AS/NZS 4761.1:2018

Australian/New Zealand Standard™

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

Part 1: Competency Standards

STANDARDS Australia

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This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee MS-066, Hazardous Areas Competencies. It was approved on behalf of the Council of Standards Australia on 10 June 2018 and by the New Zealand Standards Approval Board on 4 July 2018.
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The following are represented on Committee MS-066:

Australian Petroleum Production and Exploration Association
Aviation and Marine Engineers Association
Department of Natural Resources, Mines and Energy, Qld
Electrical Safety New Zealand
ElectroComms and Energy Utilities Industries Skills Council
Energy Skills Queensland
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee MS-066, Hazardous Areas Competencies, to supersede AS/NZS 4761.1:2008, *Competencies for working with electrical equipment for hazardous areas (EEHA)*, Part 1: *Competency Standards* and AS/NZS 4761.2:2008, *Competencies for working with electrical equipment for hazardous areas (EEHA)*, Part 2: *Guide to assessing competency*.

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 regard to explosion-protection related to the relevant functional areas.

This Standard is intended to be applied with reference to the AS/NZS 60079 series, *Explosive Atmospheres*, and the AS/NZS 80079 series, *Explosive Atmospheres*, and other AS/NZS standards such as AS/NZS 3800, *Electrical equipment for explosive atmospheres—Repair and overhaul.*

This Standard has been revised in consultation with the members of other AS/NZS hazardous area and mining committees and relevant industry experts with experience in the use of the previous editions.

Other factors that influenced this revision are as follows:

(a) The Australian/New Zealand adoption of the IEC 60079 series for explosive atmospheres.

(b) The demand from other countries for access to competencies for hazardous areas.

The principle differences between this edition and the previous editions are as follows:

(i) The competency units and assessment are contained in a single document.

(ii) The elimination of Sections 3 and 4 and some Appendices by including with each unit, the assessment required and evidence of competency under a main clause.

(iii) Ensuring the required evidence focuses on that expected of a competent person and not on the learning process.

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.

CONTENTS

Page

Page

FOREWORD

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

Since the early 1990s industries have expressed the need for a set of national competency Standards to be used by each industry sector or enterprise with regard 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 industry workshops held in each Australian state and in New Zealand.

The development of competency standards for electrical equipment for hazardous areas arose from concern about the variability in skills and knowledge of persons dealing with the risks that hazardous areas pose. This led to the inclusion in standards for explosive atmospheres, covering design, installation, inspection, maintenance, repair and area classification, of a recommendation for persons to be ‘competent’ to undertake the related tasks. However, the criteria on which the relevant competencies could be attributed was not well understood.

An industry research project initiated by the National Utilities and Electrotechnology Industry Training Advisory Board (NUEITAB) with participation of both mining and non-mining industry sectors resulted in the Standards Australia and New Zealand joint publication CS-EEHA-001—1998, Electrical Equipment in Hazardous Areas. This initial document formed the basis of a four-part series of interim Standards in 2000, the AS/NZS 4761 series, *Competencies for working with electrical equipment for hazardous areas (EEHA)*, developed by the Australian and New Zealand Joint Committee P/12, EEHA—Competency Standards Advisory Panel. New editions of the series were published in two parts in 2003 and 2008.

This edition of the Standard, developed by Australian and New Zealand Joint Committee MS-066, has been condensed* to a single document. The criteria specifying competent performance and the evidence to be considered when assessing competence in a given activity are provided under the clause of the relevant competency unit.

NOTE: The numbering of the element/performance criteria (e.g. 002.1/002.1.1) is to provide a cross reference to the performance and knowledge evidence specified for the unit.

Although informed by the national adoption of the IEC 60079 series for explosive atmospheres, the principles of this Standard may be applied to any acceptable explosive atmosphere Standard.

* The notion of competency was introduced in Australia and New Zealand in the late 1980s to provide a performance-based approach to learning and assessment focusing on skills and knowledge relevant to work-related functions/activities rather than attaining a pass mark in a prescribed syllabus.

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies the competencies required for persons to work with equipment and installations associated with explosive atmospheres and the performance and knowledge evidence required to assess and attribute competence.

The competencies specified in this Standard relate only to the explosion protection aspects of designated work activities. These competencies are additional to other competencies required for a designated work activity that may be applied for non-explosive atmospheres. The various units in this Standard include pre-requisite competencies that may be relevant to the work activity for hazardous areas As such a candidate seeking assessment needs to also be deemed competent in the designated work activity for non-explosive atmospheres.

NOTES:

1 Although this Standard is intended to be applied with reference to the AS/NZS 60079, and AS/NZS 80079 series, and other AS/NZS standards such as AS/NZS 3800, it may be used in conjunction with other internationally accepted Standards that are in use in specific industries. Examples of these industries include marine, shipping, off-shore oil and gas processing facilities, petroleum, petrochemical, printing, mobile drilling rigs, mining operations and aviation.

2 Other such standards may be referenced for the application of some competency units or where specifically sought for the competency of the personnel concerned. For example, to meet a specific need of an organization.

1.2 APPLICATION

This Standard applies to persons dealing with explosion-protected and associated electrical equipment for hazardous areas, and covers 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 hazardous areas.

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

(d) Developing/designing and maintaining explosion-protection strategies. This includes persons—

  (i) classifying hazardous areas;

  (ii) managing a hazardous area installation;

  (iii) designing electrical systems for hazardous areas; and

  (iv) inspecting equipment, systems and installations in hazardous areas.