
REGULATED QUALIFICATION FRAMEWORK (RQF)

QUALIFICATION SPECIFICATION

LCL Awards Level 3 Award in the Energy Efficiency for Gas Fired and Oil-Fired Domestic Heating and Hot Water Systems

1.0 Qualification Objectives.

The objectives of the qualification are to:

1. Prepare learners to progress to a qualification in the same subject area but at a higher level or requiring more specific knowledge, skills and understanding.
2. Support a role in the workplace.

2.0 Prior qualifications, knowledge, skill or understanding which learners are required to have achieved before taking the qualification.

None.

3.0 Other requirements which a learner must have satisfied before the learner will be assessed or before the qualification will be awarded.

None.

4.0 Qualification Framework.

The qualification comprises of 1 mandatory Unit which must be satisfactorily completed by learners.

Unit Title	Unit Reference Number	Type of Unit	Level	Credit Value
Energy efficiency for gas fired and oil-fired domestic /504/4092	LCL-P3001	Knowledge	3	1

4.1 Qualification Time.

- Total Qualification Time (TQT) is 10 hours
- The Guided Learning Hours (GLH) are 9
- The total credit value of the qualification is: see table above

4.2 Qualification level.

The qualification has been assigned at level 3.

4.3 Grading Structure.

The grading structure for the Qualification is that learners are required to achieve a result of **Pass** to be awarded credit for the Unit.

This qualification will be achieved when learners have successfully completed:

- The LCL Awards set and marked multiple choice knowledge e-examination.

4.4 Assessment Method.

The assessment method within the qualification include an on-screen multiple choice knowledge examination.

The assessment method has been designed to assess the knowledge and understanding of learners.

The on-screen multiple choice examination is set and marked by LCL Awards.

5.0 The criteria against which learners' level of attainment will be measured.

The Learning Outcomes and Assessment Criteria against which learners' level of attainment will be measured are detailed in the examination and assessment specification for each unit below.

LCL-P3001: Energy efficiency for gas fired and oil-fired domestic heating and hot water systems.

Learning Outcome 01: The learner will 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

The learner will demonstrate knowledge of:

- 1.1 Which regulations apply in:
 - England
 - Wales
 - Scotland
 - Northern Ireland
- 1.2 The industry recommended sources of guidance for:
 - Minimum regulatory compliance
 - Best practice

Learning Outcome 02: The learner will know the requirement of minimum boiler efficiency standards for gas-fired and oil-fired heating appliances connected to 'wet' heating circuits

The learner will demonstrate knowledge of:

- 2.1 The requirements for gas-fired heating appliances connected to 'wet' heating circuits in relation to:
 - New systems – new dwellings
 - New systems – existing dwellings
 - 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 The requirements for oil-fired heating appliances connected to 'wet' heating circuits in existing dwellings in relation to:
- Part new systems and replacement components – combination boilers and conventional boilers
 - Part new systems and replacement components – 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

Learning Outcome 03: The learner will know the requirement relating to space heating primary circuits type and design for gas-fired and oil-fired 'wet' heating systems.

The learner will demonstrate knowledge of:

- 3.1 The requirements in relation to:
- New systems
 - Full replacement systems
 - Boiler replacements to systems with existing semi-gravity circulation
 - Provision of a bypass valve
 - The maximum flow design temperature requirements for new heating systems

Learning Outcome 04: The learner will know the requirements relating to hot water system type and design for gas-fired and oil-fired systems.

The learner will demonstrate knowledge of:

- 4.1 The relevant compliance standards for hot water storage vessels and heat exchangers:
- Vented copper hot water storage cylinders
 - Vented hot water storage cylinders made from stainless steel
 - Copper hot water storage combination units
 - Primary storage vessels (thermal stores)
 - Unvented hot water storage cylinders
 - Heat exchangers
- 4.2 The requirements relating to labelling of hot water cylinders and vessels.
- 4.3 The requirements for the installation of wastewater heat recovery (WWHR) for showers.

Learning Outcome 05: The learner will know the requirements relating to the preparation and water treatment of hot water systems and wet central heating systems.

The learner will demonstrate knowledge of:

- 5.1 The requirements relating to the:
- Cleaning and flushing of wet central heating systems – new systems
 - Cleaning and flushing of wet central heating systems – boiler replacements to existing systems
 - Use of chemical water treatment inhibitors or other appropriate means of controlling corrosion and the formation of scale and sludge within 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

Learning Outcome 06: The learner will know the requirements relating to the commissioning of hot water systems and wet central heating systems.

The learner will demonstrate knowledge of:

- 6.1 The requirements of the commissioning process and commissioning checks in relation to:
 - Compliance with manufacturers' instructions
 - Compliance with building regulations
 - Provision of system controls
 - System flushing, cleaning and protection
 - Heat generating appliance checks
 - Temperature checks – heating
 - Temperature checks – domestic hot water
 - Provision of condensate drainage
 - Demonstration of the operation of the system/appliance/controls to the customer/user
 - Provision of system/appliance/control literature to the customer/user
- 6.2 The options relating to the use of industry approved commissioning checklists:
 - Gas fired systems
 - Oil fired systems

Learning Outcome 07: The learner will know the requirements of the minimum standards for the control of gas-fired and oil-fired wet central heating systems.

The learner will demonstrate knowledge of:

- 7.1 The meaning of the term 'boiler interlock'.
- 7.2 The control and wiring arrangements required to provide a 'boiler interlock'.
- 7.3 The requirements for the provision of a boiler interlock in relation to:
 - New systems
 - Replacement systems (including boiler replacements to existing systems)
- 7.4 The requirements relating to space heating zone control for:
 - New systems in dwellings with a total usable floor area up to 150m².
 - Replacement systems (including boiler replacements to existing systems) in dwellings with a total usable floor area up to 150m²
 - New systems in dwellings with a total usable floor area greater than 150m²
 - Replacement systems (including boiler replacements to existing systems) in dwellings with a total usable floor area greater than 150m²
 - Single-storey open-plan dwellings in which the living area is greater than 70% of the total floor area
- 7.5 The requirements relating to hot water zone control for:
 - Systems with stored domestic hot water
 - Systems where domestic hot water is produced instantaneously
- 7.6 The requirements relating to time control for:
 - New and replacement heating and hot water systems (including boiler replacements to existing systems) in dwellings with a total usable floor area up to 150m²
 - New and replacement heating and hot water systems (including boiler replacements to existing systems) in dwellings with a total usable floor area greater than 150m²

- New and replacement heating and hot water systems (including boiler replacements to existing systems) where hot water is produced instantaneously
 - Replacement systems where only the hot water cylinder is being replaced and a separate control for the hot water circuit is not present
- 7.7 The requirements relating to temperature control for:
- New and replacement space heating systems (including boiler replacements to existing systems) in dwellings with a total usable floor area up to 150m² and in dwellings with a total usable floor area greater than 150m²
- 7.8 The requirements relating to temperature control for:
- New and replacement domestic hot water systems (including boiler replacements to existing systems) in dwellings with a total usable floor area up to 150m²
 - New and replacement domestic hot water systems (including boiler replacements to existing systems) in dwellings with a total usable floor area greater than 150m²
- 7.9 The requirements for a single time controller in an existing system to control both hot water and space heating.
- 7.10 The permitted use of non-electrical (thermo-mechanical) hot water controllers.

Learning Outcome 08: The learner will know the requirements of the minimum standards for the insulation requirements of pipework for gas-fired and oil-fired wet central heating and hot water storage systems.

The learner will demonstrate knowledge of:

- 8.1 The minimum insulation thickness with a thermal conductivity of 0.0025W/(m-K) or better for the pipe sizes in the range of 15mm to 54mm
- 8.2 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

Learning Outcome 09: The learner will know the requirements relating to stand-alone, glandless heating system circulators.

The learner will demonstrate knowledge of:

- 9.1 The requirements for circulators fitted to new and replacements systems in relation to:
- Energy efficiency labelling
 - Energy efficiency rating

6.0 Other information.

Qualification Regulator numbers:

- Ofqual QAN – 601/3942/0
- Qualifications Wales - C00/0649/8

Sector Skills Area: SSAs: 5.2 Building and Construction.

Age suitability 16 plus.

Last Qualification Review Date: February 2024

Next Qualification Review Date: February 2027