Title	**Conduct a conformity assessment of explosion-protected apparatus**		
Level	**6**	**Credits**	**9**

Purpose	This unit standard is for electrical engineers and inspectors who are responsible for the design, selection, or inspection of explosion-protected electrical apparatus for use in hazardous areas. People credited with this unit standard are able to: – demonstrate knowledge of the documentation used in assessing explosion-protected apparatus for conformance to accepted Standards – demonstrate knowledge of the processes used in assessing explosion-protected apparatus for conformance to accepted Standards – prepare to conduct conformity assessment; – conduct conformity assessment, and – document and submit conformity assessment report.

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 apparatus and wiring systems similar to those encountered in a real workplace. It is recommended candidates achieve Unit 26740, *Demonstrate and apply intermediate underpinning knowledge of electrical equipment in explosive atmospheres*, or demonstrate equivalent knowledge and skills, prior to enrolment in this unit standard.

2 Candidates must be an Electrical Inspector holding current registration and a practising license with the Electrical Workers Registration Board (EWRB).

3 This unit standard is equivalent to *Conduct a conformity assessment review of explosion-protected equipment* in AS/NZS 4761.1 (version as cited in the Electricity (Safety) Regulations), *Competencies for working with electrical equipment for hazardous areas (EEHA) –Competency Standards*.

4 This unit standard is intended to be assessed against in conjunction with other work skills related to compliance assessment of electrical/electronic apparatus and general technical evaluation and report writing at NZQF Level 5 or above.

6 Competence is to be demonstrated in relation to any classified hazardous areas and explosion-protection technique. A copy of a candidate's current practising licence must be presented at the time of assessment.

7 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 IEC 60079.10.1:2022*, Explosive atmospheres - Part 10.1: Classification of areas – Explosive gas atmospheres*
- 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*
- AS/NZS 60079.29.2 (version as cited in the Electricity (Safety) Regulations)*, Explosive atmospheres – Gas detectors – Selection, installation, use and maintenance of detectors for flammable gases and oxygen*
- 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.

8 Definitions

ATEX – derived from French title of the 94/9/EC directive: Appareils destinés à être utilisés en ATmosphères EXplosibles.

Appropriate personnel – individuals with responsibilities for co-ordination, design, installation, maintenance, production or servicing activities. This can include: site managers, project managers, engineers and technicians, technical experts, line managers or supervisors, regulatory personnel, team leaders, other personnel designated by an organisation or enterprise.

AUSEx – Electrical equipment in hazardous areas Australian certification scheme.

Certification documentation **–** document(s) that assure(s) the conformity of a product, process, system, person, or organisation with specified requirements.

Established procedures – formal documented arrangements of an organisation, enterprise or statutory authority in regard to how work is to be done and by whom and may include but are not limited to – quality management systems, safety management systems, work clearance systems, work instructions, reporting systems, and arrangements for dealing with emergencies.

Explosion-protection techniques – techniques applied to the design of electrical apparatus, components, and systems to prevent the electrical energy from becoming an ignition source in the presence of flammable vapours and gases or combustible dusts in explosive atmospheres. See *Explosion-protected apparatus*.

Explosion-protected apparatus – electrical apparatus to which specific measures are applied to avoid ignition of a surrounding explosive atmosphere.
Explosive atmosphere – an atmosphere comprising volatile substances mixed with air under atmospheric conditions in the form of gases, vapours, mist, or dust, in which, after ignition has occurred, combustion spreads to the entire unburned mixture.
Hazardous area – area 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 apparatus.
IEC – International Electrotechnical Commission, the international standards and conformity assessment body for all fields of electrotechnology.
Verification dossier – a set of documents showing the complete compliance history of electrical apparatus and installations within hazardous areas, as defined in Standards.

9 Range
- a Assessment is to take account of variations between the industry sectors and enterprises. For example, apparatus used in dust-explosive atmospheres will be different in some respects from that used in a petrochemical plant.
- b Health and safety policies and procedures may include but are not limited to – work permits and clearances, hazard monitoring, evacuation procedures, plant and electrical isolation.
- c Established maintenance procedures must be followed.
- d All activities and evidence presented for all outcomes and performance criteria in this unit standard must be in accordance with safe working principles and practices, legislation, workplace policies and procedures, and Standards, safe and sound practice, and industry practice; and, where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of the documentation used in assessing explosion-protected apparatus for conformance with accepted Standards.

Performance criteria

1.1 Identify documentation and Standard(s) required to begin an assessment.

1.2 Identify differences between the test requirements of Standards from other countries and the compliant or acceptable Standards against which the apparatus is being assessed.

1.3 Explain the results given in apparatus test reports.

Outcome 2

Demonstrate knowledge of the processes used in assessing explosion-protected apparatus for conformance to accepted Standards.

Performance criteria

2.1 Explain conformity assessment processes and procedures.

2.2 Describe processes and procedures for assessing previously certified explosion-protected apparatus to current acceptable Standards and identify possible outcomes.

2.3 Describe a clause-by-clause assessment between the apparatus manufacturing Standards and the current acceptable Ex Standards in terms of processes and procedures used and differences between the Standards that may be detected.

Outcome 3

Prepare to conduct conformity assessment.

Performance criteria

3.1 Determine the certification specification using the certification documentation for which the apparatus has been assessed.

3.2 Obtain the relevant Standards required to begin the conformity assessment in accordance with established procedures.

3.3 Follow health and safety policies and procedures where a site inspection is required to identify apparatus that is already installed and is subject to the conformity assessment.

Outcome 4

Conduct conformity assessment.

Performance criteria

4.1 Carry out conformity assessment in accordance with health and safety and other established procedures.

4.2 Compare Standards to be used including with alternative Standards on which original certification is based.

Range includes but is not limited to – IEC, ATEX or AS/NZS Standards.

4.3 Compare criteria in the documented certification of the apparatus with those required by currently acceptable Standards, including any test on which the certification is based.

4.4 Identify discrepancies between the certification documentation and IEC, ATEX, AUSEx or AS/NZS Standards and record actions needed to correctly address each of them.

Outcome 5

Document and submit conformity assessment report.

Performance criteria

5.1 Record results in a conformity assessment document, to inform whether the apparatus provides an ‘equivalent level of safety’ to be installed, maintained, overhauled, repaired, and used safely within a hazardous area.

5.2 Recommend corrective actions to address discrepancies in the conformity assessment document.

5.3 Forward conformity assessment document to appropriate personnel in accordance with established procedures for inclusion in the verification dossier.

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	31 December 2025
Review	2	17 June 2011	31 December 2025
Review	3	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.