



Qualification Specification for:

OCN NI Level 2 Diploma in Plumbing Skills

➤ Qualification No: 610/2678/5

Qualification Regulation Information

Qualification Title:	OCN NI Level 2 Diploma in Plumbing Skills
Qualification Number:	610/2678/5
Operational start date:	15 May 2023
Operational end date:	30 April 2028
Certification end date:	30 April 2030

Qualification operational start and end dates indicate the lifecycle of a regulated qualification. The operational end date is the last date by which learners can be registered on a qualification. Learners have up to the certificate end date to complete the qualification and claim their certificate.

All OCN NI regulated qualifications are published to the Register of Regulated Qualifications (<http://register.ofqual.gov.uk/>). This site shows the qualifications and awarding organisations regulated by CCEA Regulation and Ofqual.

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Foreword

This document explains OCN NI's requirements for the delivery and assessment of the following regulated qualification:

➤ **OCN NI Level 2 Diploma in Plumbing Skills**

This specification sets out:

- Qualification features
- Centre requirements for delivering and assessing the qualification
- The structure and content of the qualification
- Assessment requirements for the qualification
- OCN NI's quality assurance arrangements for the qualification
- Administration

OCN NI will notify centres in writing of any major changes to this specification. We will also publish changes on our website at www.ocni.org.uk

This specification is provided online, so the version available on our website is the most up to date publication. It is important to note that copies of the specification that have been downloaded and printed may be different from this authoritative online version.

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About Regulation

OCN NI

Open College Network Northern Ireland (OCN NI) is a regulated Awarding Organisation based in Northern Ireland. OCN NI is regulated by CCEA Regulation to develop and award professional and technical (vocational) qualifications from Entry Level up to and including Level 5 across all sector areas. In addition, OCN NI is regulated by Ofqual to award similar qualification types in England.

The Regulated Qualifications Framework: an overview

The Regulated Qualifications Framework (RQF) was introduced on 1st October 2015: the RQF provides a single framework for all regulated qualifications.

Qualification Level

The level indicates the difficulty and complexity of the knowledge and skills associated with any qualification. There are eight levels (Levels 1-8) supported by three 'entry' levels (Entry 1-3).

Qualification Size

Size refers to the estimated total amount of time it could typically take to study and be assessed for a qualification. Size is expressed in terms of Total Qualification Time (TQT), and the part of that time typically spent being taught or supervised, rather than studying alone, is known as Guided Learning Hours (GLH).

Qualification Summary

Sector Subject Area

5.2 Building and construction

National Occupational Standards

This qualification reflects the following National Occupational Standards:

[BSEPH04 Install and test plumbing and heating systems - National Occupational Standards \(ukstandards.org.uk\)](https://www.ukstandards.org.uk/BSEPH04)

[BSEPH05 Service and maintain plumbing and heating systems - National Occupational Standards \(ukstandards.org.uk\)](https://www.ukstandards.org.uk/BSEPH05)

[BSEPH05 Service and maintain plumbing and heating systems - National Occupational Standards \(ukstandards.org.uk\)](https://www.ukstandards.org.uk/BSEPH05)

[BSEPH07 Commission plumbing and heating systems - National Occupational Standards \(ukstandards.org.uk\)](https://www.ukstandards.org.uk/BSEPH07)

Qualification Aim

The aim of the OCN NI Level 2 Diploma in Plumbing Skills is to develop a broad base of plumbing skills and practical plumbing techniques.

Qualification Objectives

The objectives of the OCN NI Level 2 Diploma in Plumbing Skills will enable learners to gain skills and knowledge relating to the following:

- health and safety
- installing sanitaryware
- installing central heating
- installing and maintaining open vented hot water systems
- sustainability in the plumbing industry
- installing and maintaining an above ground drainage system
- practical plumbing techniques

Grading

Grading for this qualification is pass/fail.

Qualification Target Group

The OCN NI Level 2 Diploma in Plumbing Skills is targeted at learners who wish to gain employment within the plumbing or mechanical services sector.

Entry Requirements

Learners must be at least 16 years old.

Progression

The OCN NI Level 2 Diploma in Plumbing Skills will enable learners to progress to higher level qualifications including a Level 3 Apprenticeship, Level 3 Further Education or into employment.

Qualification Support

A Qualification Support pack is available for OCN NI centres within the login area of the OCN NI website (<https://www.ocnni.org.uk/my-account/>), which includes additional support for teachers, eg planning and assessment templates, guides to best practice, etc.

Delivery Languages

This qualification is available in English only at this time. If you wish to offer this qualification in Welsh or Irish (Gaeilge) then please contact OCN NI who will review demand and provide as appropriate.

Centre Requirements for Delivering the Qualification

Centre Recognition and Qualification Approval

New and existing OCN NI recognised centres must apply for and be granted approval to deliver the qualification prior to the commencement of delivery.

Centre Staffing

Centres are required to have the following roles in place as a minimum, although a member of staff may hold more than one role*:

- Centre contact
- Programme Co-ordinator
- Tutor
- Assessor
- Internal Verifier

*Note: A person cannot be an internal verifier for their own assessments.

Tutors

Tutors delivering the qualification should be occupationally competent, qualified to at least one level higher than the qualification, and have a minimum of three years' relevant experience in the plumbing industry.

Assessors

The qualification is assessed within the centre and is subject to OCN NI's quality assurance processes. Units are achieved as outlined within each unit's Assessment Requirements and Assessment Guidance.

Assessors must:

- be occupationally competent, qualified to at least one level higher than the qualification and have a minimum of three years' relevant experience in the plumbing industry.
- have direct or related relevant experience in assessment
- assess all assessment tasks and activities

Internal Verification

OCN NI qualifications must be scrutinised through the centre's internal quality assurance processes as part of the recognised centre agreement with OCN NI. The centre must appoint an experienced and trained centre internal verifier whose responsibility is to act as the internal quality monitor for the verification of the delivery and assessment of the qualifications.

Internal Verifiers must:

- have at least three years' occupational experience in the area they are internally verifying
- attend OCN NI's internal verifier training if not already completed

Internal verifiers are required to:

- support tutors and assessors
- sample assessments according to the centre's sampling strategy
- ensure tasks are appropriate to the level being assessed
- maintain up-to-date records supporting the verification of assessment and learner achievement

Structure and Content

OCN NI Level 2 Diploma in Plumbing Skills

Total Qualification Time (TQT) for this qualification: 570 hours

Minimum Guided Learning Hours (GLH) for this qualification: 470 hours

To achieve the qualification learners must successfully complete all units – 57 credits.

Unit Reference Number	OCN NI Unit Code	Unit Title	TQT	Credit Value	GLH	Level
J/650/7184	CBG199	Health and Safety in the Plumbing Industry	40	4	30	Two
K/650/7185	CBG200	Plumbing Industry Processes, Techniques and Principles	100	10	80	Two
L/650/7186	CBG201	Installing and Maintaining Cold Water Pipework Systems	90	9	75	Two
M/650/7187	CBG202	Planning and Preparing for the Installation of a Central Heating System	70	7	60	Two
R/650/7188	CBG203	Installing Underfloor Heating Systems	70	7	60	Two
T/650/7189	CBG204	Installing and Maintaining an Open Vented Hot Water System	70	7	60	Two
D/650/7190	CBG205	Sustainability in the Plumbing Industry	20	2	15	Two
F/650/7191	CBG206	Installing and Maintaining Sanitary Systems	70	7	60	Two
H/650/7192	CBG207	Practical Plumbing Project	40	4	30	Two

Units

Title	Health and Safety in the Plumbing Industry
Level	Two
Credit Value	4
Guided Learning Hours (GLH)	30
OCN NI Unit Code	CBG199
Unit Reference No	J/650/7184
Learn Direct Code	TH3
<i>Unit purpose and aim(s):</i> This unit will enable the learner to understand relevant health and safety legislation and requirements within the plumbing industry.	
Learning Outcomes	
1. Be aware of health and safety legislation in the plumbing industry.	<p>1.1. Describe health and safety legislation in the plumbing industry including:</p> <ul style="list-style-type: none"> a) employer and employee responsibilities under the Health and Safety at Work (NI) Order 1978 b) roles and responsibilities of the Health and Safety Executive in Northern Ireland c) Control of Substances Hazardous to Health Regulations (COSHH) d) Reporting Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) e) Working at Height Regulations f) Personal Protective Equipment Regulations (PPE) g) documentation in line with building services engineering operational, legal, regulatory and organisational requirements.
2. Be able to identify hazards and controls in a plumbing environment and carry out a risk assessment.	<p>2.1. Identify common hazards and controls relating to working in a plumbing environment including:</p> <ul style="list-style-type: none"> a) work activities b) equipment with moving parts c) electrically powered equipment <p>2.2. Describe what is meant by risk assessments and method statements and the purpose of each.</p> <p>2.3. Carry out a risk assessment for a given situation.</p> <p>2.4. Identify different signs, safety and warning notices used in the plumbing environment.</p> <p>2.5. Describe how changing work practices may increase the risk of hazards and how these may be managed.</p> <p>2.6. Describe how to ensure plumbing equipment is maintained and stored safely.</p> <p>2.7. Outline why it is important to maintain a safe and tidy workplace.</p>

3. Understand the reporting procedures for accidents and emergencies at work.	<p>3.1. Outline using examples, types of plumbing industry accidents that need to be reported under RIDDOR.</p> <p>3.2. Describe the actions to be taken and the records that must be completed by employers following different types of accidents at work.</p>
4. Be able to use access equipment and work safely at heights.	<p>4.1. Identify different types of access equipment when working at heights.</p> <p>4.2. Identify possible risks when working at heights.</p> <p>4.3. Demonstrate safe working practices when using access equipment at heights.</p>
5. Be able to use PPE appropriately within the plumbing industry.	5.1. Demonstrate the appropriate use of PPE for different plumbing jobs including checking for wear and damage and appropriate storage.
6. Be aware of fire risks and associated prevention strategies in the plumbing industry.	<p>6.1. Identify possible causes of fire in the plumbing industry and associated fire prevention strategies.</p> <p>6.2. Illustrate the actions to be taken should a fire break out.</p> <p>6.3. Identify the main types of fire extinguishers and their uses.</p>

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	<p>A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes</p> <p>OR</p> <p>A collection of documents containing work that shows the learner's progression through the course</p>	<p>Learner notes/written work</p> <p>Learner log/diary</p> <p>Peer notes</p> <p>Record of observation</p> <p>Record of discussion</p>
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	<p>Record of observation</p> <p>Learner notes/written work</p> <p>Learner log</p>
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	<p>Record of observation</p> <p>Learner notes/written work</p> <p>Tutor notes/record</p> <p>Learner log/diary</p>
E-assessment	The use of information technology to assess learners' work	<p>Electronic portfolio</p> <p>E-tests</p>

Title	Plumbing Industry Processes, Techniques and Principles
Level	Two
Credit Value	10
Guided Learning Hours (GLH)	80
OCN NI Unit Code	CBG200
Unit Reference No	K/650/7185
Learn Direct Code	TH3
<i>Unit purpose and aim(s):</i> This unit will enable the learner to understand and demonstrate key processes, techniques and principles used within the plumbing industry.	
Learning Outcomes	Assessment Criteria
1. Be able to identify and use plumbing hand and power tools safely.	<p>1.1. Describe how to safely use and maintain the following hand and power tools:</p> <ul style="list-style-type: none"> a) screwdrivers b) hammers c) chisels d) grips e) wrenches f) spanners g) spirit levels h) manual pipe threaders i) pipe cutters j) hand saws k) pliers l) bending tools m) power drills n) drill bits o) circular saws p) jigsaws q) portable pipe threading machines r) hydraulic machine benders s) portable pipe freezing kit <p>1.2. Use the following hand and power tools to carry out work on plumbing and heating systems:</p> <ul style="list-style-type: none"> a) screwdrivers b) hammers c) chisels d) grips e) wrenches f) spanners g) spirit levels h) manual pipe threaders i) pipe cutters j) hand saws k) pliers l) bending tools m) power drills n) drill bits o) portable pipe threading machines p) hydraulic machine benders q) portable pipe freezing kit

<p>2. Know the types of domestic plumbing and heating pipework and their jointing principles.</p>	<p>2.1. Identify and describe the following:</p> <ul style="list-style-type: none"> a) pipework materials and sizes used in domestic plumbing and heating work b) common methods of jointing new hot and cold-water pipes c) general fitting types used in dwellings d) methods of jointing pipework used in dwellings e) methods of bending pipework used in dwellings
<p>3. Know common fixings for domestic plumbing and heating pipework and components.</p>	<p>3.1. Illustrate the process for measuring and marking out for fixings to pipework and plumbing and heating components.</p> <p>3.2. Describe common plumbing fixing devices.</p> <p>3.3. Describe different clip and bracket types for domestic plumbing and heating work.</p>
<p>4. Understand the installation techniques and requirements of domestic plumbing and heating pipework.</p>	<p>4.1. Describe the methods of installing domestic plumbing and heating pipework.</p> <p>4.2. Describe how to select pipework materials and fittings from plans and drawings.</p>
<p>5. Understand the standard units of measurement used in the mechanical services industry.</p>	<p>5.1. Describe with examples the internationally recognised (SI) standard units of measurement used in the mechanical services industry.</p>
<p>6. Understand the properties and principal applications of gasses used in the mechanical services industry.</p>	<p>6.1. Describe the properties and principal applications of gasses used in the mechanical services industry.</p>
<p>7. Understand the relationship between energy, heat and power in the mechanical services industry.</p>	<p>7.1. Summarise the relationship between the Celsius and Kelvin temperature scales.</p> <p>7.2. Describe what is meant by the terms latent and sensible heat as they apply to liquids and gases.</p> <p>7.3. Illustrate the methods of heat transfer.</p> <p>7.4. Illustrate how units of energy and heat are related and derived.</p> <p>7.5. Calculate heat, energy, power and temperature calculations.</p> <p>7.6. Calculate the quantity of power and heat energy required to raise the temperature of a substance.</p>
<p>8. Know the principles of force and pressure and their application in the mechanical services industry.</p>	<p>8.1. Describe how units of force and pressure are derived from SI units.</p> <p>8.2. Describe the application and use of units of measurement of pressure and flow rate.</p> <p>8.3. Calculate force and pressure calculations.</p> <p>8.4. Illustrate the relationship between velocity, pressure and flow rate in systems.</p> <p>8.5. Describe why pipework restricts the flow of liquids and gases.</p>
<p>9. Know the principles of electricity in the mechanical services industry.</p>	<p>9.1. Describe the basic principles of electron flow theory.</p> <p>9.2. Describe the purpose and application of simple units of electrical measurement.</p> <p>9.3. Calculate electrical calculations for different mechanical services.</p> <p>9.4. Describe the requirements for earthing of electrical circuits.</p>

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log

Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Installing and Maintaining Cold Water Pipework Systems
Level	Two
Credit Value	9
Guided Learning Hours (GLH)	75
OCN NI Unit Code	CBG201
Unit Reference No	L/650/7186
Learn Direct Code	TH3
<i>Unit purpose and aim(s):</i> This unit will enable the learner to demonstrate the skills involved in the installation and commissioning of a cold water system.	
Learning Outcomes	Assessment Criteria
1. Know different types of cold water supply route to dwellings.	<p>1.1. Describe the two main types of cold water supply to dwellings.</p> <p>1.2. Describe the mains water treatment process and typical mains water distribution systems from treatment works to dwellings.</p>
2. Know the types of cold water systems and their layout requirements.	<p>2.1. Illustrate cold water system pipework features between the water undertaker's main and the main internal stop valve into dwellings.</p> <p>2.2. Identify the type of cold water systems from different layout diagrams.</p> <p>2.3. Identify the factors which influence the selection of cold-water systems for dwellings.</p> <p>2.4. Describe typical pipe sizes used in cold water systems in dwellings.</p> <p>2.5. Describe factors that can lead to backflow from cold water outlets and equipment in dwellings.</p> <p>2.6. Identify standard backflow prevention devices that are used in cold water systems in dwellings and their appliances.</p> <p>2.7. Describe the working principles of cold-water system components.</p> <p>2.8. Identify the system layout features for cold water storage cisterns (CWSC).</p>
3. Understand site preparation requirements for cold water systems and components.	<p>3.1. Describe the sources of information which may be used when preparing to undertake work on cold water systems.</p> <p>3.2. Describe the necessary building fabric preparatory work required to be undertaken to install, decommission or maintain cold water systems and components.</p> <p>3.3. Describe the protection measures required to the building fabric or customer property, during and on completion of work on cold water systems and components.</p> <p>3.4. Identify the pipework materials and fittings required to complete work on cold water systems.</p> <p>3.5. Identify hand and power tools required to complete work on cold water systems and components.</p> <p>3.6. Describe the necessary safety checks to be carried out before commencing work on cold water systems and components.</p>

<p>4. Be able to install cold water systems and components.</p>	<p>4.1. Describe how to take readings of the incoming water supply pressure and flow rate.</p> <p>4.2. Identify suitable methods of connecting cold water system supply pipework to incoming service pipework.</p> <p>4.3. Assess the positioning requirements of components in cold water systems.</p> <p>4.4. Demonstrate how to measure, mark out and drill plastic storage cisterns to receive pipework connections.</p> <p>4.5. Demonstrate how to make pipework connections to storage cisterns.</p> <p>4.6. Demonstrate the positioning and fixing requirements for cold water system pipework and components.</p> <p>4.7. Install and join cold water pipework components in copper with capillary soldered and compression fittings.</p> <p>4.8. Demonstrate how to position, fix, and connect pipework to appliance outlets.</p> <p>4.9. Identify suitable methods of making new pipework connections into existing cold water system pipework.</p> <p>4.10. Assess the insulation requirements of cold water system components.</p> <p>4.11. Ensure that cold water systems or components cannot be brought into operation by the end user before the work has been fully completed.</p>
<p>5. Be able to carry out inspection and soundness testing on cold water systems and components.</p>	<p>5.1. Demonstrate the checks to be carried out during a visual inspection of a cold water system to confirm that it is ready to be filled with water.</p> <p>5.2. Fill cold water pipework with water at normal operating pressure and check for leakage.</p> <p>5.3. Carry out a soundness test to industry requirements on cold water systems pipework and components.</p> <p>5.4. Flush the system with wholesome water on completion of soundness testing.</p>
<p>6. Be able to service and maintain cold water systems and components.</p>	<p>6.1. Demonstrate how to use manufacturer instructions and job maintenance schedules for routine checks and periodic servicing requirements of cold water system components.</p> <p>6.2. Carry out repairs to defects in cold water system components.</p> <p>6.3. Complete the required details contained in a simple maintenance record for a cold water system.</p>
<p>7. Be able to carry out the decommissioning requirements of cold water systems and components.</p>	<p>7.1. Describe the information to be provided to others before decommissioning work takes place.</p> <p>7.2. Describe how to temporarily decommission cold water system components and connecting pipework systems.</p> <p>7.3. Outline the methods used during the decommissioning process to prevent the</p>

	<p>end-user from operating cold water system components.</p> <p>7.4. Carry out temporary decommissioning of cold water system components and connecting pipework systems ensuring the end-user is informed appropriately.</p> <p>7.5. Ensure that the decommissioning procedures carried out in AC 7.4 prevent the end-user from operating cold water system components.</p>
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Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	<p>A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes</p> <p>OR</p> <p>A collection of documents containing work that shows the learner's progression through the course</p>	<p>Learner notes/written work</p> <p>Learner log/diary</p> <p>Peer notes</p> <p>Record of observation</p> <p>Record of discussion</p>
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	<p>Record of observation</p> <p>Learner notes/written work</p> <p>Learner log</p>
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	<p>Record of observation</p> <p>Learner notes/written work</p> <p>Tutor notes/record</p> <p>Learner log/diary</p>
E-assessment	The use of information technology to assess learners' work	<p>Electronic portfolio</p> <p>E-tests</p>

Title	Planning and Preparing for the Installation of a Central Heating System
Level	Two
Credit Value	7
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBG202
Unit Reference No	M/650/7187
Learn Direct Code	TH3
<i>Unit purpose and aim(s):</i> This unit will enable the learner to understand the fundamentals of planning and preparing for the installation of a central heating system.	
Learning Outcomes	Assessment Criteria
1. Understand central heating systems in dwellings.	1.1. Describe the purpose of central heating systems used in dwellings. 1.2. Describe different types of space heating systems used in dwellings.
2. Understand the principles of different types of central heating and their system layout requirements.	2.1. Describe the working principles of central heating systems. 2.2. Identify the type of central heating systems from different layout diagrams. 2.3. Assess the system layout features for filling and venting systems. 2.4. Describe the general operating principles of the following: a) solid fuel heat producing appliances b) oil-fired heat producing appliances c) gas-fired heat producing appliances d) heat emitters e) central heating control components f) devices used in central heating systems to minimise the build-up of sediment
3. Know the installation requirements of central heating systems and components.	3.1. Describe the procedures required to assemble valves to radiators and mount radiators on wall surfaces. 3.2. Describe the positioning and fixing requirements of central heating pipework and components. 3.3. Describe how expansion and contraction may be catered for in central heating pipework containing. 3.4. Identify clips and brackets appropriate to different central heating system pipework and industry recommended spacings. 3.5. Identify different joints for use in central heating system pipework. 3.6. Identify the positioning and fixing requirements of components in central heating systems. 3.7. Describe suitable methods for making new central heating pipework connections to components and into existing central heating circuits. 3.8. Identify how to position, fix and connect new central heating pipework to components. 3.9. Assess the insulation requirements of central heating system components.
4. Understand site preparation requirements for central heating systems and components.	4.1. Describe the sources of information which may be used when undertaking work on central heating systems.

	<p>4.2. Describe the necessary building fabric preparation work required to install, decommission or maintain central heating systems.</p> <p>4.3. Describe the protection measures required to the building fabric or customer property, during and on completion of work on central heating systems and components.</p>
<p>5. Be able to carry out site preparation requirements for central heating systems and components.</p>	<p>5.1. Demonstrate the safety checks to be carried out to ensure the location is safe for work to proceed.</p> <p>5.2. Identify personal protective equipment to be used when installing, decommissioning or maintaining central heating systems and components.</p> <p>5.3. Carry out the appropriate protection measures to the building fabric or customer property, during and on completion of work on central heating systems and components.</p> <p>5.4. Select the pipework materials and fittings required to complete work on central heating systems ensuring that they are not damaged.</p> <p>5.5. Select the appropriate hand and power tools required to complete work on central heating systems.</p> <p>5.6. Carry out preparatory work to install central heating systems.</p>
<p>6. Be able to install central heating systems and components to include panel radiators and pipework.</p>	<p>6.1. Demonstrate the correct assembly of heat emitter components.</p> <p>6.2. Demonstrate how to make pipework fixings for at least two of the following:</p> <ul style="list-style-type: none"> a) copper b) low carbon steel c) plastic d) crimped central heating system pipework <p>6.3. Demonstrate the positioning, fixing and connecting of new central heating pipework to component heat emitters.</p> <p>6.4. Apply insulation to central heating system pipework.</p> <p>6.5. Outline the methods used during the decommissioning process to prevent the end-user from operating central heating systems before work has been fully completed.</p> <p>6.6. Carry out a soundness test to industry requirements on central heating systems pipework and components.</p>

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Installing Underfloor Heating Systems
Level	Two
Credit Value	7
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBG203
Unit Reference No	R/650/7188
Learn Direct Code	TH3
<i>Unit purpose and aim(s):</i> This unit will enable the learner to install an underfloor heating system to include low temperature heat source.	
Learning Outcomes	Assessment Criteria
1. Be able to install central heating systems and components including an underfloor heating installation.	1.1. Demonstrate the correct assembly of underfloor manifold components. 1.2. Demonstrate how to make pipework fixings to underfloor heating manifold and low temperature heat source. 1.3. Demonstrate the positioning, fixing, and connecting of new central heating pipework to flooring grid and manifold. 1.4. Apply insulation to central heating system pipework. 1.5. Demonstrate how central heating components and pipework systems cannot be brought into operation by the end user before the work has been fully completed.
2. Be able to apply the service and maintenance requirements of central heating systems and components, to include an underfloor heating installation.	2.1. Demonstrate how to use manufacturer instructions and job maintenance schedules for routine checks and periodic servicing requirements of central heating systems components. 2.2. Identify operation adjustment system filling and venting components. 2.3. Carry out the procedures for dealing with defects and undertaking repairs in central heating components and pipework. 2.4. Complete the required details contained on a maintenance record for central heating systems.
3. Understand the decommissioning requirements of central heating systems and components.	3.1. Describe the information to be provided to others before decommissioning work takes place including working methods that may reduce the periods of decommissioning. 3.2. Describe how to temporarily decommission central heating and connecting pipework systems. 3.3. Describe the work sequences for permanently decommissioning central heating and pipework systems. 3.4. Outline the procedures for safely draining and disposing of central heating system contents. 3.5. Outline the methods used during the decommissioning process to prevent the end-user from operating the heating system.
4. Be able to decommission central heating systems and components.	4.1. Demonstrate how to advise appropriate persons before central heating components or pipework are isolated to undertake work. 4.2. Carry out temporary decommissioning of central heating system components and connecting pipework systems.

	4.3. Ensure that the decommissioning procedures carried out in AC 4.2 prevent the end-user from operating the heating system.	
5. Demonstrate how to inspect and soundness test central heating systems and components.	<p>5.1. Follow a visual inspection of a central heating system to confirm that it is ready to be filled with water.</p> <p>5.2. Demonstrate how to fill central heating systems with water at normal operating pressure and check for leakage.</p> <p>5.3. Apply a soundness test to industry requirements on central heating systems pipework and components.</p>	
Assessment Guidance		
The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.		
Assessment Method	Definition	Possible Content
Portfolio of evidence	<p>A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes</p> <p>OR</p> <p>A collection of documents containing work that shows the learner's progression through the course</p>	<p>Learner notes/written work</p> <p>Learner log/diary</p> <p>Peer notes</p> <p>Record of observation</p> <p>Record of discussion</p>
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	<p>Record of observation</p> <p>Learner notes/written work</p> <p>Learner log</p>
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	<p>Record of observation</p> <p>Learner notes/written work</p> <p>Tutor notes/record</p> <p>Learner log/diary</p>
E-assessment	The use of information technology to assess learners' work	<p>Electronic portfolio</p> <p>E-tests</p>

Title	Installing and Maintaining an Open Vented Hot Water System
Level	Two
Credit Value	7
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBG204
Unit Reference No	T/650/7189
Learn Direct Code	TH3
<i>Unit purpose and aim(s):</i> This unit will enable the learner to understand the fundamentals of hot water systems and processes involved with testing and commissioning.	
Learning Outcomes	Assessment Criteria
1. Understand different hot water systems and their layout requirements.	1.1. Describe factors to be considered when selecting a hot water system for use in a building. 1.2. Describe the layout requirements of hot water system components.
2. Understand centralised hot water storage systems.	2.1. Identify different pipe sizes used in centralised open vented hot water systems in dwellings and how they are installed. 2.2. Describe the system layout features for the open vent and cold feed pipes of primary and secondary open vented hot water circuits. 2.3. Describe the connection requirements for feed and expansion cisterns into open vented primary hot water circuits. 2.4. Describe the system layout features for plastic feed and expansion cisterns. 2.5. Identify different types and typical sizes of open vented storage cylinders used in hot water systems in dwellings.
3. Understand instantaneous, centralised and localised hot water storage systems.	3.1. Describe the system layout features for hot water heaters for centralised and localised systems. 3.2. Identify typical pipe sizes used with mains fed instantaneous hot water heaters and open vented point of use water heaters in dwellings. 3.3. Describe the need for temperature control of hot water systems. 3.4. Illustrate the system layout features for the installation of hot water components.
4. Understand different types of shower installations and booster pumps that support them.	4.1. Identify different shower valves used in a domestic installation. 4.2. Identify the process for installing and testing the system layout features of thermostatic and boosted shower units.
5. Be aware of different methods and the importance of adequate prevention of backflow and back siphonage.	5.1. Assess factors that may lead to backflow from hot water outlets and equipment in dwellings. 5.2. Identify standard backflow and back siphonage prevention devices that are used in hot water systems in dwellings supplying water to appliances. 5.3. Describe different backflow prevention devices and air gaps.
6. Be able to carry out different methods of testing and commissioning of a hot water system.	6.1. Carry out a visual inspection of a hot water system to confirm that it is ready to be filled with water.

	<p>6.2. Fill hot water pipework with water at normal operating pressure and check for leakage.</p> <p>6.3. Carry out a soundness test to industry requirements on hot water systems pipework and components.</p> <p>6.4. Flush hot water systems and components.</p> <p>6.5. Describe the actions that must be taken when inspection and testing reveal defects in hot water systems.</p> <p>6.6. Complete a commissioning certificate to industry standard.</p>
<p>7. Be able to identify and rectify common faults which occur in hot water system components and pipework.</p>	<p>7.1. Describe the procedures for dealing with defects in hot water components and pipework.</p> <p>7.2. Identify common faults and carry out repairs to defects in hot water system components.</p>
<p>8. Be able to carry out decommissioning and maintenance of hot water systems.</p>	<p>8.1. Describe the working methods that reduce the time periods during which hot water systems need to be isolated.</p> <p>8.2. Describe the information that needs to be provided to others before decommissioning work takes place.</p> <p>8.3. Describe how to temporarily decommission hot water system components and connecting pipework systems.</p> <p>8.4. Illustrate the work sequences for permanently decommissioning hot water components and pipework systems.</p> <p>8.5. Outline the methods used during the decommissioning process to prevent the end-user from operating hot water system components.</p> <p>8.6. Describe how to advise appropriate persons before hot water components or pipework are isolated to undertake work.</p> <p>8.7. Carry out temporary decommissioning of hot water system components and connecting pipework systems.</p> <p>8.8. Assess that the decommissioning procedures carried out prevent the end-user from operating the hot water system components.</p> <p>8.9. Use manufacturer instructions and job maintenance schedules to establish the periodic servicing requirements of system components.</p> <p>8.10. Carry out routine checks on hot water components and pipework as part of a periodic maintenance programme.</p> <p>8.11. Describe the procedures for dealing with defects in hot water components and pipework.</p> <p>8.12. Outline the types of information to be provided on a maintenance record for hot water systems.</p>

Assessment Guidance

The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.

Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Sustainability in the Plumbing Industry	
Level	Two	
Credit Value	2	
Guided Learning Hours (GLH)	15	
OCN NI Unit Code	CBG205	
Unit Reference No	D/650/7190	
Learn Direct Code	TH3	
<i>Unit purpose and aim(s):</i> This unit will enable the learner to gain an understanding of the importance of sustainability in the plumbing industry.		
Learning Outcomes	Assessment Criteria	
1. Know the legislation and standards associated with sustainability within the plumbing industry.	1.1. Describe key sustainability legislation and standards within the plumbing industry identifying who is responsible for energy conservation and the methods used to reduce waste.	
2. Be aware of the importance of the operating principles for different sustainable heat sources within the plumbing industry.	2.1. Describe the importance of the operating principles for different heat sources within the plumbing industry including handover procedures to the end user.	
3. Understand how low carbon green technologies is used to reduce energy consumption within the plumbing industry.	3.1. Compare at least three different types of green technologies used in modern properties and how they may be used to reduce energy consumption within the plumbing industry.	
4. Understand different types of insulation available within the plumbing industry.	4.1. Compare at least three different types of insulation within the plumbing industry including strategies to protect against overheating.	
Assessment Guidance		
The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.		
Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary

E-assessment	The use of information technology to assess learners' work Electronic portfolio E-tests	Electronic portfolio E-tests
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Title	Installing and Maintaining Sanitary Systems
Level	Two
Credit Value	7
Guided Learning Hours (GLH)	60
OCN NI Unit Code	CBG206
Unit Reference No	F/650/7191
Learn Direct Code	TH3
<i>Unit purpose and aim(s):</i> This unit will enable the learner to gain a knowledge of the principles and working practices associated with sanitary installation work at ground level.	
Learning Outcomes	Assessment Criteria
1. Know sanitary appliances and their operating principles within dwellings.	1.1. Describe different types of sanitary appliances and the purpose and operating principles of each.
2. Understand sanitary pipework and their system layout requirements within dwellings.	2.1. Identify different sanitary pipework systems and where they may be used. 2.2. Describe factors that lead to trap seal loss in sanitary pipework systems. 2.3. Describe the system layout features for discharge stacks including wetted and dry portion plumbing. 2.4. Compare system layout features for branch discharge pipework. 2.5. Describe the system layout features for stack ventilation including dry portion of the stack. 2.6. Describe the system layout features for systems and appliances located on the ground floor.
3. Understand site preparation requirements for sanitary appliances and pipework.	3.1. Describe the sources of information which may be used when preparing to undertake work on sanitary appliances and pipework systems including: a) drawings b) job specifications c) manufacturer instructions and specifications 3.2. Describe the necessary building fabric preparation work required to install, decommission or maintain sanitary appliances and pipework systems. 3.3. Describe the protection measures required to the building fabric or customer property, during and on completion of work on sanitary appliances and pipework systems. 3.4. Identify the pipework materials and fittings required to complete work on sanitary appliances and pipework systems. 3.5. Identify hand and power tools required to complete work on at least three different sanitary appliances and pipework systems. 3.6. Describe the necessary safety checks to be carried out before commencing sanitary appliance and pipework installation.
4. Know the assembly requirements for sanitary appliances and pipework.	4.1. Demonstrate how to assemble sanitary appliance fixtures and fittings. 4.2. Demonstrate how to make joints to sanitary pipework systems.

	<p>4.3. Demonstrate the positioning requirements of components in sanitary pipework systems.</p> <p>4.4. Describe how to account for expansion and contraction in plastics pipework.</p> <p>4.5. Identify suitable methods for making new plastic pipework connections.</p> <p>4.6. Identify the suitability of below ground drainage systems to receive foul soil and wastewater.</p> <p>4.7. Describe suitable methods for making new plastic pipework connections into existing soil and waste systems.</p>
<p>5. Be able to prepare and install sanitary appliances.</p>	<p>5.1. Demonstrate the preparatory work required to be undertaken to the building fabric and site prior to the installation of a given sanitary system taking appropriate building protection measures.</p> <p>5.2. Install sanitary appliances completing the following:</p> <ul style="list-style-type: none"> a) identifying and using appropriate tools b) ensuring the workplace is safe and free of hazards c) assembling sanitary fittings to industry standard d) assembling joints to industry standard e) assembling and positioning sanitaryware and fittings to industry standard <p>5.3. Describe the methods for making new plastic pipework connections into existing soil and waste systems including cast iron and plastic.</p>
<p>6. Be able to carry out inspection and air testing on sanitary appliances and pipework.</p>	<p>6.1. Demonstrate the checks to be carried out during a visual inspection of a sanitation system to confirm that it is ready to receive foul water.</p> <p>6.2. Demonstrate how to carry out an air test on a sanitary pipework system to industry standards.</p>
<p>7. Be able to service and maintain sanitary systems and pipework.</p>	<p>7.1. Demonstrate how to use manufacturer instructions and job maintenance schedules to carry out routine checks and periodic servicing of sanitary pipework systems and components.</p> <p>7.2. Carry out repairs to defects in sanitary system components.</p>
<p>8. Be able to carry out the decommissioning requirements of sanitary systems and components.</p>	<p>8.1. Describe the information to be provided to the end-user before decommissioning work takes place.</p> <p>8.2. Describe how to temporarily decommission sanitary system components and connecting pipework systems.</p> <p>8.3. Outline the methods used during the decommissioning process to prevent the end-user from operating sanitary system components.</p> <p>8.4. Carry out temporary decommissioning of sanitary system components and connecting pipework before commencing</p>

		work ensuring end-user is informed appropriately. 8.5. Ensure that the decommissioning procedures carried out in AC 8.4 prevent the end-user from operating sanitary system components.
Assessment Guidance		
The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.		
Assessment Method	Definition	Possible Content
Portfolio of evidence	A collection of documents containing work undertaken to be assessed as evidence to meet required skills outcomes OR A collection of documents containing work that shows the learner's progression through the course	Learner notes/written work Learner log/diary Peer notes Record of observation Record of discussion
Practical demonstration/ PBL assignment	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practice and apply skills and knowledge	Record of observation Learner notes/written work Learner log
Coursework	Research or projects that count towards a learner's final outcome and demonstrate the skills and/or knowledge gained throughout the course	Record of observation Learner notes/written work Tutor notes/record Learner log/diary
E-assessment	The use of information technology to assess learners' work	Electronic portfolio E-tests

Title	Practical Plumbing Project	
Level	Two	
Credit Value	4	
Guided Learning Hours (GLH)	30	
OCN NI Unit Code	CBG207	
Unit Reference No	H/650/7192	
Learn Direct Code	TH3	
<i>Unit purpose and aim(s):</i> This unit will enable the learner to undertake a plumbing project demonstrating appropriate industry skills and knowledge.		
Learning Outcomes	Assessment Criteria	
1. Be able to research, develop and present solutions for a plumbing project.	1.1. Research and develop a minimum of two solutions for a given plumbing project considering: <ul style="list-style-type: none"> a) types of material and costs b) health and safety considerations c) plumbing techniques and skills required 1.2. Present and evaluate the solutions identified in AC 1.1 including costs, timeframe and resources required.	
2. Be able to carry out a plumbing project.	2.1. Carry out the plumbing solution justified in AC 1.2 to include the following: <ul style="list-style-type: none"> a) completion of a risk assessment b) completion of a project plan including timeframes c) appropriate use of tools and equipment required d) personal protective equipment required 	
3. Be able to assess completed plumbing project.	3.1. Assess own plumbing project carried out in AC 2.1 identifying possible areas for improvement and present findings on how the design met requirements.	
Delivery Guidance		
This unit must be delivered last and will simulate or be an 'on the job' activity. Learners will be given an opportunity to research the appropriate materials, tools and layouts which will be submitted through a pre-assessment report.		
Assessment Guidance		
The following assessment method/s may be used to ensure all learning outcomes and assessment criteria are fully covered.		
Assessment Method	Definition	Possible Content
Practical demonstration/observation	A practical demonstration of a skill/situation selected by the tutor or by learners, to enable learners to practise and apply skills and knowledge	Record of observation Learner notes/written work Learner log

Quality Assurance of Centre Performance

External Verification

All OCN NI recognised centres are subject to External Verification. External verification visits and monitoring activities will be conducted annually to confirm continued compliance with the conditions of recognition, review the centre's risk rating for the qualification and to assure OCN NI of the maintenance of the integrity of the qualification.

The External Verifier will review the delivery and assessment of this qualification. This will include the review of a sample of assessment evidence and evidence of the internal verification of assessment and assessment decisions. This will form the basis of the EV report and will inform OCN NI's annual assessment of centre compliance and risk. The External Verifier is appointed by OCN NI.

Standardisation

As a process, standardisation is designed to ensure consistency and promote good practice in understanding and application of standards. Standardisation events:

- make qualified statements about the level of consistency in assessment across centres delivering a qualification
- make statements on the standard of evidence that is required to meet the assessment criteria for units in a qualification
- make recommendations on assessment practice
- produce advice and guidance for the assessment of units
- identify good practice in assessment and internal verification

Centres offering units of an OCN NI qualification must attend and contribute assessment materials and learner evidence for standardisation events if requested.

OCN NI will notify centres of the nature of sample evidence required for standardisation events (this will include assessment materials, learner evidence and relevant assessor and internal verifier documentation). OCN NI will make standardisation summary reports available and correspond directly with centres regarding event outcomes.

Administration

Registration

A centre must register learners within 90 working days of commencement of a qualification.

Certification

Certificates will be issued to centres within 20 working days of receipt of correctly completed results marksheets. It is the responsibility of the centre to ensure that certificates received from OCN NI are held securely and distributed to learners promptly and securely.

Charges

OCN NI publishes all up to date qualification fees in its Fees and Invoicing Policy document. Further information can be found on the centre login area of the OCN NI website.

Equality, Fairness and Inclusion

OCN NI has considered the requirements of equalities legislation in developing the specification for these qualifications. For further information and guidance relating to access to fair assessment and the OCN NI Reasonable Adjustments and Special Considerations policies, centres should refer to the OCN NI website.

Retention of Evidence

OCN NI has published guidance for centres on the retention of evidence. Details are provided in the OCN NI Centre Handbook and can be accessed via the OCN NI website.

OCN NI Level 2 Diploma in Plumbing Skills

Qualification Number: 610/2678/5

Operational start date: 15 May 2023
Operational end date: 30 April 2028
Certification end date: 30 April 2030

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