

REGULATED QUALIFICATION FRAMEWORK (RQF)

QUALIFICATION SPECIFICATION

LCL Awards Level 3 Award in the Installation, Commissioning and Maintenance of Wood Pellet Burning Appliances

1. Objective:

The qualification allows learners to continue to learn, develop and practise the skills required for employment within the renewable sector. The objective of this qualification is for learners to demonstrate they are competent in the installation, commissioning and maintenance of wood pellet burning appliances in accordance with legislation, regulations and industry standards to;

- Understand the Requirements to Install, Commission and Maintain Wood Pellet Burning Appliances.
- Install, Commission and Maintain Wood Pellet Burning Appliances.

{The target groups for the qualification are those learners who are;

1. Updating occupational competence, continuous professional development and or obtaining a licence to practice
2. Preparing for further learning or training and/or developing knowledge and or skills in a subject area who are existing workers in the occupation seeking to extend their range of work}

2. Qualification Framework:

The qualification comprises of 2 mandatory Units;

Unit Title	Unit Reference Number	Type of Unit	Level	Credit Rating
Understand the Installation, Commissioning and Maintenance Requirements of Wood Pellet Burning Appliances. H/506/1424	LCL-R3001	Knowledge	3	2
The Installation, Commissioning and Maintenance Requirements of Wood Pellet Burning Appliances. D/506/1424	LCL-R3002	Performance	3	1

Qualification Structure:

- **LCL Awards Level 3 Award in the Installation, Commissioning and Maintenance of Wood Pellet Burning Appliances**
- QAN - **601/2957/8**
- QW - **C00/0626/4**
- The Guided Learning Hours (GLH) are **20 hours**
- The Total Qualification Time (TQT) is **30 hours**
- The total credit required to achieve the qualification is **3**

3. Unit Grading Structure:

The learner is required to successfully achieve a pass in each unit for this qualification to be awarded.

4. Unit specification:

LCL-R3001: The Installation, Commissioning and Maintenance Requirements of Wood Pellet Burning Appliances.
Assessment Method {OP}

Learning Outcome 01: The learner will be able to confirm that the installation of wood pellet burning appliances comply with the manufacturer's instructions and normative standards.

The learner can:

- 1.1 Access information to enable the wood pellet burning appliance to be installed.
- 1.2 Confirm that the installation of a wood pellet burning appliance is compliant with the manufacturers' instructions and normative standards.

Learning Outcome 02: The learner will be able to confirm the suitability of chimneys, and flue systems.

The learner can:

- 1.1 Confirm that each of the following flue system types is installed in accordance with normative standards;
 - Rigid flues - single.
 - Rigid flues - double skin.
 - Flue systems using flexible flue liners.
- 1.2 Confirm that flue outlets (terminals) of open flued appliances terminate in accordance with manufacturers' instructions and normative standards.

Learning Outcome 03: The learner will be able to commission wood pellet burning appliances.

The learner can:

- 2.1 Carry out appliance and fuel supply operational tests.
- 2.2 Carry out appliance combustion analysis tests on a wood pellet burning appliance and adjust controls to obtain optimum combustion performance.

2.3 Carry out checks to ensure the appliance safety and user controls are operating as designed.

2.4 Complete commissioning and records compliance certificates.

Learning Outcome 04: The learner will be able to service and maintain wood pellet burning appliances.

The learner can:

4.1 Access information to enable wood pellet burning appliance to be serviced and maintained.

4.2 Carry out a periodic service of a wood pellet burning appliance in accordance with the appliance manufacturers' instructions.

Learning Outcome 05: The learner will be able to service and maintain wood pellet burning appliances.

The learner can:

5.1 be able to diagnose and rectify faults in wood pellet burning appliances.

5.2 Access information to enable faults to be diagnosed and rectified on wood pellet burning appliance.

5.3 Identify and rectify 1 fault from the following situations;

- Appliance failing to light.
- Failure of the flue system.
- Inadequate or no fuel supply.
- Failure of automatic cleaning system.
- Control system defect.

LCL-R3002: Understand the Installation, Commissioning and Maintenance Requirements of Wood Pellet Burning Appliances.

Assessment Method {MC/SR}

Learning Outcome 01: The learner will know the legislation normative and informative standards that apply to wood pellet burning appliances.

The learner can:

1.1 State the legislation, normative and informative standards that apply to wood pellet burning appliances.

1.2 State the two methods of informing the local building control body that notifiable work on a wood pellet burning appliance has been completed.

Learning Outcome 02: The learner will know the formats of wood used in wood burning appliances.

The learner can:

2.1 State the 4 formats of wood used in wood burning appliances.

2.2 Explain the meaning of the term 'sustainable sources' in relation to the production and supply chain of wood as a fuel.

2.3 State 3 factors to be considered in the selection of wood pellets.

Learning Outcome 03: The learner will know the factors affecting the selection of wood burning appliances.

The learner can:

- 3.1 State 4 factors to be considered when selecting the type of wood burning appliance.
- 3.2 State the minimum wood pellet appliance efficiency requirements as required by normative standards.
- 3.3 Outline the criteria to be considered when planning the installation of a wood pellet burning appliance to meet customers' needs.

Learning Outcome 04: The learner will know the operating principles of wood pellet burning appliances and their components.

The learner can:

- 5.1 State the operating principles of automatic fed wood pellet burning appliances;
 - Pellet Stove
 - Pellet Boiler.
- 5.2 Describe the function of the following components of wood pellet burning appliances to include;
 - Fuel supply system – suction and drive feed systems.
 - Feed tube overheat protection.
 - Heat exchanger cleaning mechanism.
 - Automatic ignition system.
 - Automatic ash removal system.
 - Combustion air fan.
 - Lambda sensor.
 - Burner controller.
 - Appliance user controls.

Learning Outcome 05: The learner will know the siting, construction and safety requirements of wood pellet hoppers and storage areas.

The learner can:

- 5.1 Outline 5 factors to be considered in the siting and construction of a wood pellet hopper or store.
- 5.2 Describe the potential health hazards when entering a bulk wood pellet store.

Learning Outcome 06: The learner will know the combustion process and the principles of safe combustion of wood pellet burning appliances.

The learner can:

- 6.1 Explain the meaning of the terms;
 - Calorific value.
 - Moisture content.
 - Volatile content.
- 6.2 Outline the combustion process of wood pellet burning appliances.
- 6.3 Explain the meaning of incomplete combustion.

6.4 State 3 causes of excessive levels of Carbon Monoxide (CO) being produced by a wood pellet burning appliance.

Learning Outcome 07: The learner will know the ventilation requirements for wood pellet burning appliances.

The learner can:

- 7.1 Calculate the ventilation requirements for open flued wood pellet burning appliances;
 - For single open flued appliances installed in a room or space.
 - For appliances fitted with draught stabilisers.
- 7.2 Describe the factors to be taken into account when determining the ventilation requirements for multiple open flued appliances installed in the same room or space which includes a wood pellet burning appliance and gas or oil fired appliances.
- 7.3 State the types of grilles and vents suitable for providing ventilation to wood pellet burning appliances.
- 7.4 Outline 6 factors to be taken into account when providing ventilation for wood burning appliances.

Learning Outcome 08: The learner will know the operation and standards of chimneys and flue systems used with wood burning appliances.

The learner can:

- 8.1 Outline the working principles of flue systems fitted with;
 - A flue draught stabiliser.
 - A flue fan.
- 8.2 State 4 factors that can affect the performance of a flue system.
- 8.3 Outline the specification criteria for the selection of a chimney/flue system to be connected to a wood pellet burning appliance.
- 8.4 Outline 5 installation requirements of flues used with wood pellet burning appliances.
- 8.5 State the location requirements for the termination of flue systems serving wood pellet burning appliances to include;
 - Open flue terminal positions above roof surfaces.
 - Open flue terminal positions on easily ignited roof surfaces.
- 8.6 State the causes of and solutions to insufficient flue draught and down draught.
- 8.7 State the information to be included on a flue/chimney data plate.

Learning Outcome 09. The learner will know the requirements of hearths fitted below wood pellet burning appliances.

The learner can:

- 6.1 State the requirements for the provision of hearths to wood pellet burning appliances;
 - With base temperature below 100°C
 - With base temperature above 100°C.

Learning Outcome 10. The learner will know how to test the flue/chimney system connected to wood pellet burning appliances.

The learner can:

- 10.1 Outline the testing procedures performed to check the operation of a chimney/flue system;
- 1) Using a smoke test.
 - 2) Where the appliance is sited in the vicinity of an extraction fan(s).
 - 3) Taking flue draught readings and the adjustment of the appliance's air control device.

Learning Outcome 11. The learner will know the installation requirements of wood pellet appliances.

The learner can:

- 11.1 Explain the importance of installing a wood pellet burning appliances in accordance with manufacturers' instructions and normative standards.

Learning Outcome 12. The learner will know the range of equipment used to commission wood pellet burning appliances.

The learner can:

- 11.1 Outline the specification for the equipment used to measure flue draught readings and analyse combustion performance.

Learning Outcome 13. The learner will know the commissioning requirements of wood pellet burning appliances.

The learner can:

- 11.1 State the information needed to commission wood pellet burning appliances.
- 11.2 Outline the checks to be carried out on a wood pellet burning appliance prior to it being commissioned.
- 11.3 Outline the operational checks to be carried out during appliance commissioning.
- 11.4 State the documentation to be completed after commissioning the wood pellet burning appliance.

5 National Occupational Standard:

The Units used in this qualification have a direct relationship with the National Occupational Standards for the areas of work contained within.
MIS 3004 Biomass Standard (MCS)

6 RQF Descriptor Level {3}.

Knowledge descriptor: *(the holder can)*

- *Has factual, procedural and theoretical knowledge and understanding of a subject or field of work to complete tasks and address problems that while well-defined, may be complex and non-routine.*
- *Can interpret and evaluate relevant information and ideas.*
- *Is aware of the nature of the area of study or work.*
- *Is aware of different perspectives or approaches within the area of study or work.*

Skills Descriptor (*the holder can*)

- Identify, select and use appropriate cognitive and practical skills, methods and procedures to address problems that while well defined, may be complex and non-routine.
- Use appropriate investigation to inform actions.
- Review how effective methods and actions have been.

7 Prior qualifications, knowledge, skill or understanding which the learner is required to have before taking this qualification. (Pre-requisites)

The learner pre-requisites for the qualification are based on the LCL Assessment Strategy for the qualification; that is hold N/SVQ Level 2/3 in either Plumbing, Heating and Ventilating, Oil-Fired Technical Services, Gas Installation and Maintenance, approved equivalent, JIB-PMES/CSCS card or Engineering Services SKILL card or have the equivalent working experience.

or;

Hold a gas, oil or solid fuel qualification that will enable registration with a Competent Persons Scheme (CPS) to notify heat producing central heating appliances installed in compliance with Building Regulation Approved Document J.

and hold

A current industry recognised qualification in Water Regulations and Energy Efficiency if not included in the qualifications above.

8 Units which a learner must have completed before the qualification will be awarded and any optional routes.

Learners must complete the 6 mandatory units before the qualification will be awarded.
See Section 4.0 above.

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

none

10 The design and delivery of the examination associated with these units are based on the following documents;

MIS 3004 Biomass Standard (MCS)

11 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 Section 4 of this specification.

12 Planned exemptions

None

13 Specimen assessment materials.

None

14 Specified levels of attainment

Learners must pass all the mandatory units for the qualification to be awarded.

15 Other information

None

SSAs: {4.1 Engineering}/{5.2 Construction}

Review Date 31/12/2023

Assessment and Examination Terminology

AC – *Approved Centre; an examination conducted either at the approved centre or a location approved by the centre, using staff approved by the centre to conduct the examination.*

CBSR – **Closed Book** *Short Response; Short response written questions will be set by the awarding organisation and administered and marked locally at the approved centre by approved markers. Learners will be prohibited from using industry normative or informative documents.*

CE – *Customer Evidence; evidence provided by a customer in the form of a written witness statement confirming a competent performance by the learner. That evidence may also be provided by an employing supervisor or manager of the learner. Witness statements that relate to a technical competence will only be accepted from a person technically competent in that particular activity to provide the statement.*

IK – *Inferred Knowledge; inferred knowledge is assessed as part of a performance assessment by a centre approved assessor. To deem the learner as having sufficient knowledge the learner must satisfactorily pass the performance assessment.*

LE – *Learner Evidence; learner generated evidence is for example documented recordings of readings, calculations or the production of a risk assessment or other procedural document.*

MC – *Multiple Choice; set by the awarding organisation and administered and marked locally or electronically. Learners will be able to answer multi-choice questions using reference to appropriate industry normative or informative sources.*

O/L – *Online; a secure web-based assessment system (XAMS)*

OP – *Observed Performance; the assessment of a learner's performance by an approved assessor either in the learner's work place or at the approved centre or a location approved by the centre.*

OQ – *Oral Questions; oral questions may be asked by an assessor as part of a performance assessment or knowledge examination to confirm the understanding of the criteria by the learner.*

PA – *Performance Assessment; a performance assessment conducted either in the learner's work place or at the approved centre or a location approved by the centre.*

RWE – *Realistic Work Environment; an area at the approved centre or a location approved by the centre which replicates and has the features of a Work Place. The learner must not be permitted to be familiar with the simulated environment prior to undertaking assessment.*

WP – *Work Place; is the naturally occurring environment in which the learner works, typically that would be in a customer's premise where work is being paid for by the customer.*