas.

It has been agreed by the Committee that this Standard will be replaced by the adoption of IEC 60079-19 when the IEC revision is published (late 2006/early 2007).

Considering this fact, the revision of the 1997 Edition has focused on the most urgent aspects requiring adjustment/updating. The main structure of the Standard was kept, in order to avoid further delays to the completion of the revision and publication of this new Edition, which has a limited currency (2 to 3 years).

Major changes to AS/NZS 3800:1997 are as follows:

A2 | (a) Clauses 1.4.5, 1.4.7, 1.4.27, 1.4.33, 1.5.6, 4.2.15 and 6.2.15 were added.

(b) Clauses 1.5.2 and 2.3.4 have been fully reworded.

(c) Clause 2.4.1 has been expanded to cover cast irons.

(d) Clause 2.5.2(g) was reworded and Figure 2.1 added.

(e) In Clause 2.5.3 last two paragraphs were added.

(f) Clause 3.2.12 was reworded.

(g) In Clause 9.2.2 a NOTE was added.

(h) Clause 9.2.4 was reworded and the Table was deleted.

(i) Figure 9.1 has been modified.

(j) A new Section has been included to cover Ex ‘m’ equipment (Section 7).

(k) Paragraph A2.2.2 of Annex A (Competent persons) was deleted.

(l) Appendix B (Guidelines on the qualifications and competency of competent persons) was deleted.

(m) Paragraph D.1.4.2 was modified.

(n) Appendix E was modified.

(o) A new typical repair/overhaul report for Ex ‘m’ equipment was added (Appendix V).

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

Statements expressed in mandatory terms in notes to tables and figures are deemed to be requirements of this Standard.

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FOREWORD

This Australian and New Zealand Standard has been prepared to cover the overhaul and repair of the equipment while it is in service. This Standard is complementary to existing Standards and regulations.

Where overhaul and repair of explosion-protected electrical equipment is required, the Standard specifies that the work be carried out in service facilities recognized for that purpose, and requires that only competent persons carry out or supervise the carrying out of such work.

Guidelines setting out the manner in which the work is to be performed and recorded are included.

AS/NZS 4761 sets out the competencies required of personnel involved in the overhaul, repair and maintenance of electrical equipment for hazardous areas.

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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard sets out requirements for the repair and overhaul of electrical equipment used in hazardous areas; these hazardous areas are defined in AS/NZS 60079.10 for gases and in AS/NZS 61241.10 for dusts. The Standard covers equipment having a group designation of Group I for coal mining and Group II for all other industries where flammable gases and vapours may be present. It also includes equipment used in the presence of combustible dusts.

This Standard does not cover maintenance of explosion-protected electrical equipment; however where maintenance affects the explosion-protection properties of the equipment, the requirements of this Standard for assessment, procedure and recording of data shall be met.

This Standard details the methods of overhaul, examination and the testing required to ensure safety and compliance with the relevant equipment Standards for the different types of explosion-protection. It covers the several types of explosion-protection techniques currently in use and specifies requirements for repair and overhaul service facilities.

This Standard also deals with modifications where they form part of an overhaul or repair process.

In all cases, the basic requirement for repair and overhaul is that such work comply with the relevant Standard for each type of explosion-protection. These Standards may be supplemented by specific requirements issued by a regulatory authority. Users of this Standard should check on the current status of such regulations and the conditions applying within the certification documents.

Guidelines are also laid down for practices to be adopted by the recognized service facility to carry out work effectively, to the satisfaction of both the user and the regulatory authorities.

Attention is drawn to the various occupational health and safety Acts, and regulations under these Acts. The requirements may vary between the various Australian States as well as New Zealand but are nonetheless binding on equipment suppliers and users.

1.2 APPLICATION

The requirements of this Standard apply to all service facilities and personnel engaged in the repair and overhaul of explosion-protected electrical equipment. These requirements, other than registration, apply to equipment manufacturers repairing equipment originally manufactured by themselves. Agents and importers engaged in repair and overhaul shall meet all the requirements of this Standard.

This Standard applies only to requirements for explosion-protection techniques and does not cover fundamental electrical safety and performance requirements.