Title	**Demonstrate knowledge, use, and care of tools and test equipment used in the fire detection and alarm industry sector**		
Level	**2**	**Credits**	**4**

Purpose	This unit standard is for the training of fire alarm technicians and covers the knowledge of knowledge of tools, and test equipment used in the fire alarm industry sector, and their correct use and precautions. People credited with this unit standard are able to: demonstrate knowledge of and take measurements using test instruments used in the fire detection and alarm system industry sector; select and use simple measuring devices used in the fire detection and alarm system industry sector; select, use, and care for engineering hand tools used in the fire detection and alarm system industry sector; select, use, and care for portable hand held engineering power tools used in the fire detection and alarm system industry sector.

Classification	Mechanical Engineering > Fire Detection and Alarm Systems

Available grade	Achieved

Guidance Information

1 Definitions
a.c. – alternating current.
d.c. – direct current.
Equipment specifications refer to manufacturer's specifications for installation, operation, and performance of their equipment.
Fire detection and alarm system refers to an installation of apparatus, which performs specified fire related functions in response to the operation of a detector, manual call point, or other input. It includes – manual call points, detectors, control and indication equipment, alerting devices, interconnections, fittings, labels, energy sources, and remote signalling devices and may include emergency warning and intercommunication systems (EWIS) where applicable.
Industry practice refers to the safe and sound trade practice generally accepted by competent persons within the fire protection industry.

2 Assessment information
- a All activities must comply with relevant legislative and/or regulatory requirements and recognised codes of practice.
- b All activities must be done in accordance with applicable equipment specifications, industry practice and workplace procedures.

Outcomes and performance criteria

Outcome 1

Demonstrate knowledge of and take measurements using test instruments used in the fire detection and alarm system industry sector.

Range test instruments may include but are not limited to – voltmeter, ammeter, ohmmeter, insulation tester, multimeter, sound level meter; impedance meter; measurements may include but are not limited to – low ac and dc voltages and current, resistance, continuity, insulation, sound level, impedance.

Performance criteria

1.1 Correct method of taking measurements using the test instruments is described.

Range may include but is not limited to – precautions, safety aspects, calibration, connection, units of measure, range, tolerance.

1.2 Consequences of incorrect use of test instruments are stated.

1.3 Test instruments are selected, having regard to the quantity to be measured, expected magnitude, and avoidance of device overload.

1.4 Test instruments are handled and stored in a manner that maintains their integrity.

Outcome 2

Select and use simple measuring devices used in the fire detection and alarm system industry sector.

Range measuring devices – rulers, steel tapes, spirit levels, stud finders, laser measures.

Performance criteria

2.1 Correct method of taking measurements using the measuring devices is described.

2.2 Measuring devices are selected, having regard to the quantity to be measured.

2.3 Measuring devices are used to meet given task requirements.

2.4 Measuring devices are handled and stored in a manner that maintains their integrity.

Outcome 3

Select, use, and care for engineering hand tools used in the fire detection and alarm system industry sector.

Range tools may include but are not limited to – hacksaws, files, hole punches, hammers, drills, spanners, wrenches, screw drivers, side cutters, pliers, cable strippers.

Performance criteria

3.1 Hazards associated with hand tool use are identified in accordance with hand tool type.

3.2 Correct method of using the engineering hand tools is described.

3.3 Hand tools are used to meet given task requirements.

3.4 Hand tools are inspected for damage and faults.

3.5 Hand tools are are handled and stored in a manner that maintains their integrity.

Outcome 4

Select, use, and care for portable hand held engineering power tools used in the fire detection and alarm system industry sector.

Range power tools may include but are not limited to – drills, grinders, soldering irons.

Performance criteria

4.1 Hazards associated with portable hand held engineering power tool use are identified.

Range may include but is not limited to – electric shock, noise, presence of sharp and/or hot particles, dust, moving parts, cutting tools, stored energy.

4.2 Correct method of using the portable hand held engineering power tools is described.

4.3 Electrically operated portable hand held engineering power tools are used in conjunction with appropriate electrical safeguards to reduce risk of electrocution.

Range safeguards may include but are not limited to – residual current devices, isolating transformers, monitored-earth circuits, double insulated tools.

4.4 Portable hand held engineering power tools are selected for given task.

4.5 Portable hand held engineering power tools are inspected for damage and faults.

4.6 Portable hand held engineering power tools are handled and stored in a manner that maintains their integrity.

Planned review date	31 December 2029

Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	15 October 2015	31 December 2026
Review	2	27 June 2024	N/A

Consent and Moderation Requirements (CMR) reference	0013

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

Comments on this unit standard

Please contact the Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.