



Street Works Initial

Qualification Specification

Version 2

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Qualification Specification

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1 Why has this Qualification been Developed?

Requirements for Operatives and Supervisors

The New Roads and Street Works Act 1991 (NRSWA) requires work involving the installation, renewal, maintenance and inspection of underground apparatus in the highway, to be under the control of competent persons. The Act requires that there is a qualified operative on-site at all times while street works are in progress. The qualification held must be appropriate for the work being carried out. The Act does not require all the relevant qualification to be held by a single operative – the main requirement is that there is always at least one operative on-site whose qualifications match the activities being undertaken.

The Act also requires that the execution of street works is monitored by a person having a prescribed qualification that covers the work being undertaken as a supervisor. The supervisor is not required to be on-site at all times. A qualified supervisor might therefore supervise a number of street works sites.

To become a qualified operative or supervisor, a learner must gain one or more of the available certificates within the appropriate qualification to suit the work that they do. The certificates (referred to as units within this document) are issued by one of the four street works awarding organisations, including Lantra. The certificates must be registered with the Street Works Qualifications Register (SWQR), which is administered by SQA in Scotland. For a person to continue acting as a qualified operative or supervisor, this registration must remain current.

New entrants need to attend an approved provider to undertake initial theoretical knowledge and practical skills assessments in their chosen subjects. Training can be provided before assessment, but this is not compulsory. Once the learner passes the relevant initial assessment(s), the provider will notify Lantra and SWQR. Lantra will also contact SWQR and confirm that they have awarded the certificate and the date it was issued to the learner. SWQR will then record the certificate on the street works register and issue the learner with a street works card. Each certificate on the card will last for five years from the certification date, i.e. the date Lantra issued the certificate.

When the certificate approaches expiry or expires, operatives and supervisors are required to renew their qualification by undergoing reassessment, or undertaking the initial assessment again. The difference is as follows: initial assessment involves a practical and theoretical assessment of the learner's skills; reassessment, which is intentionally less burdensome for certificate renewal purposes, involves only a theoretical assessment.

The learner will be able to renew any certificate at any point in its lifetime. Training is not compulsory when renewing, but assessment centres can provide it if required.

A certificate is not valid once it has expired, but it can be renewed any time up to five years after the expiry date. This may be useful if the learner stops doing street works for a while and then later decides to return to the industry.

2 Who is the Qualification For?

This qualification is for those employed in carrying out and monitoring work on the highway and is available for both operators and supervisors. It covers a range of skills for those who need to safeguard their work by signing, lighting and guarding, as well as carrying out excavation and reinstatement work.

This qualification provides routes to registration on the SWQR required under the New Roads and Street Works Act 1991. Re-registration is required every five years.

This qualification is recognised by industry and regularly reviewed by the Highways Authorities and Utilities Committee (HAUC UK).

This qualification is not reviewed, recognised or monitored by any UK regulatory body (Ofqual, Scottish Qualifications Authority, Qualifications Wales etc).

The qualification and associated units are available for learners aged 16+.

Prerequisites

The street works initial units are available to anyone who can achieve the required standard. Provider staff should understand the demands of the theoretical knowledge and practical skills assessments and ensure learners are undertaking the correct unit(s) based on their individual capabilities and work activities.

There are no formal requirements for entry to this qualification and associated units.

This qualification has been developed to promote equal opportunities by eliminating any avoidable barriers that have the potential to restrict access or progression.

3 What does this Qualification Cover?

Learners undertaking this qualification will be able to demonstrate their skills and knowledge in carrying out and/or monitoring safe excavation and reinstatement work in the highway.

The qualification aims to assess the learner's practical skills, knowledge and understanding of:

- Location and avoidance of underground services
- Signing, lighting and guarding
- Excavation in the highway
- Reinstatement and compaction of backfill materials
- Reinstatement of sub-base and base in non-bituminous materials
- Reinstatement in cold lay bituminous materials
- Reinstatement in hot lay bituminous materials
- Reinstatement of concrete slabs
- Reinstatement of modular surfaces, concrete footways.

4 Qualification Overview

For the purpose of this document the *Street Works Certificates* within this qualification will be referred to as units.

Qualification title	Street Works Initial		
Qualification number	Not applicable		
Qualification aim	Learners undertaking this qualification will be able to demonstrate their skills and knowledge in carrying out and/or monitoring safe excavation and reinstatement work in the highway.		
Qualification purpose	This qualification is for those employed in carrying out and/or monitoring works on the highway who require registration on the SWQR.		
Qualification start date	8 June 2018		
Quartz ID numbers	Quartz ID	Suite Ref	Suite Name
	5992	STW01	Excavation in the highway
	5993	STW02	Excavation, backfilling and reinstatement of construction layers
	5994	STW03	Reinstatement of construction layers in hot-lay and cold-lay bituminous material
	5995	STW04	Reinstatement of concrete slabs
	5996	STW05	Reinstatement of modular surfaces and concrete footways
	5997	STW06	Signing, Lighting and Guarding
	5998	STW07	Monitoring excavation in the highway
	5999	STW08	Monitoring excavation, backfilling and reinstatement of construction layers with bituminous materials
	6000	STW09	Monitoring reinstatement of bituminous materials
	6001	STW10	Monitoring reinstatement of concrete slabs
	6002	STW11	Monitoring reinstatement of modular surfaces and concrete footways
	6003	STW12	Monitoring Signing, Lighting and Guarding
Unit numbers and titles	<ul style="list-style-type: none"> • 001 – Location and avoidance of underground apparatus • 002 – Signing, lighting and guarding • 003 – Excavation in the highway • 004 – Reinstatement and compaction of backfill materials • 005 – Reinstatement of sub-base and base in non-bituminous materials • 006 – Reinstatement in cold lay bituminous materials • 007 – Reinstatement in hot lay bituminous materials • 008 – Reinstatement of concrete slabs • 009 – Reinstatement of modular surfaces, concrete footways • 010 – Monitoring signing, lighting and guarding 		

	<ul style="list-style-type: none"> • 011 – Monitoring excavation in the highway • 012 – Monitoring reinstatement and compaction of backfill materials • 013 – Monitoring reinstatement of sub-base and base in non-bituminous materials • 014 – Monitoring reinstatement in bituminous materials • 015 – Monitoring reinstatement of concrete slabs • 016 – Monitoring reinstatement of modular surfaces, concrete footways. 								
Qualification structure	<p>This qualification comprises sixteen assessed units of competence for operatives and supervisors. Nine units are applicable to operatives and eight to supervisors. One of these units (001) applies to both groups.</p> <p>There are three key units (001, 002 and 010) which must be undertaken for operatives and supervisors wishing to carry out and/or monitor excavation and reinstatement activities.</p> <p>Depending on the learner’s role and work-based requirements, they are required to combine the appropriate key units with the relevant excavation and reinstatement units to meet their needs.</p>								
Age group	<table border="1"> <tr> <td>Pre-16</td> <td>16-18</td> <td>18+ <input checked="" type="checkbox"/></td> <td>19+</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> </table>	Pre-16	16-18	18+ <input checked="" type="checkbox"/>	19+	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Pre-16	16-18	18+ <input checked="" type="checkbox"/>	19+						
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
Entry requirements	Learners must be able to read and interpret information provided in English.								
Prerequisites	There are no formal requirements for entry to this qualification.								
Recognition of prior learning (RPL)	RPL is not a recognised method of assessment for the street works units and qualification. However, learners may provide supplementary evidence from the workplace to demonstrate their competence.								
Assessment methods	<ul style="list-style-type: none"> • Practical observation of assessment activities • Short-answer question paper • Verbal questioning. 								
Assessment model	This qualification is internally assessed with external verification. This means that providers will appoint assessors and that an internal quality assurer (IQA) is required to provide internal quality assurance prior to external quality assurer (EQA) sign-off.								
Grading	Pass/Fail								
Is there a skills card available?	Yes								
Fees	Registration and certification fees can be found in the Product Directory. Prices are subject to review on an annual basis, so please contact the sales team if you do not have an up-to-date copy: sales@lantra.co.uk								
How do I register learners?	Via QuartzWeb: ordering.lantra.co.uk/Login.aspx								

5 Content of Qualification

There are sixteen assessed units of competence for operatives and supervisors. Nine units are applicable to operatives and eight to supervisors. One of these units (001) applies to both groups. The units are listed below, with units for operatives marked 'O' and supervisors' units marked 'S'.

Unit	Unit title	O/S	SWQR Ref
001	Location and avoidance of underground apparatus.	O S	LA
002	Signing, lighting and guarding.	O	O1
003	Excavation in the highway.	O	O2
004	Reinstatement and compaction of backfill materials.	O	O3
005	Reinstatement of sub-base and base in non-bituminous materials.	O	O4
006	Reinstatement in cold lay bituminous materials.	O	O5
007	Reinstatement in hot lay bituminous materials.	O	O6
008	Reinstatement of concrete slabs.	O	O7
009	Reinstatement of modular surfaces, concrete footways.	O	O8
010	Monitoring signing, lighting and guarding.	S	S1
011	Monitoring excavation in the highway.	S	S2
012	Monitoring reinstatement and compaction of backfill materials.	S	S3
013	Monitoring reinstatement of sub-base and base in non-bituminous materials.	S	S4
014	Monitoring reinstatement in bituminous materials.	S	S5
015	Monitoring reinstatement of concrete slabs.	S	S6
016	Monitoring reinstatement of modular surfaces, concrete footways.	S	S7

There are three key units (001, 002 and 010) which must be undertaken for operatives and supervisors wishing to carry out and/or monitor excavation and reinstatement activities. Depending on the learner's role and work-based requirements, they are required to combine the appropriate key units with the relevant excavation and reinstatement units to meet their needs. There is no requirement to hold any combination of non-key units.

Operatives need the following units to be qualified to excavate or reinstate:

- 001 – Assessed location and avoidance of underground apparatus
- 002 – Assessed signing, lighting and guarding
- The relevant unit(s), from 003 to 009.

Supervisors need the following units to be qualified to monitor excavation or reinstatement:

- 001 – Assessed location and avoidance of underground apparatus
- 010 – Assessed monitoring signing, lighting and guarding
- The relevant unit(s), from 011 to 016.

Unit title	Location and avoidance of underground apparatus
Unit reference number	001
Unit aim	
<p>This unit is designed to allow the learner to demonstrate the skills and knowledge required to successfully locate and avoid underground utilities apparatus and highways services. The learner will know how to interpret plans and confirm that the plans used correspond with details of the worksite. They will be able to identify the different types of underground utilities apparatus and highways services that are encountered prior to carrying out excavation, and to identify the risks and implications of damage to underground utilities apparatus and highways services. The learner must also show that they can use pipe and cable location equipment to locate underground utilities apparatus and highways services.</p>	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Interpret plans showing location of underground apparatus.	1.1 Inspect the worksite to confirm that it corresponds with the plans.
	1.2 Identify visual indications of services being present on the site location.
	1.3 Identify symbols on plans, covering water, gas, sewers, telecommunications and electricity and highways services and structures.
	1.4 Check and confirm that the information recorded on plans is accurate and current for the site.
2. Understand how to interpret plans showing location of underground apparatus.	2.1 Describe the criteria for checking that plans are current.
	2.2 Identify the types of symbols and legends that are used on plans.
	2.3 Identify different types of services on plans.
	2.4 Explain the importance of marking the site clearly prior to excavation.
3. Identify utilities apparatus and highways services encountered during excavation.	3.1 Identify the underground utilities apparatus on the site.
	3.2 Identify the highways services on the site.
	3.3 Identify damage to utilities apparatus and highways services .

<p>4. Understand how to identify types of utilities apparatus and highways services encountered during excavation.</p>	4.1 Identify the different types of underground utilities apparatus .
	4.2 Identify the different types of highways services .
	4.3 Describe the distinguishing characteristics of different types of underground utilities apparatus .
	4.4 Describe the distinguishing characteristics of different types of highways services .
<p>5. Identify the risks and implications of damage to underground utilities apparatus and highways services.</p>	5.1 Carry out a risk assessment on utilities apparatus and highways services on-site.
	5.2 Ensure that contingency plans are in place in case of damage occurring to utilities apparatus and highways services .
<p>6. Understand the risks and implications of damage to underground utilities apparatus and highways services.</p>	6.1 Identify the elements in a risk assessment on utilities apparatus and highways services .
	6.2 Identify damage to different types of underground utilities apparatus and highways services .
	6.3 Explain the implications of damage to different types of underground utilities apparatus and highways services .
	6.4 Explain how to minimise the effects of damage to underground utilities apparatus and highways services .
	6.5 Describe the content of contingency plans in relation to damaged underground apparatus.
<p>7. Use pipe and cable location equipment.</p>	7.1 Select equipment for the pipe and cable location activity.
	7.2 Check that the equipment to be used is fit for purpose.
	7.3 Prepare equipment for use.
	7.4 Complete the search procedures to locate underground utilities apparatus.
	7.5 Interpret the results of search procedures accurately.
	7.6 Mark the site clearly showing the location of services found using cable and pipe location equipment.
	7.7 Compare the results of searches undertaken with the information on the site plans.

<p>8. Understand the use of pipe and cable location equipment.</p>	<p>8.1 Describe the operational limitations of different pipe and cable location equipment.</p>
	<p>8.2 Explain how to select equipment that is fit for purpose.</p>
	<p>8.3 Explain the procedure for notifying the relevant authority of discrepancies between search results and site plans.</p>
	<p>8.4 Explain the procedure to follow where underground utilities apparatus cannot be found using pipe and cable location equipment.</p>
<p>9. Follow safe working practices.</p>	<p>9.1 Follow current relevant health and safety regulations, standards and other legislation relating to: (a) Working practices within the construction environment. (b) Working practices specific to any practical task that they are required to carry out.</p>
	<p>9.2 Identify the current relevant health and safety regulations, standards and other legislation that must be applied in relation to: (a) Working practices within the construction environment. (b) Working practices specific to any practical task that they are required to carry out.</p>

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Utilities apparatus** includes:
 - (a) Plastic and metallic gas mains
 - (b) Plastic and metallic water mains
 - (c) Sewers and drains
 - (d) Low- and high-voltage electricity cables
 - (e) Telecommunications and television cables
 - (f) Optic fibre.

2. **Highways services** includes:
 - (a) Highway drainage
 - (b) Culverts
 - (c) Land drains
 - (d) Highways/roads with special engineering controls.

3. **The symbols and legends** must cover a minimum of three of the following types:
 - (a) Water
 - (b) Gas
 - (c) Sewers
 - (d) Telecommunications
 - (e) Electricity.

4. **Safe working practices** may include:
 - (a) Safe use of tools and equipment
 - (b) Use of PPE
 - (c) Use of risk assessment methods to identify and control hazards on-site
 - (d) Precautions to minimise danger or inconvenience to road users
 - (e) Precautions to minimise danger or inconvenience to site personnel
 - (f) Precautions to minimise damage to equipment or apparatus.

5. **Regulations, standards and other legislation** include:
 - (a) Health and Safety Guidance 47, *Avoiding Danger from Underground Services*
 - (b) Health and Safety Guidance 150, *Health and Safety in Construction*.

6. **Potential implications of damage** to underground utilities apparatus include:
 - (a) Health and safety hazards (including personal injury and dangerous situations)
 - (b) Disruption of service
 - (c) Disruption of traffic.

7. **Equipment** used when locating pipes and cables includes:
 - (a) Proprietary pipe and cable location equipment
 - (b) Suitable marking equipment
 - (c) PPE.

Unit title	Signing, lighting and guarding
Unit reference number	002
Unit aim	
<p>This unit is designed to allow the learner to demonstrate the skills and knowledge required to successfully sign, light and guard a worksite. The learner will be able to survey the worksite to put in place suitable provision for the site location requirements, ensuring the safe passage of pedestrians and site personnel, the safety of vehicular traffic, provision for any special needs, including cyclists and horse riders, and provision for vehicles and plant in the working area. They will be able to put in place suitable equipment to protect pedestrians, vehicular traffic and site personnel, and will be able to provide and control portable traffic signals and Stop/Go traffic control in line with site location requirements and traffic conditions.</p> <p>Learners undertaking this Unit must use the current version of Safety at Street Works and Road Works: A Code of Practice.</p>	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Survey the worksite.	1.1 Carry out a survey of the worksite and risk assessment, in accordance with health and safety regulations and requirements, to determine footways, traffic lanes and safety zones.
	1.2 Identify provision for the requirements of the site location .
	1.3 Identify provision for the safe passage of pedestrians.
	1.4 Identify ways to minimise disruption to and ensure the safety of vehicular traffic.
	1.5 Identify provision for any special needs .
	1.6 Produce a plan and equipment list that makes provision for vehicles and plant within the confines of the working area.
2. Understand how to survey the worksite.	2.1 Describe the purpose of a worksite survey and risk assessment.
	2.2 Explain the potential requirements of the site location when signing, lighting and guarding the site.
	2.3 Identify the factors that affect provision for: (a) The safe passage of pedestrians (b) Potential requirements of people with special needs (c) Vehicles and plant within the working area.
	2.4 Identify how to minimise disruption to and ensure the safety of vehicular traffic.

<p>3. Protect pedestrians, vehicular traffic and site personnel.</p>	<p>3.1 Select and use PPE required for the task.</p>
	<p>3.2 Create footways, traffic lanes and safety zones to provide for:</p> <p>(a) The requirements of the site location</p> <p>(b) The safe passage of pedestrians</p> <p>(c) Minimising disruption to and ensuring safety of vehicular traffic</p> <p>(d) Identified special needs.</p>
	<p>3.3 Control the movement of pedestrians, vehicles and plant within the confines of the working area.</p>
	<p>3.4 Select equipment that meets the requirements of the site location and any special needs.</p>
	<p>3.5 Check that the equipment to be used is fit for purpose.</p>
	<p>3.6 Position and remove equipment according to the specified sequence.</p>
<p>4. Understand how to protect pedestrians, vehicular traffic and site personnel.</p>	<p>4.1 Identify the PPE required for signing, lighting and guarding activities.</p>
	<p>4.2 Explain how to control the movement of pedestrians, vehicles and plant within the confines of the working area.</p>
	<p>4.3 Identify distances and dimensions to accommodate advance signing.</p>
	<p>4.4 Identify distances and dimensions to accommodate pedestrian walkways, traffic lanes and safety zones.</p>
	<p>4.5 Explain how to check that equipment is fit for purpose.</p>
	<p>4.6 Identify the specified sequences for positioning and removing equipment.</p>
<p>5. Provide portable traffic signals and Stop/Go traffic control.</p>	<p>5.1 Inspect and test signals for correct operation.</p>
	<p>5.2 Position signals to meet the site location requirements.</p>
	<p>5.3 Position signals in the correct sequence.</p>
	<p>5.4 Adjust signal controls to suit traffic conditions.</p>
	<p>5.5 Dismantle and remove signals in the correct sequence.</p>
	<p>5.6 Install and remove Stop/Go traffic control.</p>

<p>6. Understand how to provide portable traffic signals, Stop/Go and priority traffic control.</p>	6.1 Describe how to check that signals are operating correctly.
	6.2 Explain how the site location requirements affect the positioning of signals .
	6.3 Identify the implications of using an incorrect sequence for positioning signals .
	6.4 Explain how the traffic conditions affect the adjustment of signal controls.
	6.5 Describe the site conditions for using Stop/Go boards.
	6.6 Describe the site conditions for using priority traffic control.
	6.7 Describe the site conditions for using Give and Take and Stop Works traffic control.
<p>7. Follow safe working practices.</p>	<p>7.1 Follow current relevant health and safety regulations, standards and other legislation relating to:</p> <p>(a) Working practices within the construction environment</p> <p>(b) Working practices specific to any practical task that they are required to carry out.</p>
	<p>7.2 Identify the current relevant health and safety regulations, standards and other legislation that must be applied in relation to:</p> <p>(a) Working practices within the construction environment</p> <p>(b) Working practices specific to any practical task that they are required to carry out.</p>

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. Requirements of the site location include:

- (a) Proximity to schools and hospitals
- (b) Users of the route (including those with special needs)
- (c) Weather conditions (including icy roads, heavy rain, snow, fog, etc.)
- (d) Volume of traffic
- (e) Speed of traffic
- (f) Lighting on highways
- (g) Highway situations*
- (h) Different requirements for working at day and night
- (i) Mobile works and minor works
- (j) The safety zone (length of lead-in taper of cones (T); sideways clearance (S); longways clearance (L); length of exit taper of cones)
- (k) Distances and dimensions and sizes for advance signing, traffic lanes, walkways and safety zones.

* Includes lack of footways; pedestrianised areas; emergency service access; width of traffic lanes, footways and safety zones; inadequate lane widths; serious congestion; private access; bus stops, parking places, obstruction of driver's view at bends and summits; roundabouts and junctions; footways, ramps, boards and road plates; railway level crossings; tramways; cycle lanes and cycle tracks.

2. Those with special needs include:

- (a) Visually impaired people
- (b) People with disabilities
- (c) Users of prams and pushchairs
- (d) Users of wheelchairs and other physically impaired people
- (e) Cyclists
- (f) Young children
- (g) Horse riders.

3. Safe working practices may include:

- (a) Safe use of tools and equipment
- (b) Use of PPE
- (c) Precautions to minimise danger or inconvenience to road users
- (d) Precautions to minimise danger or inconvenience to site personnel
- (e) Precautions to minimise damage to equipment or apparatus.

4. Equipment may include, as necessary:

- (a) Adequate range of signing, lighting and guarding equipment (including signs, cones, lamps, footway boards, barriers, etc.)
- (b) High-visibility safety equipment
- (c) Suitable materials to construct ramps or proprietary ramps used.

5. Signals include:

- (a) Proprietary two-way electrical or engine powered portable traffic lights
- (b) Set of Stop/Go boards.

Unit title	Excavation in the highway
Unit reference number	003
Unit aim	
<p>This unit is designed to allow the learner to demonstrate the skills and knowledge required to carry out excavation in the highway. The learner will be able to identify the characteristics of different types of footway and carriageway, and their construction layers. They will be able to excavate safely, in line with the relevant specifications and codes of practice, and will show that they can support underground apparatus that they encounter during excavation. The learner will also be able to identify, select and store excavated material that can be reused as backfill.</p>	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Understand how to identify different types of footway and carriageway.	1.1 Identify the main types of footway and carriageway in accordance with current relevant specifications.
	1.2 Describe the characteristics of the main types of footway and carriageway structure.
	1.3 Describe the characteristics of a high duty or high amenity footway, footpath or cycle track.
	1.4 Describe how to distinguish between different types of footway and carriageway .
	1.5 Identify different construction layers in the main types of footway and carriageway in accordance with current relevant specifications.
2. Excavate in the highway.	2.1 Identify the type of footway or carriageway to be excavated.
	2.2 Select equipment required for the excavation activity.
	2.3 Check that the equipment to be used is fit for purpose.
	2.4 Excavate materials at all construction layers according to specifications.
	2.5 Use working methods that minimise the risk of reinstatement failure.
	2.6 Excavate trenches to the specified dimensions.

3 Understand how to excavate in the highway.	3.1 Describe the types of equipment required for excavation activities.
	3.2 Explain how to select equipment that is fit for purpose.
	3.3 Identify the specifications for excavating trenches.
	3.4 Explain how to identify areas of high risk for excavation activities.
	3.5 Describe the precautions to take when excavating in high risk areas .
	3.6 Describe working methods that minimise the risk of reinstatement failure.
	3.7 Describe the differences between shallow excavations, deep openings, narrow trenches and small excavations.
	3.8 Explain how to ensure excavations can accommodate subsequent reinstatement.
4. Support underground utilities apparatus during excavation.	4.1 Identify damage to utilities apparatus and take remedial action to limit further damage.
	4.2 Report damaged apparatus to the relevant person.
	4.3 Use suitable equipment to support and protect exposed utilities apparatus.
5. Understand how to support underground apparatus during excavation.	5.1 Explain the implications of damage to the different types of underground utilities apparatus .
	5.2 State the person to whom damaged utilities apparatus should be reported.
	5.3 Describe the different types of support for exposed utilities apparatus .
	5.4 Explain how to use different types of equipment to support and protect apparatus safely.
	5.5 Describe the circumstances in which trench sidewall support is required, and where to find the guidelines for its provision.
6. Identify, select and store excavated materials for reuse as backfill.	6.1 Identify and select excavated materials that are suitable for reuse as backfill or sub-base.
	6.2 Store reusable materials safely and protect them from contamination and excessive drying or wetting.
	6.3 Identify materials that are not suitable for reuse and provide safe temporary storage for them.

7. Understand how to identify, select and store excavated materials for reuse as backfill.	7.1 Describe excavated materials that are suitable and unsuitable for reuse as backfill.
	7.2 Describe the storage requirements for different types of reusable materials.
	7.3 Explain how to protect stored reusable materials from: (a) Contamination (b) Loss of fines (c) Excessive drying or wetting.
	7.4 Describe the correct procedures for storage and reuse of chalk.
	7.5 Describe how to safely store and dispose of materials that are unsuitable for reuse.
8. Follow safe working practices.	8.1 Explain the implications of using unsuitable material for backfill or sub-base.
	8.2 Follow current relevant health and safety regulations, standards and other legislation relating to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. Types of footway and carriageway include:

- (a) Flexible footway and carriageway
- (b) Modular footway and carriageway
- (c) Rigid footway and carriageway
- (d) Composite carriageway.

2. Construction layers in footways and carriageways include:

- (a) Surface course
- (b) Binder course
- (c) Base (road base)
- (d) Sub-base
- (e) Blocks or sett
- (f) Slab
- (g) Bed.

3. Regulations, standards and other legislation includes:

- (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
- (b) Health and Safety Guidance 47, Avoiding Danger from Underground Services
- (c) Health and Safety Guidance 150, Health and Safety in Construction
- (d) Manufacturers' operating procedures for powered tools and plant.

4. Suitable **equipment** may include, as necessary:
 - (a) Appropriate hand tools – including square and round mouth shovels
 - (b) Appropriate powered equipment – including pavement saw and breakout tools
 - (c) Appropriate equipment for supporting exposed utilities – including slings, ropes and props.

5. Safe **working practices** may include:
 - (a) Safe use of tools and equipment
 - (b) Use of appropriate PPE
 - (c) Use of risk assessment methods to identify and control hazards on-site
 - (d) Precautions to minimise danger or inconvenience to road users
 - (e) Precautions to minimise danger or inconvenience to site personnel
 - (f) Precautions to minimise damage to equipment or apparatus.

6. **Utilities apparatus** includes:
 - (a) Plastic and metallic gas mains
 - (b) Plastic and metallic water mains
 - (c) Sewers and drains
 - (d) High- and low-voltage electricity cables
 - (e) Telecommunications and television cables.

7. **Excavated materials** described in specifications include:
 - (a) Class A
 - (b) Class B
 - (c) Class C
 - (d) Class D
 - (e) Class E.

8. **High risk areas** include:
 - (a) Utilities apparatus
 - (b) In close proximity to trees
 - (c) Bad ground conditions
 - (d) Special engineering difficulty.

Unit title	Reinstatement and compaction of backfill materials
Unit reference number	004
Unit aim	
This unit is designed to allow the learner to demonstrate the skills and knowledge required to backfill an excavation. The learner will be able to identify the different types of footway and carriageway and their construction layers, to select appropriate materials for use as backfill and to backfill the excavation safely to the correct level. They will also be able to identify and correctly and safely dispose of surplus materials and materials that cannot be reused.	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Understand how to identify different types of footway and carriageway.	1.1 Identify the main types of footway and carriageway in accordance with current relevant specifications .
	1.2 Describe characteristics of the main types of footway and carriageway .
	1.3 Describe characteristics of a high duty or high amenity footway, footpath or cycle track.
	1.4 Describe how to distinguish between different types of footway and carriageway .
	1.5 Identify different construction layers in the main types of footway and carriageway in accordance with current relevant specifications .
2. Select materials for backfill.	2.1 Identify the type of footway or carriageway to be reinstated.
	2.2 Identify and select excavated materials that are suitable for backfill.
	2.3 Calculate the quantities of materials required for the reinstatement.
	2.4 Store reusable materials safely and protect them from excessive drying or wetting.
	2.5 Identify imported materials that are suitable for use as backfill.
	2.6 Unload and provide safe storage for imported materials .
	2.7 Identify the correct backfill materials to use in high risk areas .
	2.8 Store materials on-site without obstructing or damaging essential facilities and street furniture.

<p>3. Understand how to select materials for backfill.</p>	<p>3.1 Describe different types of excavated materials and their suitability for use as backfill.</p>
	<p>3.2 Describe different types of imported materials and their suitability for use as backfill.</p>
	<p>3.3 Describe correct storage arrangements for backfill materials.</p>
	<p>3.4 Describe backfill materials that are suitable as a surround for utilities apparatus.</p>
	<p>3.5 Explain the implications of using unsuitable material for backfill.</p>
	<p>3.6 Describe correct backfill materials to use in high risk areas.</p>
	<p>3.7 Explain how to minimise the obstruction of essential facilities and damage to street furniture.</p>
<p>4. Backfill the excavation.</p>	<p>4.1 Select reinstatement and compaction equipment that: (a) Is suitable for the material type and trench dimensions (b) Avoids damage to underground utilities apparatus (c) Is in working condition and safe to use.</p>
	<p>4.2 Reinstatement the backfill layer to the correct level.</p>
	<p>4.3 Complete backfilling without damaging underground utilities apparatus.</p>
	<p>4.4 Compact backfill materials to provide a firm base for advancement and minimise the risk of reinstatement failure.</p>
<p>5. Understand how to backfill an excavation.</p>	<p>5.1 Explain the factors that influence the selection of reinstatement and compaction equipment to suit the material type and trench dimensions.</p>
	<p>5.2 Describe types of equipment that will minimise the potential for damage to underground utilities apparatus.</p>
	<p>5.3 State the level of backfill layer required for different pavement types.</p>
	<p>5.4 State the amount of compaction required for each layer using specific equipment.</p>
<p>6. Dispose of surplus materials.</p>	<p>6.1 Identify materials that are unsuitable for reuse or surplus to requirements.</p>
	<p>6.2 Store surplus materials and those unsuitable for reuse in safe temporary storage.</p>
	<p>6.3 Ensure that materials for disposal are loaded safely for transportation.</p>

7. Understand how to dispose of surplus materials.	7.1 Explain how to determine whether excavated materials are unsuitable for reuse or are surplus to requirements.
	7.2 Explain the importance of storing unsuitable and reusable materials separately.
	7.3 Describe how to load materials safely for transportation.
	7.4 Explain when surplus materials should be removed from site.
8. Follow safe working practices.	8.1 Follow current relevant health and safety regulations, standards and other legislation relating to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.
	8.2 Identify the current relevant health and safety regulations, standards and other legislation that must be applied in relation to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.
	8.3 Leave the site in a clean and safe condition.
	8.4 Describe how to leave the site in a clean and safe condition.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. Types of footway and carriageway include:

- (a) Flexible footway and carriageway
- (b) Modular footway and carriageway
- (c) Rigid footway and carriageway
- (d) Composite carriageway.

2. Construction layers in footways and carriageways include:

- (a) Surface course
- (b) Binder course
- (c) Base (road base)
- (d) Sub-base
- (e) Block or sett
- (f) Slab
- (g) Bed.

3. **Specifications** and procedures include:
 - (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
 - (b) Health and Safety Guidance 47, Avoiding Danger from Underground Services
 - (c) Health and Safety Guidance 150, Health and Safety in Construction
 - (d) Manufacturers' operating procedures for powered tools and plant.

4. **Materials** encountered during reinstatement include:
 - (a) Class A
 - (b) Class B
 - (c) Class C
 - (d) Class D
 - (e) Class E.

5. **Safe working practices** may include:
 - (a) Safe use of tools and equipment
 - (b) Use of PPE
 - (c) Use of risk assessment methods to identify and control hazards on-site
 - (d) Precautions to minimise danger or inconvenience to road users
 - (e) Precautions to minimise danger or inconvenience to site personnel
 - (f) Precautions to minimise damage to equipment or apparatus.

6. **Equipment** for reinstatement may include, as necessary:
 - (a) Appropriate hand tools, including square mouth shovel, tape measure, travelling site stick or depth gauge and hard bristle brooms
 - (b) Appropriate powered equipment, including vibro tamper or vibrating plate, percussive rammer and vibrating roller.

7. **Utilities apparatus** includes:
 - (a) Plastic and metallic gas mains
 - (b) Plastic and metallic water mains
 - (c) Sewers and drains
 - (d) High- and low-voltage electricity cables
 - (e) Telecommunications and television cables.

8. **High risk areas** include:
 - (a) The surround for utilities apparatus
 - (b) In close proximity to trees
 - (c) Bad ground conditions
 - (d) Special engineering difficulty.

Unit title	Reinstatement of sub-base and base in non-bituminous materials
Unit reference number	005
Unit aim	
This unit is designed to allow the learner to demonstrate the skills and knowledge required to reinstate sub-base and road base in non-bituminous materials. The learner will be able to prepare the subgrade to receive subsequent layers, to identify and select materials to be used for the reinstatement and to reinstate the sub-base or road base correctly, using the correct equipment. They will also be able to identify and correctly and safely dispose of surplus materials and materials that cannot be reused.	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Prepare the backfill layer to receive subsequent layers.	1.1 Remove loose and unacceptable materials from the area to be reinstated using suitable equipment .
	1.2 Identify and make good backfill layer defects using approved materials and suitable equipment
	1.3 Use equipment to check and confirm that the backfill layer is suitable for subsequent reinstatement.
2. Understand how to prepare the backfill layer for subsequent layers.	2.1 Explain why loose and unacceptable materials are removed from the area to be reinstated.
	2.2 Describe how to remove loose and unacceptable materials from the area to be reinstated.
	2.3 State the purpose of the sub-base and road base layer construction.
	2.4 Describe potential backfill layer defects and the equipment, materials and methods used to repair them.
	2.5 Explain the implications of leaving backfill layer defects.
3. Select and store materials for sub-base and road base.	3.1 Identify and select excavated materials that are suitable for reuse or disposal.
	3.2 Identify imported materials suitable for use in sub-base and road base.
	3.3 Unload imported materials safely on-site.
	3.4 Store all materials safely on-site to prevent degradation.
	3.5 Explain the implications of using unsuitable material for backfill.
	3.6 Describe correct backfill materials to use in high risk areas .

<p>4. Understand how to select materials for sub-base and road base.</p>	<p>4.1 Describe different types of excavated and imported materials and their suitability for use in reinstating sub-base and road base.</p>
	<p>4.2 Describe the permitted range of alternative reinstatement materials (ARMs), stabilised materials for fill (SMFs) and other materials for use as a surround for apparatus.</p>
	<p>4.3 Describe how to store materials on-site to prevent degradation.</p>
	<p>4.4 Describe how to unload and store imported materials safely on-site.</p>
	<p>4.5 Explain how to minimise the obstruction of essential facilities and damage to street furniture.</p>
<p>5. Reinstatement the sub-base and road base layers.</p>	<p>5.1 Select reinstatement equipment that is: (a) Suitable for the material type and trench dimensions (b) In working condition and safe to use.</p>
	<p>5.2 Identify the level to which the sub-base and road base layers should be reinstated.</p>
	<p>5.3 Reinstatement the sub-base and road base layers to the specified level using the correct quantities of materials.</p>
	<p>5.4 Calculate the materials required to achieve full compaction of the layer construction.</p>
	<p>5.5 Use selected compaction equipment to adequately compact the materials and layer thickness.</p>
	<p>5.6 Complete the sub-base and road base layer construction to specifications.</p>
<p>6. Understand how to reinstatement the sub-base and road base layers.</p>	<p>6.1 Explain the factors that affect the selection of equipment for the prescribed operation and material type.</p>
	<p>6.2 Explain how to measure the specified level of each layer.</p>
	<p>6.3 Describe how to check that the sub-base and road base layer construction is completed to specifications.</p>
<p>7. Dispose of surplus materials.</p>	<p>7.1 Identify materials that are unsuitable for reuse or surplus to requirements.</p>
	<p>7.2 Store surplus materials and those unsuitable for reuse in safe temporary storage.</p>
	<p>7.3 Ensure materials for disposal are loaded safely for transportation.</p>

8. Understand how to dispose of surplus materials.	8.1 Explain how to identify materials that are unsuitable for reuse or surplus to requirements.
	8.2 Explain the importance of storing unsuitable and reusable materials separately.
	8.3 Describe how to load materials safely for transportation.
	8.4 Explain when surplus materials should be removed from site.
9. Follow safe working practices.	9.1 Follow current relevant health and safety regulations, standards and other legislation relating to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.
	9.2 Identify the current relevant health and safety regulations, standards and other legislation that must be applied in relation to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.
	9.3 Leave the site in a clean and safe condition.
	9.4 Describe how to leave the site in a clean and safe condition.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Equipment** includes:

- (a) Hand tools – including square and round mouth shovels, hand picks, hard bristle broom, measuring tape, hand rammer or depth gauge
- (b) Powered equipment – including vibro tamper, vibrating plate, percussive rammer and vibrating roller.

2. **Safe working practices** include:

- (a) Safe use of tools and equipment
- (b) PPE
- (c) Use of risk assessment methods to identify and control hazards on-site
- (d) Precautions to minimise danger or inconvenience to road users
- (e) Precautions to minimise danger or inconvenience to site personnel
- (f) Precautions to minimise damage to equipment or apparatus.

3. **Specifications** and procedures include:

- (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
- (b) Health and Safety Guidance 47, Avoiding Danger from Underground Services
- (c) Health and Safety Guidance 150, Health and Safety in Construction
- (d) Manufacturers' operating procedures for powered tools and plant.

4. **Materials** identified for reinstating sub-base and road base include:

- (a) Granular Type 1 sub-base material
- (b) Excavated granular sub-base material Class A
- (c) Category 3 cement bound material (CBM3)
- (d) Foamed concrete.

5. **Materials** for disposal include:

- (a) Unsuitable surplus materials
- (b) Surplus materials that are suitable for reuse.

6. **Utilities apparatus** includes:

- (a) Plastic and metallic gas mains
- (b) Plastic and metallic water mains
- (c) Sewers and drains
- (d) High- and low-voltage electricity cables
- (e) Telecommunications and television cables.

Unit title	Reinstatement in cold lay bituminous materials
Unit reference number	006
Unit aim	
This unit is designed to allow the learner to demonstrate the skills and knowledge required to carry out reinstatement using cold lay bituminous surfacing material. The learner will be able to prepare the pavement layer to receive cold lay surfacing materials, to identify and select materials to be used for the reinstatement and to construct the cold lay bituminous surfacing layer, using the correct equipment. They will also be able to identify and correctly and safely dispose of surplus materials and materials that cannot be reused.	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Prepare the layer of pavement structure to receive permanent cold lay surfacing materials.	1.1 Remove loose and unacceptable materials from the area to be reinstated using suitable equipment .
	1.2 Identify and rectify any pavement layer surface contamination or defects.
	1.3 Use suitable equipment to trim back edges where damage has occurred.
	1.4 Use suitable equipment to reposition displaced ironwork, kerbs and edge restraints in accordance with established levels.
	1.5 Confirm, against the specifications , that the correct depth is left for the cold lay surface material.
2. Understand how to prepare the layer of pavement structure to receive cold lay surfacing materials.	2.1 Explain why loose and unacceptable materials are removed from the area to be reinstated.
	2.2 Explain how surface- and groundwater should be controlled from excavations.
	2.3 Explain the implications of pavement layer surface contamination or defects.
	2.4 Explain how to identify and rectify pavement layer surface contamination or defects.
	2.5 Explain how to identify and rectify edge damage and undercut.
	2.6 Describe how to reposition displaced ironwork, kerbs and edge restraints.
	2.7 Explain how to check and confirm that the pavement layer construction is correct.
	2.8 Explain the implications of incorrect pavement layer construction.

<p>3. Construct a cold lay bituminous surfacing layer.</p>	3.1 Check that imported bituminous material complies with the specification.
	3.2 Select compaction equipment and ensure that it is: (a) Suitable for the operation (b) In working condition and safe to use.
	3.3 Spread and level cold lay bituminous material in binder course and surface course layers.
	3.4 Handle cold lay bituminous material correctly.
	3.5 Store cold lay bituminous material to prevent contamination, oxidation and wetting.
	3.6 Reinstate around highway ironwork according to the specification.
	3.7 Seal edges of the cavity using specified edge sealant.
	3.8 Compact the bituminous material according to the specification.
<p>4. Understand how to construct a cold lay bituminous surfacing layer.</p>	4.1 Explain the factors that influence the selection of equipment for the prescribed operation.
	4.2 Explain how to check equipment is in working condition and safe to use.
	4.3 Describe handling and storage procedures for cold lay bituminous material.
	4.4 Explain the reasons for sealing cavity edges before placing surface layers.
	4.5 Explain how to determine required surcharge prior to compaction of cold lay surfacing materials .
	4.6 Explain compaction procedures for cold lay bituminous material.
	4.7 Describe how to confirm that the compacted layer thickness meets specifications .
<p>5. Dispose of surplus materials.</p>	5.1 Identify materials that are unsuitable for reuse or surplus to requirements.
	5.2 Store surplus materials and those unsuitable for reuse in safe temporary storage.
	5.3 Ensure materials for disposal are loaded safely for transportation.

<p>6. Understand how to dispose of surplus materials.</p>	<p>6.1 Explain how to identify materials that are unsuitable for reuse or surplus to requirements.</p>
	<p>6.2 Explain the importance of storing unsuitable and reusable materials separately.</p>
	<p>6.3 Describe how to load materials safely for transportation.</p>
	<p>6.4 Explain when surplus materials should be removed from site.</p>
<p>7. Follow safe working practices.</p>	<p>7.1 Follow current relevant health and safety regulations, standards and other legislation relating to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.</p>
	<p>7.2 Identify the current relevant health and safety regulations, standards and other legislation that must be applied in relation to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.</p>
	<p>7.3 Leave the site in a clean and safe condition.</p>
	<p>7.4 Describe how to leave the site in a clean and safe condition.</p>

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Equipment** includes:

- (a) Hand tools – including square and round mouth shovels, hand pick, hard bristle broom, profile gauge and measuring tape
- (b) Powered equipment – including breakout equipment, road saw, disc cutter, vibro tamper, vibrating roller or vibrating plate and Turk's head brush.

2. **Safe working practices** include:

- (a) Safe use of tools and equipment
- (b) PPE
- (c) Use of risk assessment methods to identify and control hazards on-site
- (d) Precautions to minimise danger or inconvenience to road users
- (e) Precautions to minimise danger or inconvenience to site personnel
- (f) Precautions to minimise damage to equipment or apparatus.

3. **Specifications** and **procedures** include:

- (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
- (b) Health and Safety Guidance 47, Avoiding Danger from Underground Services
- (c) Health and Safety Guidance 150, Health and Safety in Construction
- (d) Manufacturers' operating procedures for powered tools and plant.

4. **Materials** identified for reinstating a cold lay bituminous surfacing layer include:

- (a) Deferred set mixtures for reinstatement
- (b) Permanent cold lay binder and surfacing materials
- (c) Cold edge sealant.

5. **Materials** for disposal include:

- (a) Unsuitable surplus materials
- (b) Surplus materials that are suitable for reuse.

Unit title	Reinstatement in hot lay bituminous materials
Unit reference number	007
Unit aim	
This unit is designed to allow the learner to demonstrate the skills and knowledge required to carry out reinstatement using hot lay bituminous surfacing material. The learner will be able to prepare the pavement layer to receive hot lay surfacing materials, to identify and select materials to be used for the reinstatement and to construct the hot lay bituminous binder course and the asphalt surface course, using the correct equipment. They will also be able to identify and correctly and safely dispose of surplus materials and materials that cannot be reused.	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Prepare the layer of pavement structure to receive hot lay surfacing materials.	1.1 Use suitable equipment to remove interim reinstatement material to the correct depth.
	1.2 Remove loose and unacceptable materials from the area to be reinstated using suitable equipment .
	1.3 Identify and rectify any pavement layer surface contamination or defects.
	1.4 Use suitable equipment to trim back edges where damage has occurred.
	1.5 Use suitable equipment to reposition displaced ironwork, kerbs and edge restraints in accordance with established levels.
	1.6 Confirm, against the specifications , that the correct depth is left for the hot lay surface material.
2. Understand how to prepare the layer of pavement structure to receive hot lay surfacing materials.	2.1 Describe equipment to use for removing interim reinstatement material.
	2.2 Explain how to check that interim reinstatement material is removed to the correct depth.
	2.3 Explain why loose and unacceptable materials are removed from the area to be reinstated.
	2.4 Describe how to remove loose and unacceptable materials from the area to be reinstated.
	2.5 Explain the implications of pavement layer surface contamination or defects.
	2.6 Explain how to identify and rectify pavement layer surface contamination or defects.
	2.7 Explain how to identify and rectify edge damage and undercut.
	2.8 Describe how to reposition displaced ironwork, kerbs and edge restraints.
	2.9 Explain the implications of incorrect pavement layer construction.

<p>3. Construct the bituminous binder course.</p>	3.1 Confirm the delivery temperature of hot lay bituminous material prior to laying.
	3.2 Select compaction equipment and ensure that it is: (a) Suitable for the operation (b) In working condition and safe to use.
	3.3 Maintain specialist tools at the correct temperature for working with hot bituminous material.
	3.4 Seal the edges according to the specification.
	3.5 Select, spread and level hot bituminous material binder course.
	3.6 Handle hot lay bituminous material correctly.
	3.7 Store hot lay bituminous material correctly.
	3.8 Compact the hot bituminous material according to the specification.
<p>4. Understand how to construct a bituminous base (road base) and binder course.</p>	4.1 Describe quality requirements of the selected material.
	4.2 Explain why it is important to use hot lay bituminous material at the correct temperature.
	4.3 Explain why it is important to maintain tool temperatures when working with hot lay bituminous materials .
	4.4 Describe how to spread and level bituminous material in base (road base) and/or binder course and surface course layers.
	4.5 Explain the factors that influence the selection of equipment for the prescribed operation.
	4.6 Explain how to select hand tools and compaction equipment for the prescribed operation.
	4.7 Explain how to check that equipment is in working condition and safe to use.
	4.8 Describe handling and storage procedures for hot lay bituminous material.
	4.9 Explain the reasons for sealing cavity edges before placing surface layers.
	4.10 Explain compaction procedures for hot lay bituminous material.
	4.11 Describe how to confirm that compacted layer thickness meets specifications .

<p>5. Construct the asphalt surface course.</p>	5.1 Apply tack coat as necessary.
	5.2 Check the temperature of hot bituminous material before laying it.
	5.3 Maintain specialist tools at the correct temperature for working with bituminous material.
	5.4 Handle hot lay bituminous material correctly.
	5.5 Store hot lay bituminous material correctly.
	5.6 Use suitable equipment to select, spread and level hot bituminous material in a surface course layer.
	5.7 Select compaction equipment that is in working condition and safe to use.
	5.8 Compact the hot lay bituminous material according to the specification.
	5.9 Make adequate provision for skid resistance and texture depth in the surface course.
<p>6. Understand how to construct an asphalt surface course.</p>	6.1 Explain the correct procedures and requirements for applying tack coat.
	6.2 Describe the quality requirements for the selected material.
	6.3 Explain why it is important to use hot lay bituminous material at the correct temperature.
	6.4 Explain why it is important to maintain tool temperatures when working with hot lay bituminous materials .
	6.5 Describe how to spread and level bituminous material in an asphalt surface course layer.
	6.6 Explain the factors that influence the selection of equipment for the prescribed operation.
	6.7 Describe handling and storage procedures for hot lay bituminous material.
	6.8 Explain how to check that equipment is in working condition and safe to use.
	6.9 Explain compaction procedures for hot lay bituminous material.
	6.10 Explain the method used to ensure skid resistance and texture depth from specifications .

7. Dispose of surplus materials.	7.1 Identify materials that are unsuitable for reuse or surplus to requirements.
	7.2 Store surplus materials and those unsuitable for reuse in safe temporary storage.
	7.3 Ensure materials for disposal are loaded safely for transportation.
8. Understand how to dispose of surplus materials.	8.1 Explain how to identify materials that are unsuitable for reuse or surplus to requirements.
	8.2 Explain the importance of storing unsuitable and reusable materials separately.
	8.3 Describe how to load materials safely for transportation.
	8.4 Explain when surplus materials should be removed from site.
9. Follow safe working practices for locating and avoiding underground apparatus and highway services.	9.1 Follow current relevant health and safety regulations, standards and other legislation relating to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.
	9.2 Identify the current relevant health and safety regulations, standards and other legislation that must be applied in relation to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.
	9.3 Leave the site in a clean and safe condition.
	9.4 Describe how to leave the site in a clean and safe condition.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. Equipment includes:

- (a) Hand tools*
- (b) Powered equipment.**

* Includes square and round mouth shovels, hand pick, hard bristle broom, profile board, measuring tape, rake, hot hand tamper, tool heater, wheelbarrow, water butt, probe thermometer, bitumen bucket, edge seal applicator, Turk's head brush.

** Includes breakout equipment, pavement saw, vibro tamper, vibrating roller or vibrating plate, disc cutter, road saw.

2. **Safe working practices** include:

- (a) Safe use of tools and equipment
- (b) PPE
- (c) Use of risk assessment methods to identify and control hazards on-site
- (d) Precautions to minimise danger or inconvenience to road users
- (e) Precautions to minimise danger or inconvenience to site personnel
- (f) Precautions to minimise damage to equipment or apparatus
- (g) Safe working practices for working with molten bitumen
- (h) Personal hygiene measures in connection with skin contamination.

3. **Specifications and procedures** include:

- (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
- (b) Health and Safety Guidance 47, Avoiding Danger from Underground Services
- (c) Health and Safety Guidance 150, Health and Safety in Construction
- (d) Manufacturers' operating procedures for powered tools and plant.

4. **Materials** identified for constructing a bituminous binder course include:

- (a) Dense binder course materials (20mm nominal stone size), hot rolled asphalt 50/20 binder course
- (b) Close graded surface course materials (10mm stone size), hot rolled asphalt 30/14 surface course.

(Note: In small excavations and narrow trenches, the preferred binder course mixture may be replaced by any surface course mixture given in the specification, for the respective road type, provided the same mixture is used as the surface course.)

5. **Materials** identified for constructing an asphalt concrete surface course to BS EN 13108 and PD 6691 in accordance with specifications to include:

- (a) Hot rolled asphalt binder and surface course
- (b) Close graded surface course materials (10mm stone size)
- (c) Asphalt concrete dense surface course
- (d) Stone mastic asphalt surface and binder course
- (e) Pre-coated 14mm or 20mm chippings
- (f) Edge sealants
- (g) Tack coat.

6. **Materials** for disposal include:

- (a) Unsuitable surplus materials
- (b) Surplus materials that are suitable for reuse.

7. **Procedures** for handling, transportation and laying of asphalt concrete in accordance with specifications BS 594987 and PD 6691.

(Note: These standards and documents replace earlier ones and should be used in conjunction with the BS EN 13108.)

Unit title	Reinstatement of concrete slabs
Unit reference number	008
Unit aim	
This unit is designed to allow the learner to demonstrate the skills and knowledge required to carry out the reinstatement of a concrete slab. The learner will be able to prepare the sub-base to receive the concrete slab, to prepare the edges of the existing slab for concrete reinstatement, to lay mesh reinforcement and to form the concrete slab, using the correct equipment. They will also be able to identify and correctly and safely dispose of surplus materials and materials that cannot be reused.	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Prepare sub-base to receive concrete slab.	1.1 Remove loose and unacceptable materials from the area to be reinstated using suitable equipment .
	1.2 Make good any defects in the sub-base using specified materials.
	1.3 Select sub-base compaction equipment and ensure that it is: (a) Suitable for the operation (b) In working condition and safe to use.
	1.4 Compact the sub-base according to specification.
	1.5 Check that the finished sub-base level accommodates the correct slab thickness.
2. Understand how to prepare sub-base to receive concrete slab.	2.1 Explain why loose and unacceptable materials are removed from the area to be reinstated.
	2.2 Describe how to remove loose and unacceptable materials from the area to be reinstated.
	2.3 Identify different sub-base defects that could be encountered.
	2.4 Identify approved sub-base materials for replacing unacceptable materials.
	2.5 Describe the procedures for replacing defective sub-base materials with approved materials.
	2.6 Explain the factors that influence the selection of sub-base compaction equipment for the prescribed operation.
	2.7 Explain how to check that equipment is in working condition and safe to use.
	2.8 Explain how to check that the sub-base material is adequately compacted.
	2.9 Explain how to ensure the cavity depth will accommodate the specified slab thickness.

<p>3. Prepare the edges of existing slab to receive concrete reinstatement.</p>	<p>3.1 Saw cut the edge of the existing slab according to the specification, using the appropriate equipment.</p>
	<p>3.2 Prepare the unsawn section of the exposed slab edge according to the specification to form a support using steel dowel bars.</p>
	<p>3.3 Place the slip membrane in position and overlap it.</p>
	<p>3.4 Clean and wet all edges prior to placing the concrete.</p>
<p>4. Understand how to prepare the edges of existing slab to receive concrete reinstatement.</p>	<p>4.1 Describe how to saw cut the edge of an existing slab correctly.</p>
	<p>4.2 Explain how to rough-cut the unsawn section of the exposed slab edge to form a taper edge support.</p>
	<p>4.3 Explain how to provide support for concrete slab reinstatement using dowel bars, including:</p> <p>(a) How to drill the unsawn section to provide a sliding fit for dowel bars.</p> <p>(b) The diameter and length of dowel bars required for the reinstatement.</p> <p>(c) How to cut and position dowel bars.</p>
	<p>4.4 Explain the problems that may be caused by not placing slip membranes in accordance with specifications.</p>
	<p>4.5 Explain the importance of cleaning and wetting the edges of the existing slab prior to the placement of concrete.</p>
<p>5. Lay mesh reinforcement.</p>	<p>5.1 Expose the existing mesh reinforcement.</p>
	<p>5.2 Select new mesh reinforcement to match the existing reinforcement.</p>
	<p>5.3 Cut the mesh reinforcement to the correct size, including the required overlap.</p>
	<p>5.4 Tie the new mesh reinforcement securely to the existing reinforcement.</p>
<p>6. Understand how to lay mesh reinforcement.</p>	<p>6.1 Describe the minimum length of the existing reinforcement to expose, and when to use further trimming.</p>
	<p>6.2 Explain the factors that influence the selection of mesh reinforcement.</p>
	<p>6.3 Describe procedures for measuring and cutting mesh reinforcement.</p>
	<p>6.4 Explain how to position new reinforcement and attach it to existing reinforcement.</p>

7. Form concrete slab.	7.1 Replace missing or damaged joints to match existing joints .
	7.2 Carry out slump testing of concrete to confirm workability.
	7.3 Place concrete to a uniform level according to the specification.
	7.4 Compact the concrete using suitable equipment to achieve maximum density.
	7.5 Finish the concrete surface to the approved texture to ensure skid resistance.
	7.6 Apply an approved curing membrane.
8. Understand how to form concrete slab.	8.1 Identify the types of carriageway on which concrete reinstatement is carried out.
	8.2 Describe the correct procedures for replacing and constructing different types of joints .
	8.3 Describe how to check that concrete conforms to specifications and quality requirements.
	8.4 Identify equipment required to compact concrete safely and achieve maximum density.
	8.5 State the strength of concrete required prior to opening to traffic.
	8.6 Describe how to confirm the workability and strength of concrete .
	8.7 Describe the texture and skid resistance required for the finished surface.
	8.8 Explain how to apply the range of approved curing membranes.
9. Dispose of surplus materials.	9.1 Identify materials that are unsuitable for reuse or surplus to requirements.
	9.2 Store surplus materials and those unsuitable for reuse in safe temporary storage.
	9.3 Ensure materials for disposal are loaded safely for transportation.
10. Understand how to dispose of surplus materials.	10.1 Explain how to identify materials that are unsuitable for reuse or surplus to requirements.
	10.2 Explain the importance of storing unsuitable and reusable materials separately.
	10.3 Describe how to load materials safely for transportation.
	10.4 Explain when surplus materials should be removed from site.

11. Follow safe working practices.	11.1 Follow current relevant health and safety regulations, standards and other legislation relating to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.
	11.2 Identify the current relevant health and safety regulations, standards and other legislation that must be applied in relation to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.
	11.3 Leave the site in a clean and safe condition.
	11.4 Describe how to leave the site in a clean and safe condition.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Equipment** includes:

- (a) Hand tools*
- (b) Powered equipment**

* Includes, as necessary, shovel, hand pick, rake, hand rammer, reinforcing bar cutters, wire cutting tools, trowel, hand tamping beam, hard bristle broom.

** Includes, as necessary, vibro tamper, powered concrete cutting equipment, powered concrete drill, powered saw, a proprietary vibrator.

2. **Sub-base material** includes:

- (a) Granular sub-base Type 1 material
- (b) Pavement quality concrete (as described in specifications and SHW 1000)
- (c) Alternative reinstatement materials (ARMs).

3. **Safe working practices** may include:

- (a) Safe use of tools and equipment
- (b) Use of appropriate PPE
- (c) Use of risk assessment methods to identify and control hazards on-site
- (d) Precautions to minimise danger or inconvenience to road users
- (e) Precautions to minimise danger or inconvenience to site personnel
- (f) Precautions to minimise damage to equipment or apparatus.

4. **Specifications and procedures** include:
 - (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
 - (b) Specification for Highways Works Series 1000
 - (c) Health and Safety Guidance 47, Avoiding Danger from Underground Services
 - (d) Health and Safety Guidance 150, Health and Safety in Construction
 - (e) Manufacturers' operating procedures for powered tools and plant.

5. **Support** must be provided using
 - (a) Steel dowel bars of 20mm or 25mm nominal diameter.

6. The **mesh reinforcement** includes standard weights of mesh reinforcement.

7. **Joints** include:
 - (a) Contraction joints
 - (b) Expansion joints
 - (c) Warping joints.

8. The **concrete** includes:
 - (a) Class 40 concrete
 - (b) Air entrainment additive.

9. **Materials** for disposal include:
 - (a) Unsuitable surplus materials
 - (b) Surplus materials that are suitable for reuse.

10. **Types of carriageway** includes types 0, 1, 2, 3 and 4 concrete and bituminous overlaid concrete roads.

Unit title	Reinstatement of modular surfaces, concrete footways
Unit reference number	009
Unit aim	
This unit is designed to allow the learner to demonstrate the skills and knowledge required to carry out the reinstatement of modular surfaces and concrete footways. The learner will be able to remove existing modular or concrete surfacing, to prepare the sub-base, to lay bedding materials and modular or concrete surfacing, using the correct equipment. They will also be able to identify and correctly and safely dispose of surplus materials and materials that cannot be reused.	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Remove existing modular and concrete surfacing.	1.1 Select equipment and ensure that it is: (a) Suitable for the prescribed operation (b) In working condition and safe to use.
	1.2 Take up the existing modules and concrete surfacing without causing unnecessary damage.
	1.3 Remove any adhesive residues and brush modules clean.
	1.4 Identify any damaged modules and set them aside for disposal or for use in an interim reinstatement.
	1.5 Set aside broken concrete for disposal.
	1.6 Identify modules that are suitable for reuse in permanent reinstatement and stack them safely on-site.
2. Understand how to remove existing modular and concrete surfacing.	2.1 Explain the factors that influence the selection of equipment for the prescribed operation.
	2.2 Explain how to check that equipment is in working condition and safe to use.
	2.3 Explain how to avoid unnecessary damage when taking up existing modules .
	2.4 Describe the procedures for taking up concrete surfacing.
	2.5 Explain why adhesive residues are removed and modules brushed clean.
	2.6 Describe the difference between suitable and unsuitable modules for interim and permanent reinstatement.
	2.7 Describe storage methods for: (a) Damaged modules that cannot be reused (b) Modules suitable for interim reinstatement (c) Modules suitable for permanent reinstatement (d) Broken concrete .

3. Prepare sub-base.	3.1 Remove loose and unacceptable materials from the area to be reinstated using suitable equipment .
	3.2 Identify any defects in the sub-base.
	3.3 Make good any defects in the sub-base using specified materials.
	3.4 Select sub-base compaction equipment and ensure that it is: (a) Suitable for the operation (b) In working condition and safe to use.
	3.5 Compact the sub-base according to the specification
	3.6 Use suitable equipment to reposition displaced ironwork, kerbs and edge restraints in accordance with established levels.
4. Understand how to prepare the sub-base.	4.1 Explain why loose and unacceptable materials are removed from the area to be reinstated.
	4.2 Describe how to remove loose and unacceptable materials from the area to be reinstated.
	4.3 Identify different sub-base defects that could be encountered.
	4.4 Identify approved sub-base materials for replacing defective materials .
	4.5 Explain the factors that influence the selection of sub-base compaction equipment for the prescribed operation.
	4.6 Explain how to check that sub-base compaction equipment is in working condition and safe to use.
	4.7 Explain the implications of poor reinstatement of sub-base materials .
	4.8 Describe how to reposition displaced ironwork, kerbs and edge restraints.
5. Lay bedding materials.	5.1 Select equipment and ensure that it is (a) Suitable for the prescribed operation (b) In working condition and safe to use.
	5.2 Select and lay the specified bedding material uniformly.
	5.3 Compact the bedding material as necessary.
6. Understand how to lay bedding materials.	6.1 Describe the materials that are used for bedding modular surfaces.
	6.2 Explain the factors that influence the selection of equipment for the prescribed operation.
	6.3 Explain how to check that equipment is in working condition and safe to use.
	6.4 Explain the importance of laying bedding material evenly and to a specified depth.
	6.5 State the specified tolerances for laying bedding material .
	6.6 Describe the implications of poor compaction of bedding materials .

7. Lay modular or concrete surfacing.	7.1 Select equipment and ensure that it is: (a) Suitable for the prescribed operation (b) In working condition and safe to use.
	7.2 Select modules and concrete for the reinstatement operation.
	7.3 Position the modules to match the existing bond or pattern.
	7.4 Cut modules for reinstatement to the required size.
	7.5 Bed modules using suitable bedding material .
	7.6 Compact modules to the existing line and level.
	7.7 Apply and finish jointing material according to the specification .
	7.8 Lay and compact paving concrete according to the specification .
	7.9 Place a membrane and lay quality checked concrete surfacing.
	7.10 Texture the finished surface and cure the concrete .
8. Understand how to lay modular or concrete surfacing.	8.1 Explain the factors that influence the selection of equipment for the prescribed operation.
	8.2 Explain how to check that equipment is in working condition and safe to use.
	8.3 Describe concrete that is suitable for reinstatement.
	8.4 Describe the different bond patterns used in modular construction.
	8.5 Describe methods used for cutting modules .
	8.6 Describe procedures for bedding and compacting modules to the existing line and level.
	8.7 Describe procedures for applying and finishing jointing material.
	8.8 Describe the consequences of inadequate compaction.
	8.9 Explain the purpose of slip membranes used in rigid footway reinstatement
	8.10 Describe how to check that concrete is acceptable for use.
	8.11 Describe procedures for laying the concrete surfacing.
	8.12 Describe different types of textured finishes to concrete surfaces.
	8.13 Describe procedures for curing the concrete .

9. Dispose of surplus materials.	9.1 Identify materials that are unsuitable for reuse or surplus to requirements.
	9.2 Store surplus materials and those unsuitable for reuse in safe temporary storage.
	9.3 Ensure materials for disposal are loaded safely for transportation.
10. Understand how to dispose of surplus materials.	10.1 Explain how to identify materials that are unsuitable for reuse or surplus to requirements.
	10.2 Explain the importance of storing unsuitable and reusable materials separately.
	10.3 Describe how to load materials safely for transportation.
	10.4 Explain when surplus materials should be removed from site.
11. Follow safe working practices for locating and avoiding underground apparatus and highways services.	11.1 Follow current relevant health and safety regulations, standards and other legislation relating to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.
	11.2 Identify the current relevant health and safety regulations, standards and other legislation that must be applied in relation to: (a) Working practices within the construction environment (b) Working practices specific to any practical task that they are required to carry out.
	11.3 Leave the site in a clean and safe condition.
	11.4 Describe how to leave the site in a clean and safe condition.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Modules** must include:
 - (a) Natural or precast concrete paving slabs
 - (b) Precast concrete blocks or similar units.

2. **Concrete** is Class 30 concrete for footway concrete paving reinstatement.

3. **Equipment** includes:
 - (a) Hand tools – including square and round mouth shovels, lifting and clearing tools (including hand pick, crowbar, bolster, club hammer, wire brush, hard bristle broom, rake), hand rammer, straight edge (or suitably cut) timber, trowel, a textured roller.
 - (b) Powered equipment – including concrete cutting equipment, concrete saw, vibro tamper, vibrating plate.

4. **Sub-base materials** include granular Type 1 sub-base or Class A material. 5. **Bedding material** includes:
 - (a) Cement mortar or lime mortar
 - (b) Sharp sand.

6. **Safe working practices** include:
 - (a) Safe use of tools and equipment
 - (b) Use of PPE
 - (c) Use of risk assessment methods to identify and control hazards on-site
 - (d) Precautions to minimise danger or inconvenience to road users
 - (e) Precautions to minimise danger or inconvenience to site personnel
 - (f) Precautions to minimise damage to equipment or apparatus.

7. **Specifications and procedures** include:
 - (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
 - (b) BS 7533 Series
 - (c) Health and Safety Guidance 150, Health and Safety in Construction
 - (d) Manufacturers' operating procedures for powered tools and plant
 - (e) Application Guide 26.

8. **Materials** for disposal include:
 - (a) Unsuitable surplus materials
 - (b) Surplus materials that are suitable for reuse.

Unit title	Monitoring signing, lighting and guarding
Unit reference number	010
Unit aim	
<p>This unit is designed to allow the learner to demonstrate the skills and knowledge required to successfully monitor the signing, lighting and guarding of a worksite. The learner will be able to monitor a worksite survey to ensure that suitable provision is in place for the site location requirements and those with special needs, including cyclists and horse riders, and to monitor the protection of pedestrians, site personnel and vehicular traffic on-site. They will also be able to monitor the provision and control of portable traffic signals in line with site location requirements and traffic conditions, and they will be able to monitor site safety throughout the signing, lighting and guarding operation.</p> <p>Learners undertaking this unit must use the current version of <i>Safety at Street Works and Road Works: A Code of Practice</i>.</p>	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Monitor a worksite survey.	1.1 Ensure that the planned provision of footways, traffic lanes and safety zones from a given planned site meets the requirements of: (a) The site location (b) People with special needs .
	1.2 Ensure that the planned provision of footways, traffic lanes and safety zones minimises disruption to traffic and provides for the safe passage of pedestrians.
	1.3 Ensure that the planned provisions for vehicles and plant within the confines of the working area give adequate coverage and safety for people and vehicles in the vicinity.
	1.4 Check for problems with the planned provisions arising from the site survey and confirm the appropriate remedial action required.
	1.5 Carry out an on-site risk assessment in respect of signing, lighting and guarding to ensure that provision is made to control any identified hazards.

2. Understand how to monitor a worksite survey.	2.1 Describe the requirements of the Code of Practice in respect of surveying the worksite.
	2.2 Describe the health and safety requirements relating to surveying the worksite.
	2.3 Explain how to plan provision of footways, traffic lanes and safety zones to meet the requirements of: (a) The site location (b) People with special needs .
	2.4 Explain how to minimise disruption to traffic and ensure the safe passage of pedestrians when planning provision of footways, traffic lanes and safety zones.
	2.5 Explain how to plan provision for vehicles and plant within the confines of the working area to ensure: (a) Traffic lanes (b) Safe passage through the site (c) Advance signing (d) Type of traffic (e) Volume of traffic.
	2.6 Describe the problems that can occur with planned provision arising from a worksite survey, and the appropriate remedial action to resolve them.
	2.7 Explain the site conditions for the use of Priority signing and Give and Take systems of working.
3. Monitor the protection of pedestrians, vehicular traffic and site personnel.	3.1 Ensure that PPE is selected to meet the job requirements.
	3.2 Assess the provision of footways, traffic lanes and safety zones for: (a) The requirements of the site location (b) The safe passage of pedestrians (c) Minimising disruption to and ensuring safety of vehicular traffic (d) Any identified special needs .
	3.3 Confirm that the provisions for controlling the movement of pedestrians, vehicles and plant within the confines of the working area: (a) Minimise delay and inconvenience (b) Meet health and safety requirements.
	3.4 Ensure that equipment selected meets the site location requirements and any special needs .
	3.5 Ensure that pre-use inspection checks of equipment are completed.
	3.6 Monitor the positioning and removal of equipment according to the specified sequence.
	3.7 Check for problems with the protection of pedestrians, vehicular traffic and site personnel and confirm the appropriate remedial action required.

<p>4. Understand how to monitor the protection of pedestrians, vehicular traffic and site personnel.</p>	4.1 Describe the PPE to meet the job requirements.
	4.2 Describe the factors governing the provision of footways, traffic lanes and safety zones and when it is necessary to liaise with the highway authority.
	4.3 Explain how the equipment meets the requirements of the site location and any special needs .
	4.4 Describe pre-use equipment checks.
	4.5 Identify the specified sequences for positioning and removing equipment .
	4.6 Describe potential problems with the protection of pedestrians, vehicular traffic and site personnel, and the appropriate remedial action.
<p>5. Monitor the provision of portable traffic signals and Stop/Go traffic control.</p>	5.1 Monitor the inspection and testing of signals for correct operation.
	5.2 Ensure that signals are positioned in the correct sequence, and to meet the requirements of the site location .
	5.3 Monitor the adjustment of signal controls to suit the prevailing traffic conditions.
	5.4 Ensure that signals are dismantled and removed in line with current relevant specifications and procedures.
	5.5 Ensure that Stop/Go traffic control is installed in a specified sequence.
	5.6 Check for any problems with the provision of portable traffic signals and Stop/Go traffic control and confirm the appropriate remedial action required.
<p>6. Understand how to monitor the provision of portable traffic signals and Stop/Go traffic control.</p>	6.1 Describe the procedures for inspecting and testing signals for correct operation.
	6.2 Explain how the site location requirements affect the positioning of signals , and the circumstances under which the highway authority must be consulted.
	6.3 Describe the correct sequence for positioning signals .
	6.4 Explain how the prevailing traffic conditions affect the adjustment of signal controls
	6.5 Describe the requirements for dismantling and removal of portable traffic signals
	6.6 Describe the requirements for installation and removal of Stop/Go traffic control
	6.7 Describe potential problems with the provision of portable traffic signals and Stop/Go traffic control and the appropriate remedial action.

7. Monitor site safety.	7.1 Ensure that a risk assessment has been carried out.
	7.2 Monitor site operations in accordance with health and safety requirements.
	7.3 Assess site conditions in accordance with health and safety requirements.
	7.4 Ensure that safety equipment is available and fit for purpose.
	7.5 Ensure that safe working practices are followed in line with current relevant specifications.
	7.6 Check for risks to site safety and confirm the appropriate remedial action required.
8. Understand how to monitor site safety.	8.1 Explain the purpose of an on-site risk assessment.
	8.2 Describe the health and safety requirements for site operations.
	8.3 Describe the health and safety requirements for different site conditions.
	8.4 Describe the safety equipment required during site operations and how to ensure that it is fit for purpose.
	8.5 Describe safe working practices on-site.
	8.6 Describe the potential risks to site safety and the appropriate remedial action.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Site location** requirements include:
 - (a) Proximity to schools and hospitals
 - (b) Users of the route (including those with special needs)
 - (c) Weather conditions (including icy roads, heavy rain, snow, fog, etc.)
 - (d) Volume of traffic
 - (e) Speed of traffic
 - (f) Lighting on highways
 - (g) Highway situations*
 - (h) Different requirements for working at day and night
 - (i) Mobile works and minor works
 - (j) The safety zone (length of lead-in taper of cones (T); sideways clearance (S); longways clearance (L); length of exit taper of cones).
- * Includes lack of footways; pedestrianised areas; emergency service access; width of traffic lanes, footways and safety zones; inadequate lane widths; serious congestion; private access; bus stops, parking places, etc.; obstruction of driver's view at bends and summits; roundabouts and junctions; footways, ramps, boards and road plates; railway level crossings; tramways; cycle lanes and cycle tracks.
2. Those with **special needs** include:
 - (a) Visually impaired people
 - (b) People with disabilities
 - (c) Users of prams and pushchairs
 - (d) Users of wheelchairs and other physically impaired people
 - (e) Cyclists
 - (f) Young children
 - (g) Horse riders.
3. **Safe working practices** include:
 - (a) Safe use of tools and equipment
 - (b) Use of PPE
 - (c) Use of risk assessment methods to identify and control hazards on-site
 - (d) Precautions to minimise danger or inconvenience to road users
 - (e) Precautions to minimise danger or inconvenience to site personnel
 - (f) Precautions to minimise damage to **equipment** or apparatus.
4. **Equipment** may include, as necessary:
 - (a) Adequate range of signing, lighting and guarding equipment (including signs, cones, signals, lamps, footway boards, barriers, portable traffic signals)
 - (b) High-visibility safety equipment
 - (c) Suitable materials to construct ramps.
5. **Signals** include:
 - (a) Proprietary electrical or engine powered portable traffic lights
 - (b) Set of Stop/Go boards.

Unit title	Monitoring excavation in the highway
Unit reference number	011
Unit aim	
<p>This unit is designed to allow the learner to demonstrate the skills and knowledge required to monitor excavation in the highway. The learner will be able to monitor excavation work, in line with the relevant specifications and codes of practice, and will show that they monitor the action taken to avoid damage to underground apparatus during excavation. The learner will also be able to monitor the selection, storage and disposal of reusable and unusable materials on-site, and they will be able to monitor site safety throughout the excavation operation.</p>	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Monitor excavation work in the highway.	1.1 Ensure that the footway or carriageway structure has been identified correctly prior to excavation.
	1.2 Ensure that materials are excavated at all construction layers according to current specifications .
	1.3 Ensure that the working methods used minimise the risk of reinstatement failure.
	1.4 Ensure that the size of the excavation is sufficient for the work activity and future reinstatement.
	1.5 Check for any problems with the excavation work and confirm the appropriate remedial action required.
2. Understand how to monitor excavation work in the highway.	2.1 Describe the characteristics of the main types of footway and carriageway.
	2.2 Describe the factors that affect the selection of equipment required for excavation activities.
	2.3 Describe how to check that equipment is fit for purpose.
	2.4 Explain how to identify areas of high risk for excavation activities.
	2.5 Describe the precautions to take when excavating in high risk areas .
	2.6 Explain why trenches must be excavated to the correct specifications .
	2.7 Describe working methods that minimise the need for subsequent reinstatement.
	2.8 Describe potential problems with excavation work and the appropriate remedial action.

<p>3. Monitor the action taken to avoid damage to underground apparatus during excavation.</p>	<p>3.1 Ensure that utilities apparatus is located and marked correctly on-site.</p>
	<p>3.2 Ensure that exposed utilities apparatus is identified correctly.</p>
	<p>3.3 Ensure that precautions are taken to minimise the risk of damage to utilities apparatus.</p>
	<p>3.4 Identify damage to utilities apparatus and confirm the action required.</p>
	<p>3.5 Ensure that exposed utilities apparatus is supported and protected safely.</p>
<p>4. Understand how to monitor the action taken to avoid damage to underground apparatus during excavation.</p>	<p>4.1 Explain how to locate and mark the different types of utilities apparatus found on-site.</p>
	<p>4.2 Explain how to identify the different types of exposed utilities apparatus.</p>
	<p>4.3 Describe the risks and consequences of damage to utilities apparatus.</p>
	<p>4.4 Explain the precautions required to avoid damage to utilities apparatus.</p>
	<p>4.5 Explain how to safely support and protect exposed utilities apparatus.</p>
	<p>4.6 Describe the circumstances in which trench sidewall support is needed, and where to find the guidelines for its provision.</p>
<p>5. Monitor the selection, disposal and storage of excavated materials.</p>	<p>5.1 Ensure that excavated materials selected for reuse are checked against the current specification.</p>
	<p>5.2 Ensure that materials selected for disposal are confirmed as unsuitable for reuse.</p>
	<p>5.3 Ensure that reusable materials are stored in line with current relevant specifications and procedures.</p>
	<p>5.4 Ensure that materials that cannot be reused are stored and disposed of in line with current relevant specifications and procedures.</p>
	<p>5.5 Check for any problems with the selection, storage and disposal of materials and confirm the appropriate remedial action required.</p>

<p>6. Understand how to monitor the selection, disposal and storage of excavated materials.</p>	6.1 Describe the range of backfill, sub-base materials that may be reused.
	6.2 Describe the factors influencing the selection of materials for reuse or for disposal and the consequences of using unsuitable materials.
	6.3 Describe suitable and safe storage procedures for reusable materials.
	6.4 Describe the correct procedures for storage and reuse of chalk.
	6.5 Describe suitable and safe storage and disposal procedures for materials that cannot be reused.
	6.6 Describe potential problems with selection, storage and disposal of materials and the appropriate remedial action.
<p>7. Monitor site safety.</p>	7.1 Ensure that a risk assessment has been carried out.
	7.2 Monitor site operations in accordance with health and safety requirements.
	7.3 Assess site conditions in accordance with health and safety requirements.
	7.4 Ensure that safety equipment is available and fit for purpose.
	7.5 Ensure that safe working practices are followed in line with current relevant specifications .
	7.6 Check for risks to site safety and confirm the appropriate remedial action required.
<p>8. Understand how to monitor site safety.</p>	8.1 Explain the purpose of an on-site risk assessment.
	8.2 Describe the health and safety requirements for site operations.
	8.3 Describe the health and safety requirements for different site conditions.
	8.4 Describe the safety equipment required during site operations and how to ensure that it is fit for purpose.
	8.5 Describe safe working practices on-site.
	8.6 Describe the potential risks to site safety and the appropriate remedial action.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Specifications and procedures** include:
 - (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
 - (b) Health and Safety Guidance 47, Avoiding Danger from Underground Services
 - (c) Health and Safety Guidance 150, Health and Safety in Construction
 - (d) Manufacturers' operating procedures for powered tools and plant.

2. **Factors influencing the size and depth of excavation and support equipment** include:
 - (a) Trench width, length and depth
 - (b) Ease of access
 - (c) Types of ground.

3. **Suitable equipment** includes, as necessary:
 - (a) Hand tools
 - (b) Powered equipment – pavement saw, breakout tools
 - (c) Equipment to support exposed utilities – slings, ropes, props
 - (d) Equipment to minimise noise nuisance.

4. **Safe working practices** include:
 - (a) Safe use of tools and equipment
 - (b) Use of PPE
 - (c) Use of risk assessment methods to identify and control hazards on-site
 - (d) Precautions to minimise danger or inconvenience to road users
 - (e) Precautions to minimise danger or inconvenience to site personnel
 - (f) Precautions to minimise damage to equipment or apparatus.

5. **Utilities apparatus** includes:
 - (a) Plastic and metallic gas mains
 - (b) Plastic and metallic water mains
 - (c) Sewers and drains
 - (d) High- and low-voltage electricity cables
 - (e) Telecommunications, television cables and optic fibres.

6. **Excavated materials** include:
 - (a) Class A
 - (b) Class B
 - (c) Class C
 - (d) Class D
 - (e) Class E.

7. **Safety equipment** may include, as necessary:
 - (a) Adequate range of signing, lighting and guarding equipment (including signs, cones, signals, lamps, footway boards, barriers, portable traffic signals)
 - (b) High-visibility safety equipment

(c) Suitable materials to construct ramps.

8. High risk areas include:

- (a) Utilities apparatus
- (b) In close proximity to trees
- (c) Bad ground conditions
- (d) Special engineering difficulty.

Unit title	Monitoring reinstatement and compaction of backfill materials
Unit reference number	012
Unit aim	
This unit is designed to allow the learner to demonstrate the skills and knowledge required to monitor the reinstatement and compaction of backfill materials. The learner will be able to monitor the selection and storage of backfill materials, monitor the selection of compaction plant for backfilling operations, monitor the construction of the backfill layer and monitor the action taken to avoid damage to underground apparatus during backfilling. The learner will also be able to monitor site safety throughout backfill operations.	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Monitor the selection and storage of backfill materials in footway and carriageway reinstatement.	1.1 Ensure that materials selected for reuse and imported materials are checked against the range of backfill materials permitted in the current specification.
	1.2 Ensure that the correct backfill materials are selected for use as the surround for utilities apparatus and in sensitive areas.
	1.3 Ensure that the correct quantities of materials are calculated for use.
	1.4 Ensure that safe arrangements are made for the storage of reusable and imported materials in accordance with current specifications and procedures .
	1.5 Ensure that safe temporary storage arrangements are made for materials not suitable for reuse in accordance with current specifications and procedures .
	1.6 Ensure that the quantities of materials selected for reuse meet the reinstatement requirements.
	1.7 Check for problems with the selection and storage of backfill materials and confirm the appropriate remedial action required.
2. Understand how to monitor the selection and storage of backfill materials in footway and carriageway reinstatement.	2.1 Describe the range of backfill materials permitted in the current specification.
	2.2 Explain the factors that influence the selection of materials for use as backfill or for disposal.
	2.3 Describe the consequences of using unsuitable materials for backfill.
	2.4 Describe the materials that are suitable for use in high risk areas .
	2.5 Describe safe storage arrangements for: (a) Reusable materials (b) Imported materials (c) Materials unsuitable for reuse.
	2.6 Explain how the characteristics of materials affect storage arrangements.
	2.7 Describe potential problems with selection and storage of backfill materials , and the appropriate remedial action.

3. Monitor the selection of plant for compaction of backfill material.	3.1 Ensure that the compaction plant is: (a) Suitable for the location and material (b) Suitable for the dimensions and access provisions of the site (c) In working condition and safe to use.
	3.2 Check for any problems with the selection of compaction plant and confirm the appropriate remedial action required.
4. Understand how to monitor the selection of plant for compaction of backfill material.	4.1 Explain the factors that influence the selection of compaction plant .
	4.2 Describe how to check that the compaction plant is fit for purpose.
	4.3 Describe potential problems with the selection of compaction plant , and the appropriate remedial action.
5. Monitor the construction of the backfill layer.	5.1 Ensure that the backfill layer is constructed in accordance with the: (a) Specification (b) Existing pavement structure (c) Road type.
	5.2 Ensure that the backfill layer is checked using suitable equipment and materials for the job.
	5.3 Check that the backfill layer is constructed correctly to: (a) The compaction level (b) The layer thickness (c) The degree of compaction (d) Specifications in high risk areas .
	5.4 Check for any problems with the construction of the backfill layer and confirm the appropriate remedial action required.
6. Understand how to monitor the construction of the backfill layer.	6.1 Describe how to interpret the specification for constructing the backfill layer in footway and carriageway reinstatement.
	6.2 Describe how to check the construction of the backfill layer to ensure: (a) The correct use of equipment and materials (b) The achieved compaction level (c) The correct layer thickness and degree of compaction.
	6.3 Describe the methods used to confirm that construction of the backfill layer meets specifications .
	6.4 Describe potential problems with the construction of the backfill layer, and the appropriate remedial action.
7. Monitor the action taken to avoid damage to underground apparatus during backfill operations.	7.1 Ensure that exposed utilities apparatus is identified correctly.
	7.2 Ensure the exposed utilities apparatus is safely supported and protected .
	7.3 Ensure that precautions are taken to minimise the risk of damage to utilities apparatus .
	7.4 Identify damage to underground utilities apparatus and confirm the action required.

<p>8. Understand how to monitor the action taken to avoid damage to underground apparatus during backfill operations.</p>	<p>8.1 Explain how to identify the different types of utilities apparatus on-site.</p>
	<p>8.2 Describe different methods of safely supporting and protecting exposed utilities apparatus.</p>
	<p>8.3 Explain the potential risks and consequences of damage to utilities apparatus.</p>
	<p>8.4 Explain the precautions required to avoid damage to utilities apparatus.</p>
	<p>8.5 Describe the potential problems arising from damage to utilities apparatus, and the appropriate remedial action.</p>
<p>9. Monitor site safety.</p>	<p>9.1 Ensure that a risk assessment has been carried out.</p>
	<p>9.2 Monitor site operations in accordance with health and safety requirements.</p>
	<p>9.3 Assess site conditions in accordance with health and safety requirements.</p>
	<p>9.4 Ensure that safety equipment is available and fit for purpose.</p>
	<p>9.5 Ensure that safe working practices are followed in line with current relevant specifications.</p>
	<p>9.6 Check for risks to site safety and confirm the appropriate remedial action required.</p>
	<p>9.7 Ensure that the site is left in a clean and safe condition.</p>
<p>10. Understand how to monitor site safety.</p>	<p>10.1 Explain the purpose of an on-site risk assessment.</p>
	<p>10.2 Describe the health and safety requirements for site operations.</p>
	<p>10.3 Describe the health and safety requirements for different site conditions.</p>
	<p>10.4 Describe the safety equipment required during site operations and how to ensure that it is fit for purpose.</p>
	<p>10.5 Describe safe working practices on-site.</p>
	<p>10.6 Describe the potential risks to site safety and the appropriate remedial action.</p>
	<p>10.7 Describe how to leave the site in a clean and safe condition.</p>

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Materials** include:

- (a) Class A
- (b) Class B
- (c) Class C
- (d) Class D
- (e) Class E.

2. **Specifications and procedures** include:

- (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
- (b) Health and Safety Guidance 47, Avoiding Danger from Underground Services
- (c) Health and Safety Guidance 150, Health and Safety in Construction
- (d) Manufacturers' operating procedures for powered tools and plant
- (e) *Safety and Street Works and Road Works – A Code of Practice*.

3. **Safe working practices** may include:

- (a) Safe use of tools and equipment
- (b) Use of appropriate PPE
- (c) Use of risk assessment methods to identify and control hazards on-site
- (d) Precautions to minimise danger or inconvenience to road users
- (e) Precautions to minimise danger or inconvenience to site personnel
- (f) Precautions to minimise damage to **equipment** or apparatus.

4. **Compaction plant/powering equipment** includes:

- (a) Vibro tamper
- (b) Vibrating plate
- (c) Vibrating roller
- (d) Percussive rammer.

5. Measuring **equipment** may include, as necessary:

- (a) Measuring devices, rule and tape.

6. **Utilities apparatus** includes:

- (a) Plastic and metallic gas mains
- (b) Plastic and metallic water mains
- (c) Sewers and drains
- (d) High- and low-voltage electricity cables
- (e) Telecommunications and television cables.

7. Utilities apparatus is **safely supported and protected** using:

- (a) Slings
- (b) Ropes
- (c) Props.

8. **Safety equipment** may include, as necessary:

- (a) An adequate range of signing, lighting and guarding equipment (including signs, cones, signals, lamps, footway boards, barriers, portable traffic signals)
- (b) High-visibility safety equipment
- (c) Suitable materials to construct ramps.

9. **High risk areas** include:

- (a) The surround for utilities apparatus
- (b) In close proximity to trees
- (c) Bad ground conditions
- (d) Special engineering difficulty.

Unit title	Monitoring reinstatement of sub-base and base in non-bituminous materials
Unit reference number	013
Unit aim	
This unit is designed to allow the learner to demonstrate the skills and knowledge required to monitor the reinstatement of sub-base and road base in non-bituminous materials. The learner will be able to monitor the selection of non-bituminous materials, monitor the selection of compaction plant for the reinstatement of sub-base and road base and monitor the construction of the sub-base and road base. The learner will also be able to monitor site safety throughout sub-base and road base reinstatement.	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Monitor the selection of non-bituminous materials for sub-base and base (road base) reinstatement.	1.1 Ensure that excavated materials for reuse or disposal are identified and checked against the current specification .
	1.2 Ensure that imported materials selected for use are identified and checked against the current specification .
	1.3 Ensure that the quantities of materials selected for use meet reinstatement requirements.
	1.4 Ensure that reusable and imported materials are stored in accordance with current specifications and procedures .
	1.5 Ensure that safe temporary storage arrangements are made for materials not suitable for reuse in accordance with current specifications and procedures .
	1.6 Check for any problems that arise with the selection and storage of sub-base and road base materials and confirm the appropriate remedial action required.
2. Understand how to monitor the selection of non-bituminous materials for sub-base and road base reinstatement.	2.1 Describe the range of sub-base and road base materials permitted in the current specification .
	2.2 Explain factors influencing the selection of materials for use in sub-base and road base and the consequences of using unsuitable materials .
	2.3 Calculate quantities of different materials that are used in sub-base and road base reinstatement.
	2.4 Describe safe storage arrangements for: (a) Reusable materials (b) Imported materials (c) Materials unsuitable for reuse.
	2.5 Describe potential problems with selection and storage of sub-base and road base materials , and the appropriate remedial action.

<p>3. Monitor the selection of plant for compaction of sub-base and road base material.</p>	<p>3.1 Ensure that the compaction plant is:</p> <ul style="list-style-type: none"> (a) Suitable for the location and materials (b) Suitable for the dimensions and access provisions of the site (c) In working condition and safe to use. <p>3.2 Check for any problems with the selection of plant for the compaction of sub-base and road base material and confirm the appropriate remedial action.</p>
<p>4. Understand how to monitor the selection of plant for compaction of sub-base and road base material.</p>	<p>4.1 Explain the factors that influence the selection of compaction plant.</p> <p>4.2 Describe how to check that the compaction plant is in working condition and safe to use.</p> <p>4.3 Describe potential problems with the selection of compaction plant for sub-base and road base reinstatement, and the appropriate remedial action.</p>
<p>5. Monitor the construction of sub-base and road base materials.</p>	<p>5.1 Ensure that the backfill or surround has been adequately prepared to receive subsequent layers.</p> <p>5.2 Ensure that the non-bituminous layer is constructed in accordance with:</p> <ul style="list-style-type: none"> (a) The specification (b) The existing pavement structure and road type. <p>5.3 Using the correct measuring equipment, check that the layers are constructed:</p> <ul style="list-style-type: none"> (a) Using suitable powered equipment and materials (b) To the correct compaction level (c) To the correct layer thickness and degree of compaction (d) Correctly in high risk areas. <p>5.4 Check for any problems with the construction of the sub-base and road base and confirm the appropriate remedial action.</p>
<p>6. Understand how to monitor the construction of sub-base and road base materials.</p>	<p>6.1 Explain how to identify when the backfill or surround is adequately prepared to receive subsequent layers.</p> <p>6.2 Describe how to interpret the specification for constructing the non-bituminous layer in different pavement structures and road types.</p> <p>6.3 Describe how to check construction of the layers to ensure the:</p> <ul style="list-style-type: none"> (a) Correct use of equipment and materials (b) Achieved compaction level (c) Correct layer thickness and degree of compaction (d) Correct construction in high risk areas. <p>6.4 State the measuring equipment for checking the construction of the sub-base and road base.</p> <p>6.5 Describe potential problems with the construction of the sub-base and road base, and the appropriate remedial action.</p>

7. Monitor site safety.	7.1 Ensure that a risk assessment has been carried out.
	7.2 Monitor site operations in accordance with health and safety requirements.
	7.3 Assess site conditions in accordance with health and safety requirements.
	7.4 Ensure that safety equipment is available and fit for purpose.
	7.5 Ensure that safe working practices are followed in line with health and safety requirements and current relevant specifications .
	7.6 Check for risks to site safety and confirm the appropriate remedial action required.
	7.7 Ensure that the site is left in a clean and safe condition.
8. Understand how to monitor site safety.	8.1 Explain the purpose of an on-site risk assessment.
	8.2 Describe the health and safety requirements for site operations.
	8.3 Describe the health and safety requirements for different site conditions.
	8.4 Describe the safety equipment required during site operations and how to ensure that it is fit for purpose.
	8.5 Describe safe working practices on-site.
	8.6 Describe the potential risks to site safety and the appropriate remedial action.
	8.7 Describe how to leave the site in a clean and safe condition.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Materials** include:

- (a) Granular Type 1 sub-base material
- (b) Excavated granular sub-base material Class A
- (c) Category 3 cement bound material (CBM3)
- (d) Foamed concrete.

2. **Specifications and procedures** include:

- (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
- (b) Health and Safety Guidance 150, Health and Safety in construction
- (c) Safety at Street Works and Road Works – A Code of Practice.

3. **Safe working practices** include:

- (a) Safe use of tools and equipment
- (b) Use of PPE
- (c) Use of risk assessment methods to identify and control hazards on-site
- (d) Precautions to minimise danger or inconvenience to road users
- (e) Precautions to minimise danger or inconvenience to site personnel
- (f) Precautions to minimise damage to equipment or apparatus.

4. **Compaction plant/powered equipment** includes:

- (a) Vibro tamper
- (b) Vibrating plate
- (c) Vibrating roller
- (d) Percussive rammer
- (e) Hand rammer.

5. **Measuring equipment** may include, as necessary:

- (a) Measuring devices, rule and tape.

6. **Safety equipment** may include, as necessary:

- (a) Adequate range of signing, lighting and guarding equipment (including signs, cones, signals, lamps, footway boards, barriers, portable traffic signals)
- (b) High-visibility safety equipment
- (c) Suitable materials to construct ramps.

7. **High risk areas** include:

- (a) Surrounds for utilities apparatus
- (b) In close proximity to trees
- (c) Bad ground conditions
- (d) Special engineering difficulty.

8. **Pavement structures and road types** (AC 6.2)

- (a) Types 0, 1, 2, 3 and 4 Flexible road construction.

Unit title	Monitoring reinstatement in bituminous materials
Unit reference number	014
Unit aim	
This unit is designed to allow the learner to demonstrate the skills and knowledge required to monitor the reinstatement of flexible base (road base) and surface layers in bituminous materials. The learner will be able to monitor the selection of bituminous materials (hot- and cold lay), monitor the selection of compaction plant for the reinstatement of bituminous materials and monitor the construction of the flexible base (road base) and surface layers. The learner will also be able to monitor site safety throughout sub-base and base (road base) reinstatement.	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Monitor the selection of bituminous materials for flexible footway and carriageway reinstatement.	1.1 Ensure that the bituminous materials are identified and checked against the current specification .
	1.2 Ensure that the quantities of materials selected for use meet reinstatement requirements.
	1.3 Ensure that bituminous materials are stored in line with current specifications and procedures .
	1.4 Check for any problems with the selection and storage of bituminous materials and confirm the appropriate remedial action.
2. Understand how to monitor the selection of bituminous materials for flexible footway and carriageway reinstatement.	2.1 Describe the range of bituminous materials permitted in the current specification .
	2.2 Explain the factors influencing the selection of bituminous materials and the consequences of using unsuitable materials .
	2.3 Calculate quantities of different bituminous materials used in flexible footway and carriageway reinstatement.
	2.4 Describe suitable and safe storage procedures for bituminous materials .
	2.5 Describe potential problems with selection and storage of bituminous materials, and the appropriate remedial action.
3. Monitor the selection of plant for compaction of bituminous materials.	3.1 Ensure that the compaction plant is: (a) Suitable for the location and materials (b) Suitable for the dimensions and access provisions of the site (c) In working condition and safe to use.
	3.2 Check for any problems with the selection of plant for the compaction of bituminous material and confirm the appropriate remedial action.

<p>4. Understand how to monitor the selection of plant for the compaction of bituminous materials.</p>	<p>4.1 Explain the factors that influence the selection of compaction plant.</p>
	<p>4.2 Describe how to check that the compaction plant is in working condition and safe to use.</p>
	<p>4.3 Describe potential problems with the selection of compaction plant for reinstatement in bituminous materials, and the appropriate remedial action.</p>
<p>5. Monitor the construction of flexible base (road base) and surface layers in hot- and cold lay bituminous materials.</p>	<p>5.1 Ensure that the base (road base) and flexible surface layers are constructed in accordance with: (a) The specification (b) The existing pavement structure and road type.</p>
	<p>5.2 Using the correct measuring equipment, check that the layers are constructed: (a) Using suitable powered equipment and materials (b) To the correct compaction level (c) To the correct layer thickness and degree of compaction.</p>
	<p>5.3 Check that the texture depth and finished level of the surface reinstatement are correct.</p>
	<p>5.4 Ensure that the profile of the finished surface is within permitted tolerances.</p>
	<p>5.5 Check for any problems with the construction of the base (road base) and flexible surface layers and confirm the appropriate remedial action.</p>
<p>6. Understand how to monitor the construction of flexible, base (road base) and surface layers in hot- and cold lay bituminous materials.</p>	<p>6.1 Describe how to interpret the specification for constructing the bituminous flexible, base (road base) and surface layers in different pavement structures and road types.</p>
	<p>6.2 Describe the intervention limits permitted in specifications.</p>
	<p>6.3 Describe how to check construction of the layers to ensure the: (a) Correct use of equipment and materials (b) Achieved compaction level (c) Correct layer thickness, degree of compaction and permitted tolerances.</p>
	<p>6.4 Describe how to check that the texture depth and finished level of the surface reinstatement are correct.</p>
	<p>6.5 Describe how to check that the profile of the finished surface is within permitted tolerances.</p>
	<p>6.6 Describe potential problems with the construction of the base (road base) and surface layers and the appropriate remedial action.</p>

7. Monitor site safety.	7.1 Ensure that a risk assessment has been carried out.
	7.2 Monitor site operations in accordance with health and safety requirements.
	7.3 Assess site conditions in accordance with health and safety requirements.
	7.4 Ensure that safety equipment is available and fit for purpose.
	7.5 Ensure that safe working practices are followed in line with health and safety requirements and current relevant specifications .
	7.6 Check for risks to site safety and confirm the appropriate remedial action required.
	7.7 Ensure that the site is left in a clean and safe condition.
8. Understand how to monitor site safety.	8.1 Explain the purpose of an on-site risk assessment.
	8.2 Describe the health and safety requirements for site operations.
	8.3 Describe the health and safety requirements for different site conditions.
	8.4 Describe the safety equipment required during site operations and how to ensure that it is fit for purpose.
	8.5 Describe safe working practices on-site.
	8.6 Describe the potential risks to site safety and the appropriate remedial action.
	8.7 Describe how to leave the site in a clean and safe condition.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Materials** are identified for constructing (road) base and for constructing an asphalt concrete surface course to BSEN13108 and PD6691 in accordance with specifications, to include:

- (a) Deferred set mixtures for reinstatement
- (b) Permanent cold lay binder course materials
- (c) Edge sealants
- (d) Dense binder course materials (20mm nominal stone size), hot rolled asphalt 50/20 binder course
- (e) Close graded surface course materials (10mm stone size), hot rolled asphalt 30/14 surface course
- (f) Hot rolled asphalt binder and surface course
- (g) Close graded surface course materials (10mm stone size)
- (h) Asphalt concrete dense surface course
- (i) Stone mastic asphalt surface and binder course
- (j) Pre-coated 14mm or 20mm chippings
- (k) Tack coat.

(Note: In small excavations and narrow trenches, the preferred binder course mixture may be replaced by any surface course mixture given in the specification, for the respective road type, provided the same mixture is used as the surface course.)

2. **Factors** influencing the selection of materials and compaction plant include:

- (a) Constituent mix for asphalt concrete
- (b) Temperature limits for hot bituminous materials
- (c) Polished stone values
- (d) Aggregate abrasion values
- (e) Penetration grade of binders
- (f) Constituent mix for hot dense bituminous materials.

3. **Specifications and procedures** include:

- (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
- (b) Health and Safety Guidance 150, Health and Safety in Construction
- (c) Manufacturers' operating procedures for powered tools and plant
- (d) Safety and Street *Works and Road Works – A Code of Practice*.

4. **Safe working practices** include:

- (a) Safe use of tools and equipment
- (b) Use of appropriate PPE
- (c) Use of risk assessment methods to identify and control hazards on-site
- (d) Precautions to minimise danger or inconvenience to road users
- (e) Precautions to minimise danger or inconvenience to site personnel
- (f) Precautions to minimise damage to equipment or apparatus
- (g) Safe working practice for working with molten bitumen

(h) Personal hygiene measures in connection with skin contamination.

5. **Compaction plant/powered equipment** includes:

- (a) Vibro tamper
- (b) Vibrating plate
- (c) Vibrating roller
- (d) Percussive rammer.

6. **Equipment** may include, as necessary:

- (a) Measuring devices, rule and tape
- (b) Forks
- (c) Rakes
- (d) Shovels
- (e) Tool heater
- (f) Hand tamper.

7. **Safety equipment** may include, as necessary:

- (a) An adequate range of signing, lighting and guarding equipment (including signs, cones, signals, lamps, footway boards, barriers, portable traffic signals)
- (b) High-visibility safety equipment
- (c) Suitable materials to construct ramps.

Unit title	Monitoring reinstatement of concrete slabs
Unit reference number	015
Unit aim	
This unit is designed to allow the learner to demonstrate the skills and knowledge required to monitor the reinstatement of concrete slabs. The learner will be able to monitor preparation and construction of concrete slabs and will be able to monitor site safety throughout concrete slab reinstatement.	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Monitor the preparation for concrete slab reinstatement.	1.1 Ensure that the materials selected for use are identified and checked against the current specification .
	1.2 Ensure that the equipment selected for use is: (a) Suitable for the site conditions and materials (b) Suitable for the prescribed operation (c) In working condition and safe to use.
	1.3 Ensure that sub-base defects are identified and made good using specified sub-base materials .
	1.4 Ensure that slab edges are prepared according to the specification to form a support using steel dowel bars .
	1.5 Ensure that the slip membrane is positioned according to the specification .
	1.6 Ensure that slab edge support is provided.
	1.7 Ensure that mesh reinforcement is fixed according to specification .
	1.8 Check for any problems with the preparation for concrete slab reinstatement and confirm the appropriate remedial action required.

<p>2. Understand how to monitor the preparation for concrete slab reinstatement.</p>	2.1 Identify the type of carriageway on which the reinstatement of concrete slabs is carried out.
	2.2 Explain the factors that influence the selection of materials and equipment for reinstating concrete slabs.
	2.3 Identify different potential sub-base defects.
	2.4 Explain how to rectify different sub-base defects.
	2.5 Describe the procedures for positioning the slip membrane and preparing slab edges.
	2.6 Describe the procedures for providing taper edge and dowel bar support.
	2.7 Describe the procedures for laying and fixing mesh reinforcement .
	2.8 Describe potential problems with the preparation for concrete slab reinstatement and the appropriate remedial action.
<p>3. Monitor the reinstatement of concrete slabs.</p>	3.1 Monitor the construction of the concrete slab, checking: (a) Replacement of missing or damaged joints (b) Use of concrete (c) Degree of compaction (d) Air entrainment.
	3.2 Ensure that the finish is laid to the permitted tolerances and textured to match the existing surface.
	3.3 Check the use of a curing membrane.
	3.4 Check for any problems with the reinstatement of concrete slabs and confirm the appropriate remedial action.
<p>4. Understand how to monitor the reinstatement of concrete slabs.</p>	4.1 Describe methods of constructing the concrete slab.
	4.2 Describe different joints used in constructing concrete slabs.
	4.3 Explain the functions of joints in the construction of concrete slabs.
	4.4 Explain factors that affect the quality of the finished concrete surface.
	4.5 Describe checks and tests to confirm the quality of the concrete slab and finished surface.
	4.6 Describe potential problems with the reinstatement of concrete slabs, and the appropriate remedial action.

5. Monitor site safety.	5.1 Ensure that a risk assessment has been carried out.
	5.2 Monitor site operations in accordance with health and safety requirements.
	5.3 Assess site conditions in accordance with health and safety requirements.
	5.4 Ensure that safety equipment is available and fit for purpose.
	5.5 Ensure that safe working practices are followed in line with health and safety requirements and current relevant specifications .
	5.6 Check for risks to site safety and confirm the appropriate remedial action required.
	5.7 Ensure that the site is left in a clean and safe condition.
6. Understand how to monitor site safety.	6.1 Explain the purpose of an on-site risk assessment.
	6.2 Describe the health and safety requirements for site operations.
	6.3 Describe the health and safety requirements for particular site conditions.
	6.4 Describe the safety equipment required during site operations and how to ensure that it is fit for purpose.
	6.5 Describe safe working practices on-site.
	6.6 Describe the potential risks to site safety and the appropriate remedial action.
	6.7 Describe how to leave the site in a clean and safe condition.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Equipment** includes:

- (a) Hand tools – including, as necessary, square mouth shovel, hand pick, rake, hand rammer, reinforcing bar cutters, wire cutting tools, trowel, hand tamping beam, hard bristle broom
- (b) Powered equipment – including vibro tamper, powered concrete-cutting equipment, powered concrete drill, powered saw, a proprietary vibrator.

2. **Sub-base material** includes:

- (a) Granular sub-base Type 1 material
- (b) Pavement quality concrete (as described in specifications and SHW 1000)
- (c) Alternative reinstatement materials (ARMs).

3. **Specifications and procedures** include:

- (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
- (b) Specification for Highways Works Series 1000
- (c) Health and Safety Guidance 150, Health and Safety in Construction
- (d) Manufacturers' operating procedures for powered tools and plant
- (e) *Safety and Street Works and Road Works – A Code of Practice*.

4. **Safe working practices** include:

- (a) Safe use of tools and equipment
- (b) Use of PPE
- (c) Use of risk assessment methods to identify and control hazards on-site
- (d) Precautions to minimise danger or inconvenience to road users
- (e) Precautions to minimise danger or inconvenience to site personnel
- (f) Precautions to minimise damage to equipment or apparatus.

5. The **dowel bars** are steel dowel bars of 20mm or 25mm nominal diameter.

6. The **mesh reinforcement** includes standard weights of mesh reinforcement.

7. **Joints** include:

- (a) Safe use of tools and equipment
- (a) Dowel bars and their assembly
- (b) Tie bars
- (c) Supporting cradles
- (d) Contraction joints
- (e) Expansion joints
- (f) Warping joints
- (g) Construction joints
- (h) Prefabricated joint assemblies.

8. **Concrete** includes:

- (a) Class 40 concrete
- (b) Air entrainment additive.

9. **Safety equipment** may include, as necessary:

- (a) Adequate range of signing, lighting and guarding equipment (including signs, cones, signals, lamps, footway boards, barriers, portable traffic signals)
- (b) High-visibility safety equipment
- (c) Suitable materials to construct ramps.

10. **Types of carriageway** on which concrete slab reinstatement is carried out (AC 2.1) include:

- (a) Types 0-4 concrete and bituminous overlaid concrete roads and commercial vehicle crossings.

11. **Factors that influence the selection** of materials and equipment (AC 2.2) include:

- (a) The specification options for concrete slabs
- (b) Quality control of ready mixed and site mixed concrete
- (c) The position and spacing of dowel bars and reinforcement
- (d) Methods of curing concrete
- (e) The treatment of commercial vehicle access.

12. **Factors that affect the quality of the finished** concrete surface (AC 4.4) include:

- (a) Visual defects – transverse, longitudinal and random cracking.

13. **Checks and tests** to confirm quality of concrete (AC 4.5) include:

- (a) Profile checks – finished level in respect of surrounding surface and surface texture
- (b) Concrete cube crushing test
- (c) Slump test.

Unit title	Monitoring reinstatement of modular surfaces, concrete footways
Unit reference number	016
Unit aim	
<p>This unit is designed to allow the learner to demonstrate the skills and knowledge required to monitor the reinstatement of modular surfaces and concrete footways. The learner will be able to monitor the reinstatement of concrete blocks (or similar modules) in carriageways or footways, the reinstatement of paving slabs in footways and the reinstatement of concrete footways. The learner will also be able to monitor site safety throughout modular surface and concrete footway reinstatement.</p>	

Learning outcomes The learner will:	Assessment criteria The learner can:
1. Monitor the reinstatement of concrete blocks in carriageways or footways.	1.1 Ensure that the materials selected for use are identified and checked against the current specification .
	1.2 Ensure that the equipment is: (a) Suitable for the site conditions and materials (b) Suitable for the prescribed operation (c) In working condition and safe to use.
	1.3 Ensure that sub-base defects are identified and made good using specified materials .
	1.4 Monitor the reinstatement operation, including: (a) The laying of bedding material (b) The thickness of the surcharge and compactive effort (c) The treatment of joints (d) Matching and bonding of modules with existing modules.
	1.5 Assess the finished modular surface to ensure the quality of the reinstatement operation.
	1.6 Check for any problems with the reinstatement of concrete blocks and confirm the appropriate remedial action required.

<p>2. Understand how to monitor the reinstatement of concrete blocks in carriageways or footways.</p>	2.1 Identify the types of roads on which the reinstatement of concrete blocks is carried out.
	2.2 Explain the factors that influence the selection of materials and equipment for reinstating concrete blocks.
	2.3 Explain how to identify different potential sub-base defects.
	2.4 Explain how to rectify different sub-base defects.
	2.5 Describe the procedures and quality checks and tests relating to: (a) Laying of bedding materials (b) Laying concrete blocks (c) Jointing.
	2.6 Explain the factors that affect the quality of the finished modular surface.
	2.7 Describe potential problems with reinstatement of concrete blocks, and the appropriate remedial action.
<p>3. Monitor the reinstatement of paving slabs in footways.</p>	3.1 Ensure that materials selected for use are identified and checked against the current specification .
	3.2 Ensure that the equipment is: (a) Suitable for the site conditions and materials (b) Suitable for the prescribed operation (c) In working condition and safe to use.
	3.3 Ensure that sub-base defects are identified and made good using specified materials .
	3.4 Monitor the reinstatement operation, including: (a) The laying of bedding material (b) The thickness of the surcharge and compactive effort (c) The treatment of joints (d) Matching and bonding of modules with existing modules.
	3.5 Assess the finished modular surface to ensure the quality of the reinstatement operation.
	3.6 Check for any problems with the reinstatement of paving slabs and confirm the appropriate remedial action required.
<p>4. Understand how to monitor the reinstatement of paving slabs in footways.</p>	4.1 Explain the factors that influence the selection of materials and equipment for reinstating paving slabs.
	4.2 Explain how to identify different potential sub-base defects.
	4.3 Explain how to rectify different sub-base defects.
	4.4 Explain the factors that affect the quality of the finished modular surface.
	4.5 Describe potential problems with reinstatement of paving slabs and the appropriate remedial action.

5. Monitor the reinstatement of concrete footways.	5.1 Ensure that the materials selected for use are identified and checked against the current specification .
	5.2 Ensure that the equipment is: (a) Suitable for the site conditions and materials (b) Suitable for the prescribed operation (c) In working condition and safe to use.
	5.3 Ensure that sub-base defects are identified and made good using specified materials .
	5.4 Monitor the reinstatement operation, including: (a) Laying the concrete (b) Compaction operations (c) Concrete curing method.
	5.5 Assess the finished concrete surface to ensure the quality of the reinstatement operation.
	5.6 Check for any problems with the reinstatement of concrete footways and confirm the appropriate remedial action required.
6. Understand how to monitor the reinstatement of concrete footways.	6.1 Identify the types of footway on which concrete reinstatement is carried out.
	6.2 Explain the factors that influence the selection of materials and equipment for reinstating concrete footways.
	6.3 Explain how to identify different potential sub-base defects.
	6.4 Explain how to rectify different sub-base defects.
	6.5 Describe the procedures and quality checks and tests relating to: (a) Laying concrete (b) Compacting concrete (c) Curing concrete.
	6.6 Explain the factors that affect the quality of the concrete surface finish.
	6.7 Describe the checks required to ensure the quality of the finished concrete surface .
	6.8 Describe potential problems with reinstatement of concrete footways and the appropriate remedial action required.

7. Monitor site safety.	7.1 Ensure that a risk assessment has been carried out.
	7.2 Monitor site operations in accordance with health and safety requirements.
	7.3 Assess site conditions in accordance with health and safety requirements.
	7.4 Ensure that safety equipment is available and fit for purpose.
	7.5 Ensure that safe working practices are followed in line with health and safety requirements and current relevant specifications .
	7.6 Check for risks to site safety and confirm the appropriate remedial action required
	7.7 Ensure that the site is left in a clean and safe condition.
8. Understand how to monitor site safety.	8.1 Explain the purpose of an on-site risk assessment.
	8.2 Describe the health and safety requirements for site operations.
	8.3 Describe the health and safety requirements for particular site conditions.
	8.4 Describe the safety equipment required during site operations and how to ensure that it is fit for purpose.
	8.5 Describe safe working practices on-site.
	8.6 Describe the potential risks to site safety and the appropriate remedial action.
	8.7 Describe how to leave the site in a clean and safe condition.

Evidence Requirements/Scope

Some terms, used in the assessment criteria, cover a range of situations, as follows:

1. **Materials** include:

- (a) Appropriate sub-base materials for repairing defects
- (b) Bedding and grouting materials for use in modular reinstatement (including sand and mortar)
- (c) Precast concrete blocks (or similar modules) to match the existing paving for reinstatement
- (d) Natural or precast paving slabs to match the existing surface for reinstatement
- (e) Class 30 concrete for concrete footway reinstatement
- (f) Slip membrane (for concrete footway reinstatement)
- (g) Curing material (for concrete footway reinstatement).

2. **Specifications and procedures** include:

- (a) Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR)
- (b) BS 7533 Series
- (c) Health and Safety Guidance 150, Health and Safety in Construction
- (d) Manufacturers' operating procedures for powered tools and plant
- (e) Application Guide 26
- (f) *Safety and Street Works and Road Works – A Code of Practice.*

3. **Safe working practices** include:

- (a) Safe use of tools and equipment
- (b) Use of PPE (including, as necessary: high-visibility jacket or waistcoat, hard hat, ear defenders, gloves, protective footwear, waterproof clothing, eye protection visor or goggles, dust mask)
- (c) Use of risk assessment methods to identify and control hazards on-site
- (d) Precautions to minimise danger or inconvenience to road users
- (e) Precautions to minimise danger or inconvenience to site personnel
- (f) Precautions to minimise damage to equipment or apparatus.

4. **Equipment** includes:

- (a) Hand tools – including, as necessary, square and round mouth shovels, lifting and clearing tools (hand pick, crowbar, bolster, club hammer, wire brush, hard bristle broom, rake), hand rammer, straight edge (or suitably cut) timber, trowel, textured roller.
- (b) Powered equipment – including, as necessary, concrete-cutting equipment, concrete saw, vibro tamper, vibrating plate.

5. **Safety equipment** may include, as necessary:

- (a) An adequate range of signing, lighting and guarding equipment (including signs, cones, signals, lamps, footway boards, barriers, portable traffic signals)
- (b) High-visibility safety equipment
- (c) Suitable materials to construct ramps.

6. **Types of roads** (AC 2.1) include:
 - (a) Modular surfaced carriageways and footways
 - (b) High duty footways
 - (c) High amenity footways.

7. **Factors that influence the selection** of materials and equipment for reinstating concrete blocks (AC2.2) include:
 - (a) Requirement to match materials with existing modular surface
 - (b) Suitable bedding materials
 - (c) Suitable grouting materials.

8. **Factors that affect the quality** of the finished modular surface (AC 2.6 and AC 4.4) include:
 - (a) Moisture content of bedding sand
 - (b) Thickness of surcharge and compactive effort
 - (c) Treatment of joints
 - (d) Matching of and bonding with existing modules.

9. **Assessment of the finished modular surface** (AC 1.5 and AC 3.5) include:
 - (a) Visual inspection – surface defects, edge depression, surface crowning, surface regularity, jointing
 - (b) Measurement of surface profile.

10. **Factors that influence the selection** of materials and equipment for reinstating paving slabs (AC 4.1) include:
 - (a) Matching and bonding modules with existing modules
 - (b) Suitable bedding materials
 - (c) Suitable grouting materials
 - (d) Replacement of damaged modules
 - (e) Treatment of joints.

11. **Types of footway** (AC 6.1) include:
 - (a) Concrete surfaced footways
 - (b) High duty footways
 - (c) High amenity footways.

12. **Assessment of the finished concrete surface** (AC 5.5) includes:
 - (a) Visual inspection for transverse, longitudinal and random cracking
 - (b) Profile checks on finished level in respect of surrounding surface and surface texture.

13. **Procedures** for reinstating concrete (AC 6.5) include:
 - (a) Quality control of site mixed and ready mixed concrete
 - (b) Quality control of ready mixed and site mixed concrete
 - (c) The position and spacing of dowel bars and reinforcement
 - (d) Methods of curing concrete
 - (e) The treatment of commercial vehicle access.

14. **Factors that affect the quality of the finished** concrete surface (AC 4.4) include:

(a) Visual defects – transverse, longitudinal and random cracking.

15. **Checks and tests** to confirm quality of concrete (AC 4.5) include:

(a) Profile checks – finished level in respect of surrounding surface and surface texture

(b) Concrete cube crushing test

(c) Slump test.

6 How is this Qualification Delivered?

In order to deliver this qualification, you will need to be a Lantra-approved provider. Details of how to become an approved provider are available by contacting our sales team via sales@lantra.co.uk.

Approved providers should contact our quality and standards team to register for delivery of the qualification. It is important that providers are approved on a per-qualification basis as we are required to ensure that we have a quality assurance strategy in place and because it ensures that providers receive the support they need. Upon scheme approval, you will receive the relevant documentation for delivery.

Learners must be registered via QuartzWeb. Details of this process are available in the QuartzWeb User Guide. Providers must submit the required information for learner registration. Learners should be registered for the qualification once they have been enrolled with the provider. Failure to register learners may prevent assessments from taking place. Sanctions may be imposed on providers if learners are not registered before the assessment takes place.

Learners will complete the necessary elements of the assessment and be assessed by the internal assessor. The provider will compile and send the Learner Achievement Record and Cohort Assessment Summary to Lantra for external quality assurance.

Providers are not required to send learner evidence to Lantra; this should be retained by the provider. However, Lantra reserves the right to request to see learner work as part of the quality assurance process, so this should be retained and filed so that it can be easily located.

Where a provider is running a qualification well, Lantra may award Direct Claims Status (DCS), which enables certificates to be claimed in advance of external quality assurance taking place.

Delivery in the UK

The specification for this qualification is approved for delivery in the United Kingdom.

Qualifications under the old unit and certificate system are technically equivalent throughout the UK. For example, a certificate in *Excavation in the highway* in England is equivalent to the same certificate in Wales, and vice versa. As before, the only condition is that any non-English certificate more than five years old has to have been renewed by assessment or reassessment to be equivalent (certificates that have been renewed by re-registration have not been valid in England since the 2009 regulations introduced reassessment).

The new certificate system has been designed to be fully compatible with old-type certificates outside England. Non-English certificates are all recognised as equivalent to the new English

certificates (with the above proviso on certificates more than five years old).
 For this purpose, the competent authority for the UK, SQA, has formally issued a *Table of Equivalence* on the registration body website This table is reproduced below.

Operative Certificates of Competence- Old/New Equivalents	
<p>Certificates below in Wales and Northern Ireland are equivalent to the following English and Scottish certificates from April 2017.</p> <p>Each certificate in the left column is equivalent to holding new certificates in:</p> <ul style="list-style-type: none"> • 001 Location and avoidance of underground apparatus and • 002 Signing, lighting and guarding plus (in its corresponding row) • The certificate/s below. 	
Certificates in Wales and Northern Ireland	Equivalent certificates in England and Scotland
Excavation in the highway.	003 Excavation in the highway/road.
Excavation, backfilling and reinstatement of construction layers with a cold lay bituminous surface.	003 Excavation in the highway/road. 004 Reinstatement and compaction of backfill materials. 005 Reinstatement of sub-base and base in non-bituminous materials. 006 Reinstatement in cold lay bituminous materials.
Reinstatement of construction layers in hot lay and cold lay bituminous materials.	006 Reinstatement in cold lay bituminous materials. 007 Reinstatement in hot lay bituminous materials.
Reinstatement of concrete slabs.	008 Reinstatement of concrete slabs.
Reinstatement of modular surfaces and concrete footways.	009 Reinstatement of modular surfaces and concrete footways.

Supervisor Certificates of Competence- Old/New Equivalents

Certificates below in Wales and Northern Ireland are equivalent to the following English and Scottish certificates from April 2017.

Each certificate in the left column is equivalent to holding new certificates in:

- 001 Location and avoidance of underground apparatus and
- 010 Monitoring, signing, lighting and guarding plus (in its corresponding row)
- The certificate/s below.

Certificates in Wales and Northern Ireland	Equivalent certificates in England and Scotland
Monitoring excavation in the highway.	011 Monitoring excavation in the highway/road.
Monitoring excavation, backfilling and reinstatement of construction layers with bituminous materials.	011 Monitoring excavation in the highway/road. 012 Monitoring reinstatement and compaction of backfill materials. 013 Monitoring reinstatement of sub-base and base in non-bituminous materials. 014 Monitoring reinstatement in bituminous materials.
Monitoring reinstatement of construction layers in bituminous materials.	014 Monitoring reinstatement in bituminous materials.
Monitoring reinstatement of concrete slabs.	015 Monitoring reinstatement of concrete slabs.
Monitoring reinstatement of modular surfaces and concrete footways.	016 Monitoring reinstatement of modular surfaces and concrete footways.

When the qualification is no longer deemed suitable, for example if technology has moved on and working practices are no longer relevant, Lantra will advise providers of a qualification end date. The end date marks the end of registrations. Any learners registered before this date will be allowed time to complete the qualification. For this qualification, that period will be six months.

Who can Deliver this Qualification?

Only approved Lantra providers can deliver this qualification. For information on becoming approved, please contact Lantra via sales@lantra.co.uk or call on 02476 69 69 96.

Provider Resources

This section contains information about physical resources to which providers must have access to deliver the street works qualification.

Where learners are required to use equipment, apparatus or materials during practical assessments, real equipment, apparatus and materials must be used, which are appropriate for the unit being assessed and which comply with the requirements of current codes of practice.

The specific unit resource requirements are listed below and should be checked to ensure learners have access to the right equipment to meet the assessment requirements.

Note: Learners are required to have access to and wear suitable and correct PPE for the task(s) being assessed, including, as necessary: high-visibility jacket or waistcoat, hard hat, ear defenders, gloves, protective footwear, waterproof clothing, eye protection, visor or goggles and dust mask.

Operative unit resource requirements

When assessing learners for all operative units, please note that the following conditions apply:

- a) The location used must be large enough to allow each learner to carry out the required tasks in the minimum area specified for any excavation or reinstatement operation
- b) Providers must ensure learner numbers comply with the following learner/assessor ratios:
 - i. For unit 002 – Signing, lighting and guarding, with a standard set of resources, a maximum of six learners per assessor
 - ii. With the exception: two learners maximum per assessor may be assessed on the practical use of cable location equipment providing there is no cross-contamination of evidence and the location is large enough to cater for them
 - iii. For units LA and 003-009, with standard resources, a maximum of eight learners per assessor
- c) Due to the nature of street works, assessment must take place in English. It may therefore be necessary for learners to undertake additional learning prior to assessment.

001 – Location and avoidance of underground apparatus

- A suitable location where the learner can demonstrate competence locating a range of services, either on a highway or an area that closely resembles one
- Service plans to include gas, water, electricity and telecommunications
- A range of services commonly found during excavation work on the highway to identify both damaged and undamaged. Please note: assessors must identify details of any damaged apparatus prior to assessments taking place so that they can confirm the accuracy of the learner's observations. This is particularly important if assessments are taking place in a real site situation where the circumstances will vary between assessments
- A site that will allow a minimum of three traceable underground services for at least ten metres is recommended
- Cable locator (signal generator optional) and service plans to include BT, gas, water and electric cables
- All PPE relevant to the operations being carried out.

002/010 – Signing, lighting and guarding

- The site used for assessment may be any one of the following, a:
 1. Real road with unpredictable traffic
 2. Simulated road where traffic is predictable
 3. Simulated road where there is no traffic
- For 2 and 3 above, further evidence from the workplace must be provided which demonstrates that the full scope of the assessment performance criteria has been met from a real road situation (Workplace Evidence). This must be assessed prior to certification and subject to verification. A full set of temporary signing and guarding for works on a footway
- Temporary traffic signals, including Stop/Go boards
- A selection of unsuitable and damaged traffic management equipment (signs, cones, barriers) for learners to determine suitability for use and selection should be provided
- All PPE relevant to the operations being carried out.

003 – Excavation in the highway

- The activities are undertaken either on-site or at a realistic simulated site. Where the site is simulated, there should be enough signing and guarding in place to ascertain work areas
- Assessments are not to be undertaken on excavations where trench support is needed
- The learner will need to carry out an excavation on a Type 4 carriageway. The area to be excavated must be a minimum of 0.7m² and 650mm deep and must contain a minimum of one utility service. The area should be marked out to show the position of services and the extent of the excavation
- Incorporating a granular base and sub-base
- Where the learner is going to be assessed for units 004 and 005, the excavated depth should be at least 650mm to allow for a reasonable backfill layer
- A range of materials (A, B, C, D and E) to identify for reuse or disposal. A minimum of eight should be used to make an informed assessment decision
- A suitable exercise/simulation to demonstrate knowledge of carriageway and footway types and their construction
- All PPE relevant to the operations being carried out.

004 – Reinstatement and compaction of backfill materials

- The activities are undertaken either on-site or at a realistic simulated site. Where the site is simulated, there should be enough signing and guarding in place to ascertain work areas
- Assessments are not to be undertaken on excavations where trench support is needed
- A minimum trench dimension of 0.7m² area and 650mm depth for each operative undertaking the assessment. Where more than one operative is undertaking assessment, each should reinstate separate trenches to prevent cross-contamination of evidence. It is common for the learner to use the excavation for unit O2 and the reinstatement to be in a Type 4 Flexible
- A range of materials (A, B, C, D and E) to identify for reuse or disposal. A minimum of eight should be used to make an informed assessment decision
- Incorporating a minimum of one service commonly found within a highway
- Appropriate hand tools and compaction equipment to select and use
- All PPE relevant to the operations being carried out.

005 – Reinstatement of sub-base and base in non-bituminous materials

- The activities are undertaken either on-site or at a realistic simulated site. Where the site is simulated, there should be enough signing and guarding in place to ascertain work areas
- Assessments are not to be undertaken on excavations where trench support is needed
- A minimum trench dimension of 1m² area and 450mm depth for each operative undertaking assessment. Where more than one operative is undertaking assessment, each should reinstate separate trenches to prevent cross-contamination of evidence
- It is common for the learner to use the trench for unit 004 and the reinstatement to be in a Type 4 Flexible Carriageway with a granular base (road base)
- A range of materials (A, B, C, D and E) to identify for reuse or disposal. A minimum of eight should be used to make an informed assessment decision
- Appropriate hand tools and compaction equipment to select and use
- All PPE relevant to the operations being carried out.

006 – Reinstatement in cold lay bituminous materials

- The activities are undertaken either on-site or at a realistic simulated site. Where the site is simulated, there should be enough signing and guarding in place to ascertain work areas
- A minimum trench dimension of 1.2m² area (not including ironwork) and 100mm depth for each operative undertaking assessment. Where more than one operative is undertaking assessment, each should reinstate separate trenches to prevent cross-contamination of evidence
- It is common for the learner to use the trench for unit 005 and the reinstatement to be in a Type 4 Flexible Carriageway. However, a flexible footway could also be used. Appropriate hand tools and compaction equipment to select and use
- The reinstatement of the surface course (wearing course) should be carried out with the specified compaction equipment, e.g. single drum roller 600kg/m minimum weight or plate compactor 1400kg/m²
- Highway ironwork and kerbs or edge restraints for learners to set line and level
- All PPE relevant to the operations being carried out.

007 – Reinstatement in hot lay bituminous materials

- The activities are undertaken either on-site or at a realistic simulated site. Where the site is simulated, there should be enough signing and guarding in place to ascertain work areas
- A Type 4 Flexible Carriageway with a minimum trench dimension of 1.2m² area (not including ironwork) and 100mm depth for each operative undertaking the assessment. Where more than one operative is undertaking assessment, each should reinstate separate trenches to prevent cross-contamination of evidence
- Appropriate hand tools, tool heater, temperature measuring and compaction equipment to select and use
- The reinstatement of the surface (wearing) course should be carried out with the specified compaction equipment, e.g. single drum roller 600Kg/m minimum weight or plate compactor 1400kg/m²
- A tool heater, thermometer, tack coat and edge joint sealant should also be provided
- All PPE relevant to the operations being carried out.

008 – Reinstatement of concrete slabs

- The activities are undertaken either on-site or at a realistic simulated site. Where the site is simulated, there should be enough signing and guarding in place to ascertain work areas
- A minimum trench dimension of 1.0m² area and 200mm depth in a rigid road should be provided for each operative undertaking assessment and a quantity of GSB Type 1 to make good the sub-base. Where more than one operative is undertaking assessment, each should reinstate separate trenches to prevent cross-contamination of evidence
- Class 40 concrete must be used, in line with the unit requirement
- Sufficient materials to reinstate the slab using taper edge support or dowel bars
- A range of hand tools and compaction equipment should be available to the learner as stated in the Standards. This to include a vibrating poker to compact the concrete, dowel bars (25mm), reinforcement mesh, tie wires and suitable drilling and cutting equipment, polythene sheeting and mixer if not using ready mixed concrete and slump-testing equipment
- All PPE relevant to the operations being carried out.

009 – Reinstatement of modular surfaces, concrete footways

- The activities are undertaken either on-site or at a realistic simulated site. Where the site is simulated, there should be enough signing and guarding in place to ascertain work areas
- A minimum trench dimension of 1.5m² area for modular reinstatement, 1m² for concrete and a minimum of six concrete paving slabs or 1.5m² minimum for each operative undertaking assessment. Where more than one operative is undertaking assessment, each should reinstate separate trenches to prevent cross-contamination of evidence
- Class 30 concrete must be used, in line with the unit requirements
- A range of hand tools, mixing and compaction equipment should be available to the learner as stated in the Standards. This to include bedding material, concrete, kiln dried sand, GSB Type 1 and slump-testing equipment
- Sufficient quantities of materials for each learner
- All PPE relevant to the operations being carried out.

Supervisor units resource requirements

When assessing learners for all supervisor units, please note that the following conditions apply:

- a) While being assessed for monitoring activities, the supervisor will not confer with the operative. The assessor should control this throughout the assessment
- b) External verifiers will monitor the ratio of learners to assessors over time, to ensure that there are enough assessors available at each provider to assess the number of learners. Providers must ensure learner numbers are no greater than eight learners per assessor
- c) Physical resource requirements. When observing operatives undertaking activities, the supervisor must be able to see them working in a typical site situation (either real or simulated):
 - i. Real tools, equipment and materials must be used that are in accordance with the current codes of practice. It is expected that the physical resources observed will match those used for the equivalent operative unit(s), although monitoring activities undertaken by learners could result in a variety of evidence, obtained from more than one site situation
- d) Poor practices and remedial action. If no poor practices take place during the course of the practical assessment, the learner will be unable to make recommendations for remedial action. In this case, the assessor must build in the opportunity for the learner to provide the evidence required at the appropriate time, (e.g. by using further performance evidence or questioning)
- e) Where competence is not demonstrated, the assessor will recommend an action plan for the learner. This should identify any gaps in their evidence and identify further training or experience required prior to reassessment.

For the facilitation of short-answer question papers, providers must ensure the following:

- A suitable, quiet room must be provided for the assessment. This should include an ambient temperature and adequate lighting
- The test room should include a clock which can be seen clearly by all learners
- Desks/tables must be provided that allow learners to work comfortably
- Learners are provided with the permitted reference material as per the guidance below
- Learners are provided with calculators where appropriate
- Learners must be seated sufficiently far apart to ensure that they cannot see each other's work. Lantra recommends a distance of no less than one metre each side
- Providers may not display, prior to or during the test, any reference material that relates to the content of the assessment, or that may assist the learner during the assessment
- Providers must validate the identity of learners with photographic identification
- All learners must be seated at the examination start time.

It is the provider's responsibility to ensure that full, current and clean copies of the listed reference material are made available to each learner. Please refer to the table below for the specific reference material required for each unit. Providers must ensure they have copies of specifications and codes of practice currently in use in England, Wales, Northern Ireland or Scotland. This will largely depend on the location of the assessment provider.

1. Specification for the Reinstatement of Openings in Highways (SROH) or Specification for the Reinstatement of Openings in Roads (SROR), Approved Code of Practice(s)
2. Safety at Street Works and Road Works, Approved Code of Practice (Department for Transport)
3. An Introduction to the Use of Portable Vehicular Signals (Department for Transport)
4. Avoiding Danger from Underground Services HSG 47 (Health and Safety Executive)
5. Volume 1: NJUG Guidelines on The Positioning and Colour Coding of Underground Utilities' Apparatus (National Joint Utilities Group)
6. Roadwork's Theory and Practice
7. Specification for Highway Works, 'Series 1000'.

Note: This document originates from the Department for Transport/Highways Agency, and may be accessed at the following website: www.dft.gov.uk/ha/standards/mchw/index.htm.

The following table gives details of which documents are required to support each unit.

Unit title	Reference documents required
001 – Location and avoidance of underground apparatus	2, 4, 5
002 – Signing, lighting and guarding	2, 3
003 – Excavation in the highway	1, 2, 4, 5
004 – Reinstatement and compaction of backfill materials	1, 2, 4, 5
005 – Reinstatement of sub-base and base in non-bituminous materials	1, 2, 4, 5
006 – Reinstatement in cold lay bituminous materials	1, 2
007 – Reinstatement in hot lay bituminous materials	1, 2
008 – Reinstatement of concrete slabs	1, 2, 6, 7
009 – Reinstatement of modular surfaces, concrete footways	1, 2
010 – Monitoring signing, lighting and guarding	2, 3
011 – Monitoring excavation in the highway	1, 2, 4, 5
012 – Monitoring reinstatement and compaction of backfill materials	1, 2, 4, 5
013 – Monitoring reinstatement of sub-base and base in non-bituminous materials	1, 2, 4, 5
014 – Monitoring reinstatement in bituminous materials	1, 2
015 – Monitoring reinstatement of concrete slabs	1, 2, 6, 7
016 – Monitoring reinstatement of modular surfaces, concrete footways	1, 2

Quality Assurance and Certification

Quality assurance of assessment decisions

This qualification is internally assessed and externally quality assured. This means that providers will need to appoint qualification assessors to evaluate learners and complete assessment paperwork. Where you have more than one assessor, you will need to carry out internal standardisation of each assessor to ensure that they can apply the assessment criteria consistently and accurately. An internal quality assurer (IQA) will need to be appointed, and they will need to sample assessment decisions across the assessors. It is also a requirement that regular standardisation activity is carried out with assessors. The IQA will be responsible for putting this programme in place.

An external quality assurer (EQA) will be appointed to the provider and this person will be responsible for sample-checking assessors' recommendations. This will be at a rate of 10% of the cohort. The EQA will produce a sampling record detailing which work they will want to see. It is important to note that although the EQA will view only a sample of work, they may wish to widen the sample. Therefore, all learner work should be available for inspection.

Lantra operates both on-site and postal external quality assurance for this qualification. You may not, therefore, always have a visit from an EQA, but a sample may be requested for despatch via post; the principle of quality assurance is the same either way. The EQA will review a sample of work and make a recommendation on the assessment decisions of the cohort as a whole.

Your EQA will contact you to make the necessary arrangements regarding the visit (date, venue, etc.) or request the despatch of a sample of work.

Where the EQA is in agreement, this decision will be communicated to Lantra and certificate claims will be processed. Where the EQA is not in agreement, the reasons will be communicated to the provider with supportive feedback to help with future assessment decisions. This may result in learners needing to retake the assessment.

Occasionally, as part of Lantra's ongoing quality assurance strategy, an EQA may be accompanied by either Lantra staff or another EQA. This is to ensure that the EQA is following the correct procedures.

Where DCS is in place, providers will be able to claim certificates before quality assurance has taken place.

When requirements are not met, Lantra will support providers by developing action plans, providing recommendations and, where required, implementing sanctions.

Claiming certification

Providers need to submit a completed Learner Achievement Record and Cohort Assessment Summary, which allows Lantra to process the certificates following the external quality assurance approval. Where DCS is in place, the certificates will be issued prior to external quality assurance taking place.

Once a learner has completed the assessment requirements and external quality assurance has taken place, certificates will be issued by Lantra for providers to distribute to individual learners.

Street Works Qualification Register (SWQR)

Those who have gained street works qualification and who wish to work as qualified operatives or supervisors must be registered on the SWQR. Once registered, a street works card will be issued to the individual.

The SWQR holds details of all providers approved by the street works awarding organisations. When a new provider is approved, Lantra provides its name and contact details to the SWQR, which in turn contacts the provider with more information regarding the registration process.

Lantra regularly notifies the SWQR of unit and full award certificates that it has issued, but it is the responsibility of individuals or their organisations to apply for their registration card. Applications and all enquiries relating to the SWQR, its administration and the issuing of street works cards should be made to:

Street Works Qualifications Register
The Optima Building
58 Robertson Street
Glasgow
G2 8DQ
Tel: 0845 270 2720
Fax: 0845 213 5000
Email: swqr@sqa.org.uk
Website: www.swqr.org.uk

Street works cards are currently valid for five years, after which re-registration is required. To continue acting as a qualified operative or supervisor, individuals must ensure that their registration status at the SWQR remains current. The re-registration process and requirements are subject to review, but the Register contains details of the current process.

Note: When a certificate approaches expiry, the learner will be able to renew it at any time in its last year without losing the unexpired portion. The learner can also renew a certificate when it has more than a year left to go. In this case, the renewed certificate will last for six years from the date of renewal.

Replacement certification

If a learner loses the original certificate, Lantra can issue a replacement. The learner will need to provide proof of identity (e.g. passport or driving licence) and the details of the provider they were registered with. Lantra will check all claims for replacement certificates against the original Learner Achievement Record. The provider may be contacted for authentication. The certificate will be marked as a replacement. A fee is payable for replacement certificates. Please contact Lantra for the current fee.

Direct Claims Status (DCS)

DCS enables providers to claim certification directly before external quality assurance has taken place. A claim for DCS can only be made after an EQA has conducted a visit, which may be approximately six months following approval to deliver the qualification and enough learners have been progressed by the provider.

Where an EQA decides a programme is running successfully and the provider has effective internal controls, recommendation may be made to award the provider DCS. Where this is granted, the provider must retain all assessment evidence until the EQA has quality assured the work as meeting national standards. DCS will be withdrawn if access is not given to completed learners' evidence where certificates have already been claimed.

Providers must operate a system that ensures all assessors evaluate to the required standard. The IQA will be required to observe each assessor, retaining evidence of observations which must be made available during EQA visits. The EQA may wish to sample the process and observe assessors. If the EQA is not confident about the way in which the provider is operating they may recommend the suspension or withdrawal of DCS.

DCS does not mean that all claims are certificated without further quality assurance checks. Quality assurance of claims will still take place, and where this suggests that certificates have been incorrectly issued may lead to them being revoked. Providers are required to make all reasonable efforts to recover certificates which have been revoked.

Should a provider be imposed with a Level 2 sanction, DCS will be removed automatically. More information on sanctions can be found in the Provider Handbook.

Enquiries about Results and Appeals

Lantra has an Enquiries about Results Policy and Appeals Procedure which can be used when a learner or provider has reason to believe there has been an error in either the administrative processes leading to an incorrect qualification award or there has been an issue in the assessment of the learner. Fees payable for enquiries about results will be refunded in full if the enquiry is upheld or if a learner's results are changed as a result of an enquiry.

Appeals can be made following the outcome of an enquiry about results if the learner/provider remains unhappy with the outcome or has further grounds to query the decision. Please note that appeals will not be accepted before a paid result enquiry has been conducted.

Providers must ensure that learner consent is obtained before an enquiry about a result is requested. Learners must be informed that assessment outcomes can change both positively and negatively.

Please refer to the Provider Handbook for more details.

Malpractice and Maladministration

Where malpractice is suspected, especially where there is doubt about the integrity of the assessment process, Lantra will immediately suspend further certification claims while an investigation is conducted. The regulatory authorities will be notified of any investigations and their outcome.

The claimant will be required to provide information about the suspected malpractice and the circumstances surrounding the matter. Malpractice, if found, may result in sanctions being imposed on the provider, certificates being revoked or even providers being barred from Lantra membership and reported to regulatory authorities.

Maladministration is linked to malpractice and can result in a malpractice investigation being launched. Maladministration could have an impact on the credibility of the assessment taking place or the outcomes achieved; for example, in the event of a failure to investigate suspected malpractice when asked to do so by Lantra.

Please refer to the Lantra Malpractice and Maladministration Policy for more details.

Recognition of Prior Learning

Recognition of prior learning is not a recognised method of assessment for the reassessed street works certificates and qualification.

Safeguarding — Young People and Vulnerable Adults

This qualification can be offered to learners in the 16-19 age group, as well as learners aged 19+. The Health and Safety at Work Act 1974 requires employers to ensure the health, safety and welfare at work of their employees and providers to safeguard learners. Young people under the age of 18 and vulnerable adults can be exposed to risk when using work equipment due to immaturity, lack of experience or lack of awareness of existing or potential risks. Therefore, young people and vulnerable adults may need closer supervision.

For more information about young people at work, see Management of Health and Safety at Work Regulations 1999.

Additional Requirements and Reasonable Adjustments

Providers are expected to make appropriate arrangements, including reasonable adjustments. These are detailed in the Equality and Diversity Policy within the Provider Handbook to ensure that learners with additional needs can access assessment wherever possible. The Equality and Diversity Policy covers alternative assessment arrangements which can be made for learners.

Reasonable adjustments must not, however, result in a change to the learning outcomes and assessment criteria. For example, within this qualification, learners must understand product information, which includes being able to interpret product labels written in English.

A provider must apply to Lantra for reasonable adjustments using the **Reasonable Adjustments Request Form**. Lantra recommends that reasonable adjustment requests be submitted no later than six weeks prior to the assessment taking place to allow a decision on their suitability to be made before the assessment. However, Lantra recognises that this may not always be possible, and we will do our best to process requests received after this point. Please note that no reasonable adjustment should be implemented without the prior approval of Lantra.

7 What Does a Provider Need to Do?

Management Support

Experience has shown that qualification programmes run more effectively when given support by senior management. This can be achieved by appointing a person from the senior management team or a designated Qualifications Manager and ensuring they are given the authority to monitor the quality management systems for the programme and to implement any required changes. This role is separate from the required role of an IQA.

Management support can be demonstrated by ensuring that appropriate team members are allocated to the programme and given sufficient time and resources to carry out their roles effectively.

Provider Records

Providers are required to retain learner records, which include the details listed below. Providers may already have their own systems which can be used to store records. If the necessary information is accessible and conforms to the requirements below, then no further records need to be created. Lantra does not prescribe the format in which records are kept.

Provider records must include:

- Data about individual learners, including any reasonable adjustments
- Assessment and action plans
- Learner registration
- Learner induction plan
- Achievement of units
- Feedback given to learners by assessors
- Evidence sampled by the IQA
- Feedback given to assessors by the IQA
- Action plans provided by the EQA.

All records must be stored securely to avoid being falsified or fraudulent claims being made. All assessment records must be retained by the provider for at least **three years** after the learner has completed the assessment. If the programme is subject to an EQA visit/approval sign-off, then the records should be retained for three years after this date. It is the responsibility of the provider to ensure that data is updated at the appropriate time.

There is no prescribed format for these records and providers may wish to incorporate them into documentation they already maintain within their own organisation. If the provider already works to quality management systems such as the Scottish Quality Management System (SQMS), the ISO 9001 series or is required to maintain records for government-funded training schemes, that documentation will almost certainly provide an adequate basis for provider records.

Providers may also need to adhere to separate requirements, where appropriate, with regard to the retention of records such as funding applications. Please refer to the specific requirements of the funding agency.

Support for Learners

Learners will need to follow an induction programme when enrolled on the qualification. This should be designed around a particular element or unit of the qualification so that they become familiar with the way the qualification operates.

Throughout the programme tutors and/or instructors should aim to provide feedback to learners on how they are progressing through the qualification to ensure that on the day of the assessment they are ready for the requirements of the question paper and the practical assessment. Feedback should be positive, constructive and used for future planning.

Some providers will have staff working in education support; in others, assessors may offer this support. It is important for each learner to have appropriate guidance and be directed towards additional information as required. Guidance on career opportunities may also be appropriate.

Learners with particular characteristics may need additional support from the provider/instructor. Refer to Lantra's Equality and Diversity Policy for more information relating to reasonable adjustments/special considerations. Learners with certain protected characteristics should not be discriminated against or prohibited from assessment where adjustments can be made to the assessment evidence requirements which would allow them to demonstrate competence or knowledge in different ways.

Learners must be informed when they have been registered for a qualification. It is also a regulatory requirement that Lantra be informed if a learner later withdraws from a qualification. Providers must also ensure that learners are informed when they have been withdrawn from a qualification for any reason and retain evidence of this.

Learners will not be recognised by Lantra until they have been registered and Lantra will have no obligation to the learners if there is a problem with them completing the qualification, for example the provider ceases operations.

If for any reason a provider is not intending to renew their membership while they still have uncertified learners registered on a qualification, regulatory requirements stipulate that learner interests must be maintained. The provider may choose to transfer learners to another awarding organisation or the provider will still be required to complete the assessment of learners with Lantra and pay any fees due for quality assurance or certification.

8 Administration and Other Important Information

Administration Process for Registration and Certification

The QuartzWeb User Guide contains instructions on how to register learners.

Learners may transfer registration from one certificate/qualification to another, provided they are both offered by Lantra. This will incur an administration fee. If the registration fee for the new qualification is higher than for the previous one, providers will be invoiced for the difference. No refunds will be made if the registration fee for the new qualification is lower. Learners transferring to a different provider must re-register with the new provider. Lantra may need to charge the learner's new provider an administration fee.

Learners must be informed when they have been registered for a qualification.

Registering the learner

Providers **must** register any planned assessment activity for the units within this qualification a minimum of ten working days prior to the assessment taking place.

Learners **must** be registered against the qualification and respective unit(s) within five working days of undertaking a planned assessment. Please refer to the QuartzWeb User Guide for details on how to register learners.

Each learner must give their surname/family name, first name, date of birth and postcode. The date of birth is important to distinguish between learners with the same name. Data on gender, ethnic origin and whether any reasonable adjustments have been requested are also required by the regulatory bodies so that achievements can be monitored for equal opportunities purposes and to ensure that fair access to training and qualification is achieved.

Certificate claims

Certificates can only be claimed for learners who are registered on QuartzWeb. All certificate claims are checked against provider approval records and learner registration records (unless DCS is in place). Certificates will not be issued to learners who are not registered before the assessment takes place.

The learner name will appear on the certificate in the same way as it is entered on QuartzWeb.

Assessment Strategy

Providers and assessors (and IQAs where appropriate) must ensure that they are familiar with the specifications and the requirements of the qualification.

Unit and qualification assessment requirements set out the scope of evidence required in terms of equipment, services, statutory regulations and industry standards and systems.

Methods of assessment:

- Summative assessment through short-answer question paper
- Observation of practical activities
- Verbal questioning.

Assessment requirements:

- For practical observations, competence must be demonstrated and evidenced
- The assessor may decide that more observations are required to ensure that all assessment criteria have been met
- Assessors must be capable of identifying when competence has been demonstrated by the learner based on their own professional judgement
- The evidence is sufficient when the assessor judges the requirements of the qualification have been met and competence has been demonstrated by the learner
- Although there are no formal limits set on the time taken to complete the qualification or the number of assessment opportunities provided, providers may wish to set guidelines for the length of time or amount of tuition offered to learners for financial or logistical reasons, taking into account the stated key safety-critical and technically critical aspects of the assessment. It is estimated that the practical assessment will take approximately two hours, depending on the learner.

Access to assessment:

- Learners should not be put forward for an assessment until they are deemed ready to be assessed
- This can be demonstrated through an evaluation of the learner's previous training and experience
- This underpins the assumption that the learner has sufficient technical expertise, knowledge, skill and maturity to meet the assessment requirements
- Key considerations for evaluation of the learner's previous training and experience include:
 - Health and safety considerations
 - Knowledge of New Roads and Street Works legislation.

Operative units assessment guidance

The assessment of street works units 001-009 is based on observing the learner's performance and questioning the learner to ensure that they can meet the knowledge requirements of the awards. Due to the nature of street works, assessment must take place in English.

Assessors need to ensure that they assess each learner's individual competence against all the requirements of each unit.

Learner observations may be conducted either in a simulated situation at an approved location or in the learner's workplace.

The observation must be carried out by a qualified assessor, who will observe the learner carrying out the tasks specified in the unit of competence. The following conditions must be met for all observations:

- a) The assessment must take place at a site with physical characteristics that conform to the definition of 'street' in Section 48 or 'road' in Section 107 of the New Roads and Street Works Act 1991
- b) The resource requirements listed for each unit are met
- c) The learner uses equipment and materials that comply with the requirements of the relevant codes of practice.

Learners may also provide supplementary evidence from the workplace to demonstrate their competence. Where this includes a documented observation report that indicates how they have met the requirements of particular units, this must be provided by a street works operative or supervisor who is qualified in the same unit(s) or by a qualified street works assessor.

Supervisor unit assessment guidance

The assessment of supervisor units is by performance evidence provided by the learner, supplemented by evidence of underpinning knowledge.

The assessment documentation provided requires the learner to provide details of the monitoring activities that they have undertaken and to record the results of their monitoring. The learner must therefore have the opportunity to watch street works operations being carried out and must be able to demonstrate that they can meet the requirements of the monitoring unit(s) that they are undertaking.

Observations can take place either in an off-site, simulated situation (e.g. at an assessment provider) or on-site, in a workplace situation. The observation must be carried out by a qualified and occupationally experienced assessor who will observe the learner carrying out the tasks specified in the unit of competence.

It is common for learners taking the supervisor units to provide their performance evidence by monitoring the practical activities carried out by other learners who are being assessed for the related operative units.

Assessors need to ensure that they assess each learner's individual competence against all the requirements of each unit, and that there is sufficient opportunity for the supervisor to make a decision on the activities observed.

Where a learner provides performance evidence from a real site situation, the assessor may not have the opportunity to be present during the monitoring. More information may be required to enable the assessor to determine the validity of the learner's evidence against the performance criteria. This can include:

- Reports of completed jobs that reflect the site situation
- Interviews with the learner's supervisor or team leader
- The learner's own report of the job, including details of the site situation
- Documented observation reports showing how the learner has met the requirements of the unit being assessed (please note that observation reports of this kind must be provided by a qualified street works supervisor or assessor, as outlined in the units of competence).

Signing, lighting and guarding (002 and 010)

For safety reasons, observed assessments of learners undertaking signing, lighting and guarding activities must take place at a centre, or a location linked to a centre, that has been approved by the centre's external verifier prior to use for assessment. The site used for assessment must be a real road with unpredictable traffic flows.

Providers must notify Lantra in advance if it wishes to carry out assessments at any other site(s) than those that have previously been advised and approved by Lantra.

Time allocated for assessments

There is no time limit specified for assessments, because learners work at different rates. However, it is expected that any particular task will be completed within a period of time that is acceptable in normal working practice. Assessors should therefore be able to judge an approximate time for each task, but additional time will be needed for oral questioning and for completion of the relevant assessment documentation by both the learner and their assessor.

Questioning

Learners must demonstrate that they can cover all the knowledge-based learning outcomes in the units of competence that they undertake. Questions have been provided for each unit of competence, and assessors must make use of these when carrying out assessments.

Questioning can be carried out either orally, by means of a written question paper or a combination of the two. Please see below for more information on the use of the questions.

The use of simulated evidence

Learner observations may be conducted either in a simulated situation at an approved location, or in the learner's workplace.

The observation must be carried out by a qualified assessor, who will observe the learner carrying out the tasks specified in the unit of competence. The following conditions must be met for all observations:

- a) The assessment must take place at a site with physical characteristics that conform to the definition of 'street' in Section 48 or 'road' in Section 107 of the New Roads and Street Works Act 1991
- b) The resource requirements listed for each unit are met
- c) The learner uses equipment and materials that comply with the requirements of the relevant codes of practice.

The use of a simulated site situation at the assessment provider's approved centre has the advantage of allowing an assessor to observe learners monitoring operatives at work while combining the practical assessment with the assessment of other evidence produced for the supervisor units (including the production of any other workplace evidence and the assessment of underpinning knowledge).

Using video evidence

It is not permissible to use video evidence for assessment purposes.

Learner to assessor ratios

Providers must ensure learner numbers comply with the following learner/assessor ratios:

- For unit 002 – Signing, lighting and guarding, with a standard set of resources, a maximum of six learners per assessor
- For units LA and 003-009, with standard resources, a maximum of eight learners per assessor
- For units 010-016, with standard resources, a maximum of eight learners per assessor
- With the exception: two learners maximum per assessor may be assessed on the practical use of cable location equipment providing there is no cross-contamination of evidence and the location is large enough to cater for them.

External verifiers will monitor the ratio of learners to assessors over a period of time to ensure that there are sufficient assessors available at each provider to assess the numbers of learners in accordance with the ratios above.

Please note: assessors who are newly qualified or in training should only assess 50% of the stated learner numbers until such time as they are deemed experienced by the provider's internal verifier.

Learners undertaking operative and supervisor units

Where a learner is to be assessed for both operative and supervisor units, adequate time must be allocated to complete all assessments in full. There must be no cross-contamination of evidence between learners. This means that learners must carry out all of the tasks specified for any unit they undertake and must each provide evidence to show that they meet the requirements of the standards for each unit.

Feedback, Compliments and Complaints

Lantra recognises that from time to time providers, learners, assessors and other personnel may have reason to provide feedback on a process or have grounds for a complaint. We also welcome compliments when aspects of our courses have been well received so that we can seek to implement best practice across our suite of products. The Lantra Feedback, Compliments and Complaints Procedure is published on the Lantra Awards website.

Appendix 1 – Glossary of Terms

Knowledge	Factual information that can be recalled as required, e.g. the individual can 'identify' and/or 'describe' key information relevant to the subject area.
Understanding	The application and extension of knowledge allowing organised thought, e.g. the individual can 'explain', 'analyse' and/or 'evaluate'.
Skill	The application of knowledge and/or understanding in a practical context demonstrating practical competency, e.g. the individual can 'operate', 'use' and/or 'carry out'.
Learning outcome	How the learner will be changed by the learning/assessment process. That which the learner will, due to learning experiences, newly know, understand or be able to do.
Assessment criteria	Discrete criteria which holistically deliver on the promised objective of the qualification and which must all be evidenced to a unified (and/or graded) standard.
Qualification objective	A succinct summation of the overarching development of the learner in terms of tangible work or further developmental opportunities available as a result of achieving this qualification.
Qualification aim	A succinct summation of why this qualification is of value to the learner (without reference to assessment).
Transferable	Knowledge, understanding or skills that can be applied beyond the context in which they were taught to benefit the learner in different job roles, industries, contexts and/or personal situations.
Assessment guidance	Guidance used to advise centres on a general level of expectation rather than to prescribe a definitive list of evidence.
Delivery guidance	Guidance that, without reference to assessment, illustrates opportunities for evidence which might: <ul style="list-style-type: none"> • Be naturally generated through the learning process • Offer innovative examples of delivery gathered through centre/learner consultation • Minimise the burden of assessment on centres and learners.
Arrangements for reasonable adjustments	Adjustments made to an assessment for a qualification so as to enable a learner with additional requirements to demonstrate their attainment of the level required.
Arrangements for special consideration	Special consideration might be given to a learner who has temporarily experienced: <ul style="list-style-type: none"> • An illness or injury • Some other event outside of their control which has had a material effect on their ability to take an assessment or demonstrate their attainment of the level required.
Recognition of prior learning	A method of assessment that considers whether a learner can demonstrate that they meet the assessment requirements for a unit/certificate through knowledge, understanding or skills they already possess and do not need to develop through a course of learning.

Appendix 2 – Census Ethnic Group Classifications (2011)

Please use the following code(s) to indicate ethnicity when completing the learner registration.

England and Wales		Northern Ireland		Scotland	
01	White: English/Welsh/Scottish/ Northern Irish/British	19	White: White	30	White: Scottish
02	Irish	20	Irish Traveller	31	British
03	Gypsy or Irish Traveller		Asian/Asian British:	32	Irish
04	Any other White background	21	Indian	33	Any other White background
	Mixed/multiple ethnic groups	22	Pakistani		Mixed:
05	White and Black Caribbean	23	Bangladeshi	34	Any mixed/multiple ethnic background
06	White and Black African	24	Chinese		Asian, Asian Scottish or Asian British:
07	White and Asian		Black, Black Irish or Black British:	35	Indian
08	Any other mixed/multiple ethnic background	25	Black Caribbean	36	Pakistani
	Asian/Asian British:	26	Black African	37	Bangladeshi
09	Indian	27	Black other	38	Chinese
10	Pakistani	28	Mixed: Mixed ethnic group	39	Any other Asian background
11	Bangladeshi	29	Other ethnic group: Any other ethnic group		Black, Black Scottish or Black British:
12	Chinese			40	Caribbean
13	Any other Asian background			41	African
	Black/African/Caribbean/Black British:			42	Any other Black background
14	African				Other ethnic group:
15	Caribbean			43	Any other ethnic group
16	Any other Black/African/Caribbean background				
17	Arab				
18	Any other ethnic group				

Where a learner does not want to disclose information on their ethnicity, the provider should provide an option to the learner to indicate that they “prefer not to say”. The provider can then bypass this section when registering the learner.

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