Title	**Manage compliance of explosive atmospheres**		
Level	**5**	**Credits**	**3**

Purpose	This unit standard is intended for use in the training and assessment of people who work with electrical equipment in explosive atmospheres. People credited with this unit standard are able to: – demonstrate knowledge of the management responsibilities related to explosive atmosphere environments, the strategies used to maintain the safety of explosive atmospheres, and the maintenance requirements – establish possibility of explosive hazard – establish explosion-protection strategies for site – implement explosion-protection strategies and – establish and implement procedures for maintaining explosion-protection.

Classification	Explosive Atmospheres > Electrical Apparatus in Explosive Atmospheres - Compliance

Available grade	Achieved

Guidance Information

1 This unit standard has been designed for training and assessment on-job or off-job in a simulated environment, which includes explosion-protected equipment and wiring systems similar to those encountered in a real workplace. It is recommended candidates achieve Unit 26741, *Demonstrate underpinning knowledge of gas detection equipment in explosive atmospheres*, or demonstrate equivalent knowledge and skills, prior to enrolment in this unit standard.

2 Achievement of this unit standard alone does not entitle trainees to legally perform prescribed electrical work without supervision. Until registered and licensed under the Electricity Act 1992, trainees are assisting, and must work under supervision when carrying out prescribed electrical work.

3 Competence is to be demonstrated in relation to any classified explosive atmospheres.

4 References

- AS/NZS 1768:2007, *Lightning protection*
- AS/NZS 3000 (version as cited in the Electricity (Safety) Regulations), *Electrical installations (known as the Australian/New Zealand Wiring Rules)*
- AS/NZS 4761.1 (version as cited in the Electricity (Safety) Regulations), *Competencies for working with electrical equipment for hazardous areas* (*EEHA*) – *Competency Standards*
- AS/NZS 60079.14 (version as cited in the Electricity (Safety) Regulations), *Explosive atmospheres – Part 14: Electrical installations design, selection and erection*
- AS/NZS 60079.17 (version as cited in the Electricity (Safety) Regulations), *Explosive atmospheres – Part 17: Electrical installations inspection and maintenance*
- Electricity Act 1992
- Electricity (Safety) Regulations 2010
- Health and Safety at Work Act 2015, and associated regulations
- *Workplace Exposure Standards and Biological Exposure Indices Edition 13,* available from WorkSafe New Zealand www.worksafe.govt.nz/, and associated regulations

and all subsequent amendments and replacements.

5 Definitions

Competent personnel – a person or people who can demonstrate a combination of knowledge and skills to effectively, efficiently, and safely carry out activities in explosive atmospheres covered by AS/NZS 4761.1. Competency in some cases may be limited to one or more specific types of explosion-protection technique or activity e.g. design, selection, installation, maintenance, testing and inspection.

Explosion-protected equipment – electrical equipment to which one or more explosion-protection techniques are applied to avoid ignition of a surrounding explosive atmosphere.

Explosion-protection techniques – techniques applied to the design of electrical equipment, components, and systems to prevent electrical energy from becoming an ignition source in the presence of a surrounding explosive atmosphere.

Explosive atmosphere – mixture with air, under atmospheric conditions, of flammable substances in the form of gas, vapour, dust, fibres, or flyings which, after ignition, permits self-sustaining propagation.

Hazardous area – a three-dimensional region or space in which an explosive atmosphere is present, or may be expected to be present, in quantities such as to require special precautions for the construction, installation, and use of equipment.

Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000, *Electrical Installations (known as the Australian/New Zealand Wiring Rules).*

Verification dossier – a set of documents showing the complete compliance history of electrical equipment and installations within explosive atmospheres, as defined in Standards.

Wiring system – permitted wiring and accessories for power, measurement, control or communications purposes.

6 Assessment is to take account of variations between the industry sectors and enterprises. For example, equipment used in dust-explosive atmospheres will be different in some respects from that used in a petrochemical plant.

7 Range
- a Established maintenance procedures must be followed.
- b Candidates must refer to current legislation and Standards during assessment.
- c Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
- d All activities and evidence presented for all outcomes and performance criteria in this unit standard must be in accordance with:
  - i legislation
  - ii workplace policies and procedures
  - iii Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010
  - iv applicable site, enterprise, and industry practice
  - v manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the management responsibilities related to explosive atmosphere environments, the strategies used to maintain the safety of explosive atmospheres, and the maintenance requirements.

Performance criteria

1.1 Describe the responsibilities of a person managing explosive atmosphere activities or a site related to an explosive atmosphere environment.

Range includes but is not limited to – health and safety procedures to be established, responsibilities for ensuring that an explosive atmosphere environment is safe, responsibilities and processes for establishing and maintaining a verification dossier.

1.2 Describe explosion-protection strategies in relation to an explosive atmosphere.

Range the process of classifying a hazardous area, ways in which electrical systems/equipment can be treated to prevent them from becoming an ignition source, the cost of the different ways of treating electrical systems/equipment associated with explosive atmospheres.

1.3 Describe the requirements for the maintenance of electrical systems associated with explosive atmospheres.

Range includes but is not limited to – the type and grades of inspection of explosive atmospheres, maintenance programmes for electrical explosion-protected systems/equipment, documentation requirements associated with maintenance procedures.

Outcome 2

Establish possibility of explosive hazard.

Performance criteria

2.1 Engage competent personnel to provide advice on the nature and extent of any explosive hazard on the site.

2.2 Take measures to ensure explosive hazards are identified and that the area has been classified by competent personnel in accordance with requirements.

2.3 Make arrangements to establish a verification dossier in accordance with requirements.

Outcome 3

Establish explosion-protection strategies for site.

Performance criteria

3.1 Engage competent personnel to design the explosion-protection system and installation.

3.2 Determine if the explosion-protection system and installation design need to be verified with statutory authority to ensure compliance with requirements.

Outcome 4

Implement explosion-protection strategies.

Performance criteria

4.1 Engage competent personnel to install explosion-protected equipment and wiring system.

4.2 Implement procedures to ensure the explosion-protected equipment and wiring system installation is tested and inspected in accordance with requirements.

Outcome 5

Establish and implement procedures for maintaining explosion-protection.

Performance criteria

5.1 Engage competent personnel to develop inspection or maintenance schedules, including the level and intervals for periodic inspections, for the explosion-protected equipment and wiring system.

5.2 Develop procedures to ensure periodic inspections, testing, and maintenance are carried out in accordance with documented schedule and requirements.

5.3 Establish procedures to ensure data related to explosion-protection is included in the verification dossier in accordance with requirements.

Planned review date	31 December 2027

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	29 August 2000	30 June 2012
Review	2	20 May 2011	31 December 2021
Review	3	16 March 2017	31 December 2025
Review	4	2 March 2023	N/A

Consent and Moderation Requirements (CMR) reference	0003

This CMR can be accessed at http://www.nzqa.govt.nz/framework/search/index.do.

Comments on this unit standard

Please contact Waihanga Ara Rau Construction and Infrastructure Workforce Development Council qualifications@WaihangaAraRau.nz if you wish to suggest changes to the content of this unit standard.