Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction)

Qualification Specification

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Introduction

The ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction) is designed to assess occupational competence in the workplace where candidates are required to demonstrate skills and knowledge to a level required in the construction industry. It is appropriate for employees in the construction and the built environment sector working across a broad range of areas.

The awarding body for this qualification is ProQual Awarding Body (www.proqualab.com) and the regulatory body is the Office of Qualifications and Examinations Regulation (Ofqual); It is also endorsed by the sector body for construction - CITB.

The qualification has been accredited onto the Regulated Qualifications Framework (RQF) and is published on Ofqual's Register of Qualifications.

Qualification Profile
Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction)

Qualification title	**ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction)**
Ofqual qualification number	603/1144/7
Level	2
Total Qualification Time	420 - 1470 hours (141 - 491 GLH) (dependent on pathway)
Assessment	Pass or fail Internally assessed and verified by centre staff External quality assurance by ProQual verifiers
Qualification start date	1/3/17
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

To achieve the qualification candidates must complete the required Mandatory and Optional Units from one of the Pathways.

Unit Endorsements are indicated in the Pathway Unit lists on the following pages, full details of endorsements are also included after the learning outcomes/assessment criteria at the end of each relevant unit.

CITB references are provided in this document for information only.

Pathways – Candidates choose ONE pathway

Pathway 1	Underpinning Operations – Excavated Underpinning
Pathway 2	Underpinning Operations – Underpinning Piling
Pathway 3	Chemical and Resin Grouting
Pathway 4	Retaining Structures
Pathway 5	Dewatering – Well Points
Pathway 6	Dewatering – Deep Wells
Pathway 7	Dewatering – Ejectors
Pathway 8	Ground Anchors – Driven
Pathway 9	Ground Anchors – Open Hole
Pathway 10	Ground Anchors – Self-drilling
Pathway 11	Box Beam Post Tensioning
Pathway 12	Installation of Gas Membranes
Pathway 13	Structural Waterproofing
Pathway 14	Basement Construction – Underpinning Operations – Excavated Underpinning Operations
Pathway 15	Basement Construction – Underpinning Operations – Underpinning Piling
Pathway 16	Basement Construction – Chemical and Resin Grouting
Pathway 17	Basement Construction – Retaining Structures
Pathway 18	Basement Construction – Dewatering – Well Points
Pathway 19	Basement Construction – Dewatering – Deep Wells
Pathway 20	Basement Construction – Dewatering – Ejectors
Pathway 21	Basement Construction – Ground Anchors – Driven
Pathway 22	Basement Construction – Ground Anchors – Open Hole
Pathway 23	Basement Construction – Ground Anchors – Self-drilling
Pathway 24	Basement Construction – Box Beam Post Tensioning
Pathway 25	Basement Construction – Installation of Gas Membranes
Pathway 26	Basement Construction – Structural Waterproofing

Pathway 1: Underpinning Operations – Excavated Underpinning

Candidates must complete NINE units:

- FOUR Mandatory units
- ONE unit from Optional unit Group A
- FOUR units from Optional unit Group B

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
K/615/4862	Setting out and marking positions for underpinning sequence in the workplace	3	*167v2*
Optional Units Group A – ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
A/615/4977	Excavating for underpinning in the workplace	2	*168v2*
J/615/4979	Excavating and providing temporary support to pits and trenches in the workplace *Unit Endorsements:* ***One** of the following endorsements required:* *Timber* *Trench sheet* *Frames* *Support systems*	2	*173v3*
Optional Units Group B – FOUR units			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
A/615/4980	Erecting and striking underpinning formwork in the workplace *Unit endorsements:* ***One** of the following endorsements required (i.e. own area of work):* *Excavated underpinning* *Basement Construction – Excavated Underpinning*	2	*161v2*
J/615/4982	Installing reinforcement steel for underpinning in the workplace	2	*164v2*
L/615/4983	Installing drypacking in the workplace	2	*169v2*

Y/615/4985	Repairing sub-structure after underpinning in the workplace *<u>Unit Endorsements</u>:* ***Two** of the following endorsements required:* *Brickwork* *Blockwork* *Concrete* *Timber* *Facings* *Linings* *Waterproofing systems*	2	*171v2*
D/615/4986	Placing and compacting concrete in the workplace *<u>Unit Endorsements</u>:* ***Three** of the following endorsements required:* *Chute* *Elephants trunk* *Skip* *Pump* *Mono-rail* *Manual*	2	*225v2*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *<u>Unit endorsements</u>:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Pathway 2: Underpinning Operations – Underpinning Piling

Candidates must complete SEVEN units:

- SIX Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
K/615/4862	Setting out and marking positions for underpinning sequence in the workplace	2	*167v2*
M/615/4989	Installing piles in areas of restricted access (micro or mini piling) in the workplace *Unit endorsements:* ***Two*** *of the following endorsements required:* *Open auger* *Hollow stem auger* *Sectional flight auger (cfa)* *Down-hole hammer In-hole support drilling* *Drop hammer* *Jacked down piling* *Pneumatic displacement piling* *Proprietary micro piling systems*	2	*170v2*
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *Unit endorsements:* ***One*** *of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*

Optional Units – ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/4985	Repairing sub-structure after underpinning in the workplace *Unit Endorsements:* ***Two** of the following endorsements required:* *Brickwork* *Blockwork* *Concrete* *Timber* *Facings* *Linings* *Waterproofing systems*	2	*171v2*
J/615/4979	Excavating and providing temporary support to pits and trenches in the workplace *Unit endorsements:* ***One** of the following endorsements required:* *Timber* *Trench sheet* *Frames* *Support systems*	2	*173v2*
D/615/4986	Placing and compacting concrete in the workplace *Unit Endorsements:* ***Three** of the following endorsements required:* *Chute* *Elephants trunk* *Skip* *Pump* *Mono-rail* *Manual*	2	*225v2*
A/508/6525	Slinging and hand signalling the movement of suspended loads in the workplace *Unit Endorsements:* *The following endorsement required (i.e. own area of work):* *Slinger signaller – Underpinning Piling only* *Slinger signaller – Dewatering only* *Slinger signaller – Self-drilling Ground Anchor only* *Slinger signaller – Chemical and Resin Grouting*	2	*402Av2*
H/615/4987	Installing constructing, maintaining, dismantling and removing temporary works *Unit endorsements:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Pathway 3: Chemical and Resin Grouting

Candidates must complete SIX units:

- FIVE Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
H/615/4990	Preparing the site for chemical and resin grouting and soil injection in the workplace	2	*520v2*
M/615/4992	Carrying out chemical and resin grouting and soil injection in the workplace	2	*521v2*
Optional Units – ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *<u>Unit endorsements</u>:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*

A/508/6525	Slinging and hand signalling the movement of suspended loads in the workplace *<u>Unit Endorsements:</u>* *The following endorsement required (i.e. own area of work):* *Slinger signaller – Underpinning Piling only* *Slinger signaller – Dewatering only* *Slinger signaller – Self-drilling Ground Anchor only* *Slinger signaller – Chemical and Resin Grouting*	2	*402Av2*

Pathway 4: Retaining Structures

Candidates must complete SEVEN units:

- SIX Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *Unit Endorsements:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*
A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *Unit Endorsements:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*
K/508/6536	Setting out secondary dimensional work control in the workplace *Unit Endorsements:* ***Three** of the following endorsements required:* *Lines* *Levels* *Depths* *Areas* *Heights* *Angles*	2	*401v2*

Optional Units – ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/615/5012	Installing mass gravity retaining structures in the workplace *<u>Unit Endorsements</u>:* ***Two** of the following endorsements required:* *Gabions* *Crib walls* *Dry laid segmental blocks*	2	*563v2*
T/615/5013	Installing precast concrete retaining structures in the workplace	2	*564v2*
A/615/5014	Installing reinforcement for the formation of soil structures and slopes in the workplace	2	*565v2*
F/615/5015	Stablishing steep slopes in the workplace	2	*566v2*

Pathway 5: Dewatering – Well Points

Candidates must complete SIX units:

- FIVE Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
J/615/5016	Preparing the site for the installation of dewatering systems in the workplace	2	*486v2*
L/615/5017	Installing well point dewatering systems in the workplace *Unit Endorsements:* ***Two*** *of the following endorsements required:* *Set up pumping system* *Commission and monitor system* *Decommission system*	2	*487v2*
Optional Units – ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *Unit endorsements:* ***One*** *of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *Unit Endorsements:* ***One*** *of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*

A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*
A/508/6525	Slinging and hand signalling the movement of suspended loads in the workplace *<u>Unit Endorsements:</u>* *The following endorsement required (i.e. own area of work):* *Slinger signaller – Underpinning Piling only* *Slinger signaller – Dewatering only* *Slinger signaller – Self-drilling Ground Anchor only* *Slinger signaller – Chemical and Resin Grouting*	2	*402Av2*

Pathway 6: Dewatering – Deep Wells

Candidates must complete SIX units:

- FIVE Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
J/615/5016	Preparing the site for the installation of dewatering systems in the workplace	2	*486v2*
R/615/5018	Installing deep well dewatering systems in the workplace	2	*489v2*
Optional Units – ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace <u>*Unit endorsements*</u>*:* ***One*** *of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace <u>*Unit Endorsements*</u>*:* ***One*** *of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*

A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*
A/508/6525	Slinging and hand signalling the movement of suspended loads in the workplace *<u>Unit Endorsements:</u>* *The following endorsement required (i.e. own area of work):* *Slinger signaller – Underpinning Piling only* *Slinger signaller – Dewatering only* *Slinger signaller – Self-drilling Ground Anchor only* *Slinger signaller – Chemical and Resin Grouting*	2	*402Av2*

Pathway 7: Dewatering – Ejectors

Candidates must complete SIX units:

- FIVE Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
J/615/5016	Preparing the site for the installation of dewatering systems in the workplace	2	*486v2*
Y/615/5019	Installing ejector dewatering systems in the workplace	2	*490v2*
Optional Units – ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *Unit endorsements:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *Unit Endorsements:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*

A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*
A/508/6525	Slinging and hand signalling the movement of suspended loads in the workplace *<u>Unit Endorsements:</u>* *The following endorsement required (i.e. own area of work):* *Slinger signaller – Underpinning Piling only* *Slinger signaller – Dewatering only* *Slinger signaller – Self-drilling Ground Anchor only* *Slinger signaller – Chemical and Resin Grouting*	2	*402Av2*

Pathway 8: Ground Anchors – Driven

Candidates must complete FIVE Mandatory units.

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
L/615/5020	Preparing the site to install ground anchors in the workplace	2	*513v2*
R/615/5021	Installing mechanical ground anchors in the workplace	2	*514v2*

Pathway 9: Ground Anchors – Open Hole

Candidates must complete FIVE Mandatory units.

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
L/615/5020	Preparing the site to install ground anchors in the workplace	2	*513v2*
Y/615/5022	Installing open hole ground anchors in the workplace	2	*515v2*

Pathway 10: Ground Anchors – Self Drilling

Candidates must complete SIX units:

- FIVE Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
L/615/5020	Preparing the site to install ground anchors in the workplace	2	*513v2*
D/615/5023	Installing self-drilling ground anchors in the workplace	2	*516v2*
Optional Units – ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *<u>Unit endorsements</u>:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*

Pathway 11: Box Beam Post Tensioning

Candidates must complete SIX Mandatory units.

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *Unit Endorsements:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*
H/615/5024	Preparing the site for the installation of post tensioning systems as sub-structural repair in the workplace	2	*518v2*
K/615/5025	Installing post tensioning system as sub-structural repair in the workplace	2	*519v2*

Pathway 12: Installation of Gas Membranes

Candidate must complete FIVE Mandatory units.

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
M/615/5026	Preparing to install gas membranes in the workplace	2	*612v2*
T/615/5027	Installing gas membranes in the workplace	2	*613v2*

Pathway 13: Structural Waterproofing

Candidates must complete SIX units:

- FIVE Mandatory units
- ONE Optional units

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
A/615/5028	Preparing surfaces for structural waterproofing in the workplace	2	*491v2*
H/615/1958	Carrying out structural waterproofing in the workplace	2	*492v2*
Optional Units – ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *<u>Unit endorsements</u>:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
T/615/1611	Establishing work area protection and safety in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v2*

A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*
K/508/6538	Setting out secondary dimensional work control in the workplace *<u>Unit Endorsements</u>:* ***Three** of the following endorsements required:* *Lines* *Levels* *Depths* *Areas* *Heights* *Angles*	2	*401v2*

Pathway 14: Basement Construction – Excavated Underpinning Operations

Candidates must complete ELEVEN units:

- SIX Mandatory units
- ONE unit from Optional Group A
- FOUR units from Optional Group B

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
K/615/4862	Setting out and marking positions for underpinning sequence in the workplace	2	*167v2*
F/615/5029	Working on basement construction projects in the workplace *Unit endorsements:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *Unit endorsements:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Optional Group A Units - ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
A/615/4977	Excavating for underpinning in the workplace	2	*168v2*
J/615/4979	Excavating and providing temporary support to pits and trenches in the workplace *Unit Endorsements:* ***One** of the following endorsements required:* *Timber* *Trench sheet* *Frames* *Support systems*	2	*173v3*
Optional Group B Units – FOUR units			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
A/615/4980	Erecting and striking underpinning formwork in the workplace *Unit Endorsements:* ***One** of the following endorsements required (i.e. own area of work):* *Excavated underpinning* *Basement Construction – Excavated Underpinning*	2	*161v2*
J/615/4982	Installing reinforcement steel for underpinning in the workplace	2	*164v2*
L/615/4983	Installing drypacking in the workplace	2	*169v2*
Y/615/4985	Repairing sub-structure after underpinning *Unit Endorsements:* ***Two** of the following endorsements required:* *Brickwork* *Blockwork* *Concrete* *Timber* *Facings* *Linings* *Waterproofing systems*	2	*171v2*
D/615/4986	Placing and compacting concrete in the workplace *Unit Endorsements:* ***Three** of the following endorsements required:* *Chute* *Elephants trunk* *Skip* *Pump* *Mono-rail* *Manual*	2	*225v2*

H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *<u>Unit endorsements</u>:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Pathway 15: Basement Construction – Underpinning Piling

Candidates must complete NINE units:

- EIGHT Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
K/615/4862	Setting out and marking positions for underpinning sequence in the workplace	2	*167v2*
M/615/4989	Installing piles in areas of restricted access (micro or mini piling) in the workplace *Unit Endorsements:* *Two of the following endorsements required:* *Open auger* *Hollow stem auger* *Sectional flight auger (cfa)* *Down-hole hammer In-hole support drilling* *Drop hammer* *Jacked down piling* *Pneumatic displacement piling* *Proprietary micro piling systems*	2	*170v2*
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *Unit endorsements:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
F/615/5029	Working on basement construction projects *Unit endorsements:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*

H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *<u>Unit endorsements</u>:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*
Optional Units – ONE unit			
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/4985	Repairing sub-structure after underpinning in the workplace *<u>Unit Endorsements</u>:* ***Two** of the following endorsements required:* *Brickwork* *Blockwork* *Concrete* *Timber* *Facings* *Linings* *Waterproofing systems*	2	*171v2*
J/615/4979	Excavating and providing temporary support to pits and trenches in the workplace	2	*173v2*
D/615/4986	Placing and compacting concrete in the workplace *<u>Unit Endorsements</u>:* ***Three** of the following endorsements required:* *Chute* *Elephants trunk* *Skip* *Pump* *Mono-rail* *Manual*	2	*225v2*
A/508/6525	Slinging and hand signalling the movement of suspended loads in the workplace *<u>Unit Endorsements:</u>* *The following endorsement required (i.e. own area of work):* *Slinger signaller – Underpinning Piling only* *Slinger signaller – Dewatering only* *Slinger signaller – Self-drilling Ground Anchor only* *Slinger signaller – Chemical and Resin Grouting*	2	*402Av2*

H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *<u>Unit endorsements</u>:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Pathway 16: Basement Construction – Chemical and Resin Grouting

Candidates must complete EIGHT units:

- SEVEN Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
H/615/4990	Preparing the site for chemical and resin grouting and soil injection in the workplace	2	*520v2*
J/615/1077	Carrying out chemical and resin grouting and soil injection in the workplace	2	*521v2*
F/615/5029	Working on basement construction projects in the workplace *Unit endorsements:* ***One*** *of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *Unit endorsements:* ***Four*** *of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Optional Units – ONE unit			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *<u>Unit endorsements</u>:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*
A/508/6525	Slinging and hand signalling the movement of suspended loads in the workplace *<u>Unit Endorsements:</u>* *The following endorsement required (i.e. own area of work):* *Slinger signaller – Underpinning Piling only* *Slinger signaller – Dewatering only* *Slinger signaller – Self-drilling Ground Anchor only* *Slinger signaller – Chemical and Resin Grouting*	2	*402Av2*

Pathway 17: Basement Construction – Retaining Structures

Candidates must complete NINE units:

- EIGHT Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *Unit Endorsements:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*
A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *Unit Endorsements:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*
K/508/6536	Setting out secondary dimensional work control in the workplace *Unit Endorsements:* ***Three** of the following endorsements required:* *Lines* *Levels* *Depths* *Areas* *Heights* *Angles*	2	*401v2*

F/615/5029	Working on basement construction projects in the workplace *<u>Unit endorsements</u>:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *<u>Unit endorsements</u>:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*
Optional Units – ONE unit			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/615/5012	Installing mass gravity retaining structures in the workplace *<u>Unit Endorsements</u>:* ***Two** of the following endorsements required:* *Gabions* *Crib walls* *Dry laid segmental blocks*	2	*563v2*
T/615/5013	Installing precast concrete retaining structures in the workplace	2	*564v2*
A/615/5014	Installing reinforcement for the formation of soil structures and slopes in the workplace	2	*565v2*
F/615/5015	Stabilising steep slopes in the workplace	2	*566v2*

Pathway 18: Basement Construction – Dewatering – Well Points

Candidates must complete EIGHT units:

- SEVEN Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
J/615/5016	Preparing the site for the installation of dewatering systems in the workplace	2	*486v2*
L/615/5017	Installing well point dewatering systems in the workplace *Unit Endorsements:* ***Two*** *of the following endorsements required:* *Set up pumping system* *Commission and monitor system* *Decommission system*	2	*487v2*
F/615/5029	Working on basement construction projects in the workplace *Unit endorsements:* ***One*** *of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *Unit endorsements:* ***Four*** *of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Optional Units – ONE unit			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *<u>Unit endorsements</u>:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*
A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*
A/508/6525	Slinging and hand signalling the movement of suspended loads in the workplace *<u>Unit Endorsements:</u>* *The following endorsement required (i.e. own area of work):* *Slinger signaller – Underpinning Piling only* *Slinger signaller – Dewatering only* *Slinger signaller – Self-drilling Ground Anchor only* *Slinger signaller – Chemical and Resin Grouting*	2	*402Av2*

Pathway 19: Basement Construction – Dewatering – Deep Wells

Candidates must complete EIGHT units:

- SEVEN Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
J/615/5016	Preparing the site for the installation of dewatering systems in the workplace	2	*486v2*
R/615/5018	Installing deep well dewatering systems in the workplace	2	*489v2*
F/615/5029	Working on basement construction projects in the workplace *<u>Unit endorsements</u>:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *<u>Unit endorsements</u>:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Optional Units – ONE unit			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *<u>Unit endorsements</u>:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*
A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*
A/508/6525	Slinging and hand signalling the movement of suspended loads in the workplace *<u>Unit Endorsements:</u>* *The following endorsement required (i.e. own area of work):* *Slinger signaller – Underpinning Piling only* *Slinger signaller – Dewatering only* *Slinger signaller – Self-drilling Ground Anchor only* *Slinger signaller – Chemical and Resin Grouting*	2	*402Av2*

Pathway 20: Basement Construction – Dewatering - Ejectors

Candidates must complete EIGHT units:

- SEVEN Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
J/615/5016	Preparing the site for the installation of dewatering systems in the workplace	2	*486v2*
Y/615/5019	Installing ejector dewatering systems in the workplace	2	*490v2*
F/615/5029	Working on basement construction projects in the workplace *Unit endorsements:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *Unit endorsements:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Optional Units – ONE unit			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *<u>Unit endorsements</u>:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*
A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*
A/508/6525	Slinging and hand signalling the movement of suspended loads in the workplace *<u>Unit Endorsements:</u>* *The following endorsement required (i.e. own area of work):* *Slinger signaller – Underpinning Piling only* *Slinger signaller – Dewatering only* *Slinger signaller – Self-drilling Ground Anchor only* *Slinger signaller – Chemical and Resin Grouting*	2	*402Av2*

Pathway 21: Basement Construction – Ground Anchors - Driven

Candidates must complete SEVEN Mandatory units.

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
L/615/5020	Preparing the site to install ground anchors in the workplace	2	*513v2*
R/615/5021	Installing mechanical ground anchors in the workplace	2	*514v2*
F/615/5029	Working on basement construction projects in the workplace *Unit endorsements:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *Unit endorsements:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Pathway 22: Basement Construction – Ground Anchors – Open Hole

Candidates must complete SEVEN Mandatory units.

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
L/615/5020	Preparing the site to install ground anchors in the workplace	2	*513v2*
Y/615/5022	Installing open hole ground anchors in the workplace	2	*515v2*
F/615/5029	Working on basement construction projects in the workplace *Unit endorsements:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *Unit endorsements:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Pathway 23: Basement Construction – Ground Anchors – Self-drilling

Candidates must complete EIGHT units:

- SEVEN Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
L/615/5020	Preparing the site to install ground anchors in the workplace	2	*513v2*
D/615/5023	Installing self-drilling ground anchors in the workplace	2	*516v2*
F/615/5029	Working on basement construction projects in the workplace *Unit endorsements:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, construction, maintaining, dismantling and removing temporary works in the workplace *Unit endorsements:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Optional Units – ONE unit			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *<u>Unit endorsements</u>:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*

Pathway 24: Basement Construction – Box Beam Post Tensioning

Candidates must complete EIGHT Mandatory units.

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *Unit Endorsements:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*
H/615/5024	Preparing the site for the installation of post tensioning systems as sub-structural repair in the workplace	2	*518v2*
K/615/5025	Installing post tensioning system as sub-structural repair in the workplace	2	*519v2*
F/615/5029	Working on basement construction projects in the workplace *Unit endorsements:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *Unit endorsements:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Pathway 25: Basement Construction – Installation of Gas Membranes

Candidates must complete SEVEN Mandatory units.

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
M/615/5026	Preparing to install gas membranes in the workplace	2	*612v2*
T/615/5027	Installing gas membranes in the workplace	2	*613v2*
F/615/5029	Working on basement construction projects in the workplace *Unit endorsements:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *Unit endorsements:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Pathway 26: Basement Construction – Structural Waterproofing

Candidates must complete EIGHT units:

- SEVEN Mandatory units
- ONE Optional unit

Mandatory Units			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
M/508/6537	Conforming to general health, safety and welfare in the workplace	1	*641*
T/508/6538	Conforming to productive working practices in the workplace	2	*642*
Y/508/6533	Moving, handling and storing resources in the workplace	2	*643*
A/615/5028	Preparing surfaces for structural waterproofing in the workplace	2	*491v2*
H/615/1958	Carrying out structural waterproofing in the workplace	2	*492v2*
F/615/5029	Working on basement construction projects in the workplace *<u>Unit endorsements</u>:* ***One** of the following endorsements required:* *Underpinning* *Dewatering* *Structural waterproofing* *Ground anchors* *Box beam post tensioning* *Grouting* *Retaining structures* *Installation of gas membranes*	2	*762v1*
H/615/4987	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace *<u>Unit endorsements</u>:* ***Four** of the following endorsements required:* *Protective screens, hoardings and covers* *Access and egress routes* *Supports* *Supporting structures* *Removal equipment* *Diverting equipment* *Site facilities* *Stabilisation*	2	*763v1*

Optional Units – ONE unit			***CITB references provided for information only***
Unit Ref.	**Title**	**Level**	***CITB Internal Unit Ref.***
Y/615/2363	Inspecting and completing user maintenance on plant or machinery in the workplace *<u>Unit endorsements</u>:* ***One** of the following (i.e. own area of work)* *Underpinning piling* *Dewatering* *Structural waterproofing* *Ground anchors* *Chemical and resin grouting*	2	*657*
J/617/1197	Installing, maintaining and removing work area protection and safety equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required (i.e. own area of work):* *Dewatering* *Structural waterproofing* *Box beam post tensioning* *Chemical and resin grouting* *Retaining structures*	2	*360v3*
A/508/6587	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace *<u>Unit Endorsements</u>:* ***One** of the following endorsements required:* *Generators* *Pumps* *Pedestrian operated plant or machines* *Mixers* *Compressors* *Self-powered tools*	2	*400v2*
K/508/6536	Setting out secondary dimensional work control in the workplace *<u>Unit Endorsements</u>:* ***Three** of the following endorsements required:* *Lines* *Levels* *Depths* *Areas* *Heights* *Angles*	2	*401v2*

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/or occupationally competent.

Assessors/Internal Quality Assurance
Assessors for each unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.

Assessors and internal quality assurance verifiers for competence-based units or qualifications will normally need to hold appropriate assessor or internal quality assurance qualifications.

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

Links to National Standards / NOS mapping

National Occupational Standards (NOS) are owned by a Sector Skills Council or Standard Setting Body and they describe the skills, knowledge and understanding needed to undertake a particular task or job at different levels of competence.

The structure and units of this qualification are based on NOS for the construction sector developed by CITB.

Assessment

This qualification is competence-based, candidates must demonstrate the level of competence described in the units. Assessment is the process of measuring a candidate's skill, knowledge and understanding against the standards set in the qualification.

The qualification must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment, and it must be internally assessed by an appropriately experienced and qualified assessor.

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

Evidence can include:

- observation report by assessor
- assignments/projects/reports
- professional discussion
- witness testimony
- candidate product
- worksheets
- record of oral and written questioning
- Recognition of Prior Learning

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 can be found from page 53.

Additional information for assessment and requirements for unit endorsements where relevant is included after all of the learning outcomes and assessment criteria for each unit.

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 this qualification will be awarded:

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

ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction)

Claiming certificates

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

Unit certificates

If a candidate does not achieve all of the units required for a qualification, the centre may claim a unit certificate for the candidate which will list all of the units achieved.

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.

Title:	Conforming to general health, safety and welfare in the workplace.
Unit Number:	M/508/6537

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*	
1 Comply with all workplace health, safety and welfare legislation requirements.	1.1	Comply with information from workplace inductions and any health, safety and welfare briefings attended relevant to the occupational area.
	1.2	Use health and safety control equipment safely to carry out the activity in accordance with legislation and organisational requirements.
	1.3	Comply with statutory requirements, safety notices and warning notices displayed within the workplace and/or on equipment.
	1.4	State why and when health and safety control equipment, identified by the principles of protection, should be used relating to types, purpose and limitations of each type, the work situation, occupational use and the general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	1.5	State how the health and safety control equipment relevant to the work should be used in accordance with the given instructions.
	1.6	State which types of health, safety and welfare legislation, notices and warning signs are relevant to the occupational area and associated equipment.
	1.7	State why health, safety and welfare legislation, notices and warning signs are relevant to the occupational area.
	1.8	State how to comply with control measures that have been identified by risk assessments and safe systems of work.
2 Recognise hazards associated with the workplace that have not been previously controlled and report them in accordance with organisational procedures.	2.1	Report any hazards created by changing circumstances within the workplace in accordance with organisational procedures.
	2.2	List typical hazards associated with the work environment and occupational area in relation to resources, substances, asbestos, equipment, obstructions, storage, services and work activities.
	2.3	List the current Health and Safety Executive top ten safety risks.

Title:	Conforming to general health, safety and welfare in the workplace.
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
2 continued	2.4 List the current Health and Safety Executive top five health risks.
	2.5 State how changing circumstances within the workplace could cause hazards.
	2.6 State the methods used for reporting changed circumstances, hazards and incidents in the workplace.
3 Comply with organisational policies and procedures to contribute to health, safety and welfare.	3.1 Interpret and comply with given instructions to maintain safe systems of work and quality working practices.
	3.2 Contribute to discussions by offering/providing feedback relating to health, safety and welfare.
	3.3 Contribute to the maintenance of workplace welfare facilities in accordance with workplace welfare procedures.
	3.4 Safely store health and safety control equipment in accordance with given instructions.
	3.5 Dispose of waste and/or consumable items in accordance with legislation.
	3.6 State the organisational policies and procedures for health, safety and welfare, in relation to: – dealing with accidents and emergencies associated with the work and environment – methods of receiving or sourcing information – reporting – stopping work – evacuation – fire risks and safe exit procedures – consultation and feedback.
	3.7 State the appropriate types of fire extinguishers relevant to the work.
	3.8 State how and when the different types of fire extinguishers are used in accordance with legislation and official guidance.

Title:	Conforming to general health, safety and welfare in the workplace.

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Work responsibly to contribute to workplace health, safety and welfare whilst carrying out work in the relevant occupational area.	4.1 Demonstrate behaviour which shows personal responsibility for general workplace health, safety and welfare.
	4.2 State how personal behaviour demonstrates responsibility for general workplace health, safety and welfare, in relation to: – recognising when to stop work in the face of serious and imminent danger to self and/or others – contributing to discussions and providing feedback – reporting changed circumstances and incidents in the workplace – complying with the environmental requirements of the workplace.
	4.3 Give examples of how the behaviour and actions of individuals could affect others within the workplace.
5 Comply with and support all organisational security arrangements and approved procedures.	5.1 Provide appropriate support for security arrangements in accordance with approved procedures: – during the working day – on completion of the day's work – for unauthorised personnel (other operatives and the general public) – for theft.
	5.2 State how security arrangements are implemented in relation to the workplace, the general public, site personnel and resources.

Title:	Conforming to general health, safety and welfare in the workplace.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector Subject Area	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	7

Title:	Conforming to productive working practices in the workplace
Unit Number:	T/508/6538

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Communicate with others to establish productive work practices.	1.1 Communicate in an appropriate manner with line management, colleagues and/or customers to ensure that work is carried out productively.
	1.2 Describe the different methods of communicating with line management, colleagues and customers.
	1.3 Describe how to use different methods of communication to ensure that the work carried out is productive.
2 Follow organisational procedures to plan the sequence of work.	2.1 Interpret relevant information from organisational procedures in order to plan the sequence of work.
	2.2 Plan the sequence of work, using appropriate resources, in accordance with organisational procedures to ensure work is completed productively.
	2.3 Describe how organisational procedures are applied to ensure work is planned and carried out productively, in relation to: – using resources for own and other's work requirements – allocating appropriate work to employees – organising the work sequence – reducing carbon emissions.
	2.4 Describe how to contribute to zero/low carbon work outcomes within the built environment.
3 Maintain relevant records in accordance with the organisational procedures.	3.1 Complete relevant documentation according to the occupation as required by the organisation.
	3.2 Describe how to complete and maintain documentation in accordance with organisational procedures, in relation to: – job cards – worksheets – material/resource lists – time sheets.
	3.3 Explain the reasons for ensuring documentation is completed clearly and within given timescales.
4 Maintain good working relationships when conforming to productive working practices.	4.1 Carry out work productively, to the agreed specification, in conjunction with line management, colleagues, customers and/or other relevant people involved in the work to maintain good working relationships.

Title:	Conforming to productive working practices in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
	4.2 Apply the principles of equality and diversity and respect the needs of individuals when communicating and working with others.
	4.3 Describe how to maintain good working relationships, in relation to: – individuals – customer and operative – operative and line management – own and other occupations.
	4.4 Describe why it is important to work effectively with line management, colleagues and customers.
	4.5 Describe how working relationships could have an effect on productive working.
	4.6 Describe how to apply principles of equality and diversity when communicating and working with others.

Title:	Conforming to Productive Working Practices in the Workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector Subject Areas	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	10

Title:	Moving, handling and storing resources in the workplace	
Unit Number	Y/508/6533	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Comply with given information when moving, handling and/or storing resources.		1.1 Interpret the given information relating to moving, handling and/or storing resources, relevant to the given occupation.
		1.2 Interpret the given information relating to the use and storage of lifting aids and equipment.
		1.3 Describe the different types of technical, product and regulatory information, their source and how they are interpreted.
		1.4 State the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.5 Describe how to obtain information relating to using and storing lifting aids and equipment.
2 Know how to comply with relevant legislation and official guidance when moving, handling and/or storing resources.		2.1 Describe their responsibilities under current legislation and official guidance whilst working: – in the workplace, in confined spaces, below ground level, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making the reports.
		2.4 State the appropriate types of fire extinguishers relevant to the work.
		2.5 Describe how and when the different types of fire extinguishers, relevant to the given occupation, are used in accordance with legislation and official guidance.
3 Maintain safe working practices when moving, handling and/or storing resources.		3.1 Use health and safety control equipment safely to carry out the activity in accordance with legislation and organisational requirements when moving, handling and/or storing resources.
		3.2 Use lifting aids safely as appropriate to the work.

Title:	Moving, handling and storing resources in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 continued	3.3 Protect the environment in accordance with safe working practices as appropriate to the work.
	3.4 Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to moving, handling **and/or** storing resources, and the types, purpose and limitations of each type, the work situation, occupational use and the general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.5 Describe how the health and safety control equipment relevant to the work should be used in accordance with the given instructions.
	3.6 State how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4 Select the required quantity and quality of resources for the methods of work to move, handle and/or store occupational resources.	4.1 Select the relevant resources to be moved, handled and/or stored, associated with own work.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the occupational resources in relation to: – lifting and handling aids – container(s) – fixing, holding and securing systems.
	4.3 Describe how the resources should be handled and how any problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
5 Prevent the risk of damage to occupational resources and surrounding environment when moving, handling and/or storing resources.	5.1 Protect occupational resources and their surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Dispose of waste and packaging in accordance with legislation.

Title:	Moving, handling and storing resources in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 continued	5.3 Maintain a clean work space when moving, handling or storing resources.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when moving, handling and/or storing resources.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 State the purpose of the work programme and explain why deadlines should be kept in relation to: – progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given occupational resource information to move, handle **and/or** store resources to the required guidance.	7.1 Demonstrate the following work skills when moving, handling and/or storing occupational resources: – moving, positioning, storing, securing and/or using lifting aids and kinetic lifting techniques.
	7.2 Move, handle and/or store occupational resources to meet product information and organisational requirements relating to three of the following: – sheet material – loose material – bagged or wrapped material – fragile material – tools and equipment – components – liquids.
	7.3 Describe how to apply safe work practices, follow procedures, report problems and establish the authority needed to rectify them when moving, handling **and/or** storing occupational resources.
	7.4 Describe the needs of other occupations when moving, handling **and/or** storing resources.

Title:	Moving, handling and storing resources in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector Subject Areas	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	17

Title:	Setting out and marking positions for underpinning sequence in the workplace	
Unit Number:	K/615/4862	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when setting out and marking positions for underpinning sequence.		1.1 Interpret and extract relevant information from drawings, sequencing, specifications, schedules, method statements, risk assessments and manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, sequencing, specifications, schedules method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with underpinning.
2 Know how to comply with relevant legislation and official guidance when setting out and marking positions for underpinning sequence.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when setting out and marking positions for underpinning sequence.		3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when setting out and marking positions for underpinning sequence.

Title:	Setting out and marking positions for underpinning sequence in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.2 Demonstrate compliance with given information and relevant legislation when setting out and marking positions for underpinning sequence in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to setting out and marking positions for underpinning sequence and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to set out and mark positions for underpinning sequence.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools, equipment and setting out equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – timber and fixings – marking equipment (pegs, pins, lines, markers, paints) – hand tools portable power tools and equipment – setting out equipment (levels, global positioning systems, laser equipment and plumb lines).

Title:	Setting out and marking positions for underpinning sequence in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculation associated with the method and procedure to set out and mark positions for underpinning sequence.
5 Minimise the risk of damage to the work and surrounding area when setting out and marking positions for underpinning sequence.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when setting out and marking positions for underpinning sequence.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.

Title:	Setting out and marking positions for underpinning sequence in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Comply with the given contract information to set out and mark positions for underpinning sequence to the required specification.	7.1 Demonstrate the following work skills when setting out and marking positions for underpinning sequence: – measuring, marking out, levelling, plumb, positioning and securing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Set out for the underpinning sequence and transfer lines, plumbs and levels to given working instructions
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – confirm base line datum and design requirements – ensure the calibration of measuring and levelling equipment – apply setting out and sequencing data from drawings and method statements – set out from base line datum for underpinning sequences – mark installation points, lines, levels, plumb, depths (vertical and horizontal) and angles – check site markings against quality requirements – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – use setting out equipment and materials – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when setting out and marking positions for underpinning sequence.
	7.6 Describe how to maintain the tools and equipment used when setting out and marking positions for underpinning sequence.

Title:	Setting out and marking positions for underpinning sequence in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	43

Title:	Excavating for underpinning in the workplace	
Unit Number:	A/615/4977	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when excavating for underpinning.		1.1 Interpret and extract relevant information from drawings, specifications, schedules, sequencing, method statements, risk assessments and manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with underpinning
2 Know how to comply with relevant legislation and official guidance when excavating for underpinning.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when excavating for underpinning.		3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when excavating for underpinning.
		3.2 Demonstrate compliance with given information and relevant legislation when excavating for underpinning in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Excavating for underpinning in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to excavating for underpinning, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV) (including the monitoring of gas types and levels).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to excavate for underpinning.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – excavation support, fixings, fittings – plant and machinery – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to excavate for underpinning.

Title:	Excavating for underpinning in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when excavating for underpinning.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Install temporary earth work support and edge protection.
	5.3 Maintain a clean work space.
	5.4 Dispose of waste in accordance with current legislation.
	5.5 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.6 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when excavating for underpinning.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to excavate for underpinning to the required specification.	7.1 Demonstrate the following work skills when excavating for underpinning: – measuring, marking out, excavating, positioning and securing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Excavate pits and trenches for underpinning to contractor's working instructions.
	7.4 Utilise excavation plant, machinery and equipment
	7.5 Locate, mark and protect services.

Title:	Excavating for underpinning in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.6 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – recognise the sequence of excavation – excavate pits and trenches to line and level – meet design and quality requirements, angles and depth – excavate in sequence – recognise changes in ground conditions and soil types – support excavations, temporary earth work support and edge protection – locate, mark and protect services – remove water – store and remove spoil and excavated materials – install, operate and work with conveyor belt systems – work with, around and in close proximity to plant and machinery – direct and guide the operations of plant and machinery – load excavated materials onto transportation – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.7 Describe the needs of other occupations and how to effectively communicate within a team when excavating for underpinning.
	7.8 Describe how to maintain the tools and equipment used when excavating for underpinning.

Title:	Excavating for underpinning in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	47

Title:	Excavating and providing temporary support to pits and trenches in the workplace
Unit Number:	J/615/4979

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when excavating and providing temporary support to pits and trenches.	1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with excavation and provision of temporary support to pits and trenches.
2 Know how to comply with relevant legislation and official guidance when excavating and providing temporary support to pits and trenches.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when excavating and providing temporary support to pits and trenches.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when excavating and providing temporary support to pits and trenches.

Title:	Excavating and providing temporary support to pits and trenches in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.2 Demonstrate compliance with given information and relevant legislation when excavating and providing temporary support to pits and trenches in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to excavating and providing temporary support to pits and trenches, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV) (including the monitoring of gas types and levels).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to excavate and provide temporary support to pits and trenches.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – timber support systems, frames, trench sheets, – support systems including: skeleton, open and closed boarding, drag box, trench box, coffer dam, diaphragm wall and secant support – hand tools, portable power tools, plant, machinery and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.

Title:	Excavating and providing temporary support to pits and trenches in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area, volume and wastage associated with the method and procedure to excavate and provide temporary support to pits and trenches.
5 Minimise the risk of damage to the work and surrounding area when excavating and providing temporary support to pits and trenches.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when excavating and providing temporary support to pits and trenches.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to excavate and provide temporary support to pits and trenches to the required specification.	7.1 Demonstrate the following work skills when excavating and providing temporary support to pits and trenches: – measuring, marking out, excavating, positioning and securing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.

Title:	Excavating and providing temporary support to pits and trenches in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.3 Excavate and provide temporary support, to given working instructions, to pits and trenches with one of the following – timber – trench sheet – frames – support systems (e.g. skeleton, open and closed boarding, drag box, trench box, coffer dam, diaphragm wall or secant support)
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – confirm and work to agreed designs – recognise changes in ground and soil conditions – visually inspect excavations prior to entry – recognise side wall pressure, pressure from existing structures and hydrostatic pressure to depth ratios – support excavations with timber, trench sheets, frames and support systems including: skeleton, open and closed boarding, drag box, trench box, coffer dam, diaphragm wall and secant support – work around protected services – work with, around and in close proximity to plant and machinery – direct and guide the operations of plant and machinery – remove water – work in confined spaces – recognise the potential effects of installing temporary supports on adjacent structures – protect adjacent and neighbouring structures – assess and adjust propping systems – reduce voids behind supports, backfill, wedges and grouts – install and secure edge protection – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance

Title:	Excavating and providing temporary support to pits and trenches in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 contd – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when excavating and providing temporary support to pits and trenches.
	7.6 Describe how to maintain the tools and equipment used when excavating and providing temporary support to pits and trenches.

Title:	Excavating and providing temporary support to pits and trenches in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction):</u> **One** of the following endorsements required: Timber Trench sheet Frames Support systems
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	57

Title:	Erecting and striking underpinning formwork in the workplace
Unit Number:	A/615/4980

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when erecting and striking underpinning formwork.	1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with underpinning.
2 Know how to comply with relevant legislation and official guidance when erecting and striking underpinning formwork.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, whilst working: – in the workplace, below ground level, at ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when erecting and striking underpinning formwork.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when erecting and striking underpinning formwork.
	3.2 Demonstrate compliance with given information and relevant legislation when erecting and striking underpinning formwork in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Erecting and striking underpinning formwork in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to erecting and striking underpinning formwork, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV) (including the monitoring of gas types and levels)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to erect and strike underpinning formwork.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – formwork, timber and non-timber based sheet material, tie systems, proprietary soldiers and walings, release agents, fixings and fittings – hand tools portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to erect and strike underpinning formwork.

Title:	Erecting and striking underpinning formwork in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when erecting and striking underpinning formwork.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when erecting and striking underpinning formwork.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to erect and strike underpinning formwork to the required specification.	7.1 Demonstrate the following work skills when erecting and striking underpinning formwork: – measuring, marking out, fitting, levelling, plumb, finishing, removing, positioning and securing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Erect and strike formwork to given working instructions to underpin structures for one of the following: – structural underpinning – basement construction

Title:	Erecting and striking underpinning formwork in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – erect formwork for columns, walls, beams, floor slabs, including kickers, stop ends and for pre-cast units – produce and assemble formwork from timber and timber based products – assemble proprietary formwork systems – attach and remove soldiers and walings – recognise design requirements for the reduction of the effects of hydrostatic pressure – position and strike box-outs and bolt boxes, grout checks, level controls, angle fillets and features – position and remove tie systems, fixtures and fittings – install water stops – apply release agents – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when erecting and striking underpinning formwork.
	7.6 Describe how to maintain the tools and equipment used when erecting and striking underpinning formwork.

Title:	Erecting and striking underpinning formwork in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction):</u> **One** of the following endorsements required (i.e. own area of work): Excavated underpinning Basement construction – excavated underpinning
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	30

Title:	Installing reinforcement steel for underpinning in the workplace
Unit Number:	J/615/4982

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing reinforcement steel for underpinning.	1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, shape codes, method statements, risk assessments, manufacturers' information, oral and written instructions and official guidance relating to steelfixing for underpinning.
2 Know how to comply with relevant legislation and official guidance when installing reinforcement steel for underpinning.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing reinforcement steel for underpinning.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing reinforcement steel for underpinning.
	3.2 Demonstrate compliance with given information and relevant legislation when installing reinforcement steel for underpinning in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Installing reinforcement steel for underpinning in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing reinforcement steel for underpinning, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV) (including the monitoring of gas types and levels).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install reinforcement steel for underpinning.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – prefabricated cages, wire mesh, reinforcement steel, tie wire, ancillary steelfixing components – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install reinforcement steel for underpinning.

Title:	Installing reinforcement steel for underpinning in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when installing reinforcement steel for underpinning.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing reinforcement steel for underpinning.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect progress and the work programme.
7 Comply with the given contract information to install reinforcement steel for underpinning to the required specification.	7.1 Demonstrate the following work skills when installing reinforcement steel for underpinning: – sorting, measuring, marking out, cutting, fitting, positioning and securing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Install in-situ and/or prefabricated reinforcement steel to support concrete structures for underpinning to given working instructions incorporating ~~of~~ the following: – mesh – steel bar – spacers – cover blocks – ties

Title:	Installing reinforcement steel for underpinning in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – prepare mesh and steel bar reinforcement – position and support mesh and steel bar reinforcement (e.g. chairs, cover blocks) – position and support prefabricated cages – form associated wire ties to tie and secure mesh and steel bar reinforcement, and to tie and secure cover blocks and spacers – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing reinforcement steel for underpinning.
	7.6 Describe how to maintain the tools and equipment used when installing reinforcement steel for underpinning.

Title:	Installing reinforcement steel for underpinning in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills 'Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	57

Title:	Installing dry packing in the workplace	
Unit Number:	L/615/4983	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing dry packing.		1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statement, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with underpinning.
2 Know how to comply with relevant legislation and official guidance when installing dry packing.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe working practices when installing dry packing.		3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing dry packing.
		3.2 Demonstrate compliance with given information and relevant legislation when installing dry packing in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Installing dry packing in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing dry packing, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV) (including the monitoring of gas types and levels).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install dry packing.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – jacks, stools, footing pads, shims, packings, cement, aggregates and additives – hand tool, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install dry packing.

Title:	Installing dry packing in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when installing dry packing.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing dry packing.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install dry packing to the required specification.	7.1 Demonstrate the following work skills when installing dry packing: – measuring, marking out, removing, mixing, placing, positioning and securing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Prepare and install temporary or permanent support to given working instructions: – cut pockets – jack positions – stool positions – formation – foundations – structural members – dry pack.

Title:	Installing dry packing in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – cut and form pockets to position jacks, stools and footing pads – prepare formations and foundations and structural members – prepare and mix dry packs, cement and aggregates including additives – place and compact dry pack – select and insert shims – consider the relationship between existing structures, dry packs and new structures – recognise the potential effects of installing dry packs on adjacent structures – protect dry packs for curing – determine the quality of dry packs in accordance with specifications – recognise and determine when specialist skills and knowledge are required and report accordingly – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing dry packing.
	7.6 Describe how to maintain the tools and equipment used when installing dry packing.

Title:	Installing dry packing in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	30

Title:	Repairing sub-structure after underpinning in the workplace
Unit Number:	Y/615/4985

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when repairing sub-structure after underpinning.	1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with underpinning.
2 Know how to comply with relevant legislation and official guidance when repairing sub-structure after underpinning.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when repairing sub-structure after underpinning.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when repairing sub-structure after underpinning.
	3.2 Demonstrate compliance with given information and relevant legislation when repairing sub-structure after underpinning in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Repairing sub-structure after underpinning in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention should be used, relating to repairing sub-structure after underpinning, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV) (including the monitoring of gas types and levels)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to repair sub-structure after underpinning.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – bricks, blocks, timber, stone, concrete, aggregates, cements and additives – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to repair sub-structure after underpinning.

Title:	Repairing sub-structure after underpinning in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when repairing sub-structure after underpinning.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when repairing sub-structure after underpinning.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to repair sub-structure after underpinning to the required specification.	7.1 Demonstrate the following work skills when repairing sub-structure after underpinning: – mixing, placing, positioning and securing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Repair existing sub-structure to given working instructions for two of the following: – brickwork – blockwork – concrete – timber – facings – linings – waterproofing systems.
	7.4 Provide temporary support

Title:	Repairing sub-structure after underpinning in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.5 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – repair existing brick, block, timber, facings, linings and concrete sub-structures – mix concrete – recognise the requirements and criteria for effective drainage – apply waterproofing – install temporary support – work with, around and in close proximity to plant and machinery – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.6 Describe the needs of other occupations and how to effectively communicate within a team when repairing sub-structure after underpinning.
	7.7 Describe how to maintain the tools and equipment used when repairing sub-structure after underpinning.

Title:	Repairing sub-structure after underpinning in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment.. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction):</u> **Two** of the following endorsements required: Brickwork Blockwork Concrete Timber Facings Linings Waterproof systems
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	50

Title:	Placing and compacting concrete in the workplace	
Unit Number:	D/615/4986	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when placing and compacting concrete.		1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, oral and written instructions, current regulations governing buildings and official guidance associated with the placement and compaction of concrete
2 Know how to comply with relevant legislation and official guidance when placing and compacting concrete.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when placing and compacting concrete.		3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when placing and compacting concrete.
		3.2 Demonstrate compliance with given information and relevant legislation when placing and compacting concrete in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Placing and compacting concrete in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to placing and compacting concrete, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to place and compact concrete.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability limitations and defects associated with the resources in relation to: – aggregates, cements, concrete, reinforcement, membranes, release agents, anti-heave materials, moulds, additives and retardants – hand tools portable power tools and equipment, slump test equipment, skips, compaction equipment, poker vibrator, tampers, floats and trowels.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to place and compact concrete.

Title:	Placing and compacting concrete in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*	
5 Minimise the risk of damage to the work and surrounding area when placing and compacting concrete.	5.1	Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2	Maintain a clean work space.
	5.3	Dispose of waste in accordance with current legislation.
	5.4	Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5	Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when placing and compacting concrete.	6.1	Demonstrate completion of the work within the allocated time.
	6.2	Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to place and compact concrete to the required specification.	7.1	Demonstrate the following work skills when placing and compacting concrete: – measuring, marking out, inspecting, receiving, handling, transporting, placing, spreading, levelling, vibrating, compacting, testing and protecting.
	7.2	Use and maintain hand tools, portable power tools, plant or machinery and ancillary equipment.

Title:	Placing and compacting concrete in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.3 Place, lay and compact concrete to given working instructions using three of the following placement methods – chute – elephant's trunk – skip – pump – mono-rail – manually
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – confirm integrity of formwork and temporary supports – handle and transport concrete – place concrete using shuts, elephant's trunk, skip, pump, mono-rail and manually – visually assess the quality of the concrete prior to and during pouring and placement – extract samples for testing – work with, around and in close proximity to plant and machinery – direct and guide the operations and movement of plant and machinery – compact and finish concrete – protect concrete to assist the curing process – apply curing accelerants and aids – recognise requirements for working with concretes containing additives for waterproofing and retardants – recognise and determine when additional specialist skills and knowledge are required and report accordingly

Title:	Placing and compacting concrete in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 contd – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools, plant, machinery and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when placing and compacting concrete.
	7.6 Describe how to maintain the tools and equipment used when placing and compacting concrete.

Title:	Placing and compacting concrete in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. Evidence for assessment criteria 7.2 must be for at least three different structures/placements. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. **ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction):** Three of the following endorsements required: Chute Elephants trunk Skip Pump Mono-rail Manual
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	37

Title:	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace
Unit Number:	H/615/4987

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing, constructing, maintaining, dismantling and removing temporary works.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statement, risk assessments, electronic data, written and verbal instructions, permits, manufacturers' information, current regulations governing buildings, structures and official guidance associated with installation, construction, maintenance, dismantling and removal of temporary works.
2 Know how to comply with relevant legislation and official guidance when installing, constructing, maintaining, dismantling and removing temporary works.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.

Title:	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Maintain safe and healthy working practices when installing, constructing, maintaining, dismantling and removing temporary works.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing, constructing, maintaining, dismantling and removing temporary works.
	3.2 Demonstrate compliance with given information and relevant legislation when installing, constructing, maintaining, dismantling and removing temporary works in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health.
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention should be used, relating to installing, constructing, maintaining, dismantling and removing temporary works and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.

Title:	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Select the required quantity and quality of resources for the methods of work to install, construct, maintain, dismantle and remove temporary works.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – protective measures – materials – supports – components, fittings and fixings – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe how to calculate quantity, length, area, volume and wastage associated with the method and procedure to install, construct, maintain, dismantle and remove temporary works.
5 Minimise the risk of damage to the work and surrounding area when installing, constructing, maintaining, dismantling and removing temporary works.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean and tidy work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.

Title:	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*	
6 Complete the work within the allocated time when installing, constructing, maintaining, dismantling and removing temporary works.	6.1	Demonstrate completion of the work within the allocated time.
	6.2	Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install, construct, maintain, dismantle and remove temporary works to the required specification.	7.1	Demonstrate the following work skills when installing, constructing, maintaining, dismantling and removing temporary works : – measuring, marking out, aligning, altering, assembling, building, erecting, laying, levelling, plumb, installing, checking, monitoring, adjusting, reinforcing, fitting, fixing, positioning, securing, dismantling and removing.
	7.2	Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3	Install, construct, maintain, dismantle and remove to given working instructions for four of the following as temporary works to allow or enable permanent construction – protective screens, hoardings and covers – access and egress routes – supports – supporting structures – removal equipment – diverting equipment – site facilities – stabilisation.
	7.4	Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify agreed quality requirements – conform to agreed specification – identify the roles of the temporary works supervisor and the temporary work co-ordinator – recognise the characteristics, critical factors of temporary works and interface with existing structures and permanent work – identify temporary works control mechanisms – check resources for type, quantity and damage and report discrepancies

Title:	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 contd – install, construct, maintain, dismantle and remove protective screens, hoardings and covers in order to restrict access and maintain the integrity of the protected items – install, construct, maintain, dismantle and remove access and egress routes, new and alterations to existing routes including pedestrian routes, vehicle routes, bridges, decks, openings, stairs, ramps, passing and parking places – assemble, build, align, erect, install, construct, dismantle and remove load bearing supports – assemble, build, align, erect, install, construct, dismantle and remove supports that hold in position including formwork, falsework and excavation support systems – identify the criteria, characteristics and differences between proprietary and bespoke support systems – check and maintain supporting structures including scaffolding, formwork, falsework, props, excavation support and dewatering systems – check condition, support and protection of utilities – recognise the checking, inspection, examination and certification criteria for temporary works – install removal equipment including gantries, hoists, skips, chutes, conveyors, vacuums, pumps and pipework – maintain removal and diverting equipment, including alterations by reinforcement – recognise the criteria for disconnecting, protecting and reconnecting utilities – fit, fix, position, align, secure, dismantle and remove supports and carriage systems, underground and overhead, to divert utility carrying equipment including electric, communications, water (foul, surface and fresh), gas and air – work with, around and in close proximity to plant and machinery – recognise the criteria for directing and guiding the movement and operations of vehicles, plant and machinery – measure, mark out, transfer, set out and maintain lines, plumbs and levels – monitor wear and tear on temporary works and report – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance

Title:	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*	
7 continued	7.4 contd	– use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5	Describe the needs of other occupations and how to effectively communicate within a team when installing, constructing, maintaining, dismantling and removing temporary works.
	7.6	Describe how to maintain the tools and equipment used when installing, constructing, maintaining, dismantling and removing temporary works.

Title:	Installing, constructing, maintaining, dismantling and removing temporary works in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations:</u> **Four** of the following endorsements required: Protective screens, hoardings and cvers Access and egress routes Supports Supporting structures Removal equipment Diverting equipment Site facilities Stabilisation
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	73

Title:	Installing piles in areas of restricted access (mini or micro-piling) in the workplace
Unit Number:	M/615/4989

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing piles in areas of restricted access (micro or mini piling).	1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with the installation of mini or micro piles.
2 Know how to comply with relevant legislation and official guidance when installing piles in areas of restricted access (micro or mini piling).	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing piles in areas of restricted access (micro or mini piling).	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing piles in areas of restricted access (micro or mini piling).

Title:	Installing piles in areas of restricted access (mini or micro piling) in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.2 Demonstrate compliance with given information and relevant legislation when installing piles in areas of restricted access (micro or mini piling) in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing piles in areas of restricted access (micro or mini piling), and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV) (including the monitoring of gas types and levels).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to installing piles in areas of restricted access (mini or micro piling).	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – mini or micro piles, casings, linings, reinforcement steel, concrete – hand tools, portable power tools and ancillary equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.

Title:	Installing piles in areas of restricted access (mini or micro piling) in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install piles in areas of restricted access (mini or micro piling)
5 Minimise the risk of damage to the work and surrounding area when installing piles in areas of restricted access (mini or micro piling).	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing piles in areas of restricted access (mini or micro piling).	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install piles in areas of restricted access (mini or micro piling) to the required specification.	7.1 Demonstrate the following work skills when installing piles in areas of restricted access (mini or micro piling): – measuring, fitting, positioning, aligning, levelling, plumb, securing and operating.
	7.2 Use and maintain hand tools, portable power tools, plant, machinery and ancillary equipment.

Title:	Installing piles in areas of restricted access (mini or micro piling) in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.3 Install mini and micro piles in areas of restricted access to given working instructions by two of the following: – open auger – hollow stem auger – sectional flight auger (continuous flight auger) – down-hole hammer – in-hole support drilling – drop hammer – jacked down piling – pneumatic displacement piling – proprietary micro piling systems.
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – install, operate and dismantle mini piling and micro piling rigs – recognise the uses and characteristics of casings, linings, reinforcement steel and concrete in mini and micro piling – identify and confirm pile positions and sequence – work in restricted areas, considering movement, limited head room and stability – drive and bore piles maintaining alignment, level and plumb – install piles by means of: open auger, hollow stem auger, sectional flight auger (continuous flight auger), down-hole hammer, in-hole support drilling, drop hammer, jacked down piling, pneumatic displacement piling, proprietary micro- piling systems – recognise changes in ground conditions and soil types – identify concrete levels and control concrete supply – complete piling documentation – install protection to pile tops to prevent access and support the curing process – work with, around and in close proximity to plant and machinery – direct and guide the operations and movement of plant and machinery – recognise the potential effects of installing piles on adjacent structures – recognise and determine when additional specialist skills and knowledge are required and report accordingly

Title:	Installing piles in areas of restricted access (mini or micro piling) in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 contd – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and ancillary equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing piles in areas of restricted access (mini or micro piling).
	7.6 Describe how to maintain the tools and equipment used when installing piles in areas of restricted access (mini or micro piling).

Title:	Installing piles in areas of restricted access (mini or micro piling) in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction):</u> **Two** of the following endorsements required: Open auger Hollow stem auger Sectional slight auger (cfa) Down-hole hammer In-hole support drilling Drop hammer Jacked down piling Pneumatic displacement piling Proprietary micro piling systems
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	103

Title:	Installing, maintaining and removing work area protection and safety equipment in the workplace
Unit Number:	J/617/1197

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing, maintaining and removing work area protection and safety equipment.	1.1 Interpret and extract relevant information from drawings, plans, risk assessments, method statements, specifications, schedules and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, plans, risk assessments, method statements, specifications, schedules, site inspection reports, manufacturers' information, verbal and written instructions, current regulations and official guidance associated with protecting work areas.
2 Know how to comply with relevant legislation and official guidance when establishing work area protection and safety.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing, maintaining and removing work area protection and safety equipment.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing, maintaining and removing work area protection and safety equipment.

Title:	Installing, maintaining and removing work area protection and safety equipment in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 continued	3.2 Demonstrate compliance with given information and relevant legislation when installing, maintaining and removing work area protection and safety equipment in relation to at least two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing, maintaining and removing work area protection and safety equipment, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install, maintain and remove work area protection and safety equipment.	4.1 Select resources associated with own work in relation to materials, components and fixings, and tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – safety and security equipment (cones, tapes, fences, barriers, hoarding, doors, gates) – protection and safety notices – signs and lighting – hand tools, power tools and equipment.
	4.3 Describe how to confirm that the resources and materials conform to the specification.

Title:	Installing, maintaining and removing work area protection and safety equipment in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 continued	4.4 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.5 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.6 Describe any potential hazards associated with the resources and methods of work.
	4.7 Describe how to calculate quantity, length and area associated with the method and procedure to install, maintain and remove work area protection and safety equipment.
5 Minimise the risk of damage to the work and surrounding area when installing, maintaining and removing work area protection and safety equipment.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clear and tidy work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing, maintaining and removing work area protection and safety equipment.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of productivity targets and time scales – how times are estimated – organisational procedures for reporting circumstances which will affect the work programme.

Title:	Installing, maintaining and removing work area protection and safety equipment in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Comply with the given contract information to install, maintain and remove work area protection and safety equipment to the required specification.	7.1 Demonstrate the following work skills when installing, maintaining and removing work area protection and safety equipment: – measuring, setting out, positioning, assembling, constructing, securing, dismantling and removing.
	7.2 Use and maintain hand tools, power tools and ancillary equipment.
	7.3 Install, maintain and remove temporary protection and safety arrangements for the work area, to given working instructions, relating to protection equipment, barriers, fences and at least one of the following: – protection and safety notices – safety lighting.
	7.4 Report work undertaken
	7.5 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – plan for the protection and the safety of the work and surrounding environment – conform to agreed specification – confirm the location of utility services and ensure they are protected – prepare and set out area protection equipment to required dimensions – install, check and maintain the protection and safety equipment – dismantle and remove protection and safety equipment – install safety notices – install lighting systems – monitor and check accuracy during progress and on completion of work – install, maintain and remove work area protection equipment in public areas – transport, load and off load work area protection equipment – recognise and determine when specialist skills and knowledge are required and report accordingly – use hand tools, power tools and equipment – work at height – use access equipment.

Title:	Installing, maintaining and removing work area protection and safety equipment in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 continued	7.6 Describe the needs of other occupations and how to communicate effectively within a team when installing, maintaining and removing work area protection and safety equipment in the workplace.
	7.7 Describe how to maintain the tools and equipment used when installing, maintaining and removing work area protection and safety equipment in the workplace.

Title:	Installing, maintaining and removing work area protection and safety equipment in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ structure. <u>ProQual Level 2 NVQ Diploma in Sub Structure Work Occupations (Construction):</u> **One** of the following endorsements required (i.e. own area of work): Dewatering Structural waterproofing Box beam post tensioning Chemical and resin grouting Retaining structures
Sector Subject Areas	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	55

Title:	Slinging and hand signalling the movement of suspended loads in the workplace
Unit Number:	A/508/6525

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the preparation for and the slinging and signalling of loads.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, risk assessments, method statements (lift plans) and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, lift plans, work instructions, manufacturers' information, approved procedures and Codes of Practice.
2 Organise with others the sequence and operation in which the slinging and signalling of loads is to be carried out.	2.1 Organise the work according to given information or instructions.
	2.2 Describe how to communicate ideas between team members.
	2.3 Organise and communicate with team members and other associated occupations.
	2.4 Describe how to organise resources prior to and when slinging and signalling of loads.
3 Know how to comply with relevant legislation and official guidance to carry out slinging and signalling of loads.	3.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	3.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	3.3 Explain what the accident reporting procedures are and who is responsible for making reports.

Title:	Slinging and hand signalling the movement of suspended loads in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Maintain safe and healthy working practices when preparing for and slinging and signalling loads.	4.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with legislation and organisational requirements when slinging and signalling loads.
	4.2 Demonstrate compliance with given information and relevant legislation when carrying out the slinging and signalling of loads in relation to at least three of the following: – safe use and storage of tools and equipment – safe use, storage and handling of lifting accessories – safe use of access equipment – specific risks to health.
	4.3 Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to slinging and signalling of loads, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	4.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	4.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
5 Select the required quantity and quality of resources to prepare for and when slinging and signalling loads.	5.1 Select resources associated with slinging/signalling in relation to lifting accessories/aids, hand tools and ancillary equipment.
	5.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources, and how they should be used correctly, relating to: – lifting accessories – signalling and communication equipment – hand tools and ancillary equipment.
	5.3 Describe how the resources should be used correctly, and how problems associated with the resources are reported.

Title:	Slinging and hand signalling the movement of suspended loads in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Continued	5.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	5.5 Describe any potential hazards associated with the resources and methods of work.
	5.6 Describe how to identify weight, quantity, length and area associated with the method/procedures to carry out slinging/signalling.
6 Minimise the risk of damage to the work and surrounding area when preparing to and slinging and signalling loads.	6.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	6.2 Prevent damage and maintain a clean work space.
	6.3 Dispose of waste in accordance with current legislation.
	6.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	6.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
7 Complete the work within the allocated time when preparing to and slinging and signalling loads.	7.1 Demonstrate completion of the work within the allocated time.
	7.2 Describe the purpose of the work programme and describe why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.

Title:	Slinging and hand signalling the movement of suspended loads in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
8 Comply with the given contract information to prepare to and sling and signal suspended loads for movement to the required specification.	8.1 Demonstrate the following work skills when preparing to and slinging and signalling loads: – measuring, gauging, estimating, calculating, fitting, fixing, testing, balancing, interpreting, inspecting, judging, explaining, preparing, indicating, informing, instructing, signing, positioning, adjusting, configuring, moving, securing, signalling and relaying.
	8.2 Use and maintain lifting accessories, lifting aids and equipment.
	8.3 Inspect and prepare lifting accessories prior to slinging.
	8.4 Prepare to and attach suspended loads to lifting equipment, using appropriate lifting accessories and load securing methods, to given working instructions for three of the following: – balanced – unbalanced – loose – bundled – container – drum – a load where the machine operator cannot observe its full movement path.
	8.5 Guide, move and place suspended loads to specified destinations, using hand signals, to given working instructions for three of the following: – balanced – unbalanced – loose – bundled – container – drum – a load where the machine operator cannot observe its full movement path.
	8.6 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish authority needed to rectify, to: – identify the differences between: slinging and signalling, directing and guiding movement of vehicles, plant and machinery, and directing and guiding operations of plant and machinery not being used for lifting operations – confirm the authority, duties and responsibilities allocated – identify characteristics of lifting equipment and lifting accessories – identify and interpret valid certification for maintenance, inspection and thorough examination

Title:	Slinging and hand signalling the movement of suspended loads in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
8 Continued	8.7 – lift and transfer people – sling balanced, unbalanced, loose, live, bundled, container drum loads and loads that are blind to the equipment operator – communicate using hand signals, hand signalling equipment (lights, wands, fluorescent gloves, flags) and electronic communication equipment (loud hailers, radios) – confirm methods of communication – recognise blind-spots, potential crush zones and other limitations to driver visibility – consider the load characteristics including centre of gravity and lifting points to determine the method of slinging – determine and check the route of the load before and during the lift including distances, clearances and landing position
	8.8 – select, handle, inspect and use (assemble, set up and adjust) lifting accessories and aids – identify rejection criteria for removing lifting accessories from service – recognise and determine when specific skills and knowledge are required and report accordingly – attach lifting accessories and sling loads securely – ensure balance and stability of loads – attach and use load guidance equipment (tag lines) – guide and place suspended loads by recognised methods of communication and agreed operational procedures – land and position loads safely and securely – remove and store lifting accessories – use hand tools and ancillary equipment.
	8.9 Describe the needs of other occupations and how to communicate within a team when preparing to and slinging and signalling loads.
	8.10 Describe how to maintain the lifting accessories, lifting aids and signalling and communication equipment used to sling and signal loads.

Title:	Slinging and hand signalling the movement of suspended loads in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction):</u> The following endorsement required (i.e. own area of work): Slinger signaller – Underpinning piling only Slinger signaller – Dewatering only Slinger signaller – Self-drilling Ground Anchor only Slinger signaller – Chemical and resin grouting
Sector subject areas	5.2 Building and Construction
Availability for use	Shared unit
Unit credit value	10
Unit guided learning hours	33

Title:	Preparing the site for chemical and resin grouting and soil injection in the workplace
Unit Number:	H/615/4990

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when preparing the site for chemical and resin grouting and soil injection.	1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with chemical and resin grouting and soil injection.
2 Know how to comply with relevant legislation and official guidance when preparing the site for chemical and resin grouting and soil injection.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when preparing the site for chemical and resin grouting and soil injection.	3.1 Use personal health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when preparing the site for chemical and resin grouting and soil injection.

Title:	Preparing the site for chemical and resin grouting and soil injection in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.2 Demonstrate compliance with given information and relevant legislation when preparing the site for chemical and resin grouting and soil injection in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to preparing the site for chemical and resin grouting and soil injection, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to prepare the site for chemical and resin grouting and soil injection.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – protection materials – drill and drill bits – lances and connectors – horizontal laser and targets – drain protection gear – grouting plant – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly, how problems associated with the resources are reported.

Title:	Preparing the site for chemical and resin grouting and soil injection in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, volume, length, area and wastage associated with the method and procedure to prepare the site for chemical and resin grouting and soil injection.
5 Minimise the risk of damage to the work and surrounding area when preparing the site for chemical and resin grouting and soil injection.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when preparing the site for chemical and resin grouting and soil injection.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.

Title:	Preparing the site for chemical and resin grouting and soil injection in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Comply with the given contract information to prepare the site for chemical and resin grouting and soil injection to the required specification.	7.1 Demonstrate the following work skills when preparing for chemical grouting and soil injection: – measuring, checking, setting out positioning, coupling, connecting, assembling and driving.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment
	7.3 Prepare the site to carry out chemical and resin grouting and soil injection to given working instructions, relating to the following: – locate and protect services – position machines and equipment (mixers, pumps, agitators, hoses, cables, packers, lances) – position materials (water, cements, additives, solutions [acrylics], hardeners [stab jell] sodium silicate) – assemble and connect injection equipment (hoses, couplings, valves, manchette tubes [TaM], lances, packers, pumps) – establish a movement and progress monitoring system.
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – set out injection positions – recognise site layouts that encourage efficiency – locate, expose and protect services – prepare safety observation locations – prepare and assemble manchette tube (TaM) – drive lances to depth – set up laser and secure targets as levelling and monitoring systems – locate and position equipment, mixers, pumps and agitators – confirm, locate, lay out and connect system hoses and cables to agreed water and power supplies – identify disposal sources to prevent contamination – locate and protect drains build bunds and make drip trays for machines and equipment, – work with, around and in close proximity to plant and machinery – direct and guide the operation and movement of plant and machinery – recognise and determine when additional specialist skills and knowledge are required and report accordingly

Title:	Preparing the site for chemical and resin grouting and soil injection in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 contd – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when preparing the site for chemical and resin grouting and soil injection.
	7.6 Describe how to maintain the tools and equipment used when preparing the site for chemical and resin grouting and soil injection.

Title:	Preparing the site for chemical and resin grouting and soil injection in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills 'Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	60

Title:	Carrying out chemical and resin grouting and soil injection in the workplace
Unit Number:	M/615/4992

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when carrying out chemical and resin grouting and soil injection.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with chemical and resin grouting and soil injection.
2 Know how to comply with relevant legislation and official guidance when carrying out chemical and resin grouting and soil injection.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when carrying out chemical and resin grouting and soil injection.	3.1 Use personal health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when carrying out chemical and resin grouting and soil injection.
	3.2 Demonstrate compliance with given information and relevant legislation when carrying out chemical and resin grouting and soil injection in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Carrying out chemical and resin grouting and soil injection in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to carrying out chemical and resin grouting and soil injection, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV) (including the monitoring of gas types and levels)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to carry out chemical and resin grouting and soil injection.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – horizontal lasers and targets and levelling equipment – lances and chemical grout – grouting plant for mixing, heating, measuring and pumping chemicals – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly, how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to carry out chemical and resin grouting and soil injection.

Title:	Carrying out chemical and resin grouting and soil injection in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when carrying out chemical and resin grouting and soil injection.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when carrying out chemical and resin grouting and soil injection.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to carry out chemical and resin grouting and soil injection to the required specification.	7.1 Demonstrate the following work skills when carrying out chemical and resin grouting and soil injection: – checking, securing and mixing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Carry out grouting and soil injection to given working instructions for the following: – seal (waterproofing, leakage, contamination) – stabilise (compaction, consolidation, void filling) – structural loading – clean out grouting equipment.

Title:	Carrying out chemical and resin grouting and soil injection in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – confirm levelling and monitoring system – recognise the characteristics of chemical and resin grout and soil stabilisation used to seal, stabilise and support loads – work to line, level and plumb – use grouting plant to mix, heat, pump and inject grout – apply additives and hardeners – monitor movement of surfaces and structure – install manchette tube systems – insert packers and packer hose to depth – monitor injection by judging pressures and flows – grout to termination – record details (pressure, quantity and flow) – identify disposal sources – operate and maintain pumps – clear and remove blockages – reinstate original conditions – identify the criteria for handling, dealing with and disposing of hazardous waste – work with, around and in close proximity to plant and machinery – clean and flush out grouting equipment – recognise and determine when specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when carrying out chemical and resin grouting and soil injection.
	7.6 Describe how to maintain the tools and equipment used when carrying out chemical and resin grouting and soil injection.

Title:	Carrying out chemical and resin grouting and soil injection in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	60

Title:	Inspecting and completing user maintenance on plant or machinery in the workplace
Unit Number:	Y/615/2363

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Identify relevant information relating to the work and resources when inspecting and completing user maintenance on plant or machinery.	1.1 Identify relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information related to the work to be carried out.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 State the organisational procedures developed to report and rectify inappropriate information.
	1.4 List different types of information and their source in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information and current regulations associated with inspecting and completing user maintenance on plant or machinery.
2 Know how to comply with relevant legislation and official guidance when inspecting and completing user maintenance on plant or machinery.	2.1 Outline their responsibilities regarding potential accidents and health hazards, whilst working: – in the workplace, below ground level, at height, in confined spaces, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	2.2 State the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 State what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when inspecting and completing user maintenance on plant or machinery.	3.1 Use health and safety control equipment and access equipment (if applicable) safely to carry out the activity in accordance with current legislation and organisational requirements when inspecting and completing user maintenance on plant or machinery.
	3.2 Comply with information relating to specific risks to health when inspecting and completing user maintenance on plant or machinery.

Title:	Inspecting and completing user maintenance on plant or machinery in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 State why and when health and safety control equipment, identified by the principles of protection, should be used, relating to inspecting and completing user maintenance on plant or machinery, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4 State how the relevant health and safety control equipment should be used in accordance with the given instructions.
	3.5 State how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4 Select the required quantity and quality of resources for the methods of work to inspect and complete user maintenance on plant or machinery.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools, equipment and consumables.
	4.2 Outline the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – consumables – coolants, oils, fuels – caps, covers and fastenings – hand tools, portable powered tools and equipment.
	4.3 State how the resources should be used correctly.
	4.4 State how any problems associated with the resources are reported.
	4.5 Outline any potential hazards associated with the resources and methods of work.
	4.6 State how to calculate quantity, length, area and wastage associated with the method/procedure to inspect and complete user maintenance on plant and machinery.

Title:	Inspecting and completing user maintenance on plant or machinery in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*	
5 Minimise the risk of damage to the work and surrounding area when inspecting and completing user maintenance on plant or machinery.	5.1	Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2	Minimise damage and maintain a clean work space.
	5.3	Dispose of waste in accordance with current legislation.
	5.4	Outline how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5	State why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when inspecting and completing user maintenance on plant or machinery.	6.1	Demonstrate completion of the work within the allocated time.
	6.2	State the purpose of the work programme.
	6.3	State why deadlines should be kept in relation to agreed start and finish times.
7 Comply with the given contract information to inspect and complete user maintenance on plant or machinery to the required specification.	7.1	Demonstrate the following work skills when inspecting and completing user maintenance on plant or machinery: – inspecting, replenishing, replacing, applying, adjusting, lubricating, cleaning and securing.
	7.2	Inspect and complete user maintenance on plant or machinery to given working instructions to include four of the following: – cooling systems – oil(s) and lubricants – fuel(s) – running gear, drive mechanisms – electrics, instruments, lights and warning devices.
	7.3	Record information on user maintenance in accordance with given working instructions.
	7.4	Safely use and handle materials, hand tools, portable power tools and ancillary equipment.
	7.5	Safely store the materials, tools and equipment used when inspecting and completing user maintenance on plant or machinery.

Title:	Inspecting and completing user maintenance on plant or machinery in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.6 Outline how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify user maintenance criteria – inspect plant and machinery – identify high temperature and high pressure components and systems – measure and replenish fluids, coolants, oils and fuels – remove and replace caps and covers – undo, remove and replace nuts, bolts, pins, clips and specialist fastenings – deflate and inflate tyres – adjust running gear, wheel phasing, track, belt and chain – check operation of electrics, instruments, lights and warning devices – apply lubricants, greases, oils and compounds by grease gun, cartridge, can, spray and brush – use hand tools, portable power tools and equipment – work at height – use access equipment – complete and maintain records.
	7.7 State the needs of other occupations and how to effectively communicate within a team when inspecting and completing user maintenance on plant or machinery.
	7.8 Outline how to maintain the tools and equipment used when inspecting and completing user maintenance on plant or machinery.

Title:	Inspecting and completing user maintenance on plant or machinery in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsement detailed within the relevant NVQ Structure. ProQual Level 2 NVWQ Diploma in Sub Structure Occupations (Construction) **One** of the following (i.e. own area of work) Underpinning piling Dewatering Structural waterproofing Ground anchors Chemical and resin grouting
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit credit value	8
Unit guided learning hours	45

Title:	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace
Unit Number:	A/508/6587

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the preparation and use of powered units, tools or pedestrian plant, machinery or equipment.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, risk assessments, operating instructions and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, legislation, Codes of Practice, manufacturers' information and operating instructions.
2 Know how to comply with relevant legislation and official guidance to prepare and use powered units, tools or pedestrian plant, machinery or equipment.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.

Title:	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Maintain safe and healthy working practices when preparing for and using powered units, tools or pedestrian plant, machinery or equipment.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with legislation and organisational requirements when using powered units, tools or pedestrian plant, machinery or equipment
	3.2 Demonstrate compliance with given information and relevant legislation when using powered units, tools or pedestrian plant, machinery or equipment in relation to two or more of the following: – safe use of access equipment – safe handling of materials – safe use and storage of materials, tools and equipment – specific risks to health.
	3.3 Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to powered units, tools or pedestrian plant, machinery or equipment use, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources to prepare for and sustain powered units, tools or pedestrian plant, machinery or equipment.	4.1 Select resources associated with the type of work in relation to fuel/power source, lubricants and consumables.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources, and how they should be used correctly, relating to: – power source/fuels – consumables, lubricants.

Title:	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe how to identify quantity, length, area and wastage associated with the method/procedures to operate powered units, tools or pedestrian plant, machinery or equipment.
5 Minimise the risk of damage to the work and surrounding area when preparing to and using powered units, tools or pedestrian plant, machinery or equipment.	5.1 Protect the work and its surrounding area from damage. in accordance with safe working practices and organisational procedures
	5.2 Prevent damage and maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when preparing to and using powered units, tools or pedestrian plant, machinery or equipment.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and describe why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.

Title:	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*	
7 Comply with the given contract information to operate powered units, tools or pedestrian plant, machinery or equipment to the required specification.	7.1	Demonstrate the following work skills when using powered units, tools or pedestrian plant, machinery or equipment: – starting, stopping, replenishing, controlling and cleaning.
	7.2	Use and maintain powered units, tools and ancillary equipment.
	7.3	Operate and monitor powered units and tools or pedestrian plant, machinery or associated equipment to given working instructions relating to: – continual running – closing down – cleaning.
	7.4	Return powered unit, tools or pedestrian plant, machinery or equipment to a safe operational condition on completion of work.
	7.5	Disassemble and/or clean powered unit, tools or pedestrian plant, machinery or equipment.
	7.6	Describe how to apply safe and healthy work practices, follow procedures, report problems and establish authority needed to rectify, to: – prepare, position and set up for work – secure accessories and tool attachments – carry out pre-use and function checks to manufacturers' and suppliers' information and procedures – complete pre-start and post stop checks – recognise the characteristics of the plant, machinery and equipment – identify specific operating and safety requirements for the task and work – recognise and determine when specific skills and knowledge are required and report accordingly
	7.7	– operate, use and control – monitor and maintain – replenish consumables – close down and secure – disassemble and clean – use access equipment – transport and store.
	7.8	Describe the needs of other occupations and how to effectively communicate within a team when preparing for and using powered units, tools or pedestrian plant, machinery or equipment.
	7.9	Describe how to maintain the hand tools, portable power tools, powered units, pedestrian plant, machinery and ancillary equipment used for the work.

Title:	Preparing and operating powered units, tools or pedestrian plant, machinery or equipment in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction):</u> **One** of the following endorsements required: Generators Pumps Pedestrian operated plant or machines Mixers Compressors Self-powered tools
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit credit value	7
Unit guided learning hours	23

Title:	Setting out secondary dimensional work control in the workplace
Unit Number:	K/508/6536

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to setting out dimensional control of the work.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments, manufacturers' information and reference points.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, reference points and current regulations governing buildings and construction work.
2 Know how to comply with relevant legislation and official guidance to set out dimensional control of the work.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.

Title:	Setting out secondary dimensional work control in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Maintain safe and healthy working practices when setting out dimensional control of the work.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with legislation and organisational requirements during setting out dimensional control of the work.
	3.2 Demonstrate compliance with given information and relevant legislation when setting out dimensional control of the work in relation to two or more of the following: – safe use of access equipment/working platforms – safe handling of materials – safe use and storage of materials, tools and equipment – specific risks to health.
	3.3 Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to setting out dimensional control of the work, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources to set out dimensional control of the work.	4.1 Select resources associated with the work in relation to measuring tools and instruments, marking materials/components, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources, and how they should be used correctly, relating to: – measuring tools and instruments – marking equipment – level and alignment tools.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.

Title:	Setting out secondary dimensional work control in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe how to identify quantity of resources associated with the method/procedure to set out for secondary dimensional work control.
5 Minimise the risk of damage to the work and surrounding area when setting out dimensional control of the work.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Prevent damage and maintain a clean work area.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when setting out dimensional control of the work.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and describe why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.

Title:	Setting out secondary dimensional work control in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Comply with the given contract information to set out dimensional control of the work to the required specification.	7.1 Demonstrate the following work skills when setting out dimensional control of the work: – transferring, transposing, levelling, measuring, marking, positioning, fixing and securing.
	7.2 Use and maintain hand tools, measuring and marking equipment.
	7.3 Set out secondary dimensional control for the work to given working instructions for three or more of the following: – line – level – depth – area – height – angle.
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish authority needed to rectify, to: – measure and set out secondary dimensional control for the work – measure, align and level to dimensional control requirements – transfer and set out lines, angles and levels to dimensional control requirements – recognise and determine when specific skills and knowledge are required and report accordingly – use hand tools, measuring and marking equipment – work at height – use access equipment.
	7.5 Describe how to calculate height, depth, angle, length and area associated with the method/procedure to set out secondary dimensional work control.
	7.6 Describe the needs of other occupations and how to effectively communicate within a team when setting out dimensional control of the work.
	7.7 Describe how to maintain the hand tools, measuring, marking and ancillary and equipment used to set out dimensional control of the work.

Title:	Setting out secondary dimensional work control in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction):</u> **Three** of the following endorsements required: Lines Levels Depths Areas Heights Angles
Sector subject areas	5.2 Building and Construction
Availability for use	Shared unit
Credit value	7
Unit guided learning hours	23

Title:	Installing mass gravity retaining structures in the workplace
Unit Number:	M/615/5012

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing mass gravity retaining structures.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments, and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, site specific safety rules, current regulations governing buildings and official guidance associated with installation of mass gravity retaining structures.
2 Know how to comply with relevant legislation and official guidance when installing mass gravity retaining structures.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below cut slope level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing mass gravity retaining structures.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing mass gravity retaining structures.
	3.2 Demonstrate compliance with given information and relevant legislation when installing mass gravity retaining structures in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Installing mass gravity retaining structures in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing mass gravity retaining structures, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install mass gravity retaining structures.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – proprietary retaining units (PRU) – foundation and drainage materials and infill and backfill materials – geotextiles and geogrids – sleeves, barriers and ancillaries – erosion protection materials and vegetation – hand tools, portable power tools and ancillary equipment
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and method of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install mass gravity retaining structures.

Title:	Installing mass gravity retaining structures in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when installing mass gravity retaining structures.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing mass gravity retaining structures.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install mass gravity retaining structures to the required specification.	7.1 Demonstrate the following work skills when installing mass gravity retaining structures: – measuring, trimming , levelling, compacting, draining, laying, spreading, assembling, securing, applying and disposing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Install mass gravity retaining structures by excavation to given working instructions and install two of the following: – gabions – crib walls – dry laid segment blocks
	7.4 Install safety and protection measures.

Title:	Installing mass gravity retaining structures in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.5 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – store and prepare equipment and materials – confirm the location and protection of services – excavate, set aside and dispose of spoils – identify and confirm datum – mark out to line and level – set out for bases and foundations – trim to line and level – form bases and levelling pads – install drainage and outfall – identify the characteristics of gravity retaining structures including gabion walls, crib walls and dry laid segmental blocks – assemble, position and secure proprietary retaining units (PRU) to include gabions, crib walls or dry laid segmental blocks – work with, around and in close proximity to plant and machinery – direct and guide the operations of plant and machinery – place infill in layers – place and compact backfill in layers – secure soil separation mats – install sleeves and barriers – install material, erosion and edge protection measures – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, power tools and equipment – work at height – use access equipment
	7.6 Describe the needs of other occupations and how to effectively communicate within a team when installing mass gravity retaining structures.
	7.7 Describe how to maintain the tools and equipment used when installing mass gravity retaining structures.

Title:	Installing mass gravity retaining structures in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction):</u> **Two** of the following endorsements required: Gabions Crib walls Dry laid segmental blocks
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	100

Title:	Installing precast concrete retaining structures in the workplace	
Unit Number:	T/615/5013	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing precast concrete retaining structures.		1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, site specific safety rules, current regulations governing buildings and official guidance associated with the installation of precast concrete retaining structures.
2 Know how to comply with relevant legislation and official guidance when installing precast concrete retaining structures.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below cut slope level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing precast concrete retaining structures.		3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with legislation and organisational requirements when installing precast concrete retaining structures.
		3.2 Demonstrate compliance with given information and relevant legislation when installing precast concrete retaining structures in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Installing precast concrete retaining structures in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing precast concrete retaining structures, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install precast concrete retaining structures.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – concrete and precast concrete units, props – drainage materials – joint sealants to include dry pack, mastic and membranes – backfill materials – drills, mechanical and chemical anchors and fixings – torque and tensioning equipment and lifting accessories – sleeves, barriers and ancillaries – hand tools, portable power tools and ancillary equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.

Title:	Installing precast concrete retaining structures in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install precast concrete retaining structures.
5 Minimise the risk of damage to the work and surrounding area when installing precast concrete retaining structures.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing precast concrete retaining structures.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install precast concrete retaining structures to the required specification.	7.1 Demonstrate the following work skills when installing precast concrete retaining structures: – measuring, setting out, trimming, levelling, plumb, compacting, fixing, locating, fitting, securing, tensioning, placing and protecting.
	7.2 Use and maintain hand tools, portable power tools, torque or tensioning equipment, lifting accessories and ancillary equipment.
	7.3 Install reinforced concrete retaining structures to given working instructions relating to the following: – excavate – construct concrete base – protect concrete for curing – place, fit and secure precast units – backfill and compact in layers – install safety and protection measures.

Title:	Installing precast concrete retaining structures in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – store and prepare equipment and materials – confirm the location and protection of services – identify and confirm datum – mark out to line and level – identify the characteristics of precast concrete retaining structures – excavate,-set aside and dispose of spoils – set out for bases and precast units – trim formation to line and level – construct concrete bases – install drainage and outfall (weep) holes – drill and prepare concrete bases – install anchor bolts, mechanical and chemical fixings – work with, around and in close proximity to plant and machinery – direct and guide the operations of plant and machinery – protect concrete for the curing process – secure and seal joints – position, locate, assemble, prop and secure precast retaining units – locate, fix and layout retaining straps and lines – backfill and compact in layers – secure soil separation mats – install sleeves and barriers – install material, erosion and edge protection measures – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment.
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing precast concrete retaining structures.
	7.6 Describe how to maintain the tools, torque and tensioning equipment, lifting accessories and ancillary equipment used when installing precast concrete retaining structures.

Title:	Installing precast concrete retaining structures in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	100

Title:	Installing reinforcement for the formation of soil structures and slopes in the workplace
Unit Number:	A/615/5014

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing reinforcement for the formation of soil structures and slopes.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, site specific safety rules, current regulations governing buildings and official guidance associated with reinforced soil retaining structures.
2 Know how to comply with relevant legislation and official guidance when installing reinforcement for the formation of soil structures and slopes.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below cut slope level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.

Title:	Installing reinforcement for the formation of soil structures and slopes in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Maintain safe and healthy working practices when installing reinforcement for the formation of soil structures and slopes.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing reinforcement for the formation of soil structures and slopes.
	3.2 Demonstrate compliance with given information and relevant legislation when installing reinforcement for the formation of soil structures and slopes in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing reinforcement for the formation of soil structures and slopes, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.

Title:	Installing reinforcement for the formation of soil structures and slopes in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Select the required quantity and quality of resources for the methods of work to install reinforcement for the formation of soil structures and slopes.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – concrete – supports and restraints and temporary formwork – drainage materials to include pipes, junctions, inspection chambers, mats and aggregate – proprietary retaining facing units – soil reinforcement grids, strips, geotextiles, filter cloths, bearing pads and fixings – granular backfill – sleeves, barriers, copings and ancillaries – erosion protection materials – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly, how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install reinforcement for the formation of soil structures and slopes.
5 Minimise the risk of damage to the work and surrounding area when installing reinforcement for the formation of soil structures and slopes.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.

Title:	Installing reinforcement for the formation of soil structures and slopes in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Continued	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing reinforcement for the formation of soil structures and slopes.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install reinforcement for the formation of soil structures and slopes to the required specification.	7.1 Demonstrate the following work skills when installing reinforcement for the formation of soil structures and slopes: – measuring, setting out, spreading, compacting, laying, securing and trimming.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Install reinforced soil retaining structures or slopes to given working instructions relating to the following: – excavate to line and level and construct levelling pad or base – locate and secure proprietary retaining units or slope ancillaries – place and compact soils and soil reinforcement – install safety, protection and erosion measures – install cosmetic facing.
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – store and prepare equipment and materials – identify the characteristics of reinforced soil structures and slopes – identify and confirm datum – confirm location and protection of services – excavate, set aside, and dispose of spoils – mark out to line and level – set out for base~~≠~~ and foundation – trim formation to line and level – compact formation – construct levelling pads and bases – install drainage and outfall

Title:	Installing reinforcement for the formation of soil structures and slopes in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 cont – identify the differences between drainage and retaining material – assemble, position and secure proprietary retaining facing units (PRFU) – work with, around and in close proximity to plant and machinery – direct and guide the operations of plant and machinery – place and secure external formwork for slopes, – place and secure lining materials for slopes ensuring overlaps – install granular drainage zone – place and compact backfill in layers – locate and secure soil reinforcement – secure coping – secure soil separation mat – install sleeves and barriers – install material, erosion and edge protection measures – install cosmetic facings – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing reinforcement for the formation of soil structures and slopes.
	7.6 Describe how to maintain the tools and equipment used when installing reinforcement for the formation of soil structures and slopes.

Title:	Installing reinforcement for the formation of soil structures and slopes in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	100

Title:	Stabilising steep slopes in the workplace	
Unit Number:	F/615/5015	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when stabilising steep slopes.		1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, site specific safety rules, current regulations governing buildings and official guidance associated with the stabilisation of slopes.
2 Know how to comply with relevant legislation and official guidance when stabilising steep slopes.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below cut slope level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when stabilising steep slopes.		3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when stabilising steep slopes.
		3.2 Demonstrate compliance with given information and relevant legislation when stabilising steep slopes in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Stabilising steep slopes in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to stabilising steep slopes, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to stabilise steep slopes.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – soil nails, grout and grouting equipment – plates, nuts and proprietary facing units – mats, barriers and ancillaries – erosion protection materials – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to stabilise steep slopes.

Title:	Stabilising steep slopes in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when stabilising steep slopes.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when stabilising steep slopes.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to stabilise steep slopes to the required specification.	7.1 Demonstrate the following work skills when stabilising steep slopes: – measuring, setting out, trimming, grouting, securing and placing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Stabilise steep slopes as a retaining structure to given working instructions relating to the following: – carry out earthworks – install soil nails in drilled holes – align and secure facing – install safety, protection and erosion measures.

Title:	Stabilising steep slopes in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 Describe how to apply safe and heathy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – store and prepare equipment and materials – confirm location and protection of services – identify the characteristics of steep slope stabilisation for cuttings and embankments – identify and confirm datum – mark out to line and level – set out for slope and soil nails – excavate, set aside and dispose of spoils – work with, around and in close proximity to plant and machinery – direct and guide the operations of plant and machinery – install soil nails into drilled holes – apply grout – assemble and position proprietary facing units (PFU) – fix head plates to soil nails – align and secure facings – secure soil separation mats – install barriers and erosion protection measures – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when stabilising steep slopes.
	7.6 Describe how to maintain the tools and equipment used when stabilising steep slopes.

Title:	Stabilising steep slopes in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	83

Title:	Preparing the site for the installation of dewatering systems in the workplace
Unit Number:	J/615/5016

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when preparing the site for the installation of dewatering systems.	1.1 Interpret and extract relevant information from drawings, specifications, method statements, risk assessments, schedules and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, permits, manufacturers' information and current regulations and official guidance associated with dewatering. .
2 Know how to comply with relevant legislation and official guidance when preparing the site for the installation of dewatering systems.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when preparing the site for the installation of dewatering systems.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when preparing the site for the installation of dewatering systems.

Title:	Preparing the site for the installation of dewatering systems in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.2 Demonstrate compliance with given information and relevant legislation when preparing the site for the installation of dewatering systems in relation to three of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health – safe use of lifting accessories
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to preparing the site for the installation of dewatering systems, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to prepare the site for the installation of dewatering systems.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – filter materials, wellscreen and riser pipes – power and water source – initial water supply (bowser, intermediate bulk container), pumps, settlement tanks and ‘v’ notch weirs – excavator, drilling rig, pumps, hoses, connectors and tanks system hoses, pipes, couplings, end caps, flow meters, dip meters, valves and cables – jetting equipment and lifting accessories – hand tools, portable power tools and equipment.

Title:	Preparing the site for the installation of dewatering systems in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to prepare the site for the installation of dewatering systems.
5 Minimise the risk of damage to the work and surrounding area when preparing the site for the installation of dewatering systems.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when preparing the site for the installation of dewatering systems.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.

Title:	Preparing the site for the installation of dewatering systems in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Comply with the given contract information to prepare the site for the installation of dewatering systems to the required specification.	7.1 Demonstrate the following work skills when preparing the site for the installation of dewatering systems: – measuring, protecting, laying, locating and securing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Prepare to install dewatering systems to given working instructions: – establish services connection points – confirm, locate and prepare discharge systems – locate and lay out equipment (pumps, hoses, pipes, valves, couplings)
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – recognise the characteristics of dewatering by wellpoints, deep wells and ejector systems – confirm discharge arrangement is in place – identify and set out well locations to line and level – locate and protect services – recognise site layouts that encourage efficiency – locate and position equipment, initial water supply, drills, pumps and ‘v’ notch weirs – work with, around and in close proximity to plant and machinery – direct and guide the operations and movements of plant and machinery – identify and check lifting accessories – liaise with appointed persons and lift supervisors and position lifting appliances – locate and secure placing tube ready for jetting – identify the route for placing tubes and drilling rigs to complete jetting and drilling sequences – recognise the signs of contaminated ground water – recognise the effects of ground water pressure on excavations

Title:	Preparing the site for the installation of dewatering systems in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 contd – recognise the potential effects of dewatering on adjacent structures – recognise and determine when additional specialist skills and knowledge are required and report accordingly – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when preparing the site for the installation of dewatering systems.
	7.6 Describe how to maintain the tools and equipment used when preparing the site for the installation of dewatering systems.

Title:	Preparing the site for the installation of dewatering systems in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	43

Title:	Installing wellpoint dewatering systems in the workplace
Unit Number:	L/615/5017

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing wellpoint dewatering systems.	1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations and official guidance associated with dewatering
2 Know how to comply with relevant legislation and official guidance when installing wellpoint dewatering systems.	2.1 Describe their responsibilities regarding potential accidents, healthy hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing wellpoint dewatering systems.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing wellpoint dewatering systems.
	3.2 Demonstrate compliance with given information and relevant legislation when installing wellpoint dewatering systems in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Installing wellpoint dewatering systems in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing wellpoint dewatering systems, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install wellpoint dewatering systems.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – wellpoints consisting of screens and riser pipe – filter materials – header pipe, hoses and valves – pumps, compressors, tanks and gauges – jetting, pumping, discharge, delivery and measuring equipment – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install wellpoint dewatering systems.

Title:	Installing wellpoint dewatering systems in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when installing wellpoint dewatering systems.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing wellpoint dewatering systems.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install wellpoint dewatering systems to the required specification.	7.1 Demonstrate the following work skills when installing wellpoint dewatering systems: – measuring, assembling, connecting, maintaining adjusting and monitoring.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Install wellpoints as a dewatering system to given working instructions for two of the following: – set up pumping systems – commission and monitor the system – decommission the system.

Title:	Installing wellpoint dewatering systems in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – recognise the differences between drilled and jetted installations – confirm the adequacy of the initial water supply – connect high pressure (jetting system) and low pressure (extraction system) pipework – install wellpoints to depth using placing tube – guide the placing tube by feel of progress – install wellpoints to depth using drilled holes – confirm monitoring requirements – set up vacuum system including header pipe, pumps and tanks – identify pump head limits and suction lift capacity – connect wellpoints – commission system – identify 'bumping' and trim the system – check discharge for suspended solids – recognise the requirements for contaminated water treatment – recognise the potential effects of dewatering on adjacent structures – maintain and monitor the system – dismantle the system, recover equipment, complete serviceability checks and remove from site for potential reuse – recognise and determine when additional specialist skills and knowledge are required and report accordingly – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing wellpoint dewatering systems.
	7.6 Describe how to maintain the tools and equipment used when installing wellpoint dewatering systems.

Title:	Installing wellpoint dewatering systems in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated except for the following item from assessment criteria 7.3: – decommission the system. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>ProQual Level 2 NVQ Diploma in Sub-structure Work Occupations (Construction):</u> **Two** of the following endorsements required: Set up pumping system Commission and monitor system Decommission system
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	60

Title:	Installing deep well dewatering systems in the workplace
Unit Number:	R/615/5018

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing deep well dewatering systems.	1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations and official guidance associated with dewatering.
2 Know how to comply with relevant legislation and official guidance when installing deep well dewatering systems.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing deep well dewatering systems.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing deep well dewatering systems.
	3.2 Demonstrate compliance with given information and relevant legislation when installing deep well dewatering systems in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Installing deep well dewatering systems in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing deep well dewatering systems, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – local exhaust ventilation (LEV) – respiratory protective equipment (RPE)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities
4 Select the required quantity and quality of resources for the methods of work to install deep well dewatering systems.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – pumps and cabling – risers, clamps, flexible hose, connectors – power sources and ancillaries – flow meter, dip meter – settlement tanks – pumping, measuring, testing and monitoring equipment – hand tools and portable power tools.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install deep well dewatering systems.

Title:	Installing deep well dewatering systems in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when installing deep well dewatering systems.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing deep well dewatering systems.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install deep well dewatering systems to the required specification.	7.1 Demonstrate the following work skills when installing deep well dewatering systems: – measuring, securing, connecting, installing, cleaning, clearing, maintaining, checking, testing, commissioning, monitoring, controlling and replacing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.

Title:	Installing deep well dewatering systems in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.3 Install deep well dewatering systems to given working instructions relating to the following: – locate and install or replace submersible pumps – install and connect pipe network – commission the system – monitor well parameters – monitor system and collect data – decommission the system.
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – locate and secure submersible pumps in deep wells with riser pipes, supports, headworks and flexible hose – recognise the requirements for conducting lifting operations, planning, supervision and safe completion – establish pipe network including valves and tanks – establish electric cabling and control gear – test pumps and assess flow and water quality – commission the system – measure drawdown – control flow – monitor the system and collect data – clean, clear and maintain the system – replace pumps – de-commission systems – dismantle the system, recover equipment, complete serviceability checks and remove from site for potential reuse – recognise and determine when additional specialist skills and knowledge are required and report accordingly – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing deep well dewatering systems.
	7.6 Describe how to maintain the tools and equipment used when installing deep well dewatering systems.

Title:	Installing deep well dewatering systems in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated except for the following item from assessment criteria 7.3. – decommission the system.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	60

Title:	Installing ejector dewatering systems in the workplace
Unit Number:	Y/615/5019

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing ejector dewatering systems.	1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations and official guidance associated with dewatering.
2 Know how to comply with relevant legislation and official guidance when installing ejector dewatering systems.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing ejector dewatering systems.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing ejector dewatering systems.
	3.2 Demonstrate compliance with given information and relevant legislation when installing ejector dewatering systems in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Installing ejector dewatering systems in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing ejector dewatering systems, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities..
4 Select the required quantity and quality of resources for the methods of work to install ejector dewatering systems.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – ejectors – riser pipes, hoses and headworks – pipe network including pump, reservoir and discharge tanks – valves and gauges – control gear – pumps, testing and measuring equipment – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install ejector dewatering systems.

Title:	Installing ejector dewatering systems in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when installing ejector dewatering systems.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing ejector dewatering systems.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install ejector dewatering systems to the required specification.	7.1 Demonstrate the following work skills when installing ejector dewatering systems: – measuring, assembling, connecting, installing, cleaning, clearing, maintaining, checking, testing, commissioning, monitoring, controlling and replacing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Install ejectors as dewatering system to given working instructions relating to the following: – locate and install ejector pumps – install and connect low and high pressure pipe networks – test wells (pressure switch) – commission – monitor the system and collect data – control flow – decommission the system.

Title:	Installing ejector dewatering systems in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – assemble ejector equipment to include twin risers, headworks, flexible pipe connectors, pipework, tanks and pump – identify the differences between low pressure and high pressure equipment – establish power source – establish water supply – install ejectors in wells, including connection to pump and tank – prime the system – commission the system – check operation of pressure safety switches – test wells for flow and return – monitor and control flow – monitor and maintain water levels, discharge volumes and ejector flow rates – collect data – clean, clear and maintain the system – dismantle the system, recover equipment, complete serviceability checks and remove from site for potential reuse – recognise and determine when additional specialist skills and knowledge are required and report accordingly – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing ejector dewatering systems.
	7.6 Describe how to maintain the tools and equipment used when installing ejector dewatering systems.

Title:	Installing ejector dewatering systems in the workplace
Additional information about this unit	
Assessment guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	60

Title:	Preparing the site to install ground anchors in the workplace	
Unit Number:	L/615/5020	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when preparing the site to install ground anchors.		1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, permit to dig, manufacturers' information, current regulations governing buildings and official guidance associated with installation of ground anchors.
2 Know how to comply with relevant legislation and official guidance when preparing the site to install ground anchors.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when preparing the site to install ground anchors.		3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when preparing the site to install ground anchors.
		3.2 Demonstrate compliance with given information and relevant legislation when preparing the site to install ground anchors in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Preparing the site to install ground anchors in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to preparing the site to install ground anchors, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities..
4 Select the required quantity and quality of resources for the methods of work to prepare the site to install ground anchors.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – protection materials – hard standing materials – installation equipment and materials – hand tools and portable power tools.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to prepare the site to install ground anchors.

Title:	Preparing the site to install ground anchors in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when preparing the site to install ground anchors.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when preparing the site to install ground anchors.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to prepare the site to install ground anchors to the required specification.	7.1 Demonstrate the following work skills when preparing the site to install ground anchors: – measuring, marking out, locating, protecting, constructing, supporting and setting-up.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Prepare site for the installation of mechanical or self-drilling or open hole ground anchors to given working instructions, relating to the following: – suitability of access – segregation of the working area – establishment of the drilling platform – preparing installation equipment.

Title:	Preparing the site to install ground anchors in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – confirm scope of works – confirm the location and protection of services and infrastructure – recognise site layouts that encourage efficiency – confirm ground is prepared as agreed – recognise and confirm the suitability of temporary works – work with, around and in close proximity to plant and machinery – direct and guide the operations of plant and machinery – establish working area – offload resources and secure – locate anchor positions – identify incline – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment.
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when preparing the site to install ground anchors.
	7.6 Describe how to maintain the tools and equipment used when preparing the site to install ground anchors.

Title:	Preparing the site to install ground anchors in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	50

Title:	Installing mechanical ground anchors in the workplace
Unit Number:	R/615/5021

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing mechanical ground anchors.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with the installation of ground anchors.
2 Know how to comply with relevant legislation and official guidance when installing mechanical ground anchors.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Describe what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing mechanical ground anchors.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing mechanical ground anchors
	3.2 Demonstrate compliance with given information and relevant legislation when installing mechanical ground anchors in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Installing mechanical ground anchors in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing mechanical ground anchors, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install mechanical ground anchors.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – installation equipment – anchors, drive rods, fittings, couplings, adaptors – tensioning equipment – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install mechanical ground anchors.

Title:	Installing mechanical ground anchors in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when installing mechanical ground anchors.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures. .
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Describe why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing mechanical ground anchors.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install mechanical ground anchors to the required specification.	7.1 Demonstrate the following work skills when installing mechanical ground anchors: – measuring, marking out, setting up, locating and recording.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Install mechanical ground anchors to given working instructions: – assemble installation equipment – install anchors to line, angle and depth – tension tendons and lock off – remove and disassemble equipment.

Title:	Installing mechanical ground anchors in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – locate anchor positions – assemble installation equipment including; fittings, couplings and adaptors – carry out pre-start checks on plant and machinery – work around and in close proximity with plant and machinery – direct and guide the operations of plant and machinery – set up and install to line, ~~and~~ angle and depth – recover drive rods – load anchors and record extensions – lock off – remove and disassemble equipment – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment.
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing mechanical ground anchors.
	7.6 Describe how to maintain the tools and equipment used when installing mechanical ground anchors.

Title:	Installing mechanical ground anchors in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	05.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	57

Title:	Installing open hole ground anchors in the workplace
Unit Number:	Y/615/5022

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing open hole ground anchors.	1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with the installation of ground anchors.
2 Know how to comply with relevant legislation and official guidance when installing open hole ground anchors.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing open hole ground anchors.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing open hole ground anchors.
	3.2 Demonstrate compliance with given information and relevant legislation when installing open hole ground anchors in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health

Title:	Installing open hole ground anchors in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing open hole ground anchors, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install open hole ground anchors.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – grouting and water supply – tendons, fittings, couplings, adaptors – cement and grout – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install open hole ground anchors.

Title:	Installing open hole ground anchors in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when installing open hole ground anchors.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing open hole ground anchors.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install open hole ground anchors to the required specification.	7.1 Demonstrate the following work skills when installing open hole ground anchors: – measuring, marking out, setting up, locating and recording.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Install open hole ground anchors to given working instructions relating to: – prepare equipment and carry out pre-start checks – confirm hole parameters (depth, angle and skew) – mix grout and grout tendons

Title:	Installing open hole ground anchors in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – prepare grouting equipment and water supply – confirm location of anchor positions – carry out pre-start checks on plant and machinery – prepare anchors, rods and casings – confirm hole depth, angle and skew – work with, around and in close proximity with plant and machinery – direct and guide the operations of plant and machinery – mix grout and grout holes, take samples and maintain records – withdraw tremie and flush back – centralise tendons ensuring sufficient protrusion – confirm strand length for testing and stressing – recognise the requirements to protect anchors to ensure curing – record details of completed anchors – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment.
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing open hole ground anchors.
	7.6 Describe how to maintain the tools and equipment used when installing open hole ground anchors.

Title:	Installing open hole ground anchors in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	67

Title:	Installing self-drilling ground anchors in the workplace	
Unit Number:	D/615/5023	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing self-drilling ground anchors.		1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with the installation of ground anchors.
2 Know how to comply with relevant legislation and official guidance when installing self-drilling ground anchors.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.

Title:	Installing self-drilling ground anchors in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Maintain safe and healthy working practices when installing self-drilling ground anchors.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing self-drilling ground anchors.
	3.2 Demonstrate compliance with given information and relevant legislation when installing self-drilling ground anchors in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing self-drilling ground anchors, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install self-drilling ground anchors.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – top drive rotary percussive rig – grouting equipment, compressor and water supply – drill bits, rods, debonding tube, adaptors, fittings – cement – hand tools, portable power tools and detection equipment.

Title:	Installing self-drilling ground anchors in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install self-drilling ground anchors.
5 Minimise the risk of damage to the work and surrounding area when installing self-drilling ground anchors.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing self-drilling ground anchors.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.

Title:	Installing self-drilling ground anchors in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Comply with the given contract information to install self-drilling ground anchors to the required specification.	7.1 Demonstrate the following work skills when installing self-drilling ground anchors: – measuring, marking out, locating, protecting, pre-start checking and grouting.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Install self-drilling ground anchors to given working instructions relating to the following: – set up equipment for self-drilling ground anchors – drill and grout ground anchors to line, angle and design depth – clean down rig.
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – complete preparation of rig, grout pan, compressor and water supply – locate anchor positions – work with, around and in close proximity with plant and machinery – direct and guide the operations of plant and machinery – carry out pre-start checks – position rig for drilling to line, angle and depth – assemble drill bits and centraliser – drill and grout to line, angle and depth – install debonding tubes – complete grouting, ensuring bond length matches design criteria – complete grouting ensuring free length matches specification – check strand length for anchor stressing and testing – release flushing head and clean down equipment – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment.

Title:	Installing self-drilling ground anchors in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing self-drilling ground anchors.
	7.6 Describe how to maintain the tools and equipment used when installing self-drilling ground anchors.

Title:	Installing self-drilling ground anchors in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	70

Title:	Preparing the site for the installation of post tensioning systems as sub-structural repair in the workplace
Unit Number:	H/615/5024

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when preparing the site for the installation of post tensioning systems as sub-structural repair.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with post tensioning.
2 Know how to comply with relevant legislation and official guidance when preparing the site for the installation of post tensioning systems as sub-structural repair.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when preparing the site for the installation of post tensioning systems as sub-structural repair.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when preparing the site for the installation of post tensioning systems as sub-structural repair.

Title:	Preparing the site ~~to~~ for the installation of post tensioning systems as sub-structural repair in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.2 Demonstrate compliance with given information and relevant legislation when preparing the site to for the installation of post tensioning systems as sub-structural repair in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to preparing the site for the installation of post tensioning systems as sub-structural repair, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to prepare the site for the installation of post tensioning systems as sub-structural repair.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – trench supports, formwork, steel reinforcement – grout vents, ducts, strands, tendons, duct chairs and anchors – grouts and concretes – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.

Title:	Preparing the site for the installation of post tensioning systems as sub-structural repair in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to prepare the site for the installation of post tensioning systems as sub-structural repair.
5 Minimise the risk of damage to the work and surrounding area when preparing the site for the installation of post tensioning systems as sub-structural repair.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures. .
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when preparing the site for the installation of post tensioning systems as sub-structural repair.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to prepare the site for the installation of post tensioning systems as sub-structural repair to the required specification.	7.1 Demonstrate the following work skills when preparing the site for the installation of post tensioning systems as sub-structural repair: – measuring, marking out, constructing, erecting, tying and securing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.

Title:	Preparing the site for the installation of post tensioning systems as sub-structural repair in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.3 Prepare to install post tensioning as sub-structural repair to given working instructions. – slabs – beams
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – confirm the set out of excavations, beams and slabs – recognise site layouts that encourage efficiency – transfer lines, level plumbs and sequences from drawings and method statements to work for profiling – confirm the location and protection of services – confirm excavations are supported – recognise the requirements for post tensioning of beams and slabs – construct forms and erect formwork – tie and secure steel reinforcement – install pocket formers, anchorages and grout vents – profile and install post tensioning ducts, strands, tendons and duct chairs – monitor concrete pour – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to communicate within a team when preparing the site for the installation of post tensioning systems as sub-structural repair.
	7.6 Describe how to maintain the tools and equipment used when preparing the site for the installation of post tensioning systems as sub-structural repair.

Title:	Preparing the site for the installation of post tensioning systems as sub-structural repair in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	47

Title:	Installing post tensioning system as sub-structural repair in the workplace
Unit Number:	K/615/5025

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing post tensioning system as sub-structural repair.	1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with post tensioning.
2 Know how to comply with relevant legislation and official guidance when installing post tensioning system as sub-structural repair.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing post tensioning system as sub-structural repair.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing post tensioning system as sub-structural repair.

Title:	Installing post tensioning system as sub-structural repair in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.2 Demonstrate compliance with given information and relevant legislation when installing post tensioning system as sub-structural repair in relation to two of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing post tensioning system as sub-structural repair, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install post tensioning system as sub-structural repair.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – grouts and concretes – anti-corrosion materials – hydraulic jacks and tensioning ancillaries – finishing and reinstatement materials – testing and tensioning equipment – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly, how problems associated with the resources are reported.

Title:	Installing post tensioning system as sub-structural repair in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install post tensioning system as sub-structural repair.
5 Minimise the risk of damage to the work and surrounding area when installing post tensioning system as sub-structural repair.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing post tensioning system as sub-structural repair.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install post tensioning system as sub-structural repair to the required specification.	7.1 Demonstrate the following work skills when installing post tensioning system as sub-structural repair: – measuring, setting out, checking, installing, tensioning, recording and protecting.
	7.2 Use and maintain hand tools, portable power tools, testing and tensioning equipment and ancillary equipment.

Title:	Installing post tensioning system as sub-structural repair in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.3 Install post tensioning system as sub-structural repair to given working instructions: – monitor the placement of concrete to ground beams and slabs – tension beams and slabs – record elongation – protect the system from corrosion
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – ensure no damage occurs to the post tensioning system while concrete is being placed – confirm concrete is at specified strength – prepare for the tensioning of beams and slabs – apply tension to beams and slabs – recognise the characteristics of live and dead ends – record elongation details – liaise with design engineer – cut strands and seal anchorages (grout cap, dry pack and concrete) – consider the effects of cold weather – complete air tests and record – measure, mix and inject grout – take specimens of grout and record – operate pumps, agitators, mixers, power packs and hydraulic equipment – apply anti-corrosion measures – complete, maintain and present records – recognise and determine when additional specialist skills and knowledge are required and report accordingly – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing post tensioning system as sub-structural repair.
	7.6 Describe how and when to maintain the tools and equipment used when installing post tensioning system as sub-structural repair and how and when to carry out calibration checks.

Title:	Installing post tensioning system as sub-structural repair in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	57

Title:	Preparing to install gas membranes in the workplace	
Unit Number:	M/615/5026	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when preparing to install gas membranes.		1.1 Interpret and extract relevant information from drawings, specifications, method statements, risk assessments, manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, site specific safety rules, current regulations governing buildings and official guidance associated with gas membrane installation.
2 Know how to comply with relevant legislation and official guidance when preparing to install gas membranes.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when preparing to install gas membranes.		3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with legislation and organisational requirements when preparing to install gas membranes.
		3.2 Demonstrate compliance with given information and relevant legislation when preparing to install gas membranes in relation to three of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health – site specific safety hazards

Title:	Preparing to install gas membranes in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to preparing to install gas membranes, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to prepare to install gas membranes.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – primers – liquid membranes – masking media – venting media – venting outlets – preformed units – periscope vents – termination battens, fixings and protection materials – hand tools, portable power tools and ancillary equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to prepare to install gas membranes.

Title:	Preparing to install gas membranes in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
5 Minimise the risk of damage to the work and surrounding area when preparing to install gas membranes.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when preparing to install gas membranes.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to prepare to install gas membranes to the required specification.	7.1 Demonstrate the following work skills when preparing to install gas membranes: – protecting, laying, taping, welding, assembling, securing and maintaining.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Install and connect venting media, in preparation of gas membrane installation to unit over-site, to given working instructions.

Title:	Preparing to install gas membranes in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 continued	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – confirm suitability of formation and detail – locate and protect services – identify penetration points – lay venting strip and continuous venting media – fix and secure venting media to formation, including penetration points and collector system – connect venting media to connection and vent outlets – fit and fix protective masking for the application of primers and liquid membranes – recognise the requirements of the verification process – recognise and determine when additional specialist skills and knowledge are required and report accordingly – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when preparing to install gas membranes.
	7.6 Describe how to maintain the tools and equipment used when preparing to install gas membranes.

Title:	Preparing to install gas membranes in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	50

Title:	Installing gas membranes in the workplace	
Unit Number:	T/615/5027	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when installing gas membranes.		1.1 Interpret and extract relevant information from drawings, specifications, method statements, risk assessments and manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, site specific safety rules, current regulations governing buildings and official guidance associated with installation of gas membranes.
2 Know how to comply with relevant legislation and official guidance when installing gas membranes.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when installing gas membranes.		3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when installing gas membranes in the workplace.

Title:	Installing gas membranes in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.2 Demonstrate compliance with given information and relevant legislation when installing gas membranes in relation to three of the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health – site specific safety hazards
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to installing gas membranes, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to install gas membranes.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – membranes (sheets and liquids), primers, tape, self-adhesive membrane – pre-formed units – periscope vents – verification equipment – protection media – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.

Title:	Installing gas membranes in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to install gas membranes.
5 Minimise the risk of damage to the work and surrounding area when installing gas membranes.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures. .
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when installing gas membranes.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to install gas membranes to the required specification.	7.1 Demonstrate the following work skills when installing gas membranes: – measuring, setting-out, cutting, laying, taping, welding, assembling, fitting, applying, sealing, securing, inspecting, repairing and protecting.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.

Title:	Installing gas membranes in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.3 Install gas membranes to unit oversites to given working instructions.
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – set out for membrane and determine the direction for laying – lay out membrane ensuring specified overlap – cut, form and position membrane to formation and detail, including lift pits and shafts, large scale pre-formers, preformed corners and battens – cut and form internal and external corners, including pre-formed corners and apply self-adhesive gas membrane and flashing to detail work – join sheets and corners by taping and welding using either hand, automatic hot air, wedge or extrusion welder – apply liquid membranes, poured, brushed, rolled and sprayed – install and fit preformed units – install and fit periscope vents – locate and seal penetrations – carry out visual checks and pick test – recognise the requirements of the verification process – protect gas membrane (boards and fleece) – carry out repairs to membrane (taped, welded and self-adhesive) – recognise and determine when additional specialist skills and knowledge are required and report accordingly – use hand tools, portable power tools and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when installing gas membranes in the workplace.
	7.6 Describe how to maintain the tools and equipment used when installing gas membranes in the workplace.

Title:	Installing gas membranes in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	63

Title:	Preparing surfaces for structural waterproofing in the workplace
Unit Number:	A/615/5028

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when preparing surfaces for structural waterproofing.	1.1 Interpret and extract relevant information from drawings, design criteria, specifications, schedules, method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with structural waterproofing.
2 Know how to comply with relevant legislation and official guidance when preparing surfaces for structural waterproofing.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, in confined spaces, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when preparing surfaces for structural waterproofing.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when preparing surfaces for structural waterproofing.

Title:	Preparing surfaces for structural waterproofing in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.2 Demonstrate compliance with given information and relevant legislation when preparing backgrounds surfaces for structural waterproofing in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to preparing surfaces for structural waterproofing, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to prepare surfaces for structural waterproofing.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability. limitations and defects associated with the resources in relation to: – protection materials – machinery and equipment for surface preparation – cleaning, stabilising and repair materials – repair compounds – concretes, renders and screeds – fixings – mixers – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.

Title:	Preparing surfaces for structural waterproofing in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to prepare surfaces for structural waterproofing.
5 Minimise the risk of damage to the work and surrounding area when preparing surfaces for structural waterproofing.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when preparing surfaces for structural waterproofing.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to prepare surfaces for structural waterproofing to the required specification.	7.1 Demonstrate the following work skills when preparing surfaces for structural waterproofing: – measuring, marking out, draining, cleaning, stabilising, mixing, applying and testing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.

Title:	Preparing surfaces for structural waterproofing in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.3 Prepare surfaces for the application of liquid (including resins) or sheet membranes, drained cavity, concretes, screeds or renders to given working instructions, including the following: – joints for hydrophilic seals and water bars – penetration points and service entries – terminations.
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – create suitable surfaces for waterproofing by liquid (including resins), sheet membranes, drained cavity, concrete, screed and render – recognise the uses, types and characteristics of waterproofing systems available for new and existing structures – locate services – protect and confirm the protection of services – mark and set out areas to be prepared and repaired – prepare surfaces, joints, (including; movement, expansion, induced, toe-in, transition and floor-to-wall), penetration points, service entries and terminations – dewater – clean and stabilise surfaces – remove existing coatings including laitance using hand and mechanical means, grind, plane, sand, polish, scabble, strip, shot blast and vacuum – apply layering products for liquid waterproofing and cementitious systems – mix and apply repair compounds – inspect and confirm the suitability of the repaired surfaces – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – work at height – use access equipment.

Title:	Preparing surfaces for structural waterproofing in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 continued	7.5 Describe the needs of other occupations and how to effectively communicate within a team when preparing surfaces for structural waterproofing.
	7.6 Describe how to maintain the tools and equipment used when preparing surfaces for structural waterproofing.

Title:	Preparing surfaces for structural waterproofing in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. For a glossary of definitions for movement, expansion, induced, toe-in, transition and floor-to-wall joints, please copy and paste this link into your browser. http://www.citb.co.uk/qualifications-standards/national-occupational-standards/national-occupational-standards-suites/sub-structure-work-occupations/
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	37

Title:	Carrying out structural waterproofing in the workplace
Unit Number:	H/615/1958

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when carrying out structural waterproofing.	1.1 Interpret and extract relevant information from drawings, design criteria, specifications, schedules method statements, risk assessments and manufacturers' information.
	1.2 Comply with information and/or instructions derived from risk assessments and method statements.
	1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
	1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statement, risk assessments, manufacturers' information , current regulations governing buildings and official guidance associated with structural waterproofing.
2 Know how to comply with relevant legislation and official guidance when carrying out structural waterproofing.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
	2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
	2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when carrying out structural waterproofing.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when carrying out structural waterproofing.

Title:	Carrying out structural waterproofing in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Continued	3.2 Demonstrate compliance with given information and relevant legislation when carrying out structural waterproofing in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to carrying out structural waterproofing, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV)
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.
4 Select the required quantity and quality of resources for the methods of work to carry out structural waterproofing.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – setting out equipment – fixings, fittings, primers – waterproofing liquids, sheets, cavity drain membrane or cementitious concretes, screeds and renders – mixers, pumps, drainage, sumps and pumping ancillaries – testing equipment – finishing and protection materials – hand tools, portable power tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.

Title:	Carrying out structural waterproofing in the workplace

Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Continued	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to carry out structural waterproofing.
5 Minimise the risk of damage to the work and surrounding area when carrying out structural waterproofing.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when carrying out structural waterproofing.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to carry out structural waterproofing to the required specification.	7.1 Demonstrate the following work skills when carrying out structural waterproofing: – measuring, setting out, preparing, applying, securing, finishing, protecting and testing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.

Title:	Carrying out structural waterproofing in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.3 Carry out structural waterproofing to surfaces using liquid membrane (by spray, brush or roller), including resins or sheet membrane or drained cavity, concrete, screed or render to given working instructions, including: – joints – penetration points – service entries – terminations.
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify installation quality requirements – conform to agreed specification – confirm detail requirements – locate and check the preparation of surfaces and joints including movement, expansion, induced, toe-in, transition and floor-to-wall – prepare materials and equipment – mix multi pack systems – prime surfaces and apply liquid waterproofing – install sheet membranes – locate and fix sheets, ensuring overlaps, secure and seal joints including protrusions and penetrations – mix, handle and apply concretes, screeds and renders – install drained cavity systems – install drains, sumps, pumping ancillaries – recognise and apply curing and protection criteria for primers and liquid waterproofs, including resins, sheet joints, screeds and renders – visually inspect for defects – conduct flood and integrity tests – finish and protect waterproofing – repair structural waterproofing systems – recognise and determine when specialist skills and knowledge are required and report accordingly – use hand tools, portable power tools and equipment – work at height – use access equipment.
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when carrying out structural waterproofing.
	7.6 Describe how to maintain the tools and equipment used when carrying out structural waterproofing.

Title:	Carrying out structural waterproofing in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	60

Title:	Working on basement construction projects in the workplace	
Unit Number:	F/615/5029	
Learning outcomes *The learner will be able to:*		**Assessment criteria** *The learner can:*
1 Interpret the given information relating to the work and resources when working on basement construction projects.		1.1 Interpret and extract relevant information from drawings, specifications, schedules method statements, risk assessments and manufacturers' information.
		1.2 Comply with information and/or instructions derived from risk assessments and method statements.
		1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented.
		1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, specifications, schedules, method statement, risk assessments, manufacturers' information, current regulations governing buildings and official guidance associated with basement construction.
2 Know how to comply with relevant legislation and official guidance when working on basement construction projects.		2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, whilst working: – in the workplace, below ground level, in confined *spaces,* at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting.
		2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative.
		2.3 Explain what the accident reporting procedures are and who is responsible for making reports.

Title:	Working on basement construction projects in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
3 Maintain safe and healthy working practices when working on basement construction projects.	3.1 Use health and safety control equipment safely and comply with the methods of work to carry out the activity in accordance with current legislation and organisational requirements when working on basement construction projects.
	3.2 Demonstrate compliance with given information and relevant legislation when working on basement construction projects in relation to the following: – safe use of access equipment – safe use, storage and handling of materials, tools and equipment – specific risks to health.
	3.3 Explain why and when health and safety control equipment, identified by the principles of prevention should be used, relating to working on basement construction projects, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV) (including the monitoring of gas types and levels).
	3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given working instructions.
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related activities.

Title:	Working on basement construction projects in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
4 Select the required quantity and quality of resources for the methods of work to work on basement construction projects.	4.1 Select resources associated with own work in relation to materials, components, fixings, tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – measuring, levelling and marking equipment – excavation and spoil removal equipment – supports, components, fittings and fixings – formwork – concrete placement equipment, barrows, skips, elephant trunks – concrete levelling equipment, vibrators and screeders – application equipment, brushes, rollers, spray equipment – hand tools, portable power tools, plant, machinery and equipment
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe the methods of calculating quantity, length, area and wastage associated with the method and procedure to work on basement construction projects.
5 Minimise the risk of damage to the work and surrounding area when working on basement construction projects.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.

Title:	Working on basement construction projects in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
6 Complete the work within the allocated time when working on basement construction projects.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to work on basement construction projects to the required specification.	7.1 Demonstrate the following work skills when working on basement construction projects : – measuring, marking out, transferring, setting out, aligning, applying, maintaining, finishing, positioning, installing and securing.
	7.2 Use and maintain hand tools, portable power tools and ancillary equipment.
	7.3 Use sub-structure work skills to prepare and support the construction of basements in at least one of the following occupational areas to given working instructions – underpinning – dewatering – structural waterproofing – ground anchors – box beam tensioning – grouting – retaining structures – installation of gas membranes
	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – identify agreed quality requirements – conform to agreed specification – check resources for type, quantity and damage and report discrepancies – work with, around and in close proximity to plant and machinery – direct and guide the operations of plant and machinery – guide and monitor the installation of piles by driving and boring – identify the activities and characteristics of the following occupations: underpinning, dewatering, structural waterproofing, ground anchors, box beam post tensioning, grouting, piling, retaining structures and the installation of gas membranes – measure, mark out, transfer and set out lines and levels

Title:	Working on basement construction projects in the workplace
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
7 Continued	7.4 contd – align, position, install and secure supports, components, fixings, fittings, membranes and materials – prepare, apply and maintain coatings and finishes by brush, roller and spray – apply renders and plasters – receive, handle and test concrete – test formwork and reinforcement, including reinforcement integrated into concrete (fibre, plastic, metal) – place, level, vibrate, compact, screed and finish concrete – protect concrete for the curing process – excavate, stockpile and remove excavated materials – install and maintain gantries, chutes and conveyors – recognise and determine when additional specialist skills and knowledge are required and report accordingly – determine specific requirements for structures of special interest, traditional build (pre 1919) and historical significance – use hand tools, portable power tools and equipment – recognise the test, inspection and thorough examination criteria for hand tools, portable power tools, plant, machinery and equipment – work at height – use access equipment
	7.5 Describe the needs of other occupations and how to effectively communicate within a team when working on basement construction projects.
	7.6 Describe how to maintain the tools and equipment used when working on basement construction projects.

Title:	Working on basement construction projects in the workplace
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the ConstructionSkills' Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industry experience and a sufficient depth of relevant occupational expertise and knowledge, and must use a combination of assessment methods as defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. Please refer to the NVQ Structure applicable to the qualification/occupational area in which the candidate is being assessed.
Sector subject area	5.2 Building and Construction
Availability for use	Shared unit
Unit guided learning hours	147

Unit T/615/1611
Establishing work area protection and safety in the workplace

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
1 Interpret the given information relating to the work and resources when establishing work area protection and safety.	1.1 Interpret and extract relevant information from drawings, plans, risk assessments, method statements, specifications, schedules, site inspections and manufacturers' information. 1.2 Comply with information and/or instructions derived from risk assessments and method statements. 1.3 Describe the organisational procedures developed to report and rectify inappropriate information and unsuitable resources and how they are implemented. 1.4 Describe different types of information, their source and how they are interpreted in relation to: – drawings, plans, risk assessments, method statements, specifications, schedules, site inspection reports, manufacturers' information, regulations and official guidance associated with protecting work areas.
2 Know how to comply with relevant legislation and official guidance when establishing work area protection and safety.	2.1 Describe their responsibilities regarding potential accidents and health hazards, whilst working: – in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting. 2.2 Describe the organisational security procedures for tools, equipment and personal belongings in relation to site, workplace, company and operative. 2.3 Explain what the accident reporting procedures are and who is responsible for making reports.
3 Maintain safe and healthy working practices when establishing work area protection and safety.	3.1 Use health and safety control equipment and access equipment safely to carry out the activity in accordance with current legislation and organisational requirements when establishing work area protection and safety. 3.2 Comply with information relating to specific risks to health when establishing work area protection and safety. 3.3 Explain why and when health and safety control equipment, identified by the principles of protection, should be used, relating to establishing work area protection and safety, and the types, purpose and limitations of each type, the work situation and general work environment, in relation to: – collective protective measures – personal protective equipment (PPE) – respiratory protective equipment (RPE) – local exhaust ventilation (LEV). 3.4 Describe how the relevant health and safety control equipment should be used in accordance with the given instructions.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
	3.5 Describe how emergencies should be responded to in accordance with organisational authorisation and personal skills when involved with fires, spillages, injuries and other task-related hazards.
4 Select the required quantity and quality of resources for the methods of work to establish work area protection and safety.	4.1 Select resources associated with own work in relation to materials, components and fixings, and tools and equipment.
	4.2 Describe the characteristics, quality, uses, sustainability, limitations and defects associated with the resources in relation to: – safety and security barriers – protection and safety notices – temporary structures – signs and lighting – hand and/or powered tools and equipment.
	4.3 Describe how the resources should be used correctly and how problems associated with the resources are reported.
	4.4 Explain why the organisational procedures have been developed and how they are used for the selection of required resources.
	4.5 Describe any potential hazards associated with the resources and methods of work.
	4.6 Describe how to calculate quantity, length and area associated with the method/procedure to establish work area protection and safety.
5 Minimise the risk of damage to the work and surrounding area when establishing work area protection and safety.	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.
	5.2 Minimise damage and maintain a clean work space.
	5.3 Dispose of waste in accordance with current legislation.
	5.4 Describe how to protect work from damage and the purpose of protection in relation to general workplace activities, other occupations and adverse weather conditions.
	5.5 Explain why the disposal of waste should be carried out safely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance.
6 Complete the work within the allocated time when establishing work area protection and safety.	6.1 Demonstrate completion of the work within the allocated time.
	6.2 Describe the purpose of the work programme and explain why deadlines should be kept in relation to: – types of progress charts, timetables and estimated times – organisational procedures for reporting circumstances which will affect the work programme.
7 Comply with the given contract information to establish work area protection and safety to the required specification.	7.1 Demonstrate the following work skills when establishing work area protection and safety: – measuring, setting out, positioning, assembling, constructing, securing and dismantling.

Learning Outcome - The learner will:	Assessment Criterion - The learner can:
	7.2 Install, maintain and remove temporary protection and safety arrangements for the work area, to given working instructions, relating to barriers/temporary structures and one of the following: – protection and safety notices – safety lighting. 7.3 Safely use materials, hand tools, portable power tools and ancillary equipment. 7.4 Safely store the materials, tools and equipment used when establishing work area protection and safety. 7.5 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish the authority needed to rectify them, to: – plan for the protection and the safety of the work and surrounding environment – install, check and maintain the protection and safety equipment – dismantle and remove protection and safety equipment – install safety notices – install lighting systems – use hand tools, power tools and equipment – work at height – use access equipment. 7.6 Describe the needs of other occupations and how to effectively communicate within a team when establishing work area protection and safety. 7.7 Describe how to maintain the tools and equipment used when establishing work area protection and safety.

Endorsements

One *of the following endorsements required (i.e. own area of work):*
Dewatering
Structural waterproofing
Box beam post tensioning
Chemical and resin grouting
Retaining structures

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