QFI NVQ in Tunnelling Operations (Construction) at Level 2 Specification

Specification

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Contents

1. Introduction

1.1. The QFI NVQ in Tunnelling Operations (Construction) at Level 2 qualifications are nationally recognised qualifications for those working in the construction and the built environment sector working across a broad range of tunnelling occupations. They are 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.

1.2. There are 11 specialist pathways:

Pathway	Title
1	Level 2 NVQ Diploma in Tunnelling Operations (Hand Miner)
2	Level 2 NVQ Diploma in Tunnelling Operations (Shaft Miner)
3	Level 2 NVQ Diploma in Tunnelling Operations (Tunnelling Machine Operator)
4	Level 2 NVQ Diploma in Tunnelling Operations (Machine Tunnelling Operative)
5	Level 2 NVQ Diploma in Tunnelling Operations (Spoil Removal Conveyor Operative)
6	Level 2 NVQ Diploma in Tunnelling Operations (Tunnelling Operative)
7	Level 2 NVQ Diploma in Tunnelling Operations (Tunnel Fitter's or Tunnel Electrician's Mate)
8	Level 2 NVQ Diploma in Tunnelling Operations (Sprayed Concrete Lining Tunnelling Nozzleman)
9	Level 2 NVQ Diploma in Tunnelling Operations (Pipejacking or Micro-Tunnelling Operative)
10	Level 2 NVQ Diploma in Tunnelling Operations (Separation Plant Operative)
11	Level 2 NVQ Diploma in Tunnelling Operations (Tunnel Transport Operator)

1.3. The awarding organisation for these qualifications (titles as regulated on Ofqual's Register – set out below) is Qualifications for Industry Limited (Qualifications For Industry (QFI): Awards qualifications for industry globally) recognised by the Office of Qualifications and Examinations Regulation (Ofqual).

1.4. The qualifications are on the Regulated Qualifications Framework (RQF) and are published on Ofqual's Register of Qualifications.

1.5. The qualifications' requirements have been specified in the National Occupational Standards (NOS) developed by the Sector Skills Council (SSC) CITB in liaison with employers and industry/ sector representatives. As NVQs, all units within the qualifications are derived from these occupational standards directly, and evidence of knowledge, skill and understanding will be gained from a Workplace or a realistic Workplace situation.

2. Qualifications' objectives

2.1. These qualifications are for construction operatives working in various roles within tunnelling. They are designed to assess and prove occupational competence in the Workplace to a recognised standard in the construction industry.

3. Progression

3.1. Learners may use these qualifications to gain employment in the construction sector specialising in tunnelling operations and the various roles therein. They may be used as evidence to prove competence to prospective employers, directly or as a component of card competence schemes. Such schemes are not a licence to practice and can be achieved by different routes (e.g., through the experienced worker route), but are widely recognised and used by many employers as proof of competence and access to sites.

4. Entry requirements

4.1. These qualifications are for all Learners aged 16 and above who are capable of reaching the required standards and have opportunity to demonstrate practical skills in a realistic construction working environment. There are no formal entry requirements for this qualification. Centres should carry out an initial assessment of a Learner's skills and knowledge to identify any gaps and help plan the assessment. They are likely however to be either seeking work or working, in tunnelling roles on construction sites.

4.2. Candidates taking these qualifications must be made fully aware of what this entails. Centres must be satisfied that Learners have the experience and skills and will have sufficient assessment opportunities within their job role to provide evidence of competence for these qualifications. Where this may not be the immediate case, Learners should check with their employer whether they are able to go out with departmental or immediate job role boundaries to gain the necessary assessment opportunities.

5. Qualification structures

5.1. TQT:

An estimate of the total time it could reasonably be expected for a Learner to achieve a qualification. TQT includes guided learning hours (GLH) plus an estimate of the time a Learner is likely to spend in preparation, study or other learning activities as directed by but not under the immediate guidance of a lecturer, supervisor, or tutor.

5.2. GLH:

The time a Learner spends in activities under the immediate guidance or supervision of a lecturer, supervisor, or tutor. This includes assessment if under supervision.

Pathway	Qualification title[1]	QAN	TQT	GLH	Credits	Mandatory Units	Assessment	Qualification Start date	Qualification End date
1	QFI NVQ in Tunnelling Operations (Hand Miner) at Level 2	603/7781/1	**1260**	**664**	**126**	**5**	Pass or fail Internally assessed and verified by Centre staff External quality assurance by QFI verifiers		
2	QFI NVQ in Tunnelling Operations (Shaft Miner) at Level 2		**800**	**519**	**80**	**4**			
3	QFI NVQ in Tunnelling Operations (Tunnelling Machine Operator) at Level 2		**1470**	**691**	**147**	**5**			
4	QFI NVQ in Tunnelling Operations (Machine Tunnelling Operative) at Level 2		**810**	**347**	**81**	**6**			
5	QFI NVQ in Tunnelling Operations (Spoil Removal Conveyor Operative) at Level 2		**410**	**184**	**41**	**6**			
6	QFI NVQ in Tunnelling Operations (Tunnelling Operative) at Level 2		**400**	**167**	**40**	**6**			
7	QFI NVQ in Tunnelling Operations (Tunnel Fitter's or Tunnel Electrician's Mate) at Level 2		**340**	**174**	**34**	**5**			

[1] *Title as regulated by Ofqual – and on The Register.*

8	QFI NVQ in Tunnelling Operations (Sprayed Concrete Lining Tunnelling Nozzleman) at Level 2		**1120**	**374**	**112**	**6**			
9	QFI NVQ in Tunnelling Operations (Pipejacking or Micro-Tunnelling Operative) at Level 2		**710**	**434**	**71**	**5**			
10	QFI NVQ in Tunnelling Operations (Separation Plant Operative) at Level 2		**490**	**237**	**49**	**6**			
11	QFI NVQ in Tunnelling Operations (Tunnel Transport Operator) at Level 2		**450**	**151**	**45**	**8**			

Pathway 1: Level 2 NVQ Diploma in Tunnelling Operations (Hand Miner)

Units

Qualification Structure:

To achieve this qualification a minimum of 126 credits needs to be attained, this comprises the 5 mandatory units. The learner may also take the unit in the Additional Group however this will not count towards the achievement of the qualification. (Min Credits: 126)

Mandatory Group:

The learner must achieve 126 credits from the units in the Mandatory Group. (Min Credits: 126)

Title	Reference	Credit Value	Level	TQT	GLH
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Excavating and profiling tunnels in the Workplace	R/618/8214	63	Level 2	630	410
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7
Building temporary or permanent tunnel linings in the Workplace	D/618/8216	53	Level 2	530	220

Additional Group:

The learner may achieve the unit in this Additional Group, but it will not count towards the achievement of the qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Preparing and operating specialist tunnelling plant to form tunnels in the Workplace	K/618/8218	74	Level 2	740	247
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

Pathway 2: Level 2 NVQ Diploma in Tunnelling Operations (Shaft Miner)

Units

Qualification Structure:

To achieve this qualification a minimum of 80 credits need to be attained. This comprises the 4 mandatory units. The learner may also take the unit in the Additional Group; however, this will not be counted towards the achievement of the qualification (Min Credits: 80)

Mandatory Group:

The learner must achieve 80 credits from the 4 units in this Mandatory Group. (Min Credits: 80)

Title	Reference	Credit Value	Level	TQT	GLH
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Constructing shafts for tunnelling operations in the Workplace	H/618/8220	70	Level 2	700	485
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7

Additional Group:

The learner may take the unit in this Additional Group, but it will not count towards the achievement of this qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Preparing and operating specialist tunnelling plant to form tunnels in the Workplace	K/618/8218	74	Level 2	740	247
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

Pathway 3: Level 2 NVQ Diploma in Tunnelling Operations (Tunnelling Machine Operator)

Units

Qualification Structure:

To achieve this qualification a minimum of 147 credits need to be attained. This comprises the 5 mandatory units. The learner may also achieve the unit in the Additional Group however this will not be counted towards the achievement of the qualification. (Min Credits: 147)

Mandatory Group:

The learner must achieve 147 credits from the 5 units in this Mandatory Group. (Min Credits: 147)

Title	Reference	Credit Value	Level	TQT	GLH
Preparing and operating specialist tunnelling plant to form tunnels in the Workplace	K/618/8218	74	Level 2	740	247
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Excavating and profiling tunnels in the Workplace	R/618/8214	63	Level 2	630	410
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7

Additional Group:

The learner may achieve the unit from this Additional Group however it will not count towards the achievement of the qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

Pathway 4: Level 2 NVQ Diploma in Tunnelling Operations (Machine Tunnelling Operative)

Units

Qualification Structure:
To achieve this qualification a minimum of 81 credits need to be attained. This comprises the 6 units in the Mandatory Group. The learner may also take the unit from the Additional Group, but this will not count towards the achievement of the qualification. (Min Credits: 81)

Mandatory Group:

The learner must achieve a total of 81 credits from the 6 units in this Mandatory Group. (Min Credits: 81)

Title	Reference	Credit Value	Level	TQT	GLH
Preparing and operating powered units, tools or pedestrian plant, machinery,or equipment in the Workplace	K/618/8221	7	Level 2	70	23
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Installing tunnelling services in the Workplace	M/618/8222	11	Level 2	110	70
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7
Building temporary or permanent tunnel linings in the Workplace	D/618/8216	53	Level 2	530	220

Additional Group:

The learner may achieve the unit from this Additional Group however it will not count towards the achievement of the qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

Pathway 5: Level 2 NVQ Diploma in Tunnelling Operations (Spoil Removal Conveyor Operative)

Units

Qualification Structure:

To achieve this qualification a minimum of 6 units must be achieved. This comprises the 6 mandatory units. The learner may also achieve the unit in the Additional Group; however, this will not be counted towards the achievement of the qualification.

Mandatory Group: The learner must achieve 6 units in this Mandatory Group.

Title	Reference	Credit Value	Level	TQT	GLH
Preparing to and directing and guiding the movement of vehicles, plant, or machinery in the Workplace	T/618/8223	12	Level 2	120	40
Operating a spoil removal conveyor in the Workplace	A/618/8224	8	Level 2	80	40
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Installing tunnelling services in the Workplace	M/618/8222	11	Level 2	110	70
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7

Additional Group:

The learner may achieve the unit from this Additional Group however it will not count towards the achievement of the qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

Pathway 6: Level 2 NVQ Diploma in Tunnelling Operations (Tunnelling Operative)

Units

Qualification Structure:

To achieve this qualification a minimum of 40 credits need to be attained. This comprises the 6 mandatory units. The learner may also take the unit from the Additional Group, but this will not count towards the achievement of the qualification. (Min Credits: 40)

Mandatory Group:

To achieve this qualification a minimum of 40 credits need to be attained. This comprises the 6 mandatory units. (Min Credits: 40)

Title	Reference	Credit Value	Level	TQT	GLH
Preparing to and directing and guiding the movement of vehicles, plant, or machinery in the Workplace	T/618/8223	12	Level 2	120	40
Preparing and operating powered units, tools or pedestrian plant, machinery,or equipment in the Workplace	K/618/8221	7	Level 2	70	23
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Installing tunnelling services in the Workplace	M/618/8222	11	Level 2	110	70
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7

Additional Group:

The learner may achieve the unit from this Additional Group however it will not count towards the achievement of the qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

Pathway 7: Level 2 NVQ Diploma in Tunnelling Operations (Tunnel Fitter's or Tunnel Electrician's Mate)

Units

Qualification Structure:

To achieve this qualification a minimum of 34 credits need to be attained. This comprises the 5 mandatory units. The learner may also take the unit in the Additional Gup however this will not count towards the achievement of the qualification. (Min Credits: 34)

Mandatory Group:

The leaner must achieve 34 credits from the 5 units in this Mandatory Group. (Min Credits: 34)

Title	Reference	Credit Value	Level	TQT	GLH
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Installing tunnelling services in the Workplace	M/618/8222	11	Level 2	110	70
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7
Carrying out routine maintenance of tunnelling plant, machinery, andequipment in the Workplace	F/618/8225	13	Level 2	130	70

Additional Group:

The learner may achieve the unit from this Additional Group however it will not count towards the achievement of the qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

Pathway 8: Level 2 NVQ Diploma in Tunnelling Operations (Sprayed Concrete Lining Tunnelling Nozzleman)

Units

Qualification Structure:

To achieve this qualification a minimum of 112 credits need to be attained. This comprises the 6 mandatory units. The learner may also take the unit from the Additional Group however, this will not be counted towards the achievement of this qualification. (Min Credits: 112)

Mandatory Group:

The learner must achieve 112 credits from the 6 units in this Mandatory Group. (Min Credits: 112)

Title	Reference	Credit Value	Level	TQT	GLH
Preparing substrate for sprayed concrete in the Workplace	J/618/8226	12	Level 2	120	40
Preparing and operating specialist tunnelling plant to form tunnels in theWorkplace	K/618/8218	74	Level 2	740	247
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7
Applying sprayed concrete in the Workplace	R/618/8228	16	Level 2	160	53

Additional Group:

The learner may achieve the unit from this Additional Group however it will not count towards the achievement of the qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

Pathway 9: Level 2 NVQ Diploma in Tunnelling Operations (Pipejacking or Micro-Tunnelling Operative)

Units

Qualification Structure:

To achieve this qualification a minimum of 71 credits need to be attained. This comprises the 5 mandatory units. The learner may also take the unit in the Additional Group; however, it will not count towards the achievement of the qualification. (Min Credits: 71)

Mandatory Group:

The learner must achieve 71 credits from the 5 units in this Mandatory Group. (Min Credits: 71)

Title	Reference	Credit Value	Level	TQT	GLH
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Installing tunnels by pipejacking or micro-tunnelling operations in theWorkplace	L/618/8227	50	Level 2	500	330
Installing tunnelling services in the Workplace	M/618/8222	11	Level 2	110	70
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7

Additional Group:

The learner may achieve the unit from this Additional Group however it will not count towards the achievement of the qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

Pathway 10: Level 2 NVQ Diploma in Tunnelling Operations (Separation Plant Operative)

Units

Qualification Structure:

To achieve this qualification a minimum of 49 credits need to be attained. This comprises the 6 mandatory units. The learner may take the unit in the Additional Group, but it will not count towards the achievement of the qualification. (Min Credits: 49)

Mandatory Group:

The learner must achieve 49 credits from the 6 units in this Mandatory Group. (Min Credits: 49)

Title	Reference	Credit Value	Level	TQT	GLH
Preparing and operating powered units, tools or pedestrian plant, machinery,or equipment in the Workplace	K/618/8221	7	Level 2	70	23
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Installing tunnelling services in the Workplace	M/618/8222	11	Level 2	110	70
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7
Carrying out mud, slurry, or fluid plant operations in the Workplace	Y/618/8229	21	Level 2	210	110

Additional Group:

The learner may achieve the unit from this Additional Group however it will not count towards the achievement of the qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

Pathway 11: Level 2 NVQ Diploma in Tunnelling Operations (Tunnel Transport Operator)

Units

Qualification Structure:

To achieve this qualification a minimum of 45 credits need to be attained. This comprises 45 credits from the Mandatory Group. There are also additional credits that can be achieved, they will appear on the certificate, but they will not count towards the achievement of the qualification. (Min Credits: 45)

Mandatory Group:

The learner must achieve 45 credits from the units in this group. (Min Credits: 45)

Title	Reference	Credit Value	Level	TQT	GLH
Preparing and operating specialist plant to receive, transport and discharge materials in a tunnelling environment	L/618/8230	35	Level 2	350	117
Moving, Handling and Storing Resources in the Workplace	F/618/7589	5	Level 2	50	17
Conforming to Productive Working Practices in the Workplace	Y/618/8215	3	Level 2	30	10
Conforming to General Health, Safety and Welfare in the Workplace	A/618/7588	2	Level 1	20	7

Additional Group:

The learner may achieve the unit from this Additional Group however it will not count towards the achievement of the qualification. (Min Credits: 18)

Title	Reference	Credit Value	Level	TQT	GLH
Carrying out structural waterproofing in the Workplace	H/618/8217	18	Level 2	180	60
Slinging and hand signalling the movement of suspended loads in the workplace	M/618/8219	10	Level 2	100	33

6. Assessment

6.1 Roles and responsibilities

There are a number of people involved in the assessment process and the role of each needs to be clearly understood by each.

6.1.1 **Learners**
– must familiarise themselves with the content of the Units that they are taking and how these are to be assessed. They should co-operate with the assessment process, looking for opportunities to evidence the elements and gathering evidence where this arises. Learners must take on board feedback from their assessor and work with their assessor to develop realistic plans for assessment. An Assessment Plan and Review template are included at Appendix 3.

6.1.2 **Assessors**
- must familiarise themselves with the content of the units that they are assessing and how these are to be assessed. They must assist Learners in identifying assessment opportunities, gathering, and presenting evidence. Assessors must assess all elements and record these assessments. Templates for recording elements, and for unit achievement, are at Appendix 4. Assessors must feedback and work with Learners to identify any gaps and develop realistic plans for assessment. They must also work with the Internal Verifier and External Verifier to ensure a common standard of assessment.

6.1.3 **Internal Verifiers (IVs)**
– sometimes known as Internal Quality Assurers (IQAs), their role is to ensure that the assessment process is appropriate, consistent, fair, and transparent; those assessors receive on-going support and that they are assessing to a common standard; and that awards are valid, reliable, and consistent. IVs must develop a strategy that includes standardisation activities such as reviewing samples of evidence from each assessor and countersigning the decisions of unqualified assessors.

6.1.4 **External Verifiers**
- sometimes known as External Quality Assurers (EQAs), are appointed by QFI and are independent of the centre. Their role is to check that internal processes are in place to ensure robust, consistent assessment. This includes sampling assessment evidence.

6.2 The assessment process

6.2.1 Assessment for this qualification, and for individual units that comprise the qualification, must take place in accordance with '*Construction Skills Consolidated Assessment Strategy for Construction and the Built Environment: Craft, Supervisory, Technical, Managerial and Professional National Vocational Qualifications (NVQs) and Scottish Vocational Qualifications (SVQs)*'.

6.2.2 This document translates the requirements of the assessment strategy and gives guidance to ensure that Centres meet these.

6.2.3 Centres delivering the qualification must ensure that assessors and Internal Verifiers are aware of the assessment strategy and how to access this. External Verifiers may check this requirement during monitoring visits to centres.

6.2.4 Assessment involves the following key stages: planning; producing evidence; assessing evidence; recording. Each of these is considered in more detail below.

6.3 Planning

6.3.1 The assessor must create an Assessment Plan with each Learner that he/ she will be assessing. The Assessment Plan will need to be reviewed as the Learner progresses through the units. A template for assessment planning and review is at Appendix 3 of this document.

6.3.2 A wide range of assessment methods exist that can be used to assess knowledge and skills. Methods of assessment that are commonly used for assessing competence based qualifications such as NVQs include the following:

- Product evidence – this relates to the outcome of the Learner's work, and the actual product that is generated as a result of their work.
- Direct observation – where an assessor (or credible witness) will directly observe the Learner undertaking certain tasks/ creating products that occur as part of their role. Observations must be referenced to the elements covered.
- Question/ answer – these will often supplement the methods above, for example the assessor may ask the Learner a number of questions whilst they are undertaking a task. Questioning is a useful way to establish knowledge and to generate evidence of this.
- Witness testimony – credible witnesses may be identified who can for example testify that the Learner can successfully undertake certain tasks.
- Personal statement – declaration made by the Learner that should be referenced to elements.

6.3.3 Centres should ensure that their Assessors use the methods above to assess Learners for this qualification. Template assessment documents including an Assessor Report can be found at Appendix 3.

6.4 Producing evidence

6.4.1 The methods of assessment must generate evidence to demonstrate the candidates' competence. Evidence produced in the Workplace is central to Construction Skills Consolidated Assessment Strategy. Workplace evidence is vital to ensuring that the candidate is competent to industry standards and a suitable way of recording this must be used.

6.4.2 The following indicates the type of evidence generated by the methods on the section above:

- Product evidence –Photographic or video evidence is often used to record this, or it may also be recorded via the method below. Labelled photographs and/or videos that clearly show the candidate are sources of evidence for this purpose.
- Direct observation –observations must be recorded via an Assessor or other report (e.g., witness statement).
- Question/ answer –both the questions and the candidate's responses to these must be recorded either in writing or via some audio or visual device (e.g., part of a video recording).
- Witness testimony – this may be written, audio or visual recordings.
- Personal statement – the declaration made by the candidate must be recorded.

6.4.3 All of the above must be referenced to the evidence that they cover. Templates that may be used for recording evidence are at Appendix 3.

6.4.4 Feedback should be given to the candidate on an on-going basis and where there are any gaps or shortfalls in evidence then these should be incorporated into the Assessment Plan.

6.4.5 Assessment must meet the requirements of the performance criteria, knowledge and understanding documented for each unit of assessment. Methods of assessment must ensure coverage of all elements, scope, and range, and generate sufficient evidence to demonstrate competence. A holistic approach towards the collection of evidence is encouraged. The focus should be on assessing activities generated by the whole work experience rather than focusing on specific tasks. This would show how evidence requirements could be met across the qualification to make the most efficient use of evidence.

6.4.6 Direct evidence produced through normal performance in the Workplace is the primary source for meeting these requirements. This includes naturally occurring evidence, direct observation of activities and witness testimony as relevant, all of which must be recorded. Workplace evidence must be supported by the required evidence of knowledge and understanding. This evidence may be identified by:

- questioning the candidate,
- recognised industry education and training programme assessment, or professional interview assessment that has been matched to NOS requirements
- performance evidence/ completed work,

6.4.7 All of which must be recorded and made available for verification purposes. Workplace evidence of skills cannot be simulated for this qualification.

6.5 Assessing evidence

6.5.1 Evidence must be assessed against the units/ elements to establish whether the candidate is competent with regards to their performance and knowledge. In order to achieve the qualification candidates must achieve a 'pass'. The evidence must show that the candidate consistently (i.e., on more than one occasion) meets all of the elements across the scope/range of each unit.

6.5.2 If there is insufficient evidence to make this judgement, then plans must be made as to how the candidate can produce further evidence in order to demonstrate competence.

6.5.3 Assessors must check that the evidence produced is sufficient in volume, relevant and current. They must also be confident that the evidence has been generated by the candidate. Assessors and candidates normally sign documentation to declare that the evidence produced is that of the candidate and no other.

6.6 Recording evidence

6.6.1 Evidence (or reference to where certain evidence is located) is normally kept in a portfolio. This may be paper-based or electronic. All evidence contained within the portfolio must be clearly referenced to the units and elements. Candidates' progress can therefore be tracked. Note that certain pieces of evidence can be recorded across more than a single element. Tracking is important to show where this is that case.

6.6.2 It is helpful to give each piece of evidence a number so that this can be mapped across elements. See the template forms at Appendix 4. Assessment decisions made against the

evidence must also be recorded so that an IV or an EV can see these. All evidence must be kept for internal and external verification.

7. Assessors

7.1 The occupational competence of assessors is defined in '*Construction Skills Consolidated Assessment Strategy for Construction and the Built Environment: Craft, Supervisory, Technical, Managerial and Professional National Vocational Qualifications (NVQs) and Scottish Vocational Qualifications (SVQs)*'.

7.2 The roles and responsibilities of assessors is outlined in the section above. Assessors must be competent to perform their role and either hold the qualifications needed to carry out assessment – or achieve within 18 months of commencing their role:

- D32 or D33,
- A1,
- Level 3 Award in Assessing Competence in the Work Environment,
- Level 3 Award in Assessing Vocationally Related Achievement,
- Level 3 Certificate in Assessing Vocational Achievement, or
- an appropriate Assessor qualification as identified by QFI.

Assessors must also:

- have a sound, in-depth knowledge of, and uphold the integrity of, the relevant NOS and Assessment Strategy to enable them to carry out assessment to the standards specified,
- have the occupational expertise (craft/ trade specific) before commencing their role so they have up to date experience, knowledge and understanding of the particular aspects of work they are assessing,
- only assess in their acknowledged area of occupational competence,
- maintain the currency of this for the duration of their role, and
- know QFI's requirements for recording assessment decisions and maintaining assessment records.

7.3 Holders of A1 and D32/33 must assess to the current National Occupational Standards (NOS) for Learning and Development.

7.4 Assessors must be registered with QFI. The Centre Handbook provides details.

7.5 The assessment decisions of unqualified assessors must be countersigned by the IV.

8. Internal verification

8.1 Centres' internal assessment processes and practices must be effective and support the integrity and consistency of the qualification. This is achieved through the internal quality assurance that is undertaken by the approved centre, and the external quality assurance that is undertaken by QFI. Centres must operate explicit, written internal quality assurance procedures to ensure:

- the accuracy and consistency of assessment decisions between assessors operating at the centre, and

- those assessors are consistent in their interpretation and application of the qualifications or unit(s) learning outcomes.

8.2 Centres must appoint IVs who will be responsible for:

- regular sampling evidence of assessment decisions made by all assessors across all aspects of assessment for the qualification. Sampling must include direct observation of assessment practice,
- maintaining up-to-date records of IV and sampling activity (what was evidence was sampled or assessors / IV observed where there is more than one) and ensuring that these are available for external quality assurance,
- establishing procedures to ensure that all assessors interpret the learning outcomes in the same way,
- monitoring and supporting the work of assessors,
- facilitating appropriate staff development and training for assessors,
- providing feedback to the EV on the effectiveness of assessment, and
- ensuring that any corrective action required by QFI is carried out within agreed timescales.

8.3 Centres must ensure that the decisions of unqualified IVs are checked, authenticated, and countersigned by an IV who is appropriately qualified and occupationally expert. QFI will monitor a centre's compliance with these requirements through monitoring visits and certification claims.

8.4 The IV is also responsible and accountable for arranging the checking and countersigning process. IVs may verify only evidence that they did not assess themselves. Further guidance on internal quality assurance/verification is provided in the Centre Handbook. Appendix 5 of this document indicates suggested content for an IV strategy, and a template for sampling assessment evidence.

9. Internal verifiers

9.1 The occupational competence of IVs is defined in '*Construction Skills Consolidated Assessment Strategy for Construction and the Built Environment: Craft, Supervisory, Technical, Managerial and Professional National Vocational Qualifications (NVQs) and Scottish Vocational Qualifications (SVQs)*'.

9.2 The roles and responsibilities of IVs is outlined above. IVs must be competent to perform their role and either hold the qualifications needed to carry out internal verification – or achieve within 18 months of commencing their role:

- D34,
- V1,
- Level 4 Award in the Internal Quality Assurance of the Assessment Process and Practice,
- Level 4 Certificate in Leading the Internal Quality Assurance of Assessment Process and Practice, or
- an appropriate Internal Verifier qualification as identified by QFI.

9.3 It is strongly recommended that IVs also hold assessor qualifications (see section above).

9.4 Holders of V1/D34 must quality assure to the current National Occupational Standards (NOS) for Learning and Development.

9.5 IVs must be registered with QFI. The Centre Handbook provides details.

10. External verification

10.1 External verification of this qualification ensures that the requirements are met for the '*Construction Skills Consolidated Assessment Strategy for Construction and the Built Environment: Craft, Supervisory, Technical, Managerial and Professional National Vocational Qualifications (NVQs) and Scottish Vocational Qualifications (SVQs)*'.

10.2 Centre visits will normally take place on an annual basis, though these could be more frequent if deemed necessary as a result of QFI's risk assessments. The Centre Handbook provides further details on external verification including to prepare for centre visits.

QFI's appointed External Verifiers meet the requirements of the assessment strategy.

11. Certification

11.1 Note that there is a lapsing period of two years for this qualification. This means that when the qualification expires, is withdrawn or replaced by a revised version, candidates registered have two years from the expiry date in which to complete the qualification. This will allow sufficient time for candidates to compete and allow for currency of evidence.

12. Equality and diversity

12.1 This qualification must be assessed in English.

12.2 Assessment must be inclusive and where appropriate reasonable adjustments made to ensure equality of access in line with QFI's Equality and Diversity Policy. Full details are included in the QFI Centre Handbook.

12.3 Special consideration is not normally given for competence-based qualifications as it is necessary for candidates to demonstrate that they have the necessary skills and knowledge to achieve the qualification and operate safely in the Workplace.

12.4 Equality data will be collected at the point of registration. This is for monitoring purposes only and will include age, gender, ethnicity, and disability.

13. Fees

13.1 The current fees for this qualification, and for individual units, are included in the QFI Fees document. This document also details what is/ is not included in fees.

13.2 Fees may be broken down to a reasonable level upon request to QFI.

APPENDIX 1: CANDIDATE TEMPLATE DOCUMENTS

Sample Form – Induction Checklist	
This document indicates what may be covered as part of a candidate's induction. This list is not exhaustive.	**Tick**
Qualification information: • Units • Structure • Summary of assessment • Awarding body	
Roles and responsibilities: • Candidate • Assessor • Internal Verifier • External Verifier	
Training and assessment process: • Planning • Collection of evidence (including methods) • Review of evidence • Feedback on evidence • Verification of evidence • Certification	
Policies: • Complaints • Appeals • Malpractice • Data protection • Health and safety • Equality (including reasonable adjustments/ additional support)	
Forms: • Enrolment • Other	
I confirm that I have received this induction and the associated documents: Candidate name: …….. Candidate signature: ……..… Date: ……	

APPENDIX 2: Units – Learning Outcomes and Assessment Criteria

Mandatory Units common to each Pathway

Title:	**Conforming to general health, safety, and welfare in the Workplace**
Unit Number:	
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. 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.
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.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the Construction Skills '*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.

Title:	**Moving, handling, and storing resources in the Workplace**
Unit Number:	
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 – materials and substances – 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. 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.

	5.3 Maintain a clean workspace 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.
Additional information about this unit	

Assessment Guidance	This unit must be assessed in a work environment and in accordance with the Construction Skills '*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.

Title:	**Conforming to Productive Working Practices in the Workplace**
Unit Number:	
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. 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.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, inaccordance with the Construction Skills 'ConsolidatedAssessment 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.

Units particular to a Pathway

Title:	Excavating and profiling tunnels in the Workplace
Pathway	1, 3
Unit Number	

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 profiling tunnels.	1.1 Interpret and extract relevant information from drawings/required evacuation support sheet (RESS), method statements, task briefings, 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/required evacuation support sheet (RESS), method statements, task briefings, risk assessments, manufacturers' information, organisational procedures, official guidance, and current regulations governing tunnelling.
2 Know how to comply with relevant legislation and official guidance when excavating and profiling tunnels.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment 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 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. 2.4 Describe the types of fire extinguishers available when excavating and profiling tunnels and describe how and when they are used.

3	Maintain safe and healthy working practices when excavating and profiling tunnels.	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 profiling tunnels.
		3.2	Demonstrate compliance with given information and relevant legislation when excavating and profiling tunnels in relation to the following: • safe use of access equipment/systems • 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 pf prevention, should be used, relating to excavating and profiling tunnels, 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 excavate and profile tunnels.	4.1	Select resources associated with own work in relation to materials, components, tools, and equipment.
		4.2	Describe the characteristics, quality, uses, sustainability, limitations, and defects associated with the resources in relation to: • engineering controls (e.g., lasers, drill patterns, profile boards, string lines, square marks, and software controls), hand, mechanical or drill and blast excavation equipment and ancillary equipment
		4.3	Describe how to confirm that the resources and materials conform to the specification.
		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.
5	Minimise the risk of damage to the work and surrounding area when excavating and profiling tunnels.	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 workspace.
		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 profiling tunnels.	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: • 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 profile tunnels to the required specification.	7.1	Demonstrate the following work skills when excavating and profiling tunnels: • excavating and profiling.
		7.2	Use and maintain ancillary equipment.
		7.3	Excavate and profile tunnels to given working instructions and engineering controls for at least one of the following operations: • sprayed concrete lining • hand mining • drilling and blasting • tunnel boring

	7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems, and establish the authority needed to rectify them, to: • follow engineering controls to excavate and profile tunnels for sprayed concrete lining, hand mining, drilling, and blasting or tunnel boring operations • recognise and determine when specialist skills and knowledge are required and report accordingly • work with, around and in close proximity to plant and machinery • direct and guide the operations and movement of plant and machinery • use ancillary equipment • work at height • use access equipment/systems. 7.5 Describe the needs of other occupations and how to communicate effectively within a team when excavating and profiling tunnels. 7.6 Describe how to maintain the ancillary equipment used when excavating and profiling tunnels.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the Construction Skills '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 methodsas defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed withinthe relevant NVQ structure. <u>QFI Level 2 NVQ Diploma in Tunnelling Operations (Construction):</u> One of the following endorsements required: Sprayed concrete lining Hand mining Drilling and blasting Tunnel boring

Title:	Building temporary or permanent tunnel linings in the Workplace
Unit Number:	
Pathway	**1, 4**
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 building temporary or permanent tunnel linings.	1.1 Interpret and extract relevant information from specifications, schedules, task briefings, risk assessments, method statements 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, task briefings, risk assessments, manufacturers' information, organisational procedures, official guidance, and current regulations governing tunnelling.
2 Know how to comply with relevant legislation and official guidance when building temporary or permanent tunnel linings.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment 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 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. 2.4 Describe the types of fire extinguishers available when building temporary or permanent tunnel linings and describe how and when they are used.

3 Maintain safe and healthy working practices when building temporary or permanent tunnel linings.	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 building temporary or permanent tunnel linings. 3.2 Demonstrate compliance with given information and relevant legislation when building temporary or permanent tunnel linings in relation to the following: • safe use of access equipment/systems • 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 building temporary or permanent tunnel linings 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 build temporary or permanent tunnel linings.	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: • tunnel boring machine (TBM), timber, cast iron or precast linings, gaskets, fittings, and fixings • hand tools, powered tools, and equipment. 4.3 Describe how to confirm that the resources and materials conform to the specification. 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/procedure to build temporary or permanent tunnel linings.
5	Minimise the risk of damage to the work and surrounding area when building temporary or permanent tunnel linings.	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 workspace.
		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 building temporary or permanent tunnel linings.	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 build temporary or permanent tunnel linings to the required specification.	7.1	Demonstrate the following work skills when building temporary or permanent tunnel linings: • measuring, marking out, fitting, positioning, securing.
		7.2	Use and maintain hand tools, portable power tools and ancillary equipment
Additional information about this unit			

Assessment Guidance	This unit must be assessed in a work environment and in accordancewith the Construction Skills '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 methodsas defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed withinthe relevant NVQ structure. QFI Level 2 NVQ Diploma in Tunnel Operations (Construction):One of the following endorsements required: Mechanised Traditional

Title:	Constructing shafts for tunnelling operations in the Workplace
Pathway	**2**
Unit Number:	
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 constructing shafts for tunnelling operations.	1.1 Interpret and extract relevant information from drawings, specifications, method statements, task briefings, 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, method statements, task briefings, risk assessments, manufacturers' information, organisational procedures, official guidance, and current regulations governing tunnelling.
2 Know how to comply with relevant legislation and official guidance when constructing shafts for tunnelling operations.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment 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 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. 2.4 Describe the types of fire extinguishers available when constructing shafts for tunnelling operations and describe how and when they are used.

3	Maintain safe and healthy working practices when constructing shafts for tunnelling operations.	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 constructing shafts for tunnelling operations.
		3.2	Demonstrate compliance with given information and relevant legislation when constructing shafts for tunnelling operations in relation to the following: • safe use of access equipment/systems • 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 constructing shafts for tunnelling operations, 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 construct shafts for tunnelling operations.	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: • ground support systems (e.g., sheet piles, frames, segments, casts, timber), grout, lining materials and ancillary equipment • fall arrest equipment • hand tools, portable power tools and equipment.
		4.3	Describe how to confirm that the resources and materials conform to the specification.
		4.4	Describe how the resources should be used correctly, 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	Identify quantity and length, associated with the method/procedure to construct shafts for tunnelling operations.
5	Minimise the risk of damage to the work and surrounding area when constructing shafts for tunnelling operations.	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 workspace.
		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 constructing shafts for tunnelling operations.	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 construct shafts for tunnelling operations to the required specification.	7.1	Demonstrate the following work skills when constructing shafts for tunnelling operations: • measuring, marking out, positioning, excavating, and securing.
		7.2	Use and maintain hand tools, portable power tools andancillary equipment.
		7.3	Construct shafts for tunnelling operations, by at least one of the following methods, to given working instructions: • underpinning • caisson sinking • sprayed lining • sheet piles and frames

	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 types of shaft construction for ground conditions • construct shafts by underpinning, caisson sinking (wet, dry or wrap), sprayed lining, diaphragm walling, bored piles and sheet piles and frames • excavate spoil • manage ground water • locate and protect/divert underground utilities • be aware of the potential for buried structures/items (e.g., unexploded objects, burial grounds) • recognise and determine when specialist skills and knowledge are required and report accordingly • identify and follow the installation quality requirements • identify grouting methodology for the type of shaft being constructed • work with, around and in close proximity to plant and machinery • direct and guide the operations and movement of plant and machinery • use hand tools, portable power tools and equipment • work at height • use fall arrest equipment • use access equipment/systems.
	7.5	Describe the needs of other occupations and how to communicate effectively within a team when constructing shafts for tunnelling operations.
	7.6	Describe how to maintain the tools and equipment used when constructing shafts for tunnelling operations.
Additional information about this unit		
Assessment Guidance	This unit must be assessed in a work environment and in accordancewith the Construction Skills '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 methodsas defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed withinthe relevant NVQ structure. <u>QFI Level 2 NVQ Diploma in Tunnelling Operations (Construction):</u> One of the following endorsements required:	

	Sprayed concrete lining Hand mining Drilling and blasting Tunnel boring

Title:	**Preparing and operating specialist tunnelling plant to form tunnels in the Workplace**
Pathway	**3, 8 (*Additional Unit or Pathways 1 and 2*)**
Unit Number:	
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 specialist tunnelling plant to form tunnels.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, 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 and current regulations governing the operation of tunnelling plant for forming tunnels.
2 Organise with others the sequence and operation in which forming tunnels using specialist tunnelling plant are 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 during tunnelling operations using specialist tunnelling plant.
3 Know how to comply with relevant legislation and official guidance when preparing to and forming tunnels using specialist tunnelling plant.	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.
4 Maintain safe and healthy working practices when preparing for and forming tunnels using specialist tunnelling plant.	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 during tunnelling operations.
	4.2	Demonstrate compliance with given information and relevant legislation when forming tunnels using specialist tunnelling plant in relation to two or more of the following: • safe use and storage of plant or machinery • safe use and storage of tools and equipment • specific risks to health.
	4.3	Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to tunnelling plant 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).
	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 Request and select the required quantity and quality of resources to prepare for and form tunnels using specialist tunnelling plant	5.1	Request and select resources associated with specialist tunnelling plant in relation to consumables, materials, tools, ancillary equipment and/or accessories.
	5.2	Describe the characteristics, quality, uses, sustainability, limitations, and defects associated with the resources, and how they should be used correctly, relating to: • consumables, lubricants, and fuels • attachments and forming aids • hand tools, ancillary equipment and/or accessories.
	5.3	Describe how the resources should be used correctly and how problems associated with the resources are reported.
	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 resourcesand methods of work.
		5.6	Describe how to identify weight, quantity, length, and area associated with the method/procedures to form tunnels using specialist tunnelling plant.
6	Minimise the risk of damage to the work and surrounding area when preparing to and operating specialist tunnelling plant to form tunnels.	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 workspace.
		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 forming, tunnels.	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.
8	Comply with the given contract information to prepare and operate specialist tunnelling plant to form tunnels to the required specification.	8.1	Demonstrate the following work skills when preparing for and forming tunnels using specialist tunnelling plant: • checking, adjusting, communicating, manoeuvring, positioning, constructing, and forming.
		8.2	Use and maintain hand tools, ancillary equipment and/or accessories.
		8.3	Prepare, set up, position, and operate specialist tunnelling plant to form tunnels to given working instructions.
		8.4	Shut down and secure tunnelling plant.
		8.5	Describe how to apply safe and healthy work practices, follow procedures, report problems, and establish authority needed to rectify, to: • identify the characteristics of the specialist tunnelling plant used for tunnelling operations • carry out function checks for the tunnelling operation • identify the area of the tunnelling work • identify geological, environmental, and material changes and report • prepare, set up and adjust for operational requirements

	• carry out pre-operational checks for obstructions, stability, safety, and security of the work and surrounding area • check to avoid damage to structures and utilities service apparatus • form tunnels safely and securely • recognise and determine when specific skills and knowledge are required and report accordingly • complete construction and formation work • be on the public highway • shut down and secure the tunnelling plant and equipment • use hand tools, ancillary equipment, and accessories. 8.6 Describe the needs of other occupations and how to effectively communicate within a team when preparing forand operating specialist tunnelling plant to form tunnels. 8.7 Describe how to maintain the plant and machinery, hand tools, ancillary equipment and/or accessories used to formtunnels with specialist tunnelling plant.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordancewith the Construction Skills '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 methodsas defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed withinthe relevant NVQ Structure. <u>QFI Level 2 NVQ Diploma in Tunnelling Operations (Construction):</u> The following endorsement required (i.e., own area of work): Tunnelling operations Plus, **one** of the following endorsements required: Construction plant or machines Formation plant or machines Receiving plant or machines Transporting plant or machines Plus, **one** of the following endorsements required: Unshielded rock tunnel boring machine Shielded rock tunnel boring machine

	Shield mounted hydraulic excavating arm Road header above 50te Road header below 50te Road header bucket below 50te Pre vault method Drill rig (rail, gantry, or truck mounted) Excavator Sprayed concrete plant and equipment Remote and/or pedestrian control operation

Title:	Preparing and operating powered units, tools or pedestrian plant, machinery, or equipment in the Workplace
Pathway	4, 6, 10
Unit Number:	
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.
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. 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 workspace.
		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.
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 • operate, use and control • monitor and maintain • replenish consumables • close down and secure • disassemble and clean • use access equipment • transport and store. 7.7 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. 7.8 Describe how to maintain the hand tools, portable power tools, powered units, pedestrian plant, machinery, and ancillary equipment used for the work.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordancewith the Construction Skills '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>QFI Level 2 NVQ Diploma in Tunnelling Operations (Construction):</u> One of the following endorsements required: Generators Pumps Pedestrian operated plant or machines

	Mixers Compressors Self-powered tools

Title:	Installing tunnelling services in the Workplace
Pathway	**4, 5. 6, 7, 9, 10**
Unit Number:	
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 tunnelling services.	1.1 Interpret and extract relevant information from method statements, task briefings, 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, task briefings, risk assessments, manufacturers' information, organisational procedures, official guidance, and current regulations governing tunnelling.
2 Know how to comply with relevant legislation and official guidance when installing tunnelling services.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, 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 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. 2.4 Describe the types of fire extinguishers available when installing tunnelling services and describe how and when they are used.
3 Maintain safe and healthy working practices when installing tunnelling services.	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 tunnelling services.

	3.2 Demonstrate compliance with given information and relevant legislation when installing tunnelling services in relation to the following: • safe use of access equipment/systems • 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 tunnelling services, 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 tunnelling services.	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: • ventilation systems, communication systems, pressurised systems, water supply systems, material handling systems, • hand tools, portable power tools and equipment. 4.3 Describe how to confirm that the resources and materials conform to the specification. 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 identify quantity and length, associated with the method/procedure to install tunnelling services.
	5.1 Protect the work and its surrounding area from damage in

5	Minimise the risk of damage to the work and surrounding area when installing tunnelling services.		accordance with safe working practices and organisational procedures.
		5.2	Maintain a clean workspace.
		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 tunnelling services.	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 tunnelling services to the required specification.	7.1	Demonstrate the following work skills when installing tunnelling services: • measuring, fitting, positioning, connecting, checking, and securing.
		7.2	Use and maintain hand tools, portable power tools and ancillary equipment.
		7.3	Install, use, and remove the following tunnelling back-up services to given working instructions: • ventilation systems • pressurised systems • communication systems • water supply systems • materials handling systems (rail and/or conveyor and/or piped).
		7.4	Describe how to apply safe and healthy work practices, follow procedures, report problems, and establish the authority needed to rectify them, to: • position and install ventilation systems, pressurised systems, communication systems, water supply systems, material handling systems (rail conveyor and piped) and walkways • remove and dismantle ventilation systems, pressurised systems, communication systems, water supply systems, material handling systems (rail, conveyor and piped), walkways • check connection systems are ready for commissioning

	• recognise and determine when specialist skills and knowledge are required and report accordingly • identify and follow the installation quality requirements • work with, around and in close proximity to plant and machinery • direct and guide the operations and movement of plant and machinery • use hand tools, portable power tools and equipment • work at height • use access equipment/systems. 7.5 Describe the needs of other occupations and how to communicate effectively within a team when installing tunnelling services. 7.6 Describe how to maintain the tools and equipment used when installing tunnelling services.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and inaccordance with the Construction Skills 'Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industryexperience 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.

Title:	Preparing to and directing and guiding the movement of vehicles, plant, or machinery in the Workplace
Pathway:	5, 6
Unit Number:	
Learning outcomes *The learner will be able to:*	**Assessment criteria** *The learner can:*
1 Interpret the given information relating to preparing to, and directing and guiding the movement of vehicles, plant, or machinery.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, risk assessments, plant and vehicle movement plan 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, plant and vehicle movement plans, manufacturers' information and Codes of Practice for the direction and guidance of vehicles, plant, and machinery.
2 Organise with others the sequence and operation in which directing and guiding the movement of vehicles, plant or machinery 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 during directing and guiding vehicles, plant, or machinery.
3 Know how to comply with relevant legislation and official guidance when directing and guiding the movement of vehicles, plant, or machinery.	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.
4 Maintain safe and healthy working practices when preparing to, directing, and guiding the movement of vehicles, plant, or machinery.	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 directing and guiding vehicles, plant, or machinery.
	4.2	Demonstrate compliance with given information and relevant legislation when directing and guiding the movement of vehicles, plant, or machinery in relation to two or more of the following: • safe use and storage of tools • safe use and storage of 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 directing and guiding vehicles, 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).
	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 to, and direct and guide the movement of vehicles, plant, or machinery.	5.1	Select resources associated with directing and guiding vehicles, plant, or machinery in relation to hand tools, ancillary equipment and signalling and communication 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: • signalling and communication equipment • barriers, cones, signs • lighting 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.
	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/bearing pressures, quantity, length, and area associated with the method/procedures for directing and guiding the movement of vehicles, plant, and machinery.
6	Minimise the risk of damage to the work and surrounding area when preparing to and directing and guiding the movement of vehicles, plant, or machinery.	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 workspace.
		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 directing and guiding the movement of vehicles, plant, or machinery.	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.
8	Comply with the given contract information to prepare to, and direct and guide the movement of vehicles, plant, or machinery to the required specification.	8.1	Demonstrate the following work skills when preparing to, and directing and guiding vehicles, plant, or machinery: • measuring, gauging, estimating, interpreting, judging, explaining, preparing, commanding, directing, guiding, indicating, informing, instructing, signing, positioning, moving, securing, signalling, and relaying.
		8.2	Use and maintain hand tools, ancillary equipment and signalling equipment.
		8.3	Prepare to, and direct and guide the movement of loaded and unloaded vehicles, including articulated vehicles and plant or machinery (wheeled or tracked) to given working instructions, relating to the following: • hand signals • hand signalling equipment • verbal/electronic communication equipment.
		8.4	Describe how to apply safe and healthy work practices, follow procedures, report problems, and establish authority needed to rectify, to:

- identify the differences between directing and guiding movement, directing, and guiding operations and slinging and signalling
- interpret a work management plan and vehicle movement plan
- identify the hierarchy of traffic control measures and pedestrian separation
- organise and ensure the maintenance of holding areas, routes, exclusion zones, markers, and signs
- assess and determine the movement of vehicles, plant, and machinery, to include own position of safety, visibility, ground
- conditions and features, proximity hazards and weight limits
- recognise and react to changing conditions, ground, environment, weather, light, numbers and types of vehicles, plant, and machinery
- liaise with, convey, and collect information from and to, drivers and operators
- recognise and utilise movement aids (camera's, mirrors, audio, and visual warnings, etc.)
- recognise blind-spots, potential crush zones and other limitations to driver visibility
- recognise the requirements of directing and guiding the movement of vehicles, plant, and machinery onto and from public highways
- recognise the requirements of working on public highways
- direct and guide different vehicle types and size e.g., height, weight length, width, tracked, wheeled, and articulated
- assess and determine the movement of loads, including unloading, discharging, and loading requirements
- direct and guide vehicles, plant, and machinery across rough or uneven terrain
- check the integrity of load securing equipment and stability of loads, prior to commencement of movements and on arrival, prior to release
- signal and communicate following recognised and agreed operational procedures
- recognise and determine when specific skills and knowledge are required and report accordingly
- use hand tools and ancillary equipment.

8.5 Describe the needs of other occupations and how to effectively communicate within a team when preparing to and directing and guiding vehicles, plant, or machinery.

8.6 Describe how to maintain the hand tools, ancillary equipment, and signalling and communication equipment used to direct and guide vehicles, plant, or machinery.

Additional information about this unit

Assessment Guidance	This unit must be assessed in a work environment and in accordance with: the Additional Requirements for Qualifications using the title NVQ in QCF the Construction Skills '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. This unit must be assessed against the endorsements detailed within the relevant NVQ Structure. <u>QFI Level 2 NVQ Diploma in Tunnelling Operations (Construction):</u> One of the following endorsements required: Loco and rolling stock Underground bulk systems (explosives transportation)

Title:	Operating a spoil removal conveyor in the Workplace
Pathway:	5
Unit Number:	
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 operating a spoil removal conveyor.	1.1 Interpret and extract relevant information from method statements, risk assessments, task briefings 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: • method statements, task briefings, risk assessments, manufacturers' information, official guidance, and current regulations governing tunnelling.
2 Know how to comply with relevant legislation and official guidance when operating a spoil removal conveyor.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, 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 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. 2.4 Describe the types of fire extinguishers available when operating a spoil removal conveyor and describe how and when they are used.
3 Maintain safe and healthy working practices when operating a spoil removal conveyor.	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 operating a spoil removal conveyor. 3.2 Demonstrate compliance with given information and relevant legislation when operating a spoil removal conveyor in relation to the following: • safe use of access equipment/systems

			• 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 operating a spoil removal conveyor, 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 operate a spoil removal conveyor.	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: • spoil removal systems, (including belts, rollers, scrapers, spoilers), fittings and fixings • hand tools, portable power tools and equipment.
		4.3	Describe how to confirm that the resources and materials conform to the specification.
		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 potential hazards associated with the resources and methods of work.
5	Minimise the risk of damage to the work and surrounding area when operating a spoil removal conveyor.	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 workspace.
		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 operating a spoil removal conveyor.	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 operate a spoil removal conveyor to the required specification.	7.1	Demonstrate the following work skills when operating a spoil removal conveyor: measuring, inspecting, operating, monitoring, maintaining, starting up, shutting down and cleaning.
		7.2	Use and maintain hand tools, portable power tools and ancillary equipment.
		7.3	Operate and monitor a spoil removal conveyor 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: • inspect and identify defects • operate, monitor, and maintain a spoil removal conveyor • carry out start up and shut down procedure • change rollers and scrapers • remove, clean and store spoil removal equipment • recognise and determine when specialist skills and knowledge are required and report accordingly • work with, around and in close proximity to plant and machinery • direct and guide the operations and movement of plant and machinery • use hand tools, portable power tools and equipment • work at height • use access equipment/systems.
		7.5	Describe the needs of other occupations and how to communicate effectively within a team when operating a spoil removal conveyor.
		7.6	Describe how to maintain the tools and equipment used when operating a spoil removal conveyor.
Additional information about this unit			

Assessment Guidance	This unit must be assessed in a work environment and inaccordance with the Construction Skills 'Consolidated Assessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industryexperience 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.

Title:	**Carrying out routine maintenance of tunnelling plant, machinery, and equipment in the Workplace**
Pathway:	**7**
Unit Number:	
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 routine maintenance of tunnelling plant, machinery, and equipment.	1.1 Interpret and extract relevant information from method statements, task briefings, 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, task briefings, risk assessments, manufacturers' information, organisational procedures, official guidance, and maintenance authorisation procedures
2 Know how to comply with relevant legislation and official guidance when carrying out routine maintenance of tunnelling plant, machinery, and 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. 2.4 Describe the types of fire extinguishers available when carrying out routine maintenance of tunnelling plant, machinery, and equipment.
3 Maintain safe and healthy working practices when carrying out routine maintenance of tunnelling plant, machinery, and 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 carrying out routine maintenance of tunnelling plant, machinery, and equipment. 3.2 Demonstrate compliance with given information and relevant

		legislation when carrying out routine maintenance of tunnelling plant, machinery, and equipment in relation 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 carry out routine maintenance of tunnelling plant, machinery and 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 carry out routine maintenance of tunnelling plant, machinery, and equipment.		4.1 Select resources associated with own work in relation to consumables, components, fixings, tools, and equipment. 4.2 Describe the characteristics, quality, uses, sustainability, limitations, and defects associated with the resources in relation to: • fixings, fittings, and consumables • hand tools, portable power tools and equipment 4.3 Describe how to confirm that the resources and materials conform to the specification. 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 Identify quantity, length and wastage associated with the method and procedure to carry out routine maintenance of tunnelling plant, machinery, and equipment.
5 Minimise the risk of damage to the work and surrounding area when carrying out routine maintenance of tunnelling		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 workspace.

	plant, machinery, and equipment.	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 routine maintenance of tunnelling plant, machinery, and 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 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 routine maintenance of tunnelling plant, machinery, and equipment. to the required specification.	7.1 Demonstrate the following work skills when carrying out routine maintenance of tunnelling plant, machinery, and equipment: • checking, measuring, replacing, adjusting, cleaning, and securing • 7.2 Use and maintain hand tools, portable power tools and ancillary equipment. 7.3 Check and complete routine maintenance tasks on tunnelling plant, machinery, or equipment to given working instructions to include at least three of the following • cooling systems • oil(s) and lubricants • fuels • pressurised systems • ventilation/ducting systems • power cabling and equipment • electrical control systems • communication systems • lighting or signalling or monitoring equipment 7.4 Report information

	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 maintenance criteria • check tunnelling plant, machinery, or equipment for operational serviceability • clean and prepare areas and components for maintenance • select appropriate materials, tools, and consumables • carry out routine maintenance of tunnelling plant, machinery, or equipment to organisational procedures • complete functional checks in accordance with operating and care and control procedures • recognise and report where maintenance activities cannot be fully met (arising from information, resources or maintenance methods and procedures) • identify and report defects outside of the planned schedule or area of responsibility • recognise and determine when specialist skills and knowledge are required and report accordingly • provide accurate information for the completion of records and reports • identify and follow any installation quality requirements • work with, around and in close proximity to plant and machinery • use hand tools, portable power tools and equipment • work at height • use access equipment/systems 7.6 Describe the needs of other occupations and how to communicate effectively within a team when carrying out routine maintenance of tunnelling plant, machinery, and equipment. 7.7 Describe how to maintain the tools and equipment used when carrying out routine maintenance of tunnelling plant, machinery, and equipment.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, inaccordance with the Construction Skills 'ConsolidatedAssessment Strategy for Construction and the Built Environment. Assessors for this unit must have verifiable, current industryexperience 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.

Title:	Preparing substrate for sprayed concrete in the Workplace
Pathway:	**8**
Unit Number:	
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 substrate for sprayed concrete.	1.1 Interpret and extract relevant information from drawings, 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, work instructions, electronic data, manufacturers' information, and current regulations.
2 Know how to comply with relevant legislation and official guidance when preparing substrate for sprayed 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/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 substrate for sprayed 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 preparing substrate for sprayed concrete. 3.2 Demonstrate compliance with given information and relevant legislation when preparing substrate for sprayed concrete in relation to three 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 preparing substrate for sprayed 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 prepare substrate for sprayed 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: • temporary supports, screens, barriers, reinforcement, tying wire, pins, formwork • hand tools, portable power tools and equipment • jet washing and grit blasting 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, and wastage associated with the method/procedure to prepare substrate for sprayed concrete.
5	Minimise the risk of damage to the work and surrounding area when preparing substrate for sprayed concrete.	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 workspace. 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 outsafely in accordance with environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations, and official guidance.
6	Complete the work within the allocated time when preparing substrate for sprayed 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 prepare substrate for sprayed concrete to the required specification.	7.1 Demonstrate the following work skills when preparing substrate for sprayed concrete: • measuring, marking out, locating, protecting, supporting, breaking out, cleaning, profiling, tying, erecting, recording, and reporting. 7.2 Use and maintain hand tools, portable power tools and ancillary equipment 7.3 Prepare substrates prior to receiving sprayed concrete to given working instructions relating to seven of the following: • locate and protect services • break out loose and de-bonded materials • roughen smooth surfaces • clear and clean • surface profile levels • tie and secure reinforcement bar and/or mesh • fit guide wires • fit depth pins • erect formwork • record and report work carried out. 7.4 Describe how to apply safe and healthy work practices,follow procedures, report problems, and establish the authority needed to rectify them, to: • locate and protect services (water, gas, electric and waste) • break out, profile, square cut, clean and prepare, • identify when substrate needs to be supported • confirm substrate is ready to receive sprayed concrete • position and secure reinforcement • apply corrosion protection

	7.5 Describe how to apply safe and healthy work practices, follow procedures, report problems, and establish the authority needed to rectify them, to: • erect and dismantle formwork • install guide wires and depth pins • record and report • recognise and determine when specific skills and knowledge are required and report accordingly • 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 preparing substrate for sprayed concrete. 7.7 Describe how to maintain the tools and equipment used when preparing substrate for sprayed concrete.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the Construction Skills '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.

Title:	Applying sprayed concrete in the Workplace
Pathway:	**8**
Unit Number:	
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 applying sprayed concrete.	1.1 Interpret and extract relevant information from drawings, 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, work instructions, electronic data, manufacturers' information, and current regulations.
2 Know how to comply with relevant legislation and official guidance when applying sprayed 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/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 applying sprayed 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 applying sprayed concrete. 3.2 Demonstrate compliance with given information and relevant legislation when applying sprayed concrete in relation to three 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 applying sprayed 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 apply sprayed 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: • sand, aggregate, cements, water, additives, admixtures, structural concrete, curing membranes • working platforms • hand tools, portable power tools, spraying and testing equipment and ancillaries.
		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/procedure to apply sprayed concrete.
5	Minimise the risk of damage to the work and surrounding area when applying sprayed concrete.	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 workspace.
		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 applying sprayed 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 apply sprayed concrete to the required specification.	7.1	Demonstrate the following work skills when applying sprayed concrete: • measuring, marking out, assembling, checking, preparing, finishing, curing, protecting, testing, recording, and reporting.
		7.2	Use and maintain concrete spraying machinery and compressor, hand tools, portable power tools and ancillary equipment
		7.3	Apply sprayed concrete by wet and/or dry methods to given working instructions for five of the following: • pre-wet surfaces for spraying • spray concrete to profile • produce samples for testing • cure and protect concrete • record and report on test • record and report on spraying • operate spraying nozzle • operate pump • clean pump • clear lines.
		7.4	Describe how to apply safe and healthy work practices, follow procedures, report problems, and establish the authority needed to rectify them, to: • assemble and check spray equipment (wet and/or dry application) • prepare substrates including wetting, depth guides and protection measures • maintain protection against overspray and rebounding materials • set up spray and pumping equipment • operate robotic spraying equipment

	• operate hand-held spraying equipment • spray in layers to agreed profile and depth
	7.5 Describe how to apply safe and healthy work practices, follow procedures, report problems, and establish the authority needed to rectify them, to: • apply specified finish • cure and protect concrete • provide samples for testing concrete (compression, tension, consistency, and workability) • record and report • recognise and determine when specific skills and knowledge are required and report accordingly • operate spraying machines, compressors, and pumps • maintain spraying machines, nozzles, hoses, compressors, and pumps during operations • 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 applying sprayed concrete. 7.7 Describe how to maintain the tools and equipment used when applying sprayed concrete.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the Construction Skills 'Consolidated Assessment Strategy for Construction andthe Built Environment. Assessors for this unit must have verifiable, current industry experience anda 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>QFI Level 2 NVQ Diploma in Tunnelling Operations (Construction):</u> **Five** of the following endorsements required: Pre-wet surfaces for spraying Spray concrete to profile Produce samples for testing Cure and protect concrete Record and report on test Record and report on spraying Operate spraying nozzle Operate pump Clean pumpClear lines

Title:	Installing tunnels by pipe-jacking or micro-tunnelling operations in the Workplace
Pathway:	**9**
Unit Number:	
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 tunnels by pipe-jacking or micro-tunnelling operations.	1.1 Interpret and extract relevant information from method statements, task briefings, 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, task briefings, risk assessments, manufacturers' information, organisational procedures, official guidance, and current regulations governing tunnelling.
2 Know how to comply with relevant legislation and official guidance when installing tunnels by pipe-jacking or micro-tunnelling operations.	2.1 Describe their responsibilities regarding potential accidents, health hazards and the environment, 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 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. 2.4 Describe the types of fire extinguishers available when installing tunnels by pipe-jacking or micro-tunnelling operations and describe how and when they are used.
3 Maintain safe and healthy working practices when installing tunnels by pipe-jacking or micro-tunnelling operations.	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 tunnels by pipe-jacking or micro-tunnelling operations.

	3.2	Demonstrate compliance with given information and relevant legislation when installing tunnels by pipe-jacking or micro-tunnelling operations in relation to the following: • safe use of access equipment/systems • 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 tunnels by pipe-jacking or micro-tunnelling operations, 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 tunnels by pipe- jacking or micro-tunnelling operations.	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: • pipe-jacking or micro tunnelling systems • hand tools, portable powered tools, and equipment.
	4.3	Describe how to confirm that the resources and materials conform to the specification.
	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.
5 Minimise the risk of damage to the work and surrounding	5.1	Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.

	area when installing tunnels by pipe- jacking or micro-tunnelling operations.	5.2 Maintain a clean workspace. 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 tunnels by pipe- jacking or micro-tunnelling operations.	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 tunnels by pipe- jacking or micro-tunnelling operations to the required specification.	7.1 Demonstrate the following work skills when installing tunnels by pipe-jacking or micro-tunnelling operations: • measuring, positioning, levelling, aligning, connecting, disconnecting, cleaning, checking, and securing. 7.2 Use and maintain hand tools, portable power tools and ancillary equipment 7.3 Install tunnels to given working instructions by at least one of the following methods: • pipe-jacking • micro tunnelling 7.4 Communicate work operations with other operatives. 7.5 Describe how to apply safe and healthy work practices, follow procedures, report problems, and establish the authority needed to rectify them, to: • form tunnels by pipe-jacking or micro-tunnelling • launch and recover pipe-jacking or micro-tunnelling plant • connect and disconnect systems using safe isolation procedures for stored energy hazards • ensure work operations are communicated to all operatives involved with, and around, the operation • recognise and determine when specialist skills and knowledge are required and report accordingly • identify and follow the installation quality requirements

	• work with, around and in close proximity to plant and machinery • direct and guide the operations and movement of plant and machinery • use hand tools, portable power tools and equipment • work at height • use access equipment/systems. 7.6 Describe the needs of other occupations and how to communicate effectively within a team when installing tunnels by pipe-jacking or micro-tunnelling operations. 7.7 Describe how to maintain the tools and equipment used when installing tunnels by pipe-jacking or micro- tunnelling operations.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the Construction Skills '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. QFI Level 2 NVQ Diploma in Tunnelling Operations (Construction): One of the following endorsements required: Pipejacking Micro-tunnelling

Title:	Carrying out mud, slurry, or fluid plant operations in the Workplace
Pathway:	**10**
Unit Number:	
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 mud, slurry, or fluid plant operations.	1.1 Interpret and extract relevant information from method statements, task briefings, 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: • method statements, task briefings, risk assessments, manufacturers' information, organisational procedures, official guidance, and regulations associated with operating mud, slurry, or fluid plant.
2 Know how to comply with relevant legislation and official guidance when carrying out mud, slurry, or fluid plant operations.	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, operative and vehicles. 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 mud, slurry, or fluid plant operations.	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 mud, slurry, or fluid plant operations. 3.2 Demonstrate compliance with given information and relevant legislation when carrying out mud, slurry, or fluid plant operations in relation to the following:

	• safe use of access equipment/systems • 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 mud, slurry or fluid plant operations 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 carrying out mud, slurry, or fluid plant operations.	4.1 Select resources associated with own work in relation to materials, components, tools, plant, and ancillary equipment. 4.2 Describe the characteristics, quality, uses, sustainability, limitations, and defects associated with the resources in relation to: • additives and mud, slurry, or fluid • mud, slurry, or fluid plant • hand tools, portable power tools and equipment. 4.3 Describe how to confirm that the resources and materials conform to the specification. 4.4 Describe how the resources should be used correctly, 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 Identify quantity, density and viscosity associated with the method/procedure to carry out mud, slurry, or fluid plant operations.
5 Minimise the risk of damage to the work and surrounding	5.1 Protect the work and its surrounding area from damage in accordance with safe working practices and organisational procedures.

	area when carrying out mud, slurry, or fluid plant operations.	5.2 Maintain a clean workspace. 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 mud, slurry, or fluid plant operations.	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 mud, slurry, or fluid plant operations to the required specification.	7.1 Demonstrate the following work skills when carrying out mud, slurry, or fluid plant operations: • preparing, setting up, connecting, checking, maintaining, mixing, monitoring, testing, pumping, cleaning, adjusting, and recording. 7.2 Use and maintain hand tools, portable power tools, plant, and ancillary equipment. 7.3 Install, operate, and maintain mud, slurry, or fluid plant to given working instructions in one of the following operations: • piling • tunnelling • drilling. 7.4 Describe how to apply safe and healthy work practices, follow procedures, report problems, and establish the authority needed to rectify them, to: • prepare the area allocated for the plant and ancillary equipment • set up, assemble, and check the integrity of plant and ancillary equipment, including the connection of hoses, valves, and items of plant for delivery, extraction, recycling and disposal of mud, slurry, or fluids • mix mud, slurry, or fluids in accordance with manufacturer's recommendations • monitor the pumping process and make appropriate adjustments to maintain operational efficiency • test the viscosity and density of the mud, slurry, or fluid

	• complete records of the process • clean equipment ready for reuse • recognise and determine when specialist skills and knowledge are required and report accordingly • identify and follow the installation quality requirements • work with, around and in close proximity to plant and machinery • direct and guide the operations and movement of plant and machinery • use hand tools, portable power tools, plant, and ancillary equipment • work at height • use access equipment/systems 7.5 Describe the needs of other occupations and how to communicate effectively within a team when carrying out mud, slurry, or fluid plant operations. 7.6 Describe how to maintain the tools, plant and equipment used when carrying out mud, slurry, or fluid plant operations.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordancewith the Construction Skills '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 methodsas defined in the Consolidated Assessment Strategy. Workplace evidence of skills cannot be simulated. This unit must be assessed against the endorsements detailed withinthe relevant NVQ structure. <u>QFI Level 2 NVQ Diploma in Tunnelling Operations (Construction):</u> The following endorsement required (i.e., own area of work): Tunnelling operations

Title:	**Preparing and operating specialist plant to receive, transport and discharge materials in a tunnelling environment**
Pathway:	**11**
Unit Number:	
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 specialist plant to receive, transport and discharge materials.	1.1 Interpret and extract relevant information from drawings, specifications, schedules, 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: • method statements, task briefings, risk assessments, manufacturers' information, organisational procedures, official guidance governing the operation of tunnel based specialist plant.
2 Organise with others the sequence and operation in which tunnel-based transporting and discharging operations using specialist plant are 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 during tunnel based transporting and discharging operations.
3 Know how to comply with relevant legislation and official guidance when preparing for and carrying out receiving, transporting, and discharging operations with specialist plant.	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.
4 Maintain safe and healthy working practices when preparing for • and carrying out receiving, transporting, and discharging operations using specialist plant.	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 during receiving, transporting, and discharging operations with specialist plant.
	4.2	Demonstrate compliance with given information and relevant legislation when carrying out receiving, transporting, and discharging operations using specialist plant in relation to two or more of the following: • safe use and storage of plant or machinery • safe use and storage of tools and equipment • specific risks to health.
	4.3	Explain why and when health and safety control equipment, identified by the principles of prevention, should be used, relating to specialist plant 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).
	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 Request and select the required quantity and quality of resources • to prepare for and carry out receiving, transporting, and discharging operations using specialist plant.	5.1	Request and select resources associated with specialist plant in relation to consumables, materials, tools, ancillary equipment and/or accessories.
	5.2	Describe the characteristics, quality, uses, sustainability, limitations, and defects associated with the resources, and how they should be used correctly, relating to: • consumables, lubricants, and fuels • attachments and transporting and discharging aids • hand tools, ancillary equipment, and accessories.
	5.3	Describe how the resources should be used correctly and how problems associated with the resources are reported.
	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 prepare and operate specialist plant to receive, transport and discharge materials.
6 Minimise the risk of damage to the work and surrounding area when preparing to and receiving, transporting, and discharging materials.	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 workspace.
	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 receiving, transporting, and discharging materials using specialist plant.	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.
8 Comply with the given contract information to prepare and operate specialist plant to receive, transport and discharge materials to the required specification.	8.1	Demonstrate the following work skills when preparing for and receiving, transporting, and discharging materials using specialist plant in a tunnelling environment: • checking, adjusting, communicating, manoeuvring, positioning (where applicable), receiving, transporting, discharging, and cleaning.
	8.2	Use and maintain hand tools, ancillary equipment and/or accessories.
	8.3	Prepare to set up and operate specialist plant to receive, transport and discharge materials within a tunnelling environment to given working instructions.
	8.4	Shut down and secure tunnel based specialist plant.
	8.5	Describe how to apply safe and healthy work practices, follow

	procedures, report problems, and establish authority needed to rectify, to: • identify the characteristics of the specialist plant used for tunnel • ·based transporting and discharging work • carry out function checks to receive, transport and discharge loads • identify characteristics, type, and volume of loads to receive, transport and discharge • prepare, set up and adjust for operational requirements • carry out pre • ·operational checks for obstructions, stability, safety, and security of the work and surrounding area • recognise and determine when specific skills and knowledge are required and report accordingly • identify the area for discharging. 8.6 Describe how to apply safe and healthy work practices, follow procedures, report problems, and establish authority needed to rectify, to: • check to avoid damage to structures and utilities service apparatus • receive, secure and balance loads for transport • transport and deposit loads • shut down and secure the specialist plant • use hand tools, ancillary equipment, and accessories. 8.7 Describe the needs of other occupations and how to effectively communicate within a team when preparing to and operating specialist plant to receive, transport and discharge materials. 8.8 Describe how to maintain the plant and machinery, hand tools and ancillary equipment used for receiving, transporting, and discharging operations.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the Construction Skills 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 ONE of the endorsements detailed below: Loco and rolling stock Underground bulk systems (explosives transportation).

Additional Units

Title:	Carrying out structural waterproofing in the Workplace
Unit Number:	
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. 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. 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 workspace.
	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.
	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.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment and in accordance with the Construction Skills '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.

Title:	**Slinging and hand signalling the movement of suspended loads in the workplace**
Unit Number:	
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.
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. 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.
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. 8.7 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish authority needed to rectify, to: • 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 Describe how to apply safe and healthy work practices, follow procedures, report problems and establish authority needed to rectify, to: • 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.
Additional information about this unit	
Assessment Guidance	This unit must be assessed in a work environment, in accordance with the Construction Skills 'Consolidated Assessment Strategy for Construction and the Built Environment. Please refer to the hyperlink for clarity – https://www.citb.co.uk/qualifications-standards/qualification-framework/ 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.

APPENDIX 3 - ASSESSMENT TEMPLATE DOCUMENTS

3a. Sample form – Assessment Plan and Review	
Candidate name:	
Employer/location:	Date:
Qualification: Unit(s): Elements:	
Assessor:	
Period of Review: (should not normally exceed 12 weeks)	Proposed Date for next review:
Part 1 – **Activities / Tasks / Learning / Training** undertaken since last review:	
Part 2a – '**Progress to date'** specifying units/elements/modules achieved to date (the progress recorded **must** tie in with the associated '**Summary of Achievement Record'**):	
Part 2b – Identified **barriers** to progress (please detail here any issues relating to the programme delivery, which have impacted negatively on progress e.g., attendance times, learning difficulties, suitability of training/learning materials, physical barriers to participation, health issues, attitude etc):	

*

Part 2c – Solutions proposed to address the above barriers:	
Part 3 – Agreed '**assessment planning'** & action required for the next review	Element:

(proposed methods of evidence collection must be recorded & proposed assessment methods must be selected): ***N.B.*** *Methods of evidence collection may include either hard copy records or electronic records such as audio recordings, scanned documents, photographs etc.*	Proposed Assessment Methods/Sources of Evidence:							
	CrossRef	RPL	OBS	Questioning	PS	WR	D	WT

Key: Assessment Methods/Sources of Evidence

CrossRef = Cross Referencing RPL= Recognition of Prior Learning
OBS = Observation **PS** = Personal Statement
WR = Work Record **D** = Discussion
WT= Witness Testimony

Part 4 – Additional comments / issues (e.g., health & safety issues):
Part 5 – Candidate comments/feedback/evaluation:

Part 6 – Employer comments on progression and achievement noted in **Part 2a**:
Part 7 – Assessor Feedback/Assessment Judgements/Decisions/Outcome

Candidate Signature: ..... Date: .....

Assessor Signature: ..... Date: .....

Employer Signature (where present): ..... Date: .....

Employer Name and position: .....

3b. Sample Form – Assessor Report	
Qualification:	
Candidate:	
Assessor:	
Date:	
Unit/ element:	
Location/ circumstance:	
Details of observation/ question/ answers/ discussion	**Ref**
Details of observation/ question/ answers/ discussion	**Ref**
Details of observation/ question/ answers/ discussion	**Ref**
Assessors comments (state whether candidate is competent)	
Assessor signature	
Candidate signature	

3c. Sample Form – Witness Testimony

Qualification: ……

Unit: ……

Element(s): ……

Candidate Name: ……

Witness Name: ……

Witness Contact Details: ……
……

Describe your construction and any assessment qualifications/ experience:
……
……
……

Describe your relationship with the candidate:
……
……

Date of evidence: ……

Testimony and comment on candidate's performance

……

……

……

……

……

……

……

……

Witness Signature & Date: ……

Candidate Signature & Date: ……

Assessor Signature & Date: ……

3d. Sample Form – Candidate Personal Statement

Qualification:

Candidate name:

Element(s)	Date	Statement / evidence

Candidate's signature:

Date:

Assessor's signature:

Date:

APPENDIX 4 - ASSESSOR TEMPLATE DOCUMENTS

4a. Sample Form – Element Achievement Record

Candidate name:

Qualification:

Unit title:
Element(s):

Assessor:

Evidence ref:	Evidence description *	Location **	Performance criteria					Knowledge and understanding				

*** Key: Assessment Methods/Sources of Evidence**

CrossRef = Cross Referencing **RPL**= Recognition of Prior Learning **OBS**= Observation
Q&A= Questioning **PS**= Personal Statement **WR** = Work Record **D**= Discussion

**** Should refer to whether the evidence can be found in the portfolio ('PF') or elsewhere, if so state location of evidence**

4b. Sample Form – Unit Progress Record		
Qualification:		
Unit title:		
I confirm that the candidate has been assessed as competent for this unit		
Assessor name	**Assessor signature**	**Date**
I confirm that I have been assessed as competent and that the evidence produced is from work that is all mine		
Candidate name	**Candidate signature**	**Date**
I confirm that I have internally verified this unit and confirm that the candidate is competent (this section must be completed where the assessor is unqualified)		
IV name	**IV signature**	**Date**

APPENDIX 5 - INTERNAL VERIFIER TEMPLATE DOCUMENTS

5a. Sample Internal Verification Strategy

This document indicates what may be covered as part of an internal verifier's strategy. An effective internal verification strategy ensures:

- A forum for discussion of borderline cases
- Assessor networking and sharing of good practice
- Valid, reliable, and consistent training and/or assessment
- Recorded assessment decisions which are appropriate, consistent, fair, transparent, and equitable
- Clarity for candidates about assessment requirements
- Effective preparation and presentation for external verification
- Reduction in level of direct external verification scrutiny

To underpin the IV/ verification process a plan of internal activity should be developed indicating

- what will happen
- when it will happen
- who will be involved

New instructors/assessors must:

a) be supplied with assessment and materials
b) clearly understand assessment requirements and procedures

All assessors must:

a) know the name of the person who will manage the IV process and the name of the IV
b) know how IV/ verification will happen, when it will happen and who will be involved
c) be informed about issues raised through previous internal and external quality assurance

On Course Monitoring

The IV should:

a) Sample assessments to ensure that:
   - feedback to candidates is clear and constructive
   - teaching and assessment activities are standard and appropriate
   - assessment decisions are fair and consistent
   - teaching and assessment records are clear
b) Undertake standardisation activities
c) Ensure candidates understand assessment requirements
d) Provide advice and support for Assessors and share good practice
e) Identify good assessment practice
f) Record internal verification activities and findings, list action points and report to instructors/assessors and the EV
g) Liaise with the EV as necessary

End of Course Checking

The IV should:

a) monitor progress against previous action points
b) ensure assessment records are complete and accurate
c) ensure evidence of achievement is appropriate and standardised
d) record internal verification activities and findings, list action points, and report these to assessors and the EV

Guidance on Sampling and Record Keeping

What do IVs/IVs sample and why?
IVs are responsible for monitoring the quality of assessment, hence the need for them to sample assessment practices and decisions. It is not usually possible or necessary to verify every aspect of assessment at each internal verification. A properly selected representative sample should identify any issues with assessment practices and decisions.

Selecting a sample
To select a representative sample, IVs must take account of factors which may impact on the quality of assessment. These factors are used to define a sampling strategy that determines the size of the sample and enables judgements to be made.
Key factors to consider are:

- Sites of delivery
- Number and experience of Assessors
- Number of courses/assessments
- Previous IV actions/recommendations
- Assessment methods
- Special arrangements
- EV recommendations
- Borderline cases
- Anything else that you think might impact on assessment decisions

The sample should include an element of random selection by the IV. It is not necessary to sample across every aspect of the programme at each event, but the plan should seek to cover everything over a period of time, e.g., 3 years.

Which records should be kept?
Records of internal quality assurance/ verification must be kept and made available to the EV during monitoring visits. These should demonstrate that the internal verification procedures have been carried out. IVs should record two sets of information:

1. The sample taken by the IV
2. The comments and feedback to the Assessor following the sampling exercise, showing any recommendations or action required and how this was resolved.

There is a sample form shown below that you may use or adapt to suit your own requirement.

5b. Sample Form – Internal Verification Sampling Assessment Decisions					
Unit / qualification:					
Location:					
Assessor name:					
Candidate Name	**Sampling element[2]**	**Was the assessment method appropriate?**	**Is there sufficient evidence that outcomes have been met?**	**Is the evidence appropriate for the level?**	**Comments**
Comments					
Signed (IV): **Date:**			**Signed (Assessor):** **Date:**		

[2] *Was this a learning outcome across candidates, or a whole unit or one method of assessment?*

5c: Sample Form
Internal verification – observation of assessors

Internal Verifier's Name: .....
Assessor's Name: .....
Candidate's Name: .....
Qualification Title: .....
Unit Assessed: .....
Element Assessed: .....
Date of Observation: .....
Location of Assessment: .....

Prior to the assessment had the Assessor:	**Yes**	**No**	**Comments:**
Developed a written Assessment Plan for the candidate			
Checked that the facilities, resources, and information required for the assessment were available and ready for use			
Briefed the candidate on how the assessment would take place and what would be assessed			
During the assessment did the Assessor:	**Yes**	**No**	**Comments:**
Conduct the assessment unobtrusively without interfering with the candidate's performance			
Encourage the candidate to satisfy the specified Assessment Criteria			
Ask questions clearly in an encouraging tone and manner without leading the candidate			
Ensure that sufficient questions were asked and that they were justifiable and relevant to the Unit assessed			

During the assessment did the Assessor (continued):	**Yes**	**No**	**Comments:**

Ensure that the atmosphere created during the assessment was pleasant and conducive			
Clarify and resolve any concerns that the candidate had during the assessment			
Clearly inform the candidate of the assessment decision i.e., 'achieved' or 'requires further practice'			
After the assessment did the Assessor:	**Yes**	**No**	**Comments:**
Provide feedback that was clear, constructive, met the candidate's needs and was appropriate to his/her level of confidence			
Encourage the candidate to comment on the assessment decision and how he/she was assessed			
Complete the Unit assessment documentation and ensure it was fully signed and dated			
Overall feedback to Assessor:			
Assessor's comments on the IV's feedback:			

Assessor's Signature: ……Date:……

IV's Signature: ……Date:……

End of document