



QQI

Quality and Qualifications Ireland
Dearbhú Cáilíochta agus Cáilíochtaí Éireann

Special Purpose Specification NFQ Level 5

Handling Fgas Refrigerants 5SXXXX

1. Certificate Details

Title Handling Fgas Refrigerants

Teideal as Gaeilge Láimhseáil Cuisneáin F-gháis

Award Type Special Purpose

Code 5SXXXX

Level 5

Credit Value 30

Purpose The purpose of this award is to enable the learner to handle fluorinated greenhouse gas (Fgas) refrigerants safely, with due care for the environment and in compliance with European Union (EU) and national regulations, whilst working on their own initiative and without supervision.

Statements of Knowledge, Skill and Competence Learners will be able to:

Knowledge

Breadth

Demonstrate a working knowledge of the impact of Fgas refrigerants on the environment and the regulations governing their use in Refrigeration and Air-Conditioning (RAC) and Heat Pump Systems.

Kind

Explain key concepts in handling fluorinated greenhouse gas (Fgas) refrigerants safely.

Know How & Skill

Range

Apply a knowledge of a variety of vapour compression systems used in Fgas systems, to prevent leakage of refrigerant(s).

Competence

Context Carry out intrusive work on Fgas refrigeration equipment, including the fitting of major components.

Role Carry out leak detection and refrigerant recovery on Fgas refrigeration equipment in compliance with current EU and national regulations.

The learning outcomes associated with this award are outlined in the associated Component Specifications.

Access

To access programmes leading to this award the learner should have reached the standards of knowledge, skill and competence associated with the preceding level of this award on the National Framework of Qualifications. This may have been achieved through a formal qualification or through relevant life and work experience.

Transfer

Achievement of this award will enable the learner to transfer to other appropriate programmes leading to awards at the same level of the National Framework of Qualifications.

Progression

Achievement of this award will enable the learner to progress to other appropriate programmes leading to awards at the next or higher levels of the National Framework of Qualifications.

Progression Awards

Learners who successfully complete this award may progress to a range of different awards.

Grading

Pass

Merit

Distinction

The grade achieved will be determined by the grades achieved on the components

2. Certificate Requirements

The total credit value required for this certificate is 30. This will be achieved by completing:

Award Code	Title	Level	Credit Value
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All of the following component(s)

	Fgas Refrigerant Non-Intrusive Leak Detection in RACHPT&T Systems Category IV	5	5
	Fgas Recovery from Small RACHPT&T Systems Category III	5	5
	Fgas Handling in Small RACHPT&T Systems Category II	5	10
	Fgas Handling in Large RACHPT&T Systems Category I	5	10

3. Supporting Documentation

1. Commission Regulation (EU) No 517/2014
2. Commission Regulation (EC) 1516/2007
3. Commission Implementing Regulation (EU) 2015/2067
4. Commission Regulation (EC) No 1005/2009

4. Specific Validation Requirements

The provider must have the following in place to offer this award: Tools and equipment as specified in the component awards

5. Europass Certificate Supplement

The Europass Certificate Supplement for this award can be accessed at: www.qqi.ie.

6. Further Education and Training (FET) Award Standards

QQI award standards are determined within the National Framework of Qualifications (NFQ), <http://www.nfq-qqi.com>. QQI determines standards for the education and training awards that it makes itself and that are made by providers to whom it has delegated authority to make an award. Providers offering programmes leading to QQI awards **must** have their programme(s) validated in accordance with current validation policy (see www.qqi.ie).

Award standards are designed to be consistent with the NFQ's award classes i.e. major, special purpose, supplemental and minor awards. They are expressed in terms of **learning**

outcomes i.e. concise statements of what the learner is expected to know or be able to do in order to achieve a particular award. Learning outcomes for QQI awards are contained within the associated specifications:

AWARD CLASS	STANDARDS	AWARDS
Major Award	Certificate Specification	Certificate (Levels 1 to 5) Advanced Certificate (Level 6)
Supplemental Award	Supplemental Specification	Supplemental Certificate (Level 3 to 6)
Special Purpose	Specific Purpose Specification	Specific Purpose Certificate (Levels 3 to 6)
Minor Award	Component Specification	Component Certificate (Levels 1 to 6)

Award standards are thresholds, they describe standards of knowledge, skill or competence to be acquired, and where appropriate, demonstrated, by a learner before an award may be made.

Award standards will be reviewed from time to time as necessary. Minor changes may be made by the QQI executive outside the review cycle where necessary. Changes to standards are published on QQI's website. Providers with validated programmes and providers with delegated authority to make awards are responsible for monitoring relevant standards and making necessary responses to changes.

7. FET Credit

Every FET certificate and component specification includes an FET credit value (Table 1). FET credit is quantified in multiples of 5 FET credits (up to 50 hours of learner effort). Learner effort is based on the time taken by typical learners at the level of the award to achieve the learning outcomes for the award. It includes all learning time involved including: guided learning hours, self-directed learning and assessment.

Table 1: FET Credit Values

NFQ Level	Major Awards Credit Values	Default Credit Values Minor Awards	Other Permitted Minor Award Credit Values	Special Purpose and Supplemental Award Credit Value Ranges
1	20	5	10	
2	30	5	10	
3	60	10	5,20	>5 and <60
4	90	10	5,15,20	>5 and <90
5	120	15	5,10,30	>5 and <120
6	120	15	5,10,30	>5 and <120

Guide to Level

Learning outcomes at this level include a broad range of skills that require some theoretical understanding. The outcomes may relate to engaging in a specific activity, with the capacity to use the instruments and techniques relating to an occupation. They are associated with work being undertaken independently, subject to general direction.

Strand	Sub-strand	Nature of learning
Knowledge	Breadth	Broad range of knowledge
	Kind	Some theoretical concepts and abstract thinking, with significant depth in some areas. Some underpinning theory
Know How & Skill	Range	Demonstrate a broad range of specialised skills and tools
	Selectivity	Evaluate and use information to plan and develop investigative strategies and to determine solutions to varied unfamiliar problems
Competence	Context	Act in a range of varied and specific contexts, taking responsibility for the nature and quality of outputs; identify and apply skill and knowledge to a wide variety of contexts
	Role	Exercise some initiative and independence in carrying out defined activities; join and function within multiple, complex and heterogeneous groups
	Learning to Learn	Learn to take responsibility for own learning within a managed environment
	Insight	Assume full responsibility for consistency of self-understanding and behaviour



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Component Specification NFQ Level 5

Fgas Refrigerant Non-Intrusive Leak Detection in RACHPT&T Systems Category IV

1. Component Details

Title Fgas Refrigerant Non-Intrusive Leak Detection in RACHPT&T Systems Category IV

Teideal as Gaeilge Sceitheadh Cuisneán F-gháis a Bhrath (to be updated)

Award Type Minor

Code 5NXXXX

Level 5

Credit Value 5

Purpose The purpose of this award is to equip the learner with the relevant knowledge, skill, and competence to carry out leak detection of stationary refrigeration, air-conditioning and heat pump systems and the refrigeration units of refrigerated trucks and trailers containing fluorinated greenhouse provided that it does not entail breaking into the refrigeration circuit containing fluorinated greenhouse gases on all refrigeration equipment that use fluorinated greenhouse gases (F gases), in compliance with current European Union (EU) and national regulations without supervision.

Learning Outcomes Learners will be able to:

The Learning Outcomes for this award are those as stated in ANNEX 1, Category IV, of Commission Implementing [Regulation \(EU\) 2015/2067](#).

ANNEX1 expresses the minimum requirements as to skills and knowledge to be covered by an evaluation body.

Assessment

General Information All assessment should be planned in accordance with the programme assessment strategy developed as part of the programme submission for validation. See **Policies and**

Criteria for Validation of Programmes. Assessment should be undertaken consistently and reflect current assessment guidelines. See www.qqi.ie.

All FET assessment is criterion referenced. Successful achievement of the award is based on learners attaining the required standards of knowledge, skill or competence consistent with the **minimum intended programme learning outcomes**.

The techniques set out below are considered the optimum approach to assessment for this component. In exceptional circumstances providers may identify alternative assessment techniques through the provider's application for programme validation which are reliable and valid but which are more appropriate to their context.

Assessment of a number of components may be integrated across programmes for delivery, provided that the learning outcomes of each minor award are assessed.

Group or teamwork may form part of the assessment, provided each learner's achievement is separately assessed.

All providers are required to submit an assessment plan as part of their application for programme validation. Assessment Plans will include information relating to scheduling and integration of assessment. See current FET validation guidelines at www.qqi.ie.

Assessment Techniques

In order to demonstrate that they have reached the standards of knowledge, skill and competence identified in all the learning outcomes, learners are required to complete the assessment(s) below.

The assessor is responsible for devising assessment instruments (e.g. project and assignment briefs, examination papers), assessment criteria and mark sheets, consistent with the techniques identified below and QQI's assessment requirements.

Programme validation will require providers to map each learning outcome to its associated assessment technique. All learning outcomes **must** be assessed and achieved in accordance with the **minimum intended module learning outcomes** set out in the validated programme.

Skills Demonstration	70%
Examination - Theory	30%

Description

Skills Demonstration

A skills demonstration is used to assess a wide range of practical based learning outcomes including practical skills and knowledge. A skills demonstration will require the learner to complete a task or series of tasks that demonstrate a range of skills.

The assessor will devise a skill demonstration / practical test based on the criteria 1 to 4 as provided for in ANNEX 1 of Commission Implementing Regulation (EU) 2015/2067. The learner must complete tasks based on the learning outcomes. The skills demonstration will be terminated if learner actions result in potentially unsafe practice. In this case the learner will fail to meet the standard.

This assessment must be passed for the learner to achieve the award.

Examination - Theory

An examination provides a means of assessing a learner's ability to recall and apply knowledge, skills and understanding within a set period of time and under clearly specified conditions.

A theory-based examination assesses the ability to recall, apply and understand specific theory and knowledge.

The assessor will devise a theory based examination based on the criteria 1 to 4 as provided for in ANNEX 1 of Commission Implementing Regulation (EU) 2015/2067.

This assessment must be passed for the learner to achieve the award.

Recognition of Prior Learning (RPL)

To support the development and implementation of RPL with regard to access, granting credit/exemptions and achievement of awards/parts of awards, providers should refer to **QQI's Statutory Guidelines for Quality Assurance**, the **Policies and Criteria for Validation of Programmes** and the **Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training** available at www.qqi.ie

Grading

Pass	50% - 64%
Merit	65% - 79%
Distinction	80% - 100%

Specific Validation Requirements

The provider must have all of the following in place to offer this award:

1. Necessary tools and equipment to include: working vapour compression refrigeration system, complete with thermostatic expansion valve and liquid receiver operating on an Fgas refrigerant and including all relevant safety controls.
2. Leak detection tools and instruments (to include electronic leak detection equipment) suitable for both direct and indirect leak detection methods.
3. All necessary safety equipment.
4. The Training Provider will hold a Category I certificate.

Supporting Documentation

1. Commission Regulation (EC) No 1005/2009
2. Commission Regulation (EU) No 517/2014
3. Commission Regulation (EC) No 1516/2007
4. Commission Implementing Regulation (EU) 2015/2067

Access

To access programmes leading to this award the learner should have reached the standards of knowledge, skill and competence associated with the preceding level of the National Framework of Qualifications. This may have been achieved through a formal qualification or through relevant life and work experience.

Transfer

Successful completion of this component award enables the learner to transfer to programmes leading to other certificates where this component is a mandatory or an elective requirement.

Fgas Recovery from Small RACHPT&T Systems Category III
Level 5

Fgas Handling in Small RACHPT&T Systems Category II Level 5

Fgas Handling in Large RACHPT&T Systems Category I Level 5



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Component Specification NFQ Level 5

Fgas Recovery from Small RACHPT&T Systems Category III

1. Component Details

Title	Fgas Recovery from Small RACHPT&T Systems Category III
Teideal as Gaeilge	Aisghabháil F-gháis i gcórais Bheaga CA (to be updated)
Award Type	Minor
Code	5NXXXX
Level	5
Credit Value	5
Purpose	The purpose of this award is to equip the learner with the relevant knowledge, skill, and competence to carry out the recovery of fluorinated greenhouse gases from stationary refrigeration, air-conditioning and heat pump systems and the refrigeration units of refrigerated trucks and trailers which containing less than 3 kilograms of fluorinated greenhouse gases, or, if hermetically sealed systems which are labelled as such are concerned, containing less than 6 kilograms of fluorinated greenhouse gases in compliance with current European Union (EU) and national regulations without supervision.

Learning Outcomes

Learners will be able to:

The Learning Outcomes for this award are those as stated in ANNEX 1, Category III, of Commission Implementing [Regulation \(EU\) 2015/2067](#).

ANNEX1 expresses the minimum requirements as to skills and knowledge to be covered by an evaluation body.

Assessment

General Information

All assessment should be planned in accordance with the programme assessment strategy developed as part of the programme submission for validation. See **Policies and Criteria for Validation of Programmes**. Assessment should be undertaken consistently and reflect current assessment guidelines. See www.qqi.ie.

All FET assessment is criterion referenced. Successful achievement of the award is based on learners attaining the required standards of knowledge, skill or competence consistent with the **minimum intended programme learning outcomes**.

The techniques set out below are considered the optimum approach to assessment for this component. In exceptional circumstances providers may identify alternative assessment techniques through the provider's application for programme validation which are reliable and valid but which are more appropriate to their context.

Assessment of a number of components may be integrated across programmes for delivery, provided that the learning outcomes of each minor award are assessed.

Group or teamwork may form part of the assessment, provided each learner's achievement is separately assessed.

All providers are required to submit an assessment plan as part of their application for programme validation. Assessment Plans will include information relating to scheduling and integration of assessment. See current FET validation guidelines at www.qqi.ie.

Assessment Techniques

In order to demonstrate that they have reached the standards of knowledge, skill and competence identified in all the learning outcomes, learners are required to complete the assessment(s) below.

The assessor is responsible for devising assessment instruments (e.g. project and assignment briefs, examination papers), assessment criteria and mark sheets, consistent with the techniques identified below and QQI's assessment requirements.

Programme validation will require providers to map each learning outcome to its associated assessment technique. All learning outcomes **must** be assessed and achieved in accordance with the **minimum intended module learning outcomes** set out in the validated programme.

Skills Demonstration
Examination - Theory

Description

Skills Demonstration

A skills demonstration is used to assess a wide range of practical based learning outcomes including practical skills and knowledge. A skills demonstration will require the learner to complete a task or series of tasks that demonstrate a range of skills.

The assessor will devise a skill demonstration / practical test based on the criteria 1 to 4 as provided for in ANNEX 1 of Commission Implementing Regulation (EU) 2015/2067. The learner must complete tasks based on the learning outcomes. The skills demonstration will be terminated if learner actions result in potentially unsafe practice. In this case the learner will fail to meet the standard.

This assessment must be passed for the learner to achieve the award.

Examination - Theory

An examination provides a means of assessing a learner's ability to recall and apply knowledge, skills and understanding within a set period of time and under clearly specified conditions.

A theory-based examination assesses the ability to recall, apply and understand specific theory and knowledge.

The assessor will devise a theory based examination based on the criteria 1 to 4 as provided for in ANNEX 1 of Commission Implementing Regulation (EU) 2015/2067.

This assessment must be passed for the learner to achieve the award.

Recognition of Prior Learning (RPL)

To support the development and implementation of RPL with regard to access, granting credit/exemptions and achievement of awards/parts of awards, providers should refer to **QQI's Statutory Guidelines for Quality Assurance**, the **Policies and Criteria for Validation of Programmes** and the **Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training** available at www.qqi.ie

Grading

Pass	50% - 64%
Merit	65% - 79%
Distinction	80% - 100%

Specific Validation Requirements

The provider must have all of the following in place to offer this award:

1. Necessary tools and equipment to include: working vapour compression refrigeration system, complete with thermostatic expansion valve and liquid receiver operating on an Fgas refrigerant and including all relevant safety controls
2. Leak detection tools and instruments to include electronic leak detection equipment suitable for both direct and indirect leak detection methods All necessary safety equipment

Supporting Documentation

1. Commission Regulation (EC) No 1005/2009
2. Commission Regulation (EU) No 517/2014
3. Commission Regulation (EC) No 1516/2007
4. Commission Implementing Regulation (EU) 2015/2067

Access

To access programmes leading to this award the learner should have reached the standards of knowledge, skill and competence associated with the preceding level of the National Framework of Qualifications. This may have been achieved through a formal qualification or through relevant life and work experience.

The learner must have successful completion of the following QQI award or equivalent:

Fgas Refrigerant Non-Intrusive Leak Detection in RACHPT&T Systems Category IV

Transfer

Successful completion of this component award enables the learner to transfer to programmes leading to other certificates where this component is a mandatory or an elective requirement.

Fgas Handling in Small RACHPT&T Systems Category II Level 5

Fgas Handling in Large RACHPT&T Systems Category I Level 5



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Component Specification NFQ Level 5

Fgas Handling in Small RACHPT&T Systems Category II

1. Component Details

Title	Fgas Handling in Small RACHPT&T Systems Category II
Teideal as Gaeilge	Láimhseáil F-gháis i gCórais Bheaga CA (to be updated)
Award Type	Minor
Code	5NXXXX
Level	5
Credit Value	10
Purpose	<p>The purpose of this award is to equip the learner with the relevant knowledge, skill, and competence to carry out the following activities on stationary refrigeration, air-conditioning and heat pump systems and the refrigeration units of refrigerated trucks and trailers that use fluorinated greenhouse gases (F gases), in compliance with current European Union (EU) and national regulations without supervision:</p> <ul style="list-style-type: none">• Leakage checking of equipment containing fluorinated greenhouse gases in quantities of 5 tonnes of CO₂ equivalent or more and not contained in foams, unless such equipment is hermetically sealed, is labelled as such and contains fluorinated greenhouse gases in quantities of less than 10 tonnes of CO₂ equivalent, provided that it does not entail breaking into the refrigeration circuit containing fluorinated greenhouse gases; and,• Recovery, installation, repair, maintenance, servicing and decommissioning of equipment containing less than 3 kilograms of fluorinated greenhouse gases, or, if hermetically sealed systems which are labelled as such are concerned, containing less than 6 kilograms of fluorinated greenhouse gases.

Learning Outcomes

Learners will be able to:

The Learning Outcomes for this award are those as stated in ANNEX 1, Category II, of Commission Implementing [Regulation \(EU\) 2015/2067](#).

ANNEX1 expresses the minimum requirements as to skills and knowledge to be covered by an evaluation body.

Assessment

General Information

All assessment should be planned in accordance with the programme assessment strategy developed as part of the programme submission for validation. See **Policies and Criteria for Validation of Programmes**. Assessment should be undertaken consistently and reflect current assessment guidelines. See www.qqi.ie.

All FET assessment is criterion referenced. Successful achievement of the award is based on learners attaining the required standards of knowledge, skill or competence consistent with the **minimum intended programme learning outcomes**.

The techniques set out below are considered the optimum approach to assessment for this component. In exceptional circumstances providers may identify alternative assessment techniques through the provider's application for programme validation which are reliable and valid but which are more appropriate to their context.

Assessment of a number of components may be integrated across programmes for delivery, provided that the learning outcomes of each minor award are assessed.

Group or teamwork may form part of the assessment, provided each learner's achievement is separately assessed.

All providers are required to submit an assessment plan as part of their application for programme validation. Assessment Plans will include information relating to scheduling and integration of assessment. See current FET validation guidelines at www.qqi.ie.

Assessment Techniques

In order to demonstrate that they have reached the standards of knowledge, skill and competence identified in all the learning outcomes, learners are required to complete the assessment(s) below.

The assessor is responsible for devising assessment instruments (e.g. project and assignment briefs, examination papers), assessment criteria and mark sheets, consistent with the techniques identified below and QQI's assessment

requirements.

Programme validation will require providers to map each learning outcome to its associated assessment technique. All learning outcomes **must** be assessed and achieved in accordance with the **minimum intended module learning outcomes** set out in the validated programme.

Skills Demonstration

Examination - Theory

Description

Skills Demonstration

A skills demonstration is used to assess a wide range of practical based learning outcomes including practical skills and knowledge. A skills demonstration will require the learner to complete a task or series of tasks that demonstrate a range of skills.

The assessor will devise a skill demonstration / practical test based on the criteria 1 to 4 as provided for in ANNEX 1 of Commission Implementing Regulation (EU) 2015/2067. The learner must complete tasks based on the learning outcomes. The skills demonstration will be terminated if learner actions result in potentially unsafe practice. In this case the learner will fail to meet the standard.

This assessment must be passed for the learner to achieve the award.

Examination - Theory

An examination provides a means of assessing a learner's ability to recall and apply knowledge, skills and understanding within a set period of time and under clearly specified conditions. A theory-based examination assesses the ability to recall, apply and understand specific theory and knowledge.

The assessor will devise a theory based examination based on the criteria 1 to 4 as provided for in ANNEX 1 of Commission Implementing Regulation (EU) 2015/2067.

This assessment must be passed for the learner to achieve the award.

Recognition of Prior Learning (RPL)

To support the development and implementation of RPL with regard to access, granting credit/exemptions and achievement of awards/parts of awards, providers should refer to **QQI's Statutory Guidelines for Quality Assurance**, the **Policies and Criteria for Validation of Programmes** and the **Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training** available at www.qqi.ie

Grading

Pass	50% - 64%
Merit	65% - 79%
Distinction	80% - 100%

For Consultation

**Specific
Validation
Requirements**

The provider must have all of the following in place to offer this award:

1. Necessary tools and equipment to include: workworn vapour compression refrigeration system, complete with thermostatic expansion valve and liquid receiver operating on an Fgas refrigerant and including all relevant safety controls.
2. Leak detection tools and instruments to include electronic leak detection equipment suitable for both direct and indirect leak detection methods
3. All necessary safety equipment

**Supporting
Documentation**

1. Commission Regulation (EC) No 1005/2009
2. Commission Regulation (EU) No 517/2014
3. Commission Regulation (EC) No 1516/2007
4. Commission Implementing Regulation (EU) 2015/2067

Access

To access programmes leading to this award the learner should have reached the standards of knowledge, skill and competence associated with the preceding level of the National Framework of Qualifications. This may have been achieved through a formal qualification or through relevant life and work experience.

The learner must have successful completion of the following QQI awards or equivalent;

Fgas Refrigerant Non-Intrusive Leak Detection in RACHPT&T Systems Category IV, and

Fgas Recovery from Small RACHPT&T Systems Category III

Transfer

Successful completion of this component award enables the learner to transfer to programmes leading to other certificates where this component is a mandatory or an elective requirement.

Fgas Handling in Large RACHPT&T Systems Category I Level 5



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Component Specification NFQ Level 5

Fgas Handling in Large RACHPT&T Systems Category I

1. Component Details

Title	Fgas Handling in Large RACHPT&T Systems Category I
Teideal as Gaeilge	Láimhseáil F-gháis i gCórais Mhóra (to be updated)
Award Type	Minor
Code	5NXXXXX
Level	5
Credit Value	10
Purpose	<p>The purpose of this award is to equip the learner with the relevant knowledge, skill, and competence to carry out intrusive work on the following activities on stationary refrigeration, air-conditioning and heat pump systems and the refrigeration units of refrigerated trucks and trailers that use fluorinated greenhouse gases (F gases), in compliance with current European Union (EU) and national regulations without supervision:</p> <ul style="list-style-type: none">• Leakage checking of equipment containing fluorinated greenhouse gases in quantities of 5 tonnes of CO₂ equivalent or more and not contained in foams, unless such equipment is hermetically sealed, is labelled as such and contains fluorinated greenhouse gases in quantities of less than 10 tonnes of CO₂ equivalent; and,• Recovery, installation, repair, maintenance, servicing and decommissioning of equipment containing fluorinated greenhouse gases.
Learning Outcomes	<p>Learners will be able to:</p>

The Learning Outcomes for this award are those as stated in ANNEX 1, Category I, of Commission Implementing [Regulation \(EU\) 2015/2067](#).

ANNEX1 expresses the minimum requirements as to skills and knowledge to be covered by an evaluation body.

Assessment

General Information

All assessment should be planned in accordance with the programme assessment strategy developed as part of the programme submission for validation. See **Policies and Criteria for Validation of Programmes**. Assessment should be undertaken consistently and reflect current assessment guidelines. See www.qqi.ie.

All FET assessment is criterion referenced. Successful achievement of the award is based on learners attaining the required standards of knowledge, skill or competence consistent with the **minimum intended programme learning outcomes**.

The techniques set out below are considered the optimum approach to assessment for this component. In exceptional circumstances providers may identify alternative assessment techniques through the provider's application for programme validation which are reliable and valid but which are more appropriate to their context.

Assessment of a number of components may be integrated across programmes for delivery, provided that the learning outcomes of each minor award are assessed.

Group or teamwork may form part of the assessment, provided each learner's achievement is separately assessed.

All providers are required to submit an assessment plan as part of their application for programme validation. Assessment Plans will include information relating to scheduling and integration of assessment. See current FET validation guidelines at www.qqi.ie.

Assessment Techniques

In order to demonstrate that they have reached the standards of knowledge, skill and competence identified in all the learning outcomes, learners are required to complete the assessment(s) below.

The assessor is responsible for devising assessment instruments (e.g. project and assignment briefs, examination papers), assessment criteria and mark sheets, consistent with the techniques identified below and QQI's assessment requirements.

Programme validation will require providers to map each learning outcome to its associated assessment technique. All learning outcomes **must** be assessed and achieved in accordance with the **minimum intended module learning outcomes** set out in the validated programme.

Skills Demonstration
Examination - Theory

Description

Skills Demonstration

A skills demonstration is used to assess a wide range of practical based learning outcomes including practical skills and knowledge. A skills demonstration will require the learner to complete a task or series of tasks that demonstrate a range of skills.

The assessor will devise a skill demonstration / practical test based on the criteria 1 to 4 as provided for in ANNEX 1 of Commission Implementing Regulation (EU) 2015/2067. The learner must complete tasks based on the learning outcomes. The skills demonstration will be terminated if learner actions result in potentially unsafe practice. In this case the learner will fail to meet the standard.

This assessment must be passed for the learner to achieve the award.

Examination - Theory

An examination provides a means of assessing a learner's ability to recall and apply knowledge, skills and understanding within a set period of time and under clearly specified conditions.

A theory-based examination assesses the ability to recall, apply and understand specific theory and knowledge.

The assessor will devise a theory based examination based on the criteria 1 to 4 as provided for in ANNEX 1 of Commission Implementing Regulation (EU) 2015/2067.

This assessment must be passed for the learner to achieve the award.

Recognition of Prior Learning (RPL)

To support the development and implementation of RPL with regard to access, granting credit/exemptions and achievement of awards/parts of awards, providers should refer to **QQI's Statutory Guidelines for Quality Assurance**, the **Policies and Criteria for Validation of Programmes** and the **Principles and Operational Guidelines for the Recognition of Prior Learning in Further and Higher Education and Training** available at www.qqi.ie

Grading

Pass	50% - 64%
Merit	65% - 79%
Distinction	80% - 100%

Specific Validation Requirements

The provider must have all of the following in place to offer this award:

1. Necessary tools and equipment to include: working vapour compression refrigeration system, complete with thermostatic expansion valve and liquid receiver operating on a HFC refrigerant and including all relevant safety controls.
2. Leak detection tools and instruments to include electronic leak detection equipment suitable for both direct and indirect leak detection method.
3. Refrigerant recovery and charging equipment
4. Pipe jointing equipment and tools
5. Pressure testing equipment and tools
6. Major components for replacement
7. All necessary safety equipment

Supporting Documentation

1. Commission Regulation (EC) No 1005/2009
2. Commission Regulation (EU) No 517/2014
3. Commission Regulation (EC) No 1516/2007
4. Commission Implementing Regulation (EU) 2015/2067

Access

To access programmes leading to this award the learner should have reached the standards of knowledge, skill and competence associated with the preceding level of the National Framework of Qualifications. This may have been achieved through a formal qualification or through relevant life and work experience.

The learner must have successful completion all of the following QQI awards or equivalent;

Fgas Refrigerant Non-Intrusive Leak Detection in RACHPT&T Systems Category IV,
Fgas Recovery from Small RACHPT&T Systems Category III
and Fgas Handling in Small RACHPT&T Systems Category II

Transfer

Successful completion of this component award enables the learner to transfer to programmes leading to other certificates where this component is a mandatory or an elective requirement.