



**Becoming an *EnergyMasters* Refrigeration Specialist
Applicants Guide**

Issued by the EMANZ
(*Energy Management Association of New Zealand*)

February 2017

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Becoming an *EnergyMasters* Refrigeration Specialist Applicant's Guide

1. Overview

Applicants for EnergyMasters Refrigeration Specialist accreditation are expected to be persons with specific competence and experience in industrial refrigeration systems or fan systems.

The minimum requirements for EnergyMasters Refrigeration Specialist include the applicant demonstrating to the refrigeration systems Assessor(s), appointed by EMANZ, that he/she has general competence in comprehending technical concepts and applying systematic engineering methods to refrigeration problem solving. The refrigeration systems Assessor will consider both academic qualifications and experience relating to these technologies. Part of this requirement involves applying their knowledge in the performance of a Type 3: Precision Subsystem ('investment grade' for industrial operations) Refrigeration Systems Audit (AS/NZS3598.2:2014)

An EnergyMasters Refrigeration Specialist demonstrates a high degree of competence in this field, and importantly understands that industrial processes are usually comprised of a number of technologies. As such, they understand where their specialist knowledge applies and where it does not.

2. Competence Requirements

Applicants will be required to demonstrate general and specific refrigeration systems competence, including their ability to:

1. Comprehend and apply knowledge that underpins good practice in the technical aspects of industrial processes and systems;
2. Identify, state and analyse industrial systems problems and risks in accordance with sound scientific and engineering methods;
3. Develop and articulate clear and well-founded solutions to industrial refrigeration systems problems, by using systematic procedures, sound technical and financial analysis and good judgment; and,
4. Communicate clearly with others in the course of his/her business activities, including the ability to work objectively with large and medium-sized industrial organisations to facilitate positive change (e.g. improved energy efficiency).

The Competency Self Assessment Form must be completed by all applicants.

3. Work Experience

An applicant's practice field of experience is expected to include refrigeration systems.

Applicants are expected to have specific competence and experience in the review and analysis of the performance of refrigeration systems relevant to New Zealand industry.

The refrigeration systems Assessor will require details of an applicant's recent significant practical work experience in the industrial sector with refrigeration systems and/or comparable technologies and processes.

Applicants should list, in chronological order, details of their project and work history using the Work History Summary Form. Details should include:

1. Recent employers and the nature of the type of work undertaken; and
2. Specific details of work done, including the date, client, and details of each audit or energy management/improvement work done.

4. Academic and Practical Requirements

Given the level of technical competence required for accreditation, applicants are required to have the following combination (and provide details) of **either** A + B **or** A + C + D.

Either:

- A An approved Bachelors Degree or NZQA Level 6 diploma or other equivalent qualification in Engineering or Science from a tertiary education institution which includes at least two courses/papers(0.125 FTE each) of study in thermodynamics, including heat transfer, at level 6 or higher, and
- B A minimum of five years experience in fields allied to refrigeration, such as refrigeration system design, refrigeration systems auditing, system troubleshooting and/or system improvement implementation if a level 8 or higher course/paper has not been completed.

Or

- A An approved Bachelors Degree or NZQA Level 6 diploma or other equivalent qualification in Engineering or Science from a tertiary education institution which includes at least two courses/papers(0.125 FTE each) of study in thermodynamics, including heat transfer, at level 6 or higher AND
- C Completion of at least one course/paper (0.125 FTE) at level 8 or higher in thermodynamics from a tertiary institution OR attend the one week Cost Effective Refrigeration workshop held at Massey University AND
- D A minimum of three years experience in fields allied to refrigeration, such as refrigeration system design, refrigeration systems auditing, system troubleshooting and/or system improvement implementation.

Note: If you believe you are sufficiently qualified in this area through other means, please contact EMANZ.

If you do not have the recommended background above and would like further training, there are a number of courses available within New Zealand to further develop your knowledge. Please contact EMANZ at admin@emanz.org.nz to discuss your training needs.

5. Sample Refrigeration Systems Audit Report

Applicants are required to provide a sample of their refrigeration systems auditing work as evidence of the quality of their auditing, analysis and reporting, to ensure that their knowledge can be appropriately applied.

For *EnergyMasters Refrigeration Specialist 'full'* accreditation, the applicant must provide a Type 3: Precision Subsystem ('investment grade' for industrial operations) Refrigeration Systems Audit Report produced by the applicant and in accordance with the Refrigeration Systems Audit Standard published by EMANZ.

The Audit Report must relate to an industrial refrigeration system of not less than 100 kW capacity, and have involved in-depth measurement, analysis and reporting, as described in the Audit Standard.

For *EnergyMasters Refrigeration Specialist 'provisional'* accreditation, the applicant may submit a Type 2 report not meeting the requirements above. Provisional accreditation will remain until a Type 3: Precision Subsystem ('investment grade' for industrial operations) Refrigeration Systems Audit Report is provided and successfully 'passed' by the assessor within a 5-year period.

Note that all submitted audits are treated as commercial in confidence.

6. Referees for Assessment Purposes

Applicants are required to provide the details of two referees who are sufficiently familiar with the applicant's work to provide comment on the applicant's competence with regard to refrigeration systems auditing.

Referees must be independent, i.e. not personally related to the applicant and not expected to gain materially if the application is successful. The applicant's employer may be a nominated referee, provided the interest in the outcome is professional and not personal.

Applicants must forward the Referee Form to the two nominated referees, along with a copy of the applicant's Competency Self Assessment Form, for each referee to complete and then return directly to EMANZ.

7. Application Checklist

The following checklist details the forms and evidence required to make a complete application for accreditation as an EnergyMasters Refrigeration Specialist.

Application Form	
Competence Self Assessment Form	
Referee Forms (with copy of completed Competence Self Assessment Form) sent to two Referees	
Type 3: Precision Subsystem Refrigeration System Audit	
Other information that you may wish to have considered.	
Copy of certificate or academic record as appropriate	

8. Reaccreditation 5-yearly

An Accredited EnergyMasters Refrigeration Specialist is expected to remain active in the field of refrigeration systems auditing to retain continuity of his/her accredited status.

Evidence of current Refrigeration Systems competence must be provided at the time of reassessment of accreditation.

Accredited EnergyMasters Refrigeration Specialists must submit the completed Reaccreditation Forms as part of the 5-yearly reaccreditation assessment.

For reaccreditation, the minimum requirements consist of:

- Evidence of at least 20 hours of continuing professional develop (CPD) in areas relevant to refrigeration systems auditing and analysis;
- Details of three Type 3/Level 3 refrigeration system audits completed in the previous 5 years, one of which was completed in the previous 18 months; and
- A full copy of one of those Type 3/Level 3 refrigeration system audits.

With respect to CPD, accredited EnergyMasters Refrigeration Specialists must demonstrate the undertaking of activities that contribute to their understanding and maintenance of their general and refrigeration systems skills. 'Quality of content' rather than 'quantity of hours spent' is the key measure of suitable professional development.

A fee is payable for reaccreditation assessment.

9. Ethical Conduct Requirement

An Accredited EnergyMasters Auditor is expected to conduct his / her energy auditing activities according to ethical standards generally accepted in New Zealand business and in line with the EMANZ Code of Ethics as follows:

- Members shall ensure that their claims for performance of products, provision of services and expertise are accurate, substantive and independently verifiable.
- In carrying out their activities Members shall ensure that commercial practice, standards and public statements reflect and maintain the highest standards of integrity and consideration for their clients and the public welfare.
- Members shall continue the development of their knowledge, skill and expertise throughout their careers and shall actively assist and encourage those under their direction to do likewise.
- Members shall so order their conduct as to uphold at all times the high reputation of the Association.
- Members shall not injure or attempt to injure, whether directly or indirectly, the reputation, prospects or business of another.

Accreditation may be rescinded by EMANZ if, following a fair and impartial hearing of the parties affected, EMANZ considers that the Auditor's behaviour has not met these standards.