

Level 2 Awards in Excavation Support Systems (6146-21)

September 2017 Version 1.1



Qualification at a glance

Subject area	Excavation support systems
City & Guilds number	6146
Age group approved	18+
Assessment	Practical assignment
Fast track	Not available
Support materials	Centre handbook Assessment pack
Registration and certification	Consult the Walled Garden/Online Catalogue for last dates

Title and level	GLH	TQT	City & Guilds number	Accreditation number
Level 2 Award in Install and Remove Mechanical Support Systems for Excavations	10	10	6146-21	600/6495/X
Level 2 Award in Install and Remove Sheet Piling Support Systems for Excavations	10	10	6146-21	600/6567/9
Level 2 Award in Install and Remove Board and Skeleton Support Systems for Excavations	10	10	6146-21	600/6587/4
Level 2 Award in Install and Remove Support Systems for Medium Excavations	10	10	6146-21	600/6588/6

Version and date	Change detail	Section
1.1 September 2017	Added GLH and TQT details. Deleted QCF	Qualification at a Glance, Structure Appendix



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1 Introduction

This document tells you what you need to do to deliver the qualifications:

Area	Description
Who are the qualifications for?	For candidates involved in working in excavations. This may be across a range of sectors including the utilities sector
What do the qualifications cover?	The qualifications are health and safety critical tasks relating to ground excavation work.
What opportunities for progression are there?	<p>They allow candidates to access CPD opportunities and prove their continuing competence in trench support.</p> <p>They will also allow progression to the following City & Guilds qualifications:</p> <ul style="list-style-type: none">• Level 2 Certificates in Network Construction Operations• Level 2 Diploma in Electrical Power Engineering - Underground Cables• Level 3 Diploma in Electrical Power Engineering - Underground Cables

Structure

Learners must achieve **1 credit** from the mandatory unit in the table below, to achieve the **Level 2 Award in Install and Remove Mechanical Support Systems for Excavations (6146-21)**.

Level 2 Award in Install and Remove Mechanical Support Systems for Excavations			
Unit accreditation number	City & Guilds unit no.	Unit title	Credit value
Mandatory			
D/504/3764	201	Install and remove mechanical support systems for excavations	1

Learners must achieve **1 credit** from the mandatory unit in the table below, to achieve the **Level 2 Award in Install and Remove Sheet Piling Support Systems for Excavations (6146-21)**.

Level 2 Award in Install and Remove Sheet Piling Support Systems for Excavations			
Mandatory			
M/504/3414	202	Install and remove sheet piling support systems for excavations	1

Learners must achieve **1 credit** from the mandatory unit in the table below, to achieve the **Level 2 Award in Install and Remove Board and Skeleton Support Systems for Excavations (6146-21)**.

Level 2 Award in Install and Remove Board and Skeleton Support Systems for Excavations			
Mandatory			
T/504/3415	203	Install and remove board and skeleton support systems for excavations	1

In order to undertake the **Level 2 Award in Install and Remove Support Systems for Medium Excavations (6146-21)** learners must have, as a pre-requisite, completed one of the support units above or have proven occupational competence in one of the systems.

Learners must achieve **1 credit** from the mandatory unit in the table below In order to achieve the qualification

Level 2 Award in Install and Remove Support Systems for Medium Excavations			
Mandatory			
A/504/3416	204	Install and remove support systems for medium excavations	1

Total Qualification Time

Total Qualification Time (TQT) is the total amount of time, in hours, expected to be spent by a Learner to achieve a qualification. It includes both guided learning hours (which are listed separately) and hours spent in preparation, study and assessment.

Title and level	GLH	TQT
Level 2 Award in Install and Remove Mechanical Support Systems for Excavations	10	10
Level 2 Award in Install and Remove Sheet Piling Support Systems for Excavations	10	10
Level 2 Award in Install and Remove Board and Skeleton Support Systems for Excavations	10	10
Level 2 Award in Install and Remove Support Systems for Medium Excavations	10	10



2 Centre requirements

Approval

There is no fast track approval for these qualifications; existing centres who wish to offer these qualifications must use the **standard** Qualification Approval Process.

To offer these qualifications, new centres will need to gain both centre and qualification approval. Please refer to the *Centre Manual - Supporting Customer Excellence* for further information.

Centre staff should familiarise themselves with the structure, content and assessment requirements of the qualifications before designing a course programme.

Resource requirements

Physical resources and site agreements

Centres must have access to a realistic working environment or a simulated area to carry out the practical element of the assignment. This should be approved by City & Guilds.

Centres can use specially designated areas to assess the installation of ground support systems. The systems and equipment must meet industrial standards and be capable of being used under normal working conditions, for example support systems which are in common use in the construction sector.

For Units 201, 202 and 203 assessments should take place at depths greater than 1.5m up to 2.5m.

For Unit 204, Install and remove support systems for medium excavations, assessments should take place at depths of 2.5m to 6m.

Centre staffing

Staff delivering these qualifications must be able to demonstrate that they meet the following occupational expertise requirements. They should:

- be occupationally competent or technically knowledgeable in the area for which they are delivering training and have credible experience of providing training. This knowledge must be to the same level as the training being delivered
- have recent relevant experience in the specific area they will be assessing.

Centre staff may undertake more than one role, eg tutor and assessor or internal quality assurer, but cannot internally quality assure their own assessments.

Assessors and Internal Quality Assurers

Centre staff should hold, or be working towards, the relevant Assessor/ Internal Quality Assurer TAQA qualification for their role in delivering, assessing and quality assuring these qualifications.

Continuing professional development (CPD)

Centres must support their staff to ensure that they have current knowledge of the occupational area, that delivery, mentoring, training, assessment and internal quality assurance is in line with best practice, and that it takes account of any national or legislative developments.

Candidate entry requirements

City & Guilds does not set entry requirements for these qualifications. However, centres must ensure that candidates have the potential and opportunity to gain the qualifications successfully.

Age restrictions

City & Guilds cannot accept any registrations for candidates under 18 as these qualifications are not approved for under 18s.



3 Delivering the qualification

Initial assessment and induction

An initial assessment of each candidate should be made before the start of their programme to identify:

- if the candidate has any specific training needs
- support and guidance they may need when working towards their qualifications
- any units they have already completed, or credit they have accumulated which is relevant to the qualification
- the appropriate type and level of qualification.

Centres should ensure that an initial assessment is made of all candidates wishing to undertake the **Award in Install and Remove Support Systems for Medium Excavations (6146-21)** to determine whether they have the relevant occupational experience in support systems for excavations. Candidates without the relevant occupational experience are required to undertake one of the pre requisite units prior to commencing the qualification.

We recommend that centres provide an induction programme so the candidate fully understands the requirements of the qualifications, their responsibilities as a candidate, and the responsibilities of the centre. This information can be recorded on a learning contract.

Support materials

The following resources are available for these qualifications:

Description	How to access
Centre/Qualification handbook	www.cityandguilds.com
Assessment pack for each award	www.cityandguilds.com
Answer pack for each award	www.cityandguilds.com

4 Assessment



Assessment of the qualification

Candidates must successfully complete one assignment.

City & Guilds has written assignments to assess these qualifications.

Level 2 Award in install and remove mechanical support systems for excavations			
Unit	Unit Title	Assessment method	Where to obtain assessment materials
201	Install and remove mechanical support systems for excavations	The assignment, covering the skills and knowledge in the unit, is set by City & Guilds, delivered and marked internally by the centre and quality assured by City & Guilds.	www.cityandguilds.com
Level 2 Award in install and remove sheet piling support systems for excavations			
202	Install and remove sheet piling support systems for excavations	The assignment, covering the skills and knowledge in the unit, is set by City & Guilds, delivered and marked internally by the centre and quality assured by City & Guilds.	www.cityandguilds.com
Level 2 Award in install and remove board and skeleton support systems for excavations			
203	Install and remove board and skeleton support systems for excavations	The assignment, covering the skills and knowledge in the unit, is set by City & Guilds, delivered and marked internally by the centre and quality assured by City & Guilds.	www.cityandguilds.com
Level 2 Award in Install and remove support systems for medium excavations			
204	Install and remove support systems for medium excavations	The assignment, covering the skills and knowledge in the unit, is set by City & Guilds, delivered and marked internally by the centre and quality assured by City & Guilds.	www.cityandguilds.com

Time constraints

The following conditions must be applied to the assessment of this qualification:

- Candidates must finish their assessment within their period of registration
- Assignments should take no longer than 8 hours. If they do, centres should consider why this is, and make sure that they are not trying to gather too much evidence.



5 Units

Structure of units

These units each have the following:

- City & Guilds reference number
- unit accreditation number
- title
- level
- credit value
- unit aim
- Relationship to NOS
- endorsement by a sector or other appropriate body
- learning outcomes which are comprised of a number of assessment criteria
- notes for guidance.

Unit 201

Install and remove mechanical support systems for excavations

UAN:	D/504/3764
Level:	Level 2
Credit value:	1
GLH:	10
Relationship to NOS:	<p>This unit is linked to:</p> <ul style="list-style-type: none">• EUSGNO302 Excavate holes and trenches in ground and pavement structures in diverse situations.• EUSEPUS043 Carry out excavation work on underground cables in the electricity power environment.• EUS GNC007 Excavate and Maintain Holes and Trenches for Complex Operations in Gas Network Construction.• EUSMUNC07 Excavate and maintain holes and trenches for Utilities Network Construction.• EUSGNO102 Working under supervision, excavate holes and trenches in ground and pavement structures.
Endorsement by a sector or regulatory body:	<p>This unit is endorsed by Energy and Utility (EU) Skills, the Sector Skills Council for the gas, power, waste management and water industries.</p>
Aim:	<p>This unit provides learners with the knowledge and skills required to install, dismantle and remove mechanical systems for excavation support. Learners will understand the importance of dewatering when working under these conditions and there is a strong emphasis on health and safety relating to trench work.</p>

Learning outcome

The learner will:

1. Be able to assess risks against changing conditions

Assessment criteria

The learner can:

- 1.1 check that site specific **risk assessments** provide adequate safeguards in work practices to deal with the excavation becoming a confined space
- 1.2 report detrimental conditions and defects in the excavation and support mechanisms that are outside own responsibility according to relevant codes of practice.

Range**Risk assessments**

Dynamic risk assessment, report faults/anomalies.

Learning outcome

The learner will:

2. Understand the importance of dewatering in excavations

Assessment criteria

The learner can:

- 2.1 list **dewatering methods**
- 2.2 explain the importance of dewatering
- 2.3 describe **problems** associated with dewatering
- 2.4 describe **hazards** associated with water ingress to excavations
- 2.5 describe detrimental conditions and defects that affect dewatering systems
- 2.6 describe the impact on excavation activities of **interruptions** to the dewatering process.

Range**Dewatering methods**

Sump pump, wellpoint, groundwater cut off, freezing.

Problems

Loss of power, vehicle movements, water discharge, silting, blockage.

Hazards

Collapse, inundation, uplift, gas.

Interruptions

Mechanical, electrical, physical blockage, trench collapse.

Learning outcome

The learner will:

3. Be able to operate dewatering systems for excavations

Assessment criteria

The learner can:

- 3.1 inspect and operate de-watering systems suitable for excavations
- 3.2 keep gullies and water courses clear at all times
- 3.3 adjust support mechanisms and remove groundwater as required
- 3.4 resolve day to day **problems** within responsibility of own job role
- 3.5 report problems and defects in the excavation and support mechanisms that are outside own responsibility.

Range**Problems**

Operation of pumps and dewatering systems, ensure sumps remain free of debris.

Learning outcome

The learner will:

4. Be able to install, dismantle and remove mechanical support systems for excavations

Assessment criteria

The learner can:

- 4.1 assess the excavated area to determine the types of support required
- 4.2 provide safe access and egress around the excavation
- 4.3 state the key **tools plant and equipment** required for mechanical activities
- 4.4 state the safety requirements for using plant and equipment near excavations
- 4.5 inspect tools, **plant and equipment**
- 4.6 use tools, **plant and equipment** safely
- 4.7 wear appropriate **Personal Protective Equipment (PPE)** for installing, dismantling and removing mechanical support systems
- 4.8 follow current relevant approved **procedures and practices**
- 4.9 install, dismantle and remove the following temporary support systems for excavations:
 - mechanical systems
- 4.10 state the importance of communicating within own team and other occupations
- 4.11 describe the potential **impact** of excavation activities.

Range**Tools**

Spade, shovel, pick, hammer, chisel, spanners, wrenches, surveying instrument(s), chain hoists, slings, shackles, disc cutter/grinder, pneumatic /hydraulic/electric drills.

Plant and equipment

Excavators, dumpers, telescopic handling equipment, crane, dewatering equipment, wooden ladders, mechanical systems.

Personal Protective Equipment (PPE)

Safety footwear, knee protection, overalls (flame retardant) , gloves, eye protection, safety helmet, 2 point fall arrest harness, environmental monitoring equipment (dust/gas/noise), weather protection, reflective jacket, respiratory, hearing and vibration protection.

Procedures and practices

Environmental, statutory, regulatory, emergency, operational, health and safety, organisational and company procedures, risk assessments.

Impact

Pollution of groundwater, risk of damage to utility services, supporting exposed utilities.

Learning outcome

The learner will:

5. Know safe working practices for installing, dismantling and removing mechanical support systems for excavations

Assessment criteria

The learner can:

- 5.1 state current **legislative requirements and industry good practice** relating to excavation work activities
- 5.2 describe **inspection procedures** for mechanical support systems
- 5.3 describe **maintenance procedures** for equipment tools and mechanical support systems
- 5.4 describe the importance of ensuring that equipment tools and mechanical support systems are stored safely and securely
- 5.5 describe **own responsibilities** under current relevant approved procedures and practices
- 5.6 state the reporting procedures in the event of a near miss, incident or accident.

Range**Legislative requirements and industry good practice**

Environmental, statutory, regulatory, emergency, operational, health and safety, organisational and company procedures, risk assessments.

Inspection procedures

Inspect mechanical system at start, during and at the end of a shift, report damage to relevant persons.

Maintenance procedures

Wash mechanical systems, lubricate equipment as required, replace/report damaged items.

Own responsibilities

Complete checklists, sign briefings, work permits.

Unit 201 **Install and remove mechanical
support systems for
excavations**

Supporting information

Guidance

Learners should be assessed working at depths of 1.5m to 2.5m.

Unit 202

Install and remove sheet piling support systems for excavations

UAN:	M/504/3414
Level:	Level 2
Credit value:	1
GLH:	10
Relationship to NOS:	<p>This unit is linked to:</p> <ul style="list-style-type: none">• EUSGNO302 Excavate holes and trenches in ground and pavement structures in diverse situations.• EUSEPUS043 Carry out excavation work on underground cables in the electricity power environment.• EUS GNC007 Excavate and Maintain Holes and Trenches for Complex Operations in Gas Network Construction.• EUSMUNC07 Excavate and maintain holes and trenches for Utilities Network Construction.• EUSGNO102 Working under supervision, excavate holes and trenches in ground and pavement structures.
Endorsement by a sector or regulatory body:	<p>This unit is endorsed by Energy and Utility (EU) Skills, the Sector Skills Council for the gas, power, waste management and water industries</p>
Aim:	<p>This unit provides learners with the knowledge and skills required to install, dismantle and remove sheet piling systems for excavation support. Learners will understand the importance of dewatering when working under these conditions and there is a strong emphasis on health and safety relating to trench work.</p>

Learning outcome

The learner will:

1. Be able to assess risks against changing conditions

Assessment criteria

The learner can:

- 1.1 check that site specific **risk assessments** provide adequate safeguards in work practices to deal with the excavation becoming a confined space
- 1.2 report detrimental conditions and defects in the excavation and support mechanisms that are outside own responsibility according to relevant codes of practice.

Range**Risk assessments**

Dynamic risk assessment, report faults/anomalies.

Learning outcome

The learner will:

2. Understand the importance of dewatering in excavations

Assessment criteria

The learner can:

- 2.1 list **dewatering methods**
- 2.2 explain the importance of dewatering
- 2.3 describe **problems** associated with dewatering
- 2.4 describe **hazards** associated with water ingress to excavations
- 2.5 describe detrimental conditions and defects that affect dewatering systems
- 2.6 describe the impact on excavation activities of **interruptions** to the dewatering process.

Range**Dewatering methods**

Sump pump, wellpoint, groundwater cut off, freezing.

Problems

Loss of power, vehicle movements, water discharge, silting, blockage.

Hazards

Collapse, inundation, uplift, gas.

Interruptions

Mechanical, electrical, physical blockage, trench collapse.

Learning outcome

The learner will:

3. Be able to operate dewatering systems for excavations

Assessment criteria

The learner can:

- 3.1 inspect and operate de-watering systems suitable for excavations
- 3.2 keep gullies and water courses clear at all times
- 3.3 adjust support mechanisms and remove groundwater as required
- 3.4 resolve day to day **problems** within responsibility of own job role
- 3.5 report problems and defects in the excavation and support mechanisms that are outside own responsibility.

Range**Problems**

Operation of pumps and dewatering systems, ensure sumps remain free of debris.

Learning outcome

The learner will:

4. Be able to install, dismantle and remove sheet piling support systems for excavations

Assessment criteria

The learner can:

- 4.1 assess the excavated area to determine the types of support required
- 4.2 provide safe access and egress around the excavation
- 4.3 state the key **tools, plant and equipment** required for sheet piling activities
- 4.4 state the safety requirements for using **plant and equipment** near excavations
- 4.5 inspect tools, plant and equipment
- 4.6 use tools, **plant and equipment** safely
- 4.7 wear appropriate **Personal Protective Equipment** (PPE) for installing, dismantling and removing sheet piling support systems
- 4.8 follow current relevant approved **procedures and practices**
- 4.9 install, dismantle and remove the following temporary support systems for excavations:
 - sheet piling systems
- 4.10 state the importance of communicating within own team and other occupations
- 4.11 describe the potential **impact** of excavation activities.

Range
<p>Tools Spade, shovel, pick, hammer, chisel, spanners, wrenches, surveying instrument(s), chain hoists, slings, shackles, disc cutter/grinder, pneumatic /hydraulic/electric drills.</p> <p>Plant and equipment Excavators, dumpers, telescopic handling equipment, crane, dewatering equipment, wooden ladders, mechanical systems.</p> <p>Personal Protective Equipment (PPE) Safety footwear, knee protection, overalls (flame retardant) , gloves, eye protection, safety helmet, 2 point fall arrest harness, environmental monitoring equipment (dust/gas/noise), weather protection, reflective jacket, respiratory, hearing and vibration protection.</p> <p>Procedures and practices Environmental, statutory, regulatory, emergency, operational, health and safety, organisational and company procedures, risk assessments.</p> <p>Impact Pollution of groundwater, risk of damage to utility services, supporting exposed utilities.</p>

Learning outcome
<p>The learner will:</p> <p>5. Know safe working practices for installing, dismantling and removing sheet piling support systems for excavations</p>
Assessment criteria
<p>The learner can:</p> <p>5.1 state current legislative requirements and industry good practice relating to excavation work activities</p> <p>5.2 describe inspection procedures for sheet piling support systems</p> <p>5.3 describe maintenance procedures for equipment tools and sheet piling support systems</p> <p>5.4 describe the importance of ensuring that equipment tools and sheet piling support systems are stored safely and securely</p> <p>5.5 describe own responsibilities under current relevant approved procedures and practices</p> <p>5.6 state the reporting procedures in the event of a near miss, incident or accident.</p>

Range
<p>Legislative requirements and industry good practice Environmental, statutory, regulatory, emergency, operational, health and safety, organisational and company procedures, risk assessments.</p>

Inspection procedures

Inspect sheet piling system at start, during and at the end of a shift, report damage to relevant persons.

Maintenance procedures

Wash sheet piles, lubricate equipment as required, replace/report damaged items.

Own responsibilities

Complete checklists, sign briefings, work permits.

Unit 202

Install and remove sheet piling support systems for excavations

Supporting information

Guidance

Learners should be assessed working at depths of 1.5m to 2.5m.

Unit 203

Install and remove board and skeleton support systems for excavations

UAN:	T/504/3415
Level:	Level 2
Credit value:	1
GLH:	10
Relationship to NOS:	<p>This unit is linked to:</p> <ul style="list-style-type: none">• EUSGNO302 Excavate holes and trenches in ground and pavement structures in diverse situations.• EUSEPUS043 Carry out excavation work on underground cables in the electricity power environment.• EUS GNC007 Excavate and Maintain Holes and Trenches for Complex Operations in Gas Network Construction.• EUSMUNC07 Excavate and maintain holes and trenches for Utilities Network Construction.• EUSGNO102 Working under supervision, excavate holes and trenches in ground and pavement structures.
Endorsement by a sector or regulatory body:	<p>This unit is endorsed by Energy and Utility (EU) Skills, the Sector Skills Council for the gas, power, waste management and water industries</p>
Aim:	<p>This unit provides learners with the knowledge and skills required to install, dismantle and remove board and skeleton systems for excavation support. Learners will understand the importance of dewatering when working under these conditions and there is a strong emphasis on health and safety relating to trench work.</p>

Learning outcome

The learner will:

1. Be able to assess risks against changing conditions

Assessment criteria

The learner can:

- 1.1 check that site specific **risk assessments** provide adequate safeguards in work practices to deal with the excavation becoming a confined space
- 1.2 report detrimental conditions and defects in the excavation and support mechanisms that are outside own responsibility according to relevant codes of practice.

Range**Risk assessments**

Dynamic risk assessment, report faults/anomalies.

Learning outcome

The learner will:

2. Understand the importance of dewatering in excavations

Assessment criteria

The learner can:

- 2.1 list **dewatering methods**
- 2.2 explain the importance of dewatering
- 2.3 describe **problems** associated with dewatering
- 2.4 describe **hazards** associated with water ingress to excavations
- 2.5 describe detrimental conditions and defects that affect dewatering systems
- 2.6 describe the impact on excavation activities of **interruptions** to the dewatering process.

Range**Dewatering methods**

Sump pump, wellpoint, groundwater cut off, freezing.

Problems

Loss of power, vehicle movements, water discharge, silting, blockage.

Hazards

Collapse, inundation, uplift, gas.

Interruptions

Mechanical, electrical, physical blockage, trench collapse.

Learning outcome

The learner will:

3. Be able to operate dewatering systems for excavations

Assessment criteria

The learner can:

- 3.1 inspect and operate de-watering systems suitable for excavations
- 3.2 keep gullies and water courses clear at all times
- 3.3 adjust support mechanisms and remove groundwater as required
- 3.4 resolve day to day **problems** within responsibility of own job role
- 3.5 report problems and defects in the excavation and support mechanisms that are outside own responsibility.

Range**Problems**

Operation of pumps and dewatering systems, ensure sumps remain free of debris.

Learning outcome

The learner will:

4. Be able to install, dismantle and remove board and skeleton support systems for excavations

Assessment criteria

The learner can:

- 4.1 assess the excavated area to determine the types of support required
- 4.2 provide safe access and egress around the excavation
- 4.3 state the key **tools plant and equipment** required for board and skeleton activities
- 4.4 state the safety requirements for using **plant and equipment** near excavations
- 4.5 inspect tools, plant and equipment
- 4.6 use **tools, plant and equipment** safely
- 4.7 wear appropriate **Personal Protective Equipment (PPE)** for installing, dismantling and removing board and skeleton support systems
- 4.8 follow current relevant approved **procedures and practices**
- 4.9 install, dismantle and remove the following temporary support systems for excavations:
 - board and skeleton systems
- 4.10 state the importance of communicating within own team and other occupations
- 4.11 describe the potential **impact** of excavation activities.

Range**Tools**

Spade, shovel, pick, hammer, chisel, spanners, wrenches, surveying instrument(s), chain hoists, slings, shackles, disc cutter/grinder, pneumatic /hydraulic/electric drills.

Plant and equipment

Excavators, dumpers, telescopic handling equipment, crane, dewatering equipment, wooden ladders, mechanical systems.

Personal Protective Equipment (PPE)

Safety footwear, knee protection, overalls (flame retardant) , gloves, eye protection, safety helmet, 2 point fall arrest harness, environmental monitoring equipment (dust/gas/noise), weather protection, reflective jacket, respiratory, hearing and vibration protection.

Procedures and practices

Environmental, statutory, regulatory, emergency, operational, health and safety, organisational and company procedures, risk assessments.

Impact

Pollution of groundwater, risk of damage to utility services, supporting exposed utilities.

Learning outcome

The learner will:

5. Know safe working practices for installing, dismantling and removing board and skeleton support systems for excavations

Assessment criteria

The learner can:

- 5.1 state current **legislative requirements and industry good practice** relating to excavation work activities
- 5.2 describe **inspection procedures** for board and skeleton support systems
- 5.3 describe **maintenance procedures** for equipment tools and board and skeleton support systems
- 5.4 describe the importance of ensuring that equipment tools and board and skeleton support systems are stored safely and securely
- 5.5 describe **own responsibilities** under current relevant approved procedures and practices
- 5.6 state the reporting procedures in the event of a near miss, incident or accident.

Range**Legislative requirements and industry good practice**

Environmental, statutory, regulatory, emergency, operational, health and safety, organisational and company procedures, risk assessments.

Inspection procedures

Inspect board and skeleton system at start, during and at the end of a shift, report damage to relevant persons.

Maintenance procedures

Wash board and skeleton systems, lubricate equipment as required, replace/report damaged items.

Own responsibilities

Complete checklists, sign briefings, work permits.

Unit 203

Install and remove board and skeleton support systems for excavations

Supporting information

Guidance

Learners should be assessed working at depths of 1.5m to 2.5m.

Unit 204

Install and remove support systems for medium excavations

UAN:	A/504/3416
Level:	Level 2
Credit value:	1
GLH:	10
Relationship to NOS:	<p>This unit is linked to:</p> <ul style="list-style-type: none">• EUSGNO302 Excavate holes and trenches in ground and pavement structures in diverse situations• EUSEPUS043 Carry out excavation work on underground cables in the electricity power environment• EUS GNC007 Excavate and Maintain Holes and Trenches for Complex Operations in Gas Network Construction• EUSMUNC07 Excavate and maintain holes and trenches for Utilities Network Construction• EUSGNO102 Working under supervision, excavate holes and trenches in ground and pavement structures.
Endorsement by a sector or regulatory body:	<p>This unit is endorsed by Energy and Utility (EU) Skills, the Sector Skills Council for the gas, power, waste management and water industries</p>
Aim:	<p>This unit provides learners with the knowledge and skills required to install, dismantle and remove mechanical and hydraulic support systems for medium excavations. Learners will understand the importance of dewatering when working under these conditions and there is a strong emphasis on health and safety relating to medium excavations.</p>

Learning outcome

The learner will:

1. Be able to assess risks against changing conditions

Assessment criteria

The learner can:

- 1.1 check that site specific **risk assessments** provide adequate safeguards in work practices to deal with the excavation becoming a confined space
- 1.2 report detrimental conditions and defects in the excavation and support mechanisms that are outside own responsibility according to relevant codes of practice.

Range**Risk assessments**

Dynamic risk assessment, report faults/anomalies.

Learning outcome

The learner will:

2. Understand the importance of dewatering in excavations

Assessment criteria

The learner can:

- 2.1 list **dewatering methods**
- 2.2 explain the importance of dewatering
- 2.3 describe **problems** associated with dewatering
- 2.4 describe **hazards** associated with water ingress to excavations
- 2.5 describe detrimental conditions and defects that affect dewatering systems
- 2.6 describe the impact on excavation activities of **interruptions** to the dewatering process.

Range**Dewatering methods**

Sump pump, wellpoint, groundwater cut off, freezing.

Problems

Loss of power, vehicle movements, water discharge, silting, blockage.

Hazards

Collapse, inundation, uplift, gas.

Interruptions

Mechanical, electrical, physical blockage, trench collapse.

Learning outcome

The learner will:

3. Be able to operate dewatering systems for excavations

Assessment criteria

The learner can:

- 3.1 inspect and operate de-watering systems suitable for excavations
- 3.2 keep gullies and water courses clear at all times
- 3.3 adjust support mechanisms and remove groundwater as required
- 3.4 resolve day to day **problems** within responsibility of own job role
- 3.5 report problems and defects in the excavation and support mechanisms that are outside own responsibility.

Range**Problems**

Operation of pumps and dewatering systems, ensure sumps remain free of debris.

Learning outcome

The learner will:

4. Be able to install, dismantle and remove mechanical and hydraulic support systems for medium excavations

Assessment criteria

The learner can:

- 4.1 assess the excavated area to determine the types of support required
- 4.2 provide safe access and egress around the excavation
- 4.3 state the key **tools plant and equipment** required for mechanical activities
- 4.4 state the safety requirements for using **plant and equipment** near excavations
- 4.5 inspect tools, plant and equipment
- 4.6 use **tools, plant and equipment** safely
- 4.7 wear appropriate **Personal Protective Equipment (PPE)** for installing, dismantling and removing mechanical and hydraulic support systems
- 4.8 follow current relevant approved **procedures and practices**
- 4.9 install, dismantle and remove temporary mechanical and hydraulic support systems for:
 - medium excavations
- 4.10 state the importance of communicating within own team and other occupations
- 4.11 describe the potential **impact** of excavation activities.

Range

Tools

Spade, shovel, pick, hammer, chisel, spanners, wrenches, surveying instrument(s), chain hoists, slings, shackles, disc cutter/grinder, pneumatic /hydraulic/electric drills.

Plant and equipment

Excavators, dumpers, telescopic handling equipment, crane, dewatering equipment, wooden ladders, mechanical systems.

Personal Protective Equipment (PPE)

Safety footwear, knee protection, overalls (flame retardant), gloves, eye protection, safety helmet, 2 point fall arrest harness, environmental monitoring equipment (dust/gas/noise), weather protection, reflective jacket, respiratory, hearing and vibration protection.

Procedures and practices

Environmental, statutory, regulatory, emergency, operational, health and safety, organisational and company procedures, risk assessments.

Impact

Pollution of groundwater, risk of damage to utility services, supporting exposed utilities.

Learning outcome

The learner will:

5. Know safe working practices for installing, dismantling and removing mechanical and hydraulic support systems for medium excavations

Assessment criteria

The learner can:

- 5.1 state current **legislative requirements and industry good practice** relating to excavation work activities
- 5.2 describe **inspection procedures** for mechanical and hydraulic support systems
- 5.3 describe **maintenance procedures** for equipment tools and mechanical and hydraulic support systems
- 5.4 describe the importance of ensuring that equipment tools and mechanical and hydraulic support systems are stored safely and securely
- 5.5 describe **own responsibilities** under current relevant approved procedures and practices
- 5.6 state the reporting procedures in the event of a near miss, incident or accident.

Range**Legislative requirements and industry good practice**

Environmental, statutory, regulatory, emergency, operational, health and safety, organisational and company procedures, risk assessments.

Inspection procedures

Inspect mechanical system at start, during and at the end of a shift, report damage to relevant persons.

Maintenance procedures

Wash mechanical systems, lubricate equipment as required, replace/report damaged items.

Own responsibilities

Complete checklists, sign briefings, work permits.

Unit 204 Install and remove support systems for medium excavations

Supporting information

Guidance

Learners working on medium excavations should be assessed working at depths **of 2.5m to 6m**. Deep excavations ie deeper than 6m will require specialist engineering support systems.



Appendix 1 Relationships to other qualifications

Links to other qualifications

Literacy, language, numeracy and ICT skills development

These qualifications can develop skills that can be used in the following qualifications:

- Functional Skills (England) – see www.cityandguilds.com/functionalskills
- Essential Skills (Northern Ireland) – see www.cityandguilds.com/essentialskillsni
- Essential Skills Wales – see www.cityandguilds.com/esw



Appendix 2 Sources of general information

The following documents contain essential information for centres delivering City & Guilds qualifications. They should be referred to in conjunction with this handbook. To download the documents and to find other useful documents, go to the **Centres and Training Providers homepage** on www.cityandguilds.com.

Centre Manual - Supporting Customer Excellence contains detailed information about the processes which must be followed and requirements which must be met for a centre to achieve 'approved centre' status, or to offer a particular qualification, as well as updates and good practice exemplars for City & Guilds assessment and policy issues. Specifically, the document includes sections on:

- The centre and qualification approval process
- Assessment, internal quality assurance and examination roles at the centre
- Registration and certification of candidates
- Non-compliance
- Complaints and appeals
- Equal opportunities
- Data protection
- Management systems
- Maintaining records
- Assessment
- Internal quality assurance
- External quality assurance.

Our Quality Assurance Requirements encompasses all of the relevant requirements of key regulatory documents such as:

- Regulatory Arrangements for the Qualifications and Credit Framework (2008)
- SQA Awarding Body Criteria (2007)
- NVQ Code of Practice (2006)

and sets out the criteria that centres should adhere to pre and post centre and qualification approval.

Access to Assessment & Qualifications provides full details of the arrangements that may be made to facilitate access to assessments and qualifications for candidates who are eligible for adjustments in assessment.

The **centre homepage** section of the City & Guilds website also contains useful information such on such things as:

- **Walled Garden:** how to register and certificate candidates on line
- **Events:** dates and information on the latest Centre events
- **Online assessment:** how to register for GOLA/e-volve assessments.

Useful contacts

UK learners General qualification information	T: +44 (0)844 543 0033 E: learnersupport@cityandguilds.com
International learners General qualification information	T: +44 (0)844 543 0033 F: +44 (0)20 7294 2413 E: intcg@cityandguilds.com
Centres Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: centresupport@cityandguilds.com
Single subject qualifications Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 F: +44 (0)20 7294 2404 (BB forms) E: singlesubjects@cityandguilds.com
International awards Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: intops@cityandguilds.com
Walled Garden Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413 E: walledgarden@cityandguilds.com
Employer Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	T: +44 (0)121 503 8993 E: business@cityandguilds.com
Publications Logbooks, Centre documents, Forms, Free literature	T: +44 (0)844 543 0000 F: +44 (0)20 7294 2413

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City & Guilds Group

The City & Guilds Group operates from three major hubs: London (servicing Europe, the Caribbean and Americas), Johannesburg (servicing Africa), and Singapore (servicing Asia, Australia and New Zealand). The Group also includes the Institute of Leadership & Management (management and leadership qualifications), City & Guilds Land Based Services (land-based qualifications), the Centre for Skills Development (CSD works to improve the policy and practice of vocational education and training worldwide) and Learning Assistant (an online e-portfolio).

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City & Guilds
1 Giltspur Street
London EC1A 9DD
T +44 (0)844 543 0000
F +44 (0)20 7294 2413
www.cityandguilds.com

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