

Title	Install commercial RAC equipment under supervision		
Level	3	Credits	8

Purpose	<p>This unit standard is intended for people working in the refrigeration and air conditioning (RAC) sector of the engineering industry.</p> <p>People credited with this unit standard are able to, under supervision: prepare to install RAC components and systems; and install RAC system components.</p>
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Classification	Mechanical Engineering > Refrigeration and Air Conditioning
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Available grade	Achieved
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Guidance Information

- 1 Recommended skills and knowledge
Unit 28959, *Demonstrate knowledge of installation and commissioning procedures for commercial RAC equipment*, or demonstrate equivalent knowledge and skills.
- 2 Legislation and standards
Health and Safety at Work Act 2015;
Building Act 2004;
Climate Change Response Act 2002;
Electricity (Safety) Regulations 2010;
Electricity Act 1992;
Hazardous Substances and New Organisms Amendment Act 2015;
Ozone Layer Protection Act 1996;
AS/NZS 5149:2016 Parts 1:5 Refrigerating Systems and Heat pumps – Safety and environment requirements;
AS/NZS 817:2016 Refrigerants – Designation and safety classification;
AS/NZS 3000:2007 Electrical installations (known as the Australian/New Zealand Wiring Rules);
and any subsequent amendments.
- 3 References
Althouse, Turnquist, Bracciano. *Modern Refrigeration and Air Conditioning*. 19th edition. Tinley Park, Illinois: The Goodhouse-Willcox Company Inc. ISBN 1-59070-280-8.
Institute of Refrigeration, Heating and Air Conditioning Engineers of New Zealand (IRHACE New Zealand). 2001 *Code of Practice for the reduction of emissions of fluorocarbon refrigerants in refrigeration and air conditioning applications*. Available from IRHACE, <http://www.irhace.org.nz/>.

4 Definitions

Standard industry practices refer to standard and proven industry practices accepted by the refrigeration and air conditioning industry.

Under supervision means under the oversight and guidance of an experienced and authorised person holding an electrical service technician licence who takes overall responsibility for the work carried out.

Worksite procedures refer to documented procedures used by the organisation carrying out the work and applicable to the tasks being carried out. They may include but are not limited to – standard operating procedures, site safety procedures, equipment operating procedures, codes of practice, quality assurance procedures, housekeeping standards, procedures to comply with legislative and local body requirements

5 Assessment information

This unit standard may be assessed in the workplace using naturally occurring evidence or in a simulated environment that demands performance equivalent to that required in the workplace.

All work must be carried out under supervision and in accordance with worksite procedures.

Outcomes and performance criteria

Outcome 1

Prepare to install RAC components and systems.

Performance criteria

1.1 Site conditions are checked against documentation.

Range installation drawings, schedule of materials, work instructions.

1.2 Communication and planning with other trades ensures effective use of time and resources.

1.3 Components and materials are obtained and checked for compliance with drawings and specifications, and positioned on site.

1.4 Any discrepancies with on-site services or structure are identified and reported.

Range may include but is not limited to – water, electricity, mounting structure, work completed by other trades.

1.5 Any required equipment modifications are carried out to meet site conditions.

1.6 Any required permits to work are obtained in accordance with standard industry practices.

Outcome 2

Install RAC system components.

Performance criteria

2.1 Primary components are positioned and secured in accordance with drawings and specifications.

Range primary refrigeration components include but are not limited to – compressors, condensers, evaporators, metering devices; primary air conditioning components include but are not limited to – compressors, outdoor fan coils, metering devices, indoor fan coils.

2.2 Secondary components and fittings are installed in accordance with drawings and specifications.

Range secondary components may include but are not limited to – valves, controls, filters, driers, pipes; fittings may include but are not limited to – supports, brackets, attachments, seismic restraints, trunking.

2.3 Standard industry practices are applied during assembly to ensure internal cleanliness of components.

Range purging, removal of foreign/unwanted material, general cleaning procedures.

Replacement information	This unit standard, and unit standards 28959 and 29100 replaced unit standard 22702.
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Planned review date	31 December 2020
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	20 August 2015	N/A
Revision	2	22 October 2020	N/A

Consent and Moderation Requirements (CMR) reference	0013
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Competenz qualifications@competenz.org.nz if you wish to suggest changes to the content of this unit standard.