

<b>Title</b>	<b>Install commercial RAC equipment and systems in controlled temperature transport applications</b>		
<b>Level</b>	<b>4</b>	<b>Credits</b>	<b>20</b>

<b>Purpose</b>	<p>This unit standard is for people who work on refrigeration and air conditioning (RAC) equipment and systems for transport applications.</p> <p>People credited with this unit standard are able to: prepare to install RAC components and systems; and install RAC systems and components.</p>
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<b>Classification</b>	Mechanical Engineering > Refrigeration and Air Conditioning
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<b>Available grade</b>	Achieved
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<b>Prerequisites</b>	People undergoing training and assessment towards the competencies in this unit standard must be licensed by the Electrical Workers Registration Board as Electrical Service Technician.
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### Guidance Information

- 1 Recommended skills and knowledge  
Unit 28959, *Demonstrate knowledge of installation and commissioning procedures for commercial RAC equipment.*
- 2 Legislation and standards  
Health and Safety at Work Act 2015;  
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 All worksite practices must meet recognised codes of practice and documented safety procedures and safety plans (where these exceed the code) for personal and worksite safety, and obligations required under current legislation.
- 5 Definitions  
*Controlled temperature transport applications* refer to refrigeration and air conditioning systems used in road vehicles, and truck and shipping containers.  
*EWRB* refers to Electrical Workers Registration Board.  
*Standard industry practices* refer to standard and proven industry practices accepted by the refrigeration and air conditioning industry.  
*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.
- 6 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.

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## Outcomes and performance criteria

### Outcome 1

Prepare to install RAC components and systems.

### Performance criteria

- 1.1 Vehicle or container mounting 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.
- 1.4 Any discrepancies with vehicle or container site services or structure are identified and reported.
- 1.5 Any required equipment modifications are carried out to meet vehicle or container conditions.

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

## Outcome 2

Install RAC systems and 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, fan coils, metering devices.
- 2.2 Secondary components and fittings are installed in accordance with drawings and specifications.
- Range at least two of – valves, controls, filters, driers, pipes; fittings may include but are not limited to – supports, brackets, attachments, piping, ducting hoses.
- 2.3 Standard industry practices are applied during assembly and installation and ensure internal cleanliness of components.
- Range nitrogen purging, removal of foreign/unwanted material, general cleaning procedures, leak detection.
- 2.4 Systems are tested to specified pressures in accordance with worksite procedures and system specifications, and are verified as leak free.

<b>Planned review date</b>	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	18 June 2015	31 December 2020
Revision	2	16 February 2017	N/A
Revision	3	22 October 2020	N/A

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

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**Comments on this unit standard**

Please contact Competenz [qualifications@competenz.org.nz](mailto:qualifications@competenz.org.nz) if you wish to suggest changes to the content of this unit standard.