Level 2 Certificate in Highways Maintenance - Excavation and Reinstatement Operations (Construction)

Qualification Specification

Contents

Introduction

The aim of this qualification is to equip learners with the knowledge and understanding associated with the job role of highways maintenance operative. The qualification is appropriate for apprentices on the Construction Civil Engineering (Highways Maintenance) Apprenticeship Framework.

The awarding organisation for this qualification is ProQual Awarding Body and the regulatory body is the Office of Qualifications and Examinations Regulation (Ofqual). The specification for these qualifications has been approved by the Welsh Government for use by centres in Wales and by the Council for the Curriculum Examinations and Assessment (CCEA) for use by centres in Northern Ireland.

This qualification has been accredited onto the Regulated Qualifications Framework (RQF).

Qualification Profile

Qualification title	**ProQual Level 2 Certificate in Highways Maintenance - Excavation and Reinstatement Operations (Construction)**
Ofqual qualification number	601/7110/8
Level	Level 2
Total qualification time	280
Guided learning hours	237
Assessment	Pass or fail Internally assessed and verified by centre staff External quality assurance by ProQual verifiers
Qualification start date	1/9/15
Qualification end date	

Entry Requirements

There are no formal entry requirements for this qualification.

Centres should carry out an **initial assessment** of candidate skills and knowledge to identify any gaps and help plan the assessment.

Qualification Structure

Candidates must complete all of the Mandatory units.

Mandatory Units			
Unit Reference Number	**Unit Title**	**Unit Level**	**GLH**
D/503/4269	Excavate holes and trenches	2	40
F/503/4281	Install street ironwork	2	40
H/503/4323	Search for underground services	2	20
L/503/4252	Workplace health, safety and welfare	2	40
M/503/4311	Operate a powered tool and equipment	2	20
M/503/4325	Sign, light and guard the work area	2	40
R/503/4253	Conform to productive working practices	2	40
T/503/4326	Reinstate excavation and highways surfaces	2	40

Centre Requirements

Centres must be approved to offer this qualification. If your centre is not approved please complete and submit form **ProQual Additional Qualification Approval Application**.

Staff
Staff delivering this qualification must be appropriately qualified and occupationally competent.

Assessors/Internal Quality Assurance
For each competence-based unit centres must be able to provide at least one assessor and one internal quality assurance verifier who are suitably qualified for the specific occupational area. Assessors and internal quality assurance verifiers for competence-based units or qualifications will normally need to hold appropriate assessor or verifier qualifications, such as:

- Award in Assessing Competence in the Work Environment
- Award in Assessing Vocationally Related Achievement
- Certificate in Assessing Vocational Achievement
- Award in the Internal Quality Assurance of Assessment Processes and Practices
- Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practices

Support for Candidates

Materials produced by centres to support candidates should:

- enable them to track their achievements as they progress through the learning outcomes and assessment criteria;
- provide information on where ProQual's policies and procedures can be viewed;
- provide a means of enabling Internal and External Quality Assurance staff to authenticate evidence

Assessment

Candidates must demonstrate the level of knowledge described in the unit. Assessment is the process of measuring a candidate's knowledge and understanding against the standards set in the qualification.

Assessment guidance is included to assure consistency.

Each candidate is required to produce evidence which demonstrates their achievement of all of the learning outcomes and assessment criteria for each unit.

Evidence can include:
- assignments/projects/reports
- worksheets
- portfolio of evidence
- record of oral and/or written questioning
- candidate test papers

Learning outcomes set out what a candidate is expected to know, understand or be able to do.

Assessment criteria specify the standard a candidate must meet to show the learning outcome has been achieved.

Learning outcomes and assessment criteria for this qualification can be found from page 8.

Internal Quality Assurance

An internal quality assurance verifier confirms that assessment decisions made in centres are made by competent and qualified assessors, that they are the result of sound and fair assessment practice and that they are recorded accurately and appropriately.

Adjustments to Assessment

Adjustments to standard assessment arrangements are made on the individual needs of candidates. ProQual's Reasonable Adjustments Policy and Special Consideration Policy sets out the steps to follow when implementing reasonable adjustments and special considerations and the service that ProQual provides for some of these arrangements.

Centres should contact ProQual for further information or queries about the contents of the policy.

Results Enquiries and Appeals

All enquiries relating to assessment or other decisions should be dealt with by centres, with reference to ProQual's Enquiries and Appeals Procedures.

Certification

Candidates who achieve the requirements for qualifications will be awarded:

- A certificate listing the unit achieved, and
- A certificate giving the full qualification title -

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Claiming certificates

Centres may claim certificates for candidates who have been registered with ProQual and who have successfully achieved the requirements for a qualification. All certificates will be issued to the centre for successful candidates.

Replacement certificates

If a replacement certificate is required a request must be made to ProQual in writing. Replacement certificates are labelled as such and are only provided when the claim has been authenticated. Refer to the Fee Schedule for details of charges for replacement certificates.

Learning Outcomes and Assessment Criteria
Unit D/503/4269
Excavate holes and trenches

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
1	Know the requirements for excavation work	1.1	Interpret drawings and specifications for the work
		1.2	Confirm the composition of the ground to be excavated
		1.3	Identify the materials and resources required including timber, trench sheeting and mechanical support mechanisms
		1.4	Identify the hand and/or powered tools and equipment required
		1.5	Identify the personal, protective equipment (PPE) for the task, in accordance with the specification
		1.6	State procedures for workplace safety and dealing with problems, accidents and emergencies
2	Know how to prepare the work area for excavation work	2.1	Identify hazards, underground and overhead utilities apparatus to avoid during the task
		2.2	Identify the type of surface and sub-surface composition
		2.3	State how to remove any street ironworks and obstructions from the work area
		2.4	State how to measure the area to be excavated
		2.5	State how to mark out the area to be excavated in accordance with the specification
3	Manually excavate holes and trenches	3.1	Operate hand and/or powered tools and equipment
		3.2	Excavate holes and trenches according to specification
		3.3	Avoid damage to service apparatus and sub-structures

Learning Outcome - The learner will:	Assessment Criterion - The learner can:	
	3.4	Position and secure excavation supports
	3.5	Store re-usable extracted materials
	3.6	Assist with providing access and egress arrangements
	3.7	Comply with workplace safety requirements
	3.8	Dispose of waste in accordance with legislative requirements

Unit F/503/4281
Install street ironwork

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
1	Know how to prepare for the installation of ironworks fixtures in the road	1.1	Interpret given information to identify the work area
		1.2	Identify ironwork installation requirements from the given instructions
		1.3	Identify the ironwork fixtures required for the work
		1.4	Identify the materials and resources required including sand, cement, mortar, resin based materials, access covers, gully grates and frames
		1.5	Identify the hand and/or powered tools and equipment required
		1.6	State procedures for workplace safety and dealing with problems, accidents and emergencies
2	Know how to excavate for installation of ironwork fixtures in the road	2.1	Identify personal, protective equipment (PPE) for the task in accordance with the specification
		2.2	Identify the types of hazards to be aware of during the task
		2.3	Identify the area where the street ironwork is to be installed
		2.4	State how to secure the site for work to be carried out
		2.5	State legislative requirements for disposing of waste
3	Excavate and install ironwork fixtures in the road	3.1	Mark out the area to be excavated according to the specification
		3.2	Excavate for fitting ironworks according to the specification
		3.3	Install the selected ironwork fixtures

Learning Outcome - The learner will:	Assessment Criterion - The learner can:	
	3.4	Protect ironwork during curing
	3.5	Operate hand and/or powered tools and equipment
	3.6	Reinstate the surrounding excavation to specification
	3.7	Adhere to statutory requirements, safety notices and warning signs
	3.8	Dispose of waste in accordance with legislative requirements

Unit H/503/4323
Search for underground services

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
1	Know how to interpret information from public utilities plans and drawings	1.1	State procedures for obtaining services drawings for the work area from public service providers
		1.2	Identify the work area from the plans and drawings obtained
		1.3	Give examples of different public utility services from the plans and drawings obtained
		1.4	Identify colour coded drawing standards used by the highways industry and public utilities
		1.5	Give examples of underground service apparatus from the plans and drawings obtained
2	Know how to prepare, set up and restore the site	2.1	State how to select and test locating equipment including electronic instruments
		2.2	Identify personal protective equipment (PPE) for the task in accordance with the specification
		2.3	Give examples of statutory requirements and/or safety notices and warning signs
		2.4	State how to mark off the works area to be tested and proved
		2.5	State legislative requirements for disposing of waste
3	Search for, locate and avoid underground service apparatus	3.1	Use pipe and cable locating equipment to search the appointed location
		3.2	Identify underground service apparatus visually, by electronic location and trial holes
		3.3	Confirm the type of service and structures located

Learning Outcome - The learner will:	Assessment Criterion - The learner can:	
	3.4	Confirm any natural environment encountered
	3.5	Record and inform the relevant person/s of the service locations identified
	3.6	Mark the area searched and the location of services identified before excavation proceeds
	3.7	Operate hand and power tools and equipment as required
	3.8	Comply with current workplace safety and legislative requirements
	3.9	Dispose of waste in accordance with legislative requirements

Unit L/503/4252
Workplace health, safety and welfare

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
1	Understand health, safety and welfare requirements	1.1	State the role of the Health and Safety Executive
		1.2	Give examples of how induction, briefings and application of prior training can avoid risks in the workplace
		1.3	Explain why it is important to take individual responsibility for health, safety and welfare
		1.4	Explain the impact that behaviour can have on own and others' health and safety
		1.5	State the importance of health, safety and control equipment
		1.6	Explain why changing circumstances can create hazards
2	Understand the organisation's approach to health, safety and welfare	2.1	Outline the health, safety and welfare legislation that applies to the work area
		2.2	Outline the organisational policies and procedures for health, safety and welfare
		2.3	List the hazards associated with the work area
		2.4	Outline the organisation's requirements for dealing with accidents and emergencies in the work environment
		2.5	State procedures for evacuation, including safe exit procedures
		2.6	State methods of reporting hazards in the work area
		2.7	State procedures for complying with control measures identified by risk assessments
		2.8	Outline the security arrangements in the work area

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
3	Understand risk control in the workplace	3.1	List the notices and warning signs associated with the work environment
		3.2	List the health and safety control equipment in the work area
		3.3	State when control equipment should be used
		3.4	State the purpose of Personal Protective Equipment (PPE)
		3.5	State work situations where Respiratory Protective Equipment (RPE) is used
		3.6	State work situations where Local Exhaust Ventilation (LEV) is used
		3.7	List the different types of fire extinguisher in the workplace
		3.8	Give examples of situations when different types of fire extinguisher should be used
4	Confirm health and safety requirements in the workplace	4.1	Interpret work instructions to maintain safe systems of work
		4.2	Take part in discussions with others to identify safe systems of work
		4.3	Provide feedback on health, safety and welfare policies
		4.4	Report hazards as they are identified
5	Work in accordance with health and safety requirements	5.1	Store equipment in designated areas
		5.2	Ensure equipment is secured appropriately when stored
		5.3	Dispose of waste in required receptacles, including those for reuse or recycling
		5.4	Use safety control equipment according to instructions, induction and prior training

Learning Outcome - The learner will:	Assessment Criterion - The learner can:	
	5.5	Follow the requirements of safety notices and warning signs, as directed
	5.6	Comply with control measures as identified by risk assessments and safe symbols of work

Unit M/503/4311
Operate a powered tool and equipment

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
1	Know how to conduct pre and post-operational checks of powered tool, equipment and the work area	1.1	Interpret drawings and work specifications for the task
		1.2	Identify the powered tool and equipment for the task
		1.3	Identify components and controls of tool and equipment
		1.4	State how to check tool and equipment are safe for operational use
		1.5	Give examples of power sources that safely sustain the tool and equipment
		1.6	Identify potential hazards, including underground and overhead utilities apparatus, to avoid during the task
		1.7	State legislative requirements for disposing of waste
2	Know the safety requirements for operating powered tool and equipment	2.1	Identify personal protective equipment (PPE) for the task in accordance with the specification
		2.2	State procedures for workplace safety and dealing with problems, accidents and emergencies
		2.3	State workplace safety and legislative requirements for operating powered tool and equipment
3	Operate and monitor powered tool and equipment	3.1	Inspect and confirm tool and equipment are safe for operational use
		3.2	Secure accessories and tool attachments
		3.3	Operate powered tool and equipment in accordance with manufacturer's guidelines and the operator's handbook

Learning Outcome - The learner will:	Assessment Criterion - The learner can:	
	3.4	Monitor the power unit during the specified task
	3.5	Stop, dismantle and secure all tools and equipment
	3.6	Transport and/or store tools and equipment in line with the specification
	3.7	Comply with workplace safety and legislative requirements
	3.8	Dispose of waste in accordance with legislative requirements

Unit M/503/4325
Sign, light and guard the work area

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
1	Know how to prepare and select equipment for signing, lighting and guarding the work area	1.1	Identify signing, lighting and guarding equipment to suit site requirements
		1.2	Identify any defects on the signing, lighting and guarding equipment
		1.3	State procedures for recording and reporting defects on equipment
		1.4	Identify personal protective equipment (PPE) equipment for the task in accordance with the specification
		1.5	State methods for loading and securing the equipment for transport to the work area
2	Know how to prepare, set up and restore the site	2.1	Identify the materials and resources required including signs, lights, guards, traffic lights and control systems
		2.2	Identify the hand and/or powered tools and equipment required
		2.3	State procedures for planning site safety, storage of materials and traffic control
		2.4	State how to set out the basic site layout
		2.5	State codes of practice for removing signs from the work area
3	Prepare for the provision, use and removal of traffic control systems	3.1	Set out stop/go boards, priority signs, stop works signs and temporary portable traffic signals
		3.2	Operate stop/go boards, priority signs, stop works signs and temporary portable traffic signals to control traffic
		3.3	Dismantle and remove all signs and equipment relating to temporary traffic control

Learning Outcome - The learner will:	Assessment Criterion - The learner can:	
	3.4	Operate hand and/or powered tools and equipment as required

Unit R/503/4253
Conform to productive work practices

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
1	Know how to work productively in the workplace	1.1	Explain why it is important to be productive in the workplace
		1.2	State the procedures that must be followed in the workplace
		1.3	List the documentation that must be maintained by the organisation including job cards, worksheets, material/resources lists and timesheets
		1.4	State the importance of maintaining accurate, up to date records
2	Understand low/zero carbon outcomes	2.1	Explain why zero/low carbon production is desirable
		2.2	Describe the contribution that the built environment makes to carbon production
		2.3	Explain how zero/low carbon production can be achieved in the built environment
3	Understand equality and diversity in the workplace	3.1	State the legislation that protects equality and diversity in the workplace
		3.2	Explain why equality and diversity in the workplace is important
4	Know how to communicate with others	4.1	Describe ways of communicating with others that encourages cooperation
		4.2	Outline the methods of communication used in the workplace
		4.3	State the information needs of the customer, line manager, own occupation and allied trades
5	Work productively in the workplace	5.1	Interpret procedures to plan a productive sequence of work
		5.2	Plan a sequence of work which is productive and sets out the use of time and resources

Learning Outcome - The learner will:	Assessment Criterion - The learner can:	
	5.3	Communicate with others in the work environment to ensure that work is carried out productively
	5.4	Maintain records as required in the workplace and by the organisation

Unit T/503/4326
Reinstate excavation and highways surfaces

Learning Outcome - The learner will:		Assessment Criterion - The learner can:	
1	Know the requirements for excavating pavement layers and surfaces within the road	1.1	Interpret given information to identify the area to be excavated
		1.2	Identify the materials and resources required including backfill, sub-base, base and surface, pavement, cold and hot-lay bituminous materials, asphalt, sands, jointing, concrete, blocks, flags and natural soil based materials
		1.3	Identify the hand and/or powered tools and equipment required
		1.4	State how to store excavated materials for re-use
		1.5	Identify personal protective equipment (PPE) equipment for the task, in accordance with the specification
		1.6	State legislative requirements for disposing of waste
2	Know how to prepare for excavating pavement layers and surfaces within the road	2.1	Identify the types of hazards to be aware of during the task
		2.2	State how to mark off the area for excavation to receive backfill and sub-base layers
		2.3	State how to excavate an area of specific depth to receive backfill layers and sub-base layers
		2.4	Identify the type of ground structure for reinstatement
		2.5	State how to protect the work from damage during the task
		2.6	Identify compaction equipment for the task
3		3.1	Lay backfill and sub-base layers to specified depths, to optimum compaction

Learning Outcome - The learner will:	Assessment Criterion - The learner can:	
Reinstate the excavation and pavement structure to specification	3.2	Lay and compact bituminous materials to specified depths for the material type used
	3.3	Protect services apparatus and sub-structures during reinstatement
	3.4	Operate hand and/or powered tools and equipment as required
	3.5	Adhere to statutory requirements and safety notices and warning signs
	3.6	Dispose of surplus materials and waste in accordance with legislative requirements

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