AS/NZS 4761.1:2003
(Incorporating Amendment No. 1)

Australian/New Zealand Standard™

Competencies for working with electrical equipment for hazardous areas (EEHA)

Part 1: Competency Standards

Standards Australia

STANDARDS NEW ZEALAND
Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee P-012, EEHA Competency Standards Advisory Panel. It was approved on behalf of the Council of Standards Australia on 29 November 2002 and on behalf of the Council of Standards New Zealand on 27 November 2002. It was published on 21 January 2003.

The following are represented on Committee P-012:

Auckland Regional Chamber of Commerce
Australian Chamber of Commerce and Industry
Australian Coal Association
Australian Electrical and Electronic Manufacturers Association
Australian Gas Association
Australian Industry Group
Australian Institute of Petroleum
Certification Bodies (Australia)
Department of Infrastructure, Energy and Resources (Tasmania)
Department of Mineral Resources NSW
Department of Natural Resources and Mines (Qld)
Electricity Supply Association of Australia
ElectroComms and Energy Utilities Qualifications Standards Body of Australia
Electrotechnology Industry Training Organisation
Institute of Electrical Inspectors
Institute of Instrumentation and Control Australia
Institution of Engineers Australia
Mining Electrical and Mining Mechanical Engineering Society
Ministry of Economic Development (New Zealand)
New South Wales Grain Corporation
New Zealand Hazardous Areas Electrical Coordinating Committee
TAFE NSW
WorkCover New South Wales

Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Australia web site at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia International or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR 02380.

AS/NZS 4761.1:2003
(Incorporating Amendment No. 1)

Australian/New Zealand Standard™

Competencies for working with electrical equipment for hazardous areas (EEHA)

Part 1: Competency Standards

A1

Originated as part of AS/NZS 4761.1(Int):2000, AS/NZS 4761.2(Int):2000, AS/NZS 4761.3(Int):2000 and AS/NZS 4761.4(Int):2000.
AS/NZS 4761.1(Int):2000, AS/NZS 4761.2(Int):2000, AS/NZS 4761.3(Int):2000 and AS/NZS 4761.4(Int):2000 jointly revised, amalgamated and redesignated in part as AS/NZS 4761.1:2003.
Reissued incorporating Amendment No. 1 (March 2003).

Jointly published by Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

ISBN 0 7337 4998 4

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee, P-012, EEHA Competency Standards Advisory Panel.

A1 *This Standard incorporates Amendment No. 1 (March 2003). 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.*

An equivalent set of competency (unit) Standards has been formatted for the New Zealand Qualifications Framework by the ElectroTechnology Industry Training Organization (ETITO), and endorsed by the Joint Committee P-012. The Unit Standards are registered with the New Zealand Qualifications Authority (NZQA), under the domain *Electrical Equipment for Hazardous Areas*.

The objective of this Standard is to set out the generic cross-industry competencies needed for work associated with electrical equipment for hazardous areas; these competencies are intended for use by any industry sector or enterprise with regards to explosion-protection related to the relevant functional areas.

These Competency Standards are a replica of those included in the EE-Oz Training Standards *National Electrotechnology Training Package*, endorsed by the National Training Quality Council (NTQC) (ANTA's endorsing body). To ensure consistency and concurrence between the two sets of documents (this series of Standards and the National Electrotechnology Training Package) maintenance and revision of these documents will always be carried out simultaneously through the established Joint Standards Committee P-012, EEHA Competency Standards Advisory Panel, and amendments thereto processed in accordance with the respective organizational requirements.

This Standard forms part of a series covering the competencies for working with electrical equipment for hazardous areas, and the training materials/components supporting such competencies.

The series is as follows:

AS/NZS 4761	Competencies for working with electrical equipment for hazardous areas (EEHA)
4761.1	Part 1: Competency Standards (this Standard)
4761.2	Part 2: Guide for training and assessment

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

CONTENTS

Page

APPENDICES

FOREWORD

Although various Australian and New Zealand Standards and the relevant statutory/regulatory requirements lay down standard criteria for the manufacture, installation, use and maintenance of explosion-protected electrical equipment in hazardous areas, no such reference exists for the competencies needed for work associated with such equipment for hazardous areas.

In the context of this Series, ‘hazardous areas’ are areas in which an explosive atmosphere may be present. Unless electrical equipment situated in such areas is constructed, installed and maintained in a special way, it may provide the energy and temperature necessary to ignite the atmosphere, usually with devastating results. The special design features of electrical equipment and systems used for these ‘hazardous areas’ are known as explosion-protection. They form part of the risk management strategies to ensure a safe and healthy working environment.

The development of Competency Standards for electrical equipment for hazardous areas arose from concern with the variability in skills of electrical workers and others dealing with this equipment. Although training has been available, it was usually confined to the technical aspects and there was no national strategy to provide this specific training.

The concern over competence was heightened by the trend away from prescriptive regulations towards performance-based regulations. The performance-based approach places the ‘duty of care’ responsibilities on enterprises and individuals which, in turn, is said to promote self-monitored quality assurance. This results in greater compliance with requirements than is the case with the inspectoral methods that accompany prescriptive regulations.

Since the early 1990s industries have expressed the need for a set of National Competency Standards to be used by any industry sector or enterprise, with regards to explosion-protected equipment for hazardous areas.

To meet this need a set of National Competency Standards for Electrical Equipment in Hazardous Areas (EEHA) was developed in 1996 through the *National Utilities and Electrotechnology Industry Training Advisory Board* (NUEITAB) with support from the *Australian National Training Authority* (ANTA). Standards Australia was an active participant in the preparation of these Competency Standards, which were endorsed by ANTA in December 1996.

From the early stages of this project, industries (mining and non-mining) were concerned with the correct implementation of the EEHA—Competency Standards. Through their representatives in the different Standards Australia Committees dealing with electrical equipment and installations in hazardous areas, they have indicated the appropriateness of and need for a specific Standards Committee to overview, endorse and monitor the implementation of such Standards in Australia and New Zealand.

As a result the Joint Committee P-012, EEHA—Competency Standards Advisory Panel was set up in 1998 to provide advice and assist the relevant bodies (industry, regulators and educators) in the continuous review of the Competency Standards, the preparation of the National Training Package (comprising all endorsed and non-endorsed components) and in monitoring its implementation, to assure that industry’s needs and requirements are met.

Increasingly, organizations and enterprises are seeking conformance certification for their products.* Certifying bodies are using Standards developed by internationally recognized bodies, such as Standards Australia/Standards New Zealand, as the basis for this product certification. Requirements for 'competent persons' have been introduced in Australian/New Zealand Standards dealing with electrical equipment for hazardous areas; this led to certifying bodies expressing the need for formal Standards against which conformance of competencies can be measured. To fulfil such need the Joint Committee P-012 has prepared this Series of Standards, based on the previous Interim Series issued on 8 June 2000.

For use in New Zealand training systems, an equivalent set of Unit Standards was prepared by the *ElectroTechnology Industry Training Organization* (ETITO) to match the requirements of the New Zealand Qualifications Framework. These Unit Standards represent the same underpinning knowledge and practical skills, and equivalence was endorsed by the Joint Committee P-012 on 4 May 1999. They are registered with the New Zealand Qualifications Authority under the domain *Electrical Equipment for Hazardous Areas*.

* Product may be either a tangible item or service, as defined in ISO/IEC Guide 65, *General requirements for bodies operating product certification systems*.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

Competencies for working with electrical equipment for hazardous areas (EEHA)

Part 1: Competency Standards

SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies the competencies required for work associated with electrical equipment for hazardous areas (commonly termed 'Ex' equipment) and the standards to which competency is to be assessed and attributed.

The competencies specified in this Standard are intended as additional competencies to those previously acquired.

NOTE: Appendix A summarizes the specific prerequisite Units and recommended general competencies to achieve Units of Competency in this Standard.

1.2 APPLICATION

The principal application of this Standard is to personnel dealing with explosion-protected and associated electrical equipment for hazardous areas, covering the following work functions:

(a) Producing, processing or servicing functions in a hazardous area and not directly involved in installing, maintaining or repairing explosion-protected equipment and systems.

(b) Installing and maintaining explosion-protected equipment and systems in the hazardous area.

(c) Overhauling, repairing and modifying explosion-protected equipment.

(d) Developing/designing and maintaining explosion-protection strategies.

(e) Inspecting hazardous area equipment, systems and installations.

The Standard sets the minimum requirements for training programs developed by Registered Training Organizations (RTOs) who issue Statement of Attainment or Qualification in the competencies described in this Standard. However, this Standard may also be referenced by—

(i) bodies certifying overhaul and repair workshops; and

(ii) enterprises in establishing the competency of their personnel.

1.3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

2430 Classification of hazardous areas

2430.1 Part 1: Explosive gas atmospheres