National Certificate in Refrigeration and Air Conditioning (Level 5)

Level **5**

Credits **100**

This qualification is **expiring**. The last date to meet the requirements is 31 December 2012.

Purpose

People awarded this level 5 qualification have achieved skills and knowledge in the fields of advanced refrigeration and air conditioning technology, supervisory, and business and administration.

The qualification is designed to provide maximum flexibility in the selection of unit standards while maintaining the professional profile developed by industry. People awarded this qualification are able to apply higher level skills in the Refrigeration and Air Conditioning industry and to also specialise in areas applicable to them.

This qualification is a progression from the National Certificate in Refrigeration and Air Conditioning (Level 4) [Ref: 0130] and leads on to the National Diploma in Engineering (Mechanical Engineering) (Level 6) [Ref: 0534].

Replacement Information

This qualification, the National Certificate in Engineering - Fabrication (Level 5) with strands in Heavy Fabrication, Light Fabrication, and Welding [Ref: 0681], the National Certificate in Maintenance and Diagnostics in Mechanical Engineering (Level 5) [Ref: 0718], the National Certificate in Engineering Machining and Toolmaking (Level 5) [Ref: 0719], the National Certificate in Fixed Fire Protection Systems (Level 5) [Ref: 0865], the National Diploma in Fire Detection and Alarm Systems (Level 5) [Ref: 0866], the National Diploma of Fire Protection Systems Technology (Certification of Fire Safety Systems) (Level 5) [Ref: 0867], and the National Certificate in Heating, Ventilating, and Air Conditioning (Mechanical Services) (Level 5) [Ref: 0897] have been replaced by the National Certificate in Mechanical Engineering (Level 5) with strands in Engineering Fabrication, Fire Protection, General and Maintenance Engineering, Mechanical Services, and Precision Engineering [Ref: 1545].

Special Notes

Prerequisite: National Certificate in Refrigeration and Air Conditioning (Level 4) [Ref: 0130], or Trade Certificate in Refrigeration, or equivalent knowledge and skills.

It is a legislative and employment requirement that holders of the National Certificate in Refrigeration and Air Conditioning (Level 5) [Ref: 0720] must also have met the examination, practical assessment, and electrical work experience requirements of the Electrical Workers Registration Board (EWRB) in relation to the Electrical Service Technicians, Levels A and B Registration, known as EST "A" & "B". People seeking the award of this qualification must first provide the NZ Engineering, Food and Manufacturing Industry Training Organisation (NZEFMITO) with proof of their registered status. The NZEFMITO is responsible for verifying registration and for forwarding all results to NZQA for the award of the qualification.

Credit Range

	Elective A Management Generic	**Elective B Industry Specific**	**Elective C Balance**
Level 3 credits	0-9	-	-
Level 4 credits	0-3	0-99	-
Level 5 and above credits	18-62	35-98	0-15
Minimum totals	30	55	0-15

Requirements for Award of Qualification

Award of NQF Qualifications

Credit gained for a standard may be used only once to meet the requirements of this qualification.

Unit standards and achievement standards that are equivalent in outcome are mutually exclusive for the purpose of award. The table of mutually exclusive standards is provided in section 7 of the New Zealand Qualifications Authority (NZQA) *Rules and Procedures* publications available at http://www.nzqa.govt.nz/ncea/acrp/index.html.

Reviewed standards that continue to recognise the same overall outcome are registered as new versions and retain their identification number (ID). Any version of a standard with the same ID may be used to meet qualification requirements that list the ID and/or that specify the past or current classification of the standard.

Summary of Requirements

- A minimum of 100 credits
- Elective A – A minimum of 30 credits as specified
- Elective B – A minimum of 55 credits as specified
- Elective C – Balance

Detailed Requirements

Elective A
A minimum of 30 credits
- Of which a minimum of 18 credits at Level 5 or above

Business > Accounting > Accounting - Generic

ID	Title	Level	Credit
7380	Recognise and examine the need for budgeting and other management control concepts	3	3

Business > Management > First Line Management

ID	Title	Level	Credit
1988	Supervise workplace operations	5	5

Business > Management > Management - Developing and Coordinating People

ID	Title	Level	Credit
7452	Plan, organise, and allocate work to achieve objectives	5	10
8493	Lead individuals and teams	5	5
8495	Develop self to improve performance	5	5

Business > Management > Management - Systems and Resources

ID	Title	Level	Credit
7454	Plan, manage, and review projects	5	7

Business > Management > Quality Management

ID	Title	Level	Credit
8085	Explain fundamental concepts and principles of quality and its management	3	4

Education > Generic Education and Training > Assessment of Learning

ID	Title	Level	Credit
4098	Assess candidate performance using supplied assessment activities	4	3

Engineering and Technology > Engineering > Generic Engineering

ID	Title	Level	Credit
11405	Prepare estimates of engineering project costings	5	4
11408	Demonstrate an ability to prepare and submit a tender for an engineering project	5	2
11557	Provide customer service in an engineering context	5	20

Humanities > Communication Skills > Writing

ID	Title	Level	Credit
9685	Write a short analytical report	5	4

Service Sector > Service Sector Skills > Service Sector - Core Skills

ID	Title	Level	Credit
376	Employ customer service techniques for differing customer behaviours in a given situation	3	2

Elective B

A minimum of 55 credits

- Of which a minimum of 35 credits at Level 5 or above

Engineering and Technology > Mechanical Engineering > Engineering Drawing and Design

ID	Title	Level	Credit
2439	Produce heating, ventilation, refrigeration, and air conditioning drawings	4	20

Engineering and Technology > Mechanical Engineering > Heating and Ventilation

ID	Title	Level	Credit
3232	Commission control or building management systems and diagnose control or building management systems faults	5	20

Engineering and Technology > Mechanical Engineering > Maintenance and Diagnostics in Mechanical Engineering

ID	Title	Level	Credit
2412	Diagnose faults, overhaul, and test components	5	8

Engineering and Technology > Mechanical Engineering > Refrigeration and Air Conditioning

ID	Title	Level	Credit
3825	Design and develop residential and light commercial refrigeration and air conditioning systems	4	15
3826	Design and develop commercial and light industrial refrigeration and air conditioning systems	5	20
3840	Commission residential and light commercial refrigeration and air conditioning systems	4	12
3841	Commission commercial and light industrial refrigeration and air conditioning systems	4	12
3842	Commission industrial refrigeration systems	5	15
3843	Commission large central plant air conditioning systems	5	15
3847	Maintain industrial refrigeration systems	4	10
3848	Maintain large central plant air conditioning systems	4	10
3852	Service industrial refrigeration systems	4	20
3853	Service large central plant air conditioning systems	5	20

Elective C
The balance of credits to achieve
A minimum of 100 credits
May come from anywhere on the NQF

Transition Arrangements

Version 2

Version 3 was issued to indicate that this qualification is expiring.

This qualification, the National Certificate in Engineering - Fabrication (Level 5) with strands in Heavy Fabrication, Light Fabrication, and Welding [Ref: 0681], the National Certificate in Maintenance and Diagnostics in Mechanical Engineering (Level 5) [Ref: 0718], the National Certificate in Engineering Machining and Toolmaking (Level 5) [Ref: 0719], the National Certificate in Fixed Fire Protection Systems (Level 5) [Ref: 0865], the National Diploma in Fire Detection and Alarm Systems (Level 5) [Ref: 0866], the National Diploma of Fire Protection Systems Technology (Certification of Fire Safety Systems) (Level 5) [Ref: 0867], and the National Certificate in Heating, Ventilating, and Air Conditioning (Mechanical Services) (Level 5) [Ref: 0897] have been replaced by the National Certificate in Mechanical Engineering (Level 5) with strands in Engineering Fabrication, Fire Protection, General and Maintenance Engineering, Mechanical Services, and Precision Engineering [Ref: 1545].

For detailed information see Review Summaries on the NZQA website.

Previous versions of the qualification

Version 1 was issued to replace the Advanced Trade Certificate in Refrigeration Engineering, and also subsumes the air conditioning content of the Advanced Trade Certificate in Heating, Ventilation and Air Conditioning prescription.

- The final year for people to sit exams leading to the award of the Advanced Trade Certificate in Heating, Ventilation and Air Conditioning was 1995.

The final date for the issue of an Advanced Trade Certificate in Heating, Ventilation and Air Conditioning will be 31 December 2000.

- The final year for people to sit exams leading to the award of the Advanced Trade Certificate in Refrigeration Engineering was 1998.

The final date for the issue of an Advanced Trade Certificate in Refrigeration Engineering will be 31 December 2002.

Advanced Trade Certificates in the above disciplines that have been awarded will continue to be recognised by NZQA, NZEFMITO, and the industry. There is no requirement to have the former qualifications translated into the new National Certificate in Refrigeration and Air Conditioning (Level 5), and these transition arrangements do not apply to holders of that qualification.

Effective from 1 January 1996, all training programmes for 1st and 2nd year Refrigeration and Air conditioning apprentices were replaced by training packages involving unit standards at levels 1 – 3 on the National Qualifications Framework.

NZEFMITO has no record of apprentices still employed under apprenticeship training contracts in the Refrigeration Engineering or Heating, Ventilating and Air-conditioning industries. Consequently, there is no transition requirement from the former qualification to this new qualification. However, any person who is unable to complete the Advanced Trade Certificate in Refrigeration Engineering by 31 December 2002 can contact NZEFMITO who will consider each application for transition on a case by case basis.

NQF Registration Information

Process	Version	Date	Last Date for Assessment
Registration	1	January 2000	December 2012
Review	2	April 2010	December 2012

Standard Setting Body

Competenz
PO Box 9005
Newmarket
Auckland 1149

Telephone 0800 526 1800
Email info@competenz.org.nz

Other standard setting bodies whose standards are included in the qualification

InfraTrain New Zealand
NZQA

Certification

This certificate will display the logos of NZQA, Competenz and the accredited organisation.

Classification

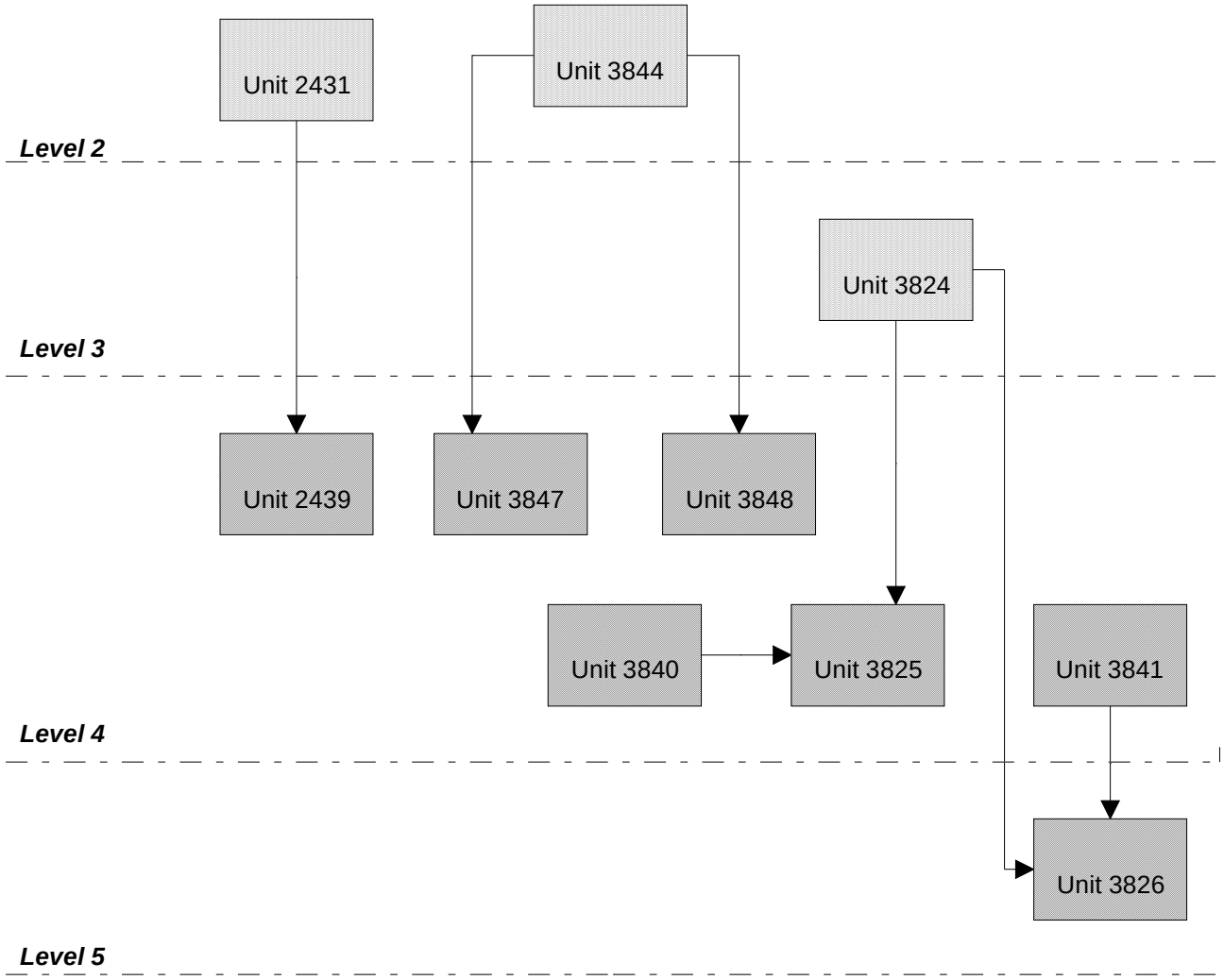
This qualification is classified according to the NQF classification system and the New Zealand Standard Classification of Education (NZSCED) system as specified below.

NQF Classification		**NZSCED**	
Code	**Description**	**Code**	**Description**
848	Engineering and Technology > Mechanical Engineering > Refrigeration and Air Conditioning	031315	Engineering and Related Technologies > Electrical and Electronic Engineering and Technology > Refrigeration, Heating and Air Conditioning

Quality Management Systems

Providers and Industry Training Organisations must be accredited by a recognised Quality Assurance Body before they can register credits from assessment against standards. Accredited providers and Industry Training Organisations assessing against standards must engage with the moderation system that applies to those standards. Accreditation requirements and the moderation system are outlined in the associated Accreditation and Moderation Action Plan (AMAP) for each standard.

Prerequisite Diagram



Key:

Unit standards are elective in this qualification

Unit standards not included in this qualification