Qualification handbook



**Introduction**

Cert-ain Certification Ltd. is a certification body accredited by the relevant regulatory authorities to offer a range of qualifications for operatives working in the building services engineering sector.

The Cert-ain Certification Ltd. qualifications are designed to be user-friendly for both the assessment centres delivering them and the candidates undertaking them. Our aim is to keep things as simple as possible whilst at the same time, maintaining the highest possible quality standards.

Our qualifications are designed to encourage learning and achievement, providing operatives with the appropriate knowledge and skills to help them progress in their chosen career.

**Energy efficiency qualification**

The aim of this handbook is to provide the necessary information for those operatives wishing to undertake the Cert-ain Certification Ltd. Energy Efficiency qualification.

The handbook also aims to provide assessment centres with details of the requirements for delivering the qualifications

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**Energy efficiency**

**Summary**

All succesful candidates completing the Energy Efficiency qualification are recognised as being competent against the assessment criteria listed on pages 4 to 7 and will be issued with a Cert-ain Certification Ltd. certificate of competence.

**Eligibility**

Operatives wishing to take the Energy Efficiency qualification shall hold domestic ACS **or** OFTEC **or** one of the following qualifications (or equivalent earlier certification that provides evidence or competence):

* N/SVQ Level 2/3 in Plumbing
* N/SVQ Level 2/3 in Heating and Ventilating (Domestic Installation)
* N/SVQ Level 2/3 in Heating and Ventilating (I & C Installation)
* N/SVQ Level 2/3 in Oil-Fired Technical Services
* N/SVQ Level 2/3 in Gas Installation and Maintenance

Individuals with any disabilities that may affect their ability to successfully complete the qualifications should inform the assessment centre on application. Training centres shall consider any reasonable requests for any aids or equipment that are designed to alleviate any disability providing that the required assessment standard is not compromised.

**Training**

Training centres deliver a training programme focussing on the contents of a number of key documents that are freely downloadable from the internet. The training programme is designed to help operatives to prepare for the assessment process.

**Reference material**

 The reference material used for the training and the examination:

* Condensing boiler installation procedures for dwellings
* Approved Document L Volume 1: Dwellings
* CIBSE Domestic Heating Design Guide (optional)
* Cert-ain Certification Ltd. training materials

**Assessment criteria**

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| 1. **Know the regulatory requirements and sources of guidance for Energy Efficiency standards for gas-fired and oil-fired heating appliances connected to ‘wet’ heating circuits**
 |
| **1.1 Know which regulations apply in:** |
| England and Wales |
| **1.2 Know the industry recommended sources of guidance for:** |
| minimum regulatory compliance and best practice |

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| 1. **Know the requirements of minimum boiler efficiency standards for gas-fired and oil-fired heating appliances connected to ‘wet’ heating circuits**
 |
| **2.1 Confirm the requirements for Gas-Fired heating appliances connected to ‘Wet’**  **heating circuits in relation to:** |
| New systems - new and existing dwellings |
| New systems – existing dwellings where a non-condensing appliance is assessed as being acceptable (Natural Gas and LPG) |
| New systems – where the heating boiler is combined with a range cooker |
| Replacement systems – not involving a fuel or energy switch |
| Replacement systems – involving a fuel or energy switch |
| **2.2 Confirm the requirements for Oil-Fired heating appliances connected to ‘Wet’**  **heating circuits in relation to:** |
| New systems – new and existing dwellings |
| New systems – existing dwellings where a non-condensing appliance is assessed as acceptable |
| New systems – where the heating boiler is combined with a range cooker |
| Replacement systems – not involving a fuel or energy switch |
| Replacement systems – involving a fuel or energy switch |

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| **3. Determine if a non-condensing boiler installation would be acceptable** |
| **3.1 Use the ‘Guide to condensing boiler installation assessment procedure for dwellings’ to determine if a non-condensing boiler installation would be acceptable** |

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| **4. Know the requirements relating to space heating primary circuit type and design for**  **gas-fired and oil-fired ‘wet’ heating systems** |
| **4.1 Confirm the requirements in relation to:** |
| New systems |
| Full replacement systems |
| Boiler replacements to systems with existing semi-gravity circulation |
| Provision of a bypass valve |

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| **5. Know the requirements relating to the preparation and water treatment of hot water**  **systems and wet central heating systems** |
| **5.1 Confirm the requirements relating to:** |
| Cleaning and flushing of wet central heating systems – new systems |
| Cleaning and flushing of wet central heating systems – boiler replacement to existing systems |
| Use of chemical water treatment inhibitors or other appropriate means of controlling corrosion and the formation of scale and sludge with primary circuits – new and existing systems |
| Treatment of feed water to water heaters and the hot water circuit of combination boilers – new and existing systems |

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| **6. Know the requirements relating to the commissioning of hot water systems and wet**  **central heating systems** |
| **6.1 Confirm the requirements of the commissioning process and commissioning checks**  **relating to:** |
| Compliance with manufacturer’s instructions |
| Compliance with current building regulations |
| Provision of system controls |
| System flushing, cleaning and protection |
| Heat generating appliance checks |
| Temperature checks – heating |
| Temperature checks – domestic hot water |
| Demonstration of the operation of the system/appliance/controls to the customer/user |
| Provision of system/appliance/control literature to the customer/user |
| System balancing |

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| **6.2 Identify the options relating to the use of industry approved commissioning**  **checklists:** |
| Gas-Fired and Oil-Fired systems |

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| **7. Know the requirements of the minimum standards for the control of gas-fired and oil-fired wet central heating systems** |
| **7.1 Confirm the meaning of the term ‘boiler interlock’** |
| **7.2 Identify the control and wiring arrangements required to provide a ‘boiler interlock’** |
| **7.3 Confirm the requirements for the provision of a boiler interlock in relation to -**  |
| New and replacement systems |
| **7.4 Confirm the requirements relating to space heating zone control for:** |
| New systems in dwellings with a total useable floor area up to 150m² |
| Replacement systems (including boiler replacements to existing systems) in dwelling with a total useable floor area up to 150m² |
| New systems in dwellings with a total useable floor area greater than 150m² |
| Replacement systems (including boiler replacements to existing systems) in dwellings with a total useable floor area greater than 150m² |
| **7.5 Confirm the requirements relating to hot water zone control for:** |
| Systems with stored domestic hot water |

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| **7.6 Confirm the requirements relating to time and temperature control for:** |
| New and replacement heating and hot water systems (including boiler replacements to existing systems) in dwellings with a total useable floor area up to 150m² |
| New and replacement heating and hot water systems (including boiler replacements to existing systems) in dwellings with a total useable floor area greater than 150m² |

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| **8. Know the minimum standards for insulation of pipework for gas-fired and oil-fired wet central heating and hot water storage systems** |
| **8.1 Confirm the requirements for the insulation of:** |
| Primary circulation pipework for heating and domestic hot water circuits |
| Pipework connected to hot water storage vessels |
| Domestic hot water secondary circulation pipework |

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| **9. Know the principles for heating system design to ensure low carbon and energy efficient operation** |
| **9.1 Confirm an understanding of:** |
| utilising relevant controls, zones and heating circuits |
| room-by-room heat loss calculations |
| different building elements and structures |
| U values |
| ventilation heat loss |
| fabric heat loss |
| air change rate |
| intermittent heating |
| hot water cylinder requirements |
| heat source sizing |
| radiator sizing |
| pipe sizing |

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| **10. Know how to correctly determine the size of a domestic hot water storage system** |
| **10.1 Calculate the size of the DHW storage system to meet the needs of both the consumer and the property** |

**Assessment**

Candidates will be required to successfully complete a multi-choice examination that takes approximately 1 hour to complete.

* The pass rate for the examination is 100%
* If the candidate does not achieve 100% on the first attempt, they will be allowed a second attempt at the questions that they got wrong on the first attempt, using an alternative question paper
* If the candidate does not achieve 100% on the second attempt, providing they have achieved over 80%, they will be orally questioned by the assessor to establish their competence
* Candidates not achieving 80% after the second attempt or 100% after oral questioning will be deemed to be unsuccessful
* Unsuccessful candidates will be required to retake the assessment in its entirety

**Assessors**

Assessors shall be approved by Cert-ain Certification Ltd. They must be occupationally competent and hold a current Energy Efficiency qualification.

Assessors must also hold **one** of the following assessor qualifications:

* D32
* A1
* Level 3 certificate ‘assessing vocationally related achievement’ or suitable equivalent

**Internal verifiers**

Internal verifiers shall be approved by Cert-ain Certification Ltd. They must be occupationally competent and hold or be working towards **one** of the following internal verifier qualifications:

* D34
* V1
* Level 4 award ‘internal quality assurance of assessment processes and practice’ or suitable equivalent

**Centre approval**

All centres delivering the Energy Efficiency qualification are subject to approval and monitoring to ensure that they have the appropriate personnel and facilities in place to deliver a fair and impartial training and assessment process.

The Cert-ain Certification Ltd. external verifier shall carry out quality assurance of the training, assessment and internal verification process. This includes sampling of:

* training and assessment facilities,
* candidate records, and
* assessment decisions

**External Verifiers**

External verifiers shall hold or be working towards **one** of the following qualifications:

* D35
* V2
* Level 4 certificate ‘external quality assurance of assessment processes and practices’ or suitable equivalent

**Contact details**

If you would like any further information relating to the Cert-ain Certification Ltd. qualifications, please contact:

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