

Reassessed Street Works Excavation and Reinstatement (6157-02)



Qualification unit handbook for centres
Reassessed Street Works Excavation and Reinstatement (6157-02)

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Version and date	Change detail	Section
V3 April 2017	Appendix 1 added	Appendix

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1 Introduction to the qualification

To re-register with the Street Works Qualification Register (SWQR) and be issued with a new SWQR card the individual must achieve one or more of the reassessed qualifications listed below. They can only achieve the necessary qualifications via an approved centre, who will in turn register the results with the appropriate awarding body - either CABWI, City & Guilds or SQA. The awarding body will then issue the appropriate reassessed certificate(s). The qualifications of the operatives and supervisors must then be registered with the Street Works Qualifications Register in order for a new SWQR card to be issued for the individual to continue to act as a qualified operative or supervisor.

There are sixteen Reassessed Units of competence for operatives and supervisors. Nine units are applicable to operatives and eight to supervisors. One of these units (Unit 020) applies to both groups. The units are listed below, with units for operatives marked 'O' and supervisors' units marked 'S'.

Unit	Title	O/S
020	Reassessed Location and Avoidance of Underground Apparatus	O & S
021	Reassessed Signing, Lighting & Guarding	O
022	Reassessed Excavation in the Road/Highway	O
023	Reassessed Reinstatement and Compaction of Backfill Materials	O
024	Reassessed Reinstatement of Sub-base and Roadbase in Non-bituminous Materials	O
025	Reassessed Reinstatement in Cold-lay Bituminous Materials	O
026	Reassessed Reinstatement in Hot-lay Bituminous Materials	O
027	Reassessed Reinstatement of Concrete Slabs	O
028	Reassessed Reinstatement of Modular Surfaces and Concrete Footways	O
029	Reassessed Monitoring Signing, Lighting and Guarding	S
030	Reassessed Monitoring Excavation in the Road/Highway	S
031	Reassessed Monitoring Reinstatement and Compaction of Backfill Materials	S
032	Reassessed Monitoring Reinstatement of Sub-base and Roadbase in Non-bituminous Materials	S
033	Reassessed Monitoring Reinstatement in Bituminous materials	S
034	Reassessed Monitoring Reinstatement of Concrete Slab	S
035	Reassessed Monitoring Reinstatement of Modular Surfaces and Concrete Footways	S

There are sixteen single unit qualifications, which are listed below, together with the unit required to achieve them.

<u>Qualification</u>	<u>Unit required</u>
Reassessed Excavation in the Road/Highway	Unit 022 or 522
Reassessed Location and Avoidance of Underground Apparatus	Unit 020 or 520
Reassessed Monitoring Excavation in the Road/Highway	Unit 030 or 530
Reassessed Monitoring Reinstatement and Compaction of Backfill Materials	Unit 031 or 531
Reassessed Monitoring Reinstatement in Bituminous materials	Unit 033 or 533
Reassessed Monitoring Reinstatement of Concrete Slab	Unit 034 or 534
Reassessed Monitoring Reinstatement of Modular Surfaces and Concrete Footways	Unit 035 or 535
Reassessed Monitoring Reinstatement of Sub-base and Roadbase in Non-bituminous Materials	Unit 032 or 532
Reassessed Monitoring Signing, Lighting and Guarding	Unit 029 or 529
Reassessed Reinstatement and Compaction of Backfill Materials	Unit 023 or 523
Reassessed Reinstatement in Cold-lay Bituminous Materials	Unit 025 or 525
Reassessed Reinstatement in Hot-lay Bituminous Materials	Unit 026 or 526
Reassessed Reinstatement of Concrete Slabs	Unit 027 or 527
Reassessed Reinstatement of Modular Surfaces and Concrete Footways	Unit 028 or 528
Reassessed Reinstatement of Sub-base and Roadbase in Non-bituminous Materials	Unit 024 or 524
Reassessed Signing, Lighting & Guarding	Unit 021 or 521

NB – Units 520 –to 535 are the online assessment components

Unit 020 Reassessed location and avoidance of underground apparatus

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 001, 6156-21 Unit 201, 6156-23 Unit 221 or 6157-02 Unit 001 Location and Avoidance of Underground Apparatus and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 020.1 Interpret plans showing the location of underground apparatus.
- 020.2 Types of services that are likely to be encountered during excavation and how to apply the information to the site.
- 020.3 Identify risks and implications of damage to underground services and safe working practices.
- 020.4 Use of pipe and cable location equipment.

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice (Edition 2)
- Specifications for the Reinstatement of Opening in Highways Approved Code of Practice (Edition 3)
- National Joint Utilities Group guidance on the Positioning and Colour Coding of Underground Utilities Apparatus.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%. The examination is 'open book' that allows candidates to use the appropriate documents listed above. Time allowed is 30 minutes for each examined unit.

The examination will only take place at an approved centre in accordance with the scheme guidance and standards set out for conducting internally marked examinations.

Access to examination

The examination may only take place at a location approved by the Awarding Body as an Examination Centre. Access to examination will require candidates to show their current Streetworks Registration Card and one other means of photo identity such as a current driving licence or passport to the invigilator prior to the examination.

Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

Element 020.1

Interpret plans showing the location of underground apparatus.

020.1.1

How to carry out checks to ensure the plans correspond to the site location.

- a. Identify the key for symbols marked on utility plans of underground apparatus.
- b. Know how to relate service drawings of underground apparatus to a site.
- c. Know how to identify the where the service plans do not give the location of located underground apparatus.
- d. Know what action to take where service plans do not relate to the site.

020.1.2

Know the types of services marked on utility plans that are likely to be encountered and how to apply the information to the site.

- a. Know the types of services that can be found using conventional pipe and cable location equipment.
- b. Know the type of underground services that cannot be found using conventional pipe and cable location equipment.
- c. Know the types of materials that underground services are made from.
- d. Know how to apply the information given on utility plans to the site location.

020.1.3

Know why the site must be clearly marked and how to mark the location of services.

- a. Know how to clearly mark located services.
- b. Understand the risks of not clearly marking the location of underground services.
- c. Know the safe working practice when marking the location of services.

Element 020.2

Types of services that are likely to be encountered during excavation and how to apply the information to the site.

020.2.1

Know the different types of services likely to be encountered during excavation

- a. Know how to identify the main utility services; Telecommunications, Sewer, Gas, Water and Electricity.
- b. Understand the types of petrol chemical services.
- c. Identify the types of highway services, Drainage, Culverts and Street Lighting.
- d. Know the safe working practices when carrying out planned excavations.

020.2.2

Know how to apply given information to the site location.

- a. Know how to confirm that the plan of underground services is up to date.
- b. Know how to confirm that the plan is appropriate for the site location.
- c. Know the action to take where service plans are not up to date or accurate.

Element 020.3

Identify risks, implications of damage to underground services and safe working practices.

020.3.1

Know how to identify the risks of damage to underground services.

- a. Know the most common causes of damage to underground services.
- b. Identify the safe working procedures to follow that is aimed at minimising the risks of damage to underground services.
- c. Identify the action to take where damage has been caused to underground services.

020.3.2

Know the implications of damage to underground services.

- a. Know the types of problems caused by damage to underground services.
- b. Know environmental issues where damage has been cause to underground services.
- c. Understand the procedures to follow where damage has been caused to
 - i Gas
 - ii Water
 - iii Electricity
 - iv Sewer and Drains
 - v Telecommunications.

020.3.3

Understand the safe working practices to be considered when carrying out a site survey to identify the location of underground services.

- a. Understand the requirements for adequate signing and guarding of the work site.
- b. Know the requirements of the site location to protect the public and workers.
- c. Know the safe working practices when working on the highway.

Element 020.4

Use of pipe and cable location equipment.

020.4.1

Know capabilities and limitations of pipe and cable location equipment.

- a. Know the modes of operation commonly used with conventional pipe and cable location equipment.
- b. Understand the limitations of conventional pipe and cable location equipment.
- c. Know the types of signal conventional pipe and cable location equipment is designed to locate.
- d. Know the purpose of using signal generators in performing search procedures.
- e. Know how to confirm pipe and cable location equipment is operating effectively.

020.4.2

Know how to carry out search procedures when using conventional pipe and cable location equipment.

- a. Know how to apply given information to a site location.
- b. Know how to locate and identify underground services.
- c. Know the purpose of using signal generators to be able to locate and trace underground services.
- d. Know how to identify signs of buried services from a visual survey of the area.

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 002, 6156-21 Unit 202, 6156-23 Unit 222 or 6157-02 Unit 002 Signing, Lighting and Guarding and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

021.1 Survey the work site.

021.2 Protect pedestrians, vehicular traffic and site personnel.

021.3 Provide temporary traffic control

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- An Introduction to the Use of Portable Temporary Traffic Lights.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

The examination is 'open book' that allows candidates to use the appropriate documents listed above.

The examination will only take place at an approved centre in accordance with the scheme guidance and standards set out for conducting internally marked examinations.

Access to examination

The examination may only take place at a location approved by the Awarding Body as an Examination Centre. Access to examination will require candidates to show their current Streetworks Registration Card and one other means of photo identity such as a current driving licence or passport to the invigilator prior to the examination.

Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

Element 021.1

Survey the work site.

021.1.1

Know the purpose of carrying out a work site survey/risk assessment and the potential requirements of the site location to identify

- a. proximity to schools, hospitals, junctions, roundabouts and rail level crossings
- b. types of pedestrians and road users
- c. special needs
- d. volume, speed and type of traffic
- e. lighting on the highway
- f. the location of footway, cycle lanes, traffic lanes and road layouts
- g. mobile and minor works
- h. siting distances, sizes of signs and road traffic cones appropriate to site locations and conditions
- i. the safe working practices when carrying out a work site survey.

021.1.2

Know the factors to consider when making provisions for the minimal disruption and safe passage of pedestrians and vehicular traffic.

- a. Identify the safe provision for types of pedestrian and special needs.
- b. Know the provision of temporary pedestrian walkways.
- c. Know the provision of pedestrian signing and lighting.
- d. Identify the provision for the type of traffic.
- e. Identifying suitable traffic control for the site location.
 - i Priority signing
 - ii Stop and Go
 - iii Temporary traffic lights
 - iv Stop Works
 - v Give and Take
- f. Know the Signing, lighting and guarding requirements for site locations.
- g. Identifying the requirements traffic lanes to accommodate the type of traffic.

021.1.3

Know the factors to consider when making provisions for site personnel, vehicles and equipment within the confines of the working space.

- a. Identifying the requirements for safety zones, works area and working space.
- b. Identify the provisions to be made for site vehicles, plant and equipment.
- c. Identifying the safety clearances appropriate to the site location.

Element 021.2

Protect pedestrians, vehicular traffic and site personnel.

021.2.1

Know the appropriate personal protective equipment to use for signing, lighting and guarding activities.

- a. Identify the personal protective equipment and its suitability for use.
- b. Identify the suitability of high visibility clothing.

021.2.2

Know how to control the movement of pedestrians, traffic, plant and vehicles within the confines of the work area and site location.

- a. Know site requirements for ensuring the safe passage of pedestrians.
- b. Know the correct types of temporary traffic control for the site location.
- c. Know the safe storage of plant and materials within the confines of the site.
- d. Identify the site requirements for works areas and working space.

021.2.3

Know the checks made to ensure equipment is suitable for use.

- a. Identify the signing requirements for the site.
- b. Identify the size of temporary road works signs for the site location.
- c. Identify the height of road traffic cones for the site location.

021.2.4

Know the specified sequence for the positioning and removal of signing, lighting and guarding equipment.

- a. Identifying the signing requirement for using temporary traffic signals.
- b. Identifying the signing requirement for Stop and Go traffic control.
- c. Identifying the signing requirement for Priority traffic control.
- d. Know sequence for setting up and removal of temporary traffic management.
- e. Know requirement for site maintenance for installed temporary traffic management.

Element 021.3

Provide temporary traffic control

021.3.1

Know how to ensure that temporary traffic signals are positioned and operating correctly.

- a. Know the safety checks on cables, lamps, detectors, generators, batteries and timings.
- b. Know how to identify the suitable positioning for temporary traffic signals.
- c. Know fault finding and action remedial action.
- d. Identify the action to take where temporary traffic signals fail.
- e. Know the safe working practices to follow when positioning, operating and removing temporary traffic signals.

021.3.2

Know the correct procedure for the positioning and removal of temporary traffic signals in relation to the requirements of the site location.

- a. Know notification requirements for the use of temporary traffic signals on the highway.
- b. Know sequence for positioning temporary traffic lights.
- c. Identify appropriate signs used with temporary traffic lights.
- d. Know sequence for commissioning and decommissioning temporary traffic lights.
- e. Know the safe working practices to follow when positioning, maintaining or removing temporary traffic management.

021.3.3

Know how to adjust of the temporary traffic signals to suit the site location and traffic flows.

- a. Know how to adjust timings to suit the site length.
- b. Identify the alterations of timings to suit traffic flows and site location.
- c. Know the modes of operation: Vehicle Actuation, Fixed Time, Manual and All Red.

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 003, 6156-21 Unit 203, 6156-23 Unit 223 or 6157-02 Unit 003 Excavation in the Highway and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

022.1 Identify different types of footway and carriageway.

022.2 Carry out excavation the highway.

022.3 Support and protect underground services exposed during excavation of the highway.

022.4 Identify the suitability of excavated materials for re-use or disposal as backfill.

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- The Specifications for the Reinstatement of Openings in Highways
- National Joint Utilities Group publications.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

The examination is 'open book' that allows candidates to use the appropriate documents listed above.

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Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

022.1

Identify different types of footway and carriageway.

022.1.1

Know how to identify highway pavement structures.

- a. Identify the layers within highway pavement structures
 - i. Sub-base
 - ii. Base
 - iii. Binder
 - iv. Surfaces course
- b. Identify features that would require the Street Authority intervention
- c. Know how to identify High Duty and High Amenity areas of the highway
- d. Understand the action to take where the pavement structure is not readily identified

022.1.2

Know the different footway and carriageway pavement structures.

- a. Know how to identify the names of highway pavement structures
 - i. Flexible footways and carriageways
 - ii. Composite carriageways
 - iii. Modular footways and carriageways
 - iv. Rigid footways and carriageways

022.1.3

Know the materials used in highway pavement structures.

- a. Know the materials commonly used in the makeup of footways and carriageways
 - i. Asphalt concrete
 - ii. Hot rolled asphalt
 - iii. Stone mastic asphalt
 - iv. Cold-lay surfacing materials
 - v. Granular Sub-bases Type 1 and 2
 - vi. Cement bound materials
 - vii. Concrete type C30 and C40
 - viii. Backfill materials Class A, B, C, D and E

022.2

Carry out excavation the highway.

022.2.1

Know how to carry out excavation in the highway and identify the methods and equipment to minimise risk of remedial work or damage to the environment.

- a. Identify risks from carrying out highway excavations
 - i. Sub-structures
 - ii. Highway and utility fixed ironwork and surface features
 - iii. Bad ground conditions
 - iv. Proximity to trees
 - v. Location of buried services
 - vi. Control of ground and surface water
- b. Know how to select appropriate tools and equipment for excavation
- c. Know how to confirm the suitability of plant and equipment for use
- d. Know how to determine the trench dimensions to facilitate work and the subsequent reinstatement
- e. Know how to minimise remedial work from highway excavations
- f. Understand reasons for separating excavated materials for re-use or disposal
- g. Know how to protect materials for re-use or disposal
- h. Understand the consequences of using unsuitable materials for reinstatement
- i. Know how to apply safe working practices for carrying out highway excavations

022.3

Identify, support and protect underground services exposed during excavation of the highway.

022.3.1

Know how to identify underground services.

- a. Identify types of underground services likely to be encountered during excavation in the highway;
 - i. Gas
 - ii. Water
 - iii. Electric
 - iv. Telecommunications
 - v. Highway drainage
- b. Know the actions to minimise damage to buried services
- c. Know how to report damage to underground services
- d. Understand the action required to report unmarked services to the appropriate highway authority or utility company
- e. Understand the requirement for trench support

022.3.2

Know how to protect and support underground services.

- a. Know how to protect;
 - i. Gas
 - ii. Water
 - iii. Electric
 - iv. Telecommunications
 - v. Highway drainage
- b. Know how to protect water and drainage services from frost damage or freezing
- c. Know how to support services from undue movement and positioning
- d. Understand the requirements where underground services may require alteration to positioning,
- e. Know the safe working practices for protecting and supporting underground services

022.4

Identify the suitability of excavated materials for re-use or disposal as backfill.

022.4.1

Know how to identify excavated materials for suitability

- a. Know how to carry out field testing of excavated materials to determine their suitability for reuse or disposal;
 - i. Granular grading
 - ii. Silt content
 - iii. Clay condition
 - iv. Fine and course aggregates
 - v. Particle size
 - vi. Moisture content
 - vii. Contamination
- b. Know the characteristics of chalk materials
- c. Know how to determine chalk materials suitability and requirements for reuse
- d. Know how to identify the following material types;
 - i. Class A Graded Granular
 - ii. Class B Granular
 - iii. Class C Cohesive Granular
 - iv. Class D Cohesive
 - v. Class E Unacceptable materials

022.4.2

Know how to protect or dispose of excavated materials for reuse or disposal

- a. Know how to store materials on-site safely
- b. Understand the reasons for separating materials for reuse or disposal
- c. Know how to protect reusable materials from;
 - i. Contamination
 - ii. Moisture loss or gain
 - iii. Loss of fines
 - iv. Weather conditions
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how to dispose of unsuitable materials safely and in accordance with legislation
- f. Understand the safe working practices to follow in protecting or disposing of materials

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 004, 6156-21 Unit 204, 6156-23 Unit 224 or 6157-02 Unit 004 Reinstatement and Compaction of Backfill Material and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 023.1 Identify types of carriageway and footways
- 023.2 Identify and protect backfill materials
- 023.3 Reinstall backfill
- 023.4 Dispose of surplus materials

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- Specifications for the Reinstatement of Openings in Highways.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

The examination is 'open book' that allows candidates to use the appropriate documents listed above.

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Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

023.1

Identify different types of footway and carriageway.

023.1.1

Know how to identify highway pavement structures.

- a. Identify the layers within highway pavement structures;
 - i. Sub-base
 - ii. Base
 - iii. Binder
 - iv. Surfaces course
- b. Identify features that would require the Street Authority intervention
- c. Know how to identify High Duty and High Amenity areas of the highway
- d. Understand the action to take where the pavement structure is not readily identified

023.1.2

Know the different footway and carriageway pavement structures.

- a. Know how to identify the names of highway pavement structures;
 - i. Flexible footways and carriageways
 - ii. Composite carriageways
 - iii. Modular footways and carriageways
 - iv. Rigid footways and carriageways

023.1.3

Know the materials used in highway pavement structures.

- a. Know the materials commonly used in the makeup of footways and carriageways;
 - i. Asphalt concrete
 - ii. Hot rolled asphalt
 - iii. Stone mastic asphalt
 - iv. Cold-lay surfacing materials
 - v. Granular Sub-bases Type 1 and 2
 - vi. Cement bound materials
 - vii. Concrete type C30 and C40
 - viii. Backfill materials Class A, B, C, D and E

Know how to identify backfill materials for suitability

- a. Know how to carry out field testing of backfill materials to determine their suitability for reuse or disposal;
 - i. Granular grading
 - ii. Silt content
 - iii. Clay condition
 - iv. Fine and coarse aggregates
 - v. Particle size
 - vi. Moisture content
 - vii. Contamination
- b. Know the characteristics of chalk materials
- c. Know how to determine chalk materials suitability and requirements for reuse
- d. Know how to identify the following material types;
 - i. Class A Graded Granular
 - ii. Class B Granular
 - iii. Class C Cohesive Granular
 - iv. Class D Cohesive
 - v. Class E Unacceptable materials
- e. Know the consequences of using unsuitable materials for backfill

023.2.2

Know how to protect backfill materials for re-use

- a. Know how to calculate the amount of backfill material required
- b. Know how to unload and protect backfill materials for re-use
- c. Know how to prevent backfill materials from degradation
- d. Understand the requirement for surround to apparatus materials
- e. Know how to select suitable materials for surround to apparatus
- f. Know the safe working practices for storing and protecting backfill materials

023.3 Reinstate backfill

023.3.1

Know how to select the appropriate tools and equipment to reinstate the backfill

- a. Know the factors which will determine the tools and equipment
 - i. Trench dimensions
 - ii. Trench depth
 - iii. Materials to compact
 - iv. Proximity to services
- b. Understand how to check the suitability of tools and equipment against specifications
- c. Know how to use tools and equipment to minimise damage to underground services
- d. Know how to protect street furniture and highway ironwork
- e. Know how to confirm plant equipment is operating efficiently
- f. Know the safe working practices for using tools and equipment

023.3.2

Know how to reinstate the backfill layers

- a. Know how to apply the specification to the type of carriageway or footway
- b. Know how to minimise damage to substructures and underground services
- c. Know the requirements for reinstatement around trees
- d. Understand the requirements of adequate compaction for the type of materials and layer thickness
- e. Know the depth of the backfill layer to meet specifications
- f. Understand how to minimise the risk of subsequent remedial work
- g. Know the safe working practices when carrying out reinstatement

023.4 Dispose of surplus materials

023.4.1

Know how to dispose of surplus materials

- a. Identify materials for disposal or re-use
- b. Know how to store materials on-site safely for disposal
- c. Understand the reasons for separating materials for reuse or disposal
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how to separate and dispose of unsuitable materials safely in accordance with legislation
- f. Know how to leave the site in a clean and safe condition
- g. Understand the safe working practices to follow in protecting or disposing of materials

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 005, 6156-21 Unit 205, 6156-23 Unit 225 or 6157-02 Unit 005 Reinstatement of Sub-base and Base (Roadbase) in non-bituminous materials and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

024.1 Prepare the sub-grade to receive subsequent layers.

024.2 Select and store materials for Sub-base and Base (Roadbase).

024.3 Reinststate the pavement layers.

024.4 Dispose of surplus materials.

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- The Specification for the Reinstatement of Openings in Highways
- National Joint Utilities Group publications.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

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Access to examination

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Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

Element 024.1

Prepare the sub-grade to receive subsequent layers.

024.1.1

Know how to prepare the sub-grade to receive subsequent layers.

- a. Know how to remove contaminated, loose or unsuitable materials prior to reinstatement
- b. Know the requirement for firm sub-grade to receive subsequent layers
- c. Know the alternative methods to be used in replacing unsuitable sub-grade material
- d. Know the consequences of failing to ensure a suitable and firm sub-grade
- e. Know how to confirm the backfill layer meets specifications for materials type and layer thickness
- f. Know the safe working practices to be used in preparing the sub-grade

Element 024.2

Select and store materials for Sub-base and Base (Roadbase).

024.2.1

Know how to select materials for Sub-base and Base (Roadbase).

- a. Know how to identify excavated and imported materials are suitable for use as a sub-base and base (roadbase)
 - i. Granular Sub-Base Type 1 and 2
 - ii. Class A Graded Granular Materials
 - iii. Alternative Reinstatement Materials (ARMS)
- b. Know how to select materials for reinstatement around services

024.2.2

Know how to store materials for Sub-base and Base (Roadbase).

- a. Know how to store and protect excavated and imported materials
- b. Know the procedures for unloading and locating imported materials
- c. Know the precautions to apply with stored materials in preventing obstruction to facilities and street furniture
- d. Know the safe working practices to be used for selecting and storing materials for reinstatement

Element 024.3
Reinstate the pavement layers.

024.3.1

Know how to select tools and equipment for reinstatement

- a. Know how to select tools and equipment for
 - i. Material type
 - ii. Location
 - iii. Trench dimensions
- b. Know how to confirm compaction equipment meets specification
 - i. Vibrotampers
 - ii. Vibrating plate
 - iii. Vibrating rollers (single, tandem and twin drum)
 - iv. Lightweight percussive rammers
 - v. Hand compacters

024.3.2

Know how to reinstate the pavement layers

- a. Know how to calculate the amount of material required to reinstate Sub-base and Base (Roadbase)
- b. Know how to lay and compact Sub-base and Base (Roadbase) for;
 - i. Material type
 - ii. Layer thickness
 - iii. Required number of passes
 - iv. Methods to use in compacting materials
- c. Know how to confirm the reinstated pavement layers meet specification
- d. Know how to carry out remedial action where specification has not been met
- e. Know the safe working practices to use when carrying out reinstatement of Sub-base and Base (Roadbase)

024.4

Dispose of surplus materials.

024.4.1

Know how to dispose of surplus materials

- a. Identify materials for disposal or re-use
- b. Know how to store materials on-site safely for disposal
- c. Understand the reasons for separating materials for reuse or disposal
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how to separate and dispose of unsuitable materials safely in accordance with legislation
- f. Know how to leave the site in a clean and safe condition
- g. Understand the safe working practices to follow in protecting or disposing of materials

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 006, 6156-21 Unit 206, 6156-23 Unit 226 or 6157-02 Unit 006 Reinstatement in Cold-Lay Bituminous Materials and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 025.1 Prepare the pavement to receive cold-lay surfacing materials.**
- 025.2 Construct cold-lay surfacing layers.**
- 025.3 Dispose of surplus materials.**

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- The Specification for the Reinstatement of Openings in Highways
- National Joint Utilities Group publications.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

The examination is 'open book' that allows candidates to use the appropriate documents listed above.

The examination will only take place at an approved centre in accordance with the scheme guidance and standards set out for conducting internally marked examinations.

Access to examination

The examination may only take place at a location approved by the Awarding Body as an Examination Centre. Access to examination will require candidates to show their current Streetworks Registration Card and one other means of photo identity such as a current driving licence or passport to the invigilator prior to the examination.

Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

025.1

Prepare the pavement to receive cold-lay surfacing materials.

025.1.1

Know how to prepare the pavement to receive cold-lay surfacing materials.

- a. Understand the reasons for removal of loose material prior to reinstatement.
- b. Know how to confirm the cavity depth will allow for specified surfacing layers;
 - i. Binder course
 - ii. Surface course
 - iii. Base (Roadbase).
- c. Know how to identify cold-lay materials are suitable for the pavement type.
- d. Know how to identify the requirement for edge preparation;
 - i. Damaged edges
 - ii. Trim back
 - iii. Undercutting
 - iv. Proximity to adjacent features.
- e. Know how to reposition displaced ironwork, pavement edge restraints and kerbs.
- f. Know the safe working practice to follow when preparing the pavement to receive the surfacing materials

025.2

Construct cold-lay surfacing layers.

025.2.1

Know how to select suitable tools and equipment for carrying out the reinstatement

- a. Know how to confirm compaction plant equipment that meets specifications
 - i. Single, twin and tandem rollers
 - ii. Plate compactors
 - iii. Vibrotamper
 - iv. Light weight percussive rammers
 - v. Hand compaction equipment
- b. Know the requirements to be met in selecting alternative compaction equipment
- c. Know how to reinstate adjacent to highway ironwork and adjacent features
- d. Know the safe working practice to follow when constructing cold-lay surfacing pavement layers

025.2.2

Know how to receive, lay and compact cold-lay bituminous materials

- a. Know how to confirm that materials delivered to site complies with specification:
 - i. Delivery note
 - ii. Visual confirmation of material quality
 - iii. Specifications
- b. Know how to handle and store cold-lay bituminous materials
- c. Know how to prepare the cavity to receive cold-lay bituminous materials:
 - i. Base (Roadbase) condition
 - ii. Existing edge straight cut, clean with no acute angles
 - iii. Application of edge sealant
- d. Know how to construct cold-lay bituminous pavement layers:
 - i. Binder courses, Surface courses
 - ii. Lift thickness and required number of passes
 - iii. Compaction methods

025.2.3

Know how to ensure the reinstatement conforms to specifications

- a. Know how to confirm cold-lay bituminous meet specification tolerances:
 - i. As laid profile
 - ii. Trench edge
 - iii. Proximity to adjacent features
- b. Know the reasons for intervention where reinstatement does not meet specifications and guarantee periods

025.3

Dispose of surplus materials.

025.3.1

Know how to dispose of surplus materials

- a. Identify materials for disposal
- b. Know how to store materials on-site safely for disposal
- c. Understand the reasons for separating materials for disposal
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how to separate and dispose of unsuitable materials safely in accordance with legislation
- f. Know how to leave the site in a clean and safe condition
- g. Understand the safe working practices to follow in disposing of materials

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 007, 6156-21 Unit 207, 6156-23 Unit 227 or 6157-02 Unit 007 Reinstatement in Hot-Lay Bituminous Materials and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

026.1 Prepare the pavement to receive hot-lay surfacing materials.

026.2 Construct hot-lay surfacing layers.

026.3 Dispose of surplus materials.

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- The Specification for the Reinstatement of Openings in Highways
- National Joint Utilities Group publications.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

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Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

026.1

Prepare the pavement to receive hot-lay surfacing materials.

026.1.1

Know how to prepare the pavement to receive hot-lay surfacing materials.

- a. Understand the reasons for removal of loose material prior to reinstatement.
- b. Know how to confirm the cavity depth will allow for specified surfacing layers;
 - i. Binder course
 - ii. Surface course
 - iii. Base (Roadbase).
- c. Know how to identify cold-lay materials are suitable for the pavement type.
- d. Know how to identify the requirement for edge preparation;
 - iv. Damaged edges
 - v. Trim back
 - vi. Undercutting
 - vii. Proximity to adjacent features.
- e. Know how to reposition displaced ironwork, pavement edge restraints and kerbs.
- f. Know the safe working practice to follow when preparing the pavement to receive the surfacing materials

026.2

Construct hot-lay surfacing layers.

026.2.1

Know how to select suitable tools and equipment for carrying out the reinstatement

- a. Know how to confirm compaction plant equipment that meets specifications
 - i. Single, twin and tandem rollers
 - ii. Plate compactors
 - iii. Vibrotamper
 - iv. Light weight percussive rammers
 - v. Hand compaction equipment
- b. Know the requirements to be met in selecting alternative compaction equipment
- c. Know how to reinstate adjacent to highway ironwork and adjacent features
- d. Know the safe working practice to follow when constructing hot-lay surfacing pavement layers

37.2.2

Know how to receive, lay and compact hot-lay bituminous materials

- a. Know how to confirm that materials delivered to site complies with specification:
 - i. Delivery note
 - ii. Visual confirmation of material quality
 - iii. Temperatures
 - iv. Specifications
- b. Know how to handle and store hot-lay bituminous materials
- c. Know how to prepare the cavity to receive hot-lay bituminous materials:
 - i. Base (Roadbase) condition
 - ii. Existing edge straight cut, clean with no acute angles
 - iii. Application of edge sealant
- d. Know how to construct hot-lay bituminous pavement layers:
 - i. Binder courses, Surface courses
 - ii. Delivery, laying and compaction temperatures
 - iii. Lift thickness and required number of passes
 - iv. Application of tack coat
 - v. Application of pre-coated chippings
 - vi. Compaction methods
- e. Know the safe working practice to follow when constructing hot-lay surfacing pavement layers

026.2.3

Know how to ensure the reinstatement conforms to specifications

- a. Know how to confirm hot-lay bituminous meet specification tolerances:
 - i. As laid profile
 - ii. Trench edge
 - iii. Proximity to adjacent features
 - iv. Know the reasons for intervention where reinstatement does not meet specifications and guarantee periods

026.3

Dispose of surplus materials.

026.3.1

Know how to dispose of surplus materials

- a. Identify materials for disposal
- b. Know how to store materials on-site safely for disposal
- c. Understand the reasons for separating materials for disposal
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how to separate and dispose of unsuitable materials safely in accordance with legislation
- f. Know how to leave the site in a clean and safe condition
- g. Understand the safe working practices to follow in disposing of materials

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 008, 6156-21 Unit 208, 6156-23 Unit 228 or 6157-02 Unit 008 Reinstatement of Concrete Slabs and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 027.1 Prepare sub-base to receive concrete slab**
- 027.2 Prepare edges of an existing slab to receive concrete reinstatement lay mesh reinforcement and place dowel bars**
- 027.3 Form concrete slab**
- 027.4 Dispose of surplus materials**

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- The Specifications for the Reinstatement of Openings in Highways.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

The examination is 'open book' that allows candidates to use the appropriate documents listed above.

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Access to examination

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Examination marking

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Outcome

Candidates will be informed of a pass or fail on the same day.

027.1 Prepare sub-base to receive concrete slab

027.1.1

Know how to prepare sub-base to receive concrete slab

- a. Know the requirement to remove loose and deleterious material from the area to be reinstated
- b. Know how to identify sub-base defects
 - i. Ingress of moisture
 - ii. Excessive drying
 - iii. Adequate compaction
 - iv. Cavity depth to receive the concrete slab
 - v. Contamination
 - vi. Camber and trench shape
- c. Know the range of suitable sub-base materials
- d. Know how to replace sub-base materials that do not conform to specifications
- e. Know how to select compaction equipment for the compaction of sub-base materials
- f. Know the safe working practices to follow when preparing the work area for reinstatement

027.2 Prepare edges of an existing slab to receive concrete reinstatement lay mesh reinforcement and place dowel bars

027.2.1

Know how to prepare the cavity edges of an existing slab to receive reinstatement in accordance with specification.

- a. Know the specified proximity to adjacent features
- b. Know how to saw cut edges
- c. Know how to form a taper edge support
- d. Know how to drill the exposed slab edge for the positioning of dowel bars
- e. Know the diameter for replacement dowel bars
- f. Know how to calculate the length of dowel bars
- g. Know how to identify and replace joints in rigid roads
 - i. Warping joint
 - ii. Expansion/contraction joint
 - iii. Transverse joint
 - iv. Longitudinal joints
- h. Know the reasons for wetting the slab edge prior to the placement of concrete
- i. Know the safe working practice to follow in preparing an existing slab to receive the reinstatement

027.2.2

Know how to lay mesh reinforcement

- a. Know the minimum amount of existing mesh to expose to allow for tying in of replacement reinforcing
- b. Know how to match the weight of replacement mesh reinforcement to match the existing
- c. Know how to tie in replacement mesh reinforcing
 - i. Tie wire
 - ii. Welding
- d. Know the safe working practice to follow when placing reinforcing mesh

027.3 Form concrete slab

027.3.1

Know how to form a concrete slab reinstatement in accordance with specification

- a. Know how to determine the suitability of concrete for use in the reinstatement
 - i. Delivery note
 - ii. Visual inspection
 - iii. Contamination
 - iv. Slump testing
 - v. Cube testing
- b. Know how to store materials for hand batching on-site
- c. Know how to separate unsuitable materials for disposal
- d. Know how to prepare the cavity edge to receive concrete adhesion
- e. Now how to handle, lay and compact concrete
- f. Know the tolerances for as-laid profile and edge
- g. Know how to apply textured finish to achieve skid resistance and texture depth
- h. Know how to allow for the protection and curing of concrete appropriate to environmental conditions
- i. Know the reasons for leaving the site in a clean and safe condition
- j. Know the safe working practices to follow when reinstating a concrete slab

027.4 Dispose of surplus materials

027.4.1

Know how to dispose of surplus materials

- a. Identify materials for disposal
- b. Know how to store materials on-site safely for disposal
- c. Understand the reasons for separating materials for disposal
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how to separate and dispose of unsuitable materials safely in accordance with legislation
- f. Know how to leave the site in a clean and safe condition
- g. Understand the safe working practices to follow in disposing of materials

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 009, 6156-21 Unit 209, 6156-23 Unit 229 or 6157-02 Unit 009 Reinstatement of Modular Surfaces and Concrete Footways and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 028.1 Remove Existing Modular or concrete surfacing
- 028.2 Prepare sub-base
- 028.3 Lay bedding materials
- 028.4 Lay modular and concrete surfacing
- 028.5 Dispose of surplus materials

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- An Introduction to the Use of Portable Temporary Traffic Lights.

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Examination marking

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Outcome

Candidates will be informed of a pass or fail on the same day.

028.1 Remove Existing Modular or concrete surfacing

028.1.1

Know how to remove existing modular or concrete surfacing

- a. Identify the bond types commonly used within the confines of the highway
- b. Know how to select tools and equipment for the removal of modular paving and concrete surfaces
- c. Know how to take up or remove modular paving and concrete surfacing
 - i. Concrete blocks
 - ii. Concrete paving slabs
 - iii. Small element paving
 - iv. Concrete surfacing
- d. Know how to clean modular paving for re-use
- e. Know how to identify and store suitable modular paving for re-use
- f. Know how to separate unsuitable modular paving for disposal
- g. Know the requirements for using temporary materials for interim reinstatement
- h. Know the safe working practice to follow when removing modular or concrete surfacing

028.2 Prepare sub-base

028.2.1

Know how to prepare sub-base to receive modular or concrete surfacing

- a. Know the requirement to remove loose and deleterious material from the area to be reinstated
- b. Know how to identify sub-base defects
 - i. Ingress of moisture
 - ii. Excessive drying
 - iii. Adequate compaction
 - iv. Cavity depth to receive the concrete slab
 - v. Contamination
 - vi. Camber and trench shape
- c. Know the range of suitable sub-base materials
- d. Know how to replace sub-base materials that do not conform to specifications
- e. Know how to select compaction equipment for the compaction of sub-base materials
- f. Know the safe working practices to follow when preparing the work area for reinstatement

028.3 Lay bedding materials

028.3.1

Know how to lay bedding materials for modular reinstatement

- a. Know the types of bedding materials permitted by specification
- b. Know how to confirm the suitability of bedding materials
- c. Know how to lay bedding materials uniformly
- d. Know how to allow for compaction and bedding in of modular surfacing
- e. Know how to compact bedding materials prior to laying modular paving
- f. Know the safe working practices to follow when laying bedding materials

028.4 Lay modular and concrete surfacing

028.4.1

Know how to lay modular surfacing

- a. Know how to identify the bond type to match the existing surfacing
- b. Know how to lay modular and concrete paving slabs to match the existing bond or pattern
- c. Know how to handle and transport modular and concrete paving slabs safely
- d. Know how to select appropriate tools and equipment to lay modular block paving and concrete paving slabs
- e. Know the procedures to compact modular block paving
- f. Know the requirement for application of jointing materials
- g. Know the tolerances for as-laid profile for modular surfacing
- h. Know the safe working practices to follow when reinstating modular block paving or concrete paving slabs

028.4.2

Know how to lay concrete surfacing

- a. Know how to confirm the cavity depth meets specification for footway reinstatement
- b. Know how to confirm the suitability of concrete
 - i. Delivery note
 - ii. Visual inspection
 - iii. Slump test
 - iv. Cube test
- c. Know how to check for proximity to adjacent features and action required where it does not meet specification
- d. Know the requirement for the placement of plastic membrane prior to concreting
- e. Know how concrete materials are placed and compacted
- f. Know how to apply textured finish to match the existing area
- g. Know the tolerances for as-laid profile for concrete footways
- h. Know the safe working practices to follow when reinstating concrete surfacing

028.5 Dispose of surplus materials

028.5.1

Know how to dispose of surplus materials

- a. Identify materials for disposal
- b. Know how to store materials on-site safely for disposal
- c. Understand the reasons for separating materials for disposal
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how to separate and dispose of unsuitable materials safely in accordance with legislation
- f. Know how to leave the site in a clean and safe condition
- g. know the safe working practices to follow in disposing of materials

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 010, 6156-21 Unit 210, 6156-23 Unit 230 or 6157-02 Unit 010 Monitoring Signing, Lighting and Guarding and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 029.1 Conduct and monitor a survey of the work site.
- 029.2 Monitor the protection of pedestrians, vehicular traffic and site personnel.
- 029.3 Monitor the provision of temporary traffic control
- 029.4 Monitor site safety

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- An Introduction to the Use of Portable Temporary Traffic Lights.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

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Examination marking

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Outcome

Candidates will be informed of a pass or fail on the same day.

Element 029.1

Conduct and monitor a survey of the work site.

029.1.1

Know the purpose of carrying out a work site survey/risk assessment and the potential requirements of the site location.

- a. Proximity to schools, hospitals, junctions, roundabouts and rail level crossings
- b. Types of pedestrians and road users
- c. Special needs
- d. Volume, speed and type of traffic
- e. Lighting on the highway
- f. The location of footway, cycle lanes, traffic lanes and road layouts
- g. Mobile and minor works
- h. Siting distances, sizes of signs and road traffic cones appropriate to site locations and conditions
- i. The safe working practices when carrying out a work site survey
- j. Know the remedial action to take where a work site survey fails to identify foreseeable risks.

029.1.2

Know the factors to consider when monitoring the provisions for minimal disruption and safe passage of pedestrians and vehicular traffic.

- a. Identify the safe provision for types of pedestrian and special needs.
- b. Know the provision of temporary pedestrian walkways.
- c. Know the provision of pedestrian signing and lighting.
- d. Identify the provision for the type of traffic.
- e. Identifying suitable traffic control for the site location.
 - i Priority signing
 - ii Stop and Go
 - iii Temporary traffic lights
 - iv Stop Works
 - v Give and Take
- f. Know the Signing, lighting and guarding requirements for site locations.
- g. Identifying the requirements traffic lanes to accommodate the type of traffic
- h. Know the remedial action to take where deficiencies in the planned provision have been identified.

029.1.3

Know the factors to consider when making provisions for site personnel, vehicles and equipment within the confines of the working space.

- a. Identifying the requirements for safety zones, works area and working space.
- b. Identify the provisions to be made for site vehicles, plant and equipment.
- c. Identifying the safety clearances appropriate to the site location.
- d. Know the remedial action to take where deficiencies in the provision have been identified.

Element 029.2

Monitor the protection of pedestrians, vehicular traffic and site personnel.

029.2.1

Know the appropriate personal protective equipment to use for signing, lighting and guarding activities.

- a. Identify the personal protective equipment and its suitability for use.
- b. Identify the suitability of high visibility clothing.
- c. Know the appropriate remedial action to be taken where the provision for site personnel, pedestrians and vehicular traffic does not comply with health and safety or specifications.

029.2.2

Know how to control the movement of pedestrians, traffic, plant and vehicles within the confines of the work area and site location.

- a. Know site requirements for ensuring the safe passage of pedestrians.
- b. Know the correct types of temporary traffic control for the site location.
- c. Know the safe storage of plant and materials within the confines of the site.
- d. Identify the site requirements for works areas and working space.
- e. Know the remedial action required where the safe passage of pedestrians, traffic, plant and site vehicles does not meet health and safety or specifications.

029.2.3

Know the checks to ensure equipment is suitable for use.

- a. Identify the signing requirements for the site.
- b. Identify the size of temporary road works signs for the site location.
- c. Identify the height of road traffic cones for the site location.
- d. Know the remedial action to be taken where work equipment does not meet the required standards.

029.2.4

Know the specified sequence for the positioning and removal of signing, lighting and guarding equipment.

- a. Identifying the signing requirement for using temporary traffic signals.
- b. Identifying the signing requirement for Stop and Go traffic control.
- c. Identifying the signing requirement for Priority traffic control.
- d. Know sequence for setting up and removal of temporary traffic management.
- e. Know requirement for site maintenance for installed temporary traffic management.

Element 029.3
Monitor the provision of temporary traffic control

029.3.1

Know how to ensure that temporary traffic signals are operating correctly.

- a. Know the safety checks on cables, lamps, detectors, generators, batteries and timings.
- b. Know fault finding and action remedial action.
- c. Identify the remedial action to take where temporary traffic signals fail or do not work in accordance with specifications

029.3.2

Know the correct procedure for the positioning and removal of temporary traffic signals in relation to the requirements of the site location.

- a. Know notification requirements for the use of temporary traffic signals on the highway.
- b. Know sequence for positioning temporary traffic lights.
- c. Identify appropriate signs used with temporary traffic lights.
- d. Know sequence for commissioning and decommissioning temporary traffic lights.
- e. Know the remedial action to be taken where the procedure for setting out, maintaining and removal of temporary traffic management does not meet the appropriate standards.

029.3.3

Know how to adjust temporary traffic signals.

- a. Know how to adjust timings to suit the site length.
- b. Identify the alterations of timings to suit traffic flows and site conditions.
- c. Know the modes of operation: Vehicle Actuation, Fixed Time, Manual and All Red.
- d. Know the remedial actions to consider where temporary traffic signals are not functioning according to specifications.

029.4 Monitor site safety

029.4.1

Know how to Monitor of site safety.

- a. Understand the general health and safety requirements for safe working on the highway and safe operations
- b. Understand the health and safety requirements for site conditions
- c. Know the appropriate safety equipment to be used during site operations
- d. Know how to ensure safety equipment is fit for purpose
- e. Know the requirements for high visibility clothing in accordance with specifications for working on the highway
- f. Know the risks associated with site operations and conditions
- g. Know the remedial action to be taken where site operations and conditions are not met
- h. Know the conditions where advise should be sought from the Road/Highway Authority

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 011, 6156-21 Unit 211, 6156-023 Unit 231 or 6157-02 Unit 011 Monitoring Excavation in the Highway and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 030.1 Monitor excavation in the highway**
- 030.2 Monitor action to be taken to avoid damage to underground apparatus during excavation**
- 030.3 Monitor the selection, storage and disposal of excavated materials**
- 030.4 Monitor site safety**

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice.
- The Specification for the Reinstatement of Openings in Highways.
- National Joint utilities Group publications.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

The examination is 'open book' that allows candidates to use the appropriate documents listed above.

The examination will only take place at an approved centre in accordance with the scheme guidance and standards set out for conducting internally marked examinations.

Access to examination

The examination may only take place at a location approved by the Awarding Body as an Examination Centre. Access to examination will require candidates to show their current Streetworks Registration Card and one other means of photo identity such as a current driving licence or passport to the invigilator prior to the examination.

Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

030.1 Monitor excavation in the highway

030.1.1

Know how to identify highway pavement structures.

- a. Identify the layers within highway pavement structures;
 - i. Sub-base
 - ii. Base
 - iii. Binder
 - iv. Surfaces course
- b. Identify features that would require the Street Authority intervention
- c. Know how to identify High Duty and High Amenity areas of the highway
- d. Understand the action to take where the pavement structure is not readily identified

030.1.2

Know the different footway and carriageway pavement structures.

- a. Know how to identify the names of highway pavement structures;
 - i. Flexible footways and carriageways
 - ii. Composite carriageways
 - iii. Modular footways and carriageways
 - iv. Rigid footways and carriageways

030.1.3

Know the materials used in highway pavement structures.

- a. Know the materials commonly used in the makeup of footways and carriageways;
 - i. Asphalt concrete
 - ii. Hot rolled asphalt
 - iii. Stone mastic asphalt
 - iv. Cold-lay surfacing materials
 - v. Granular Sub-bases Type 1 and 2
 - vi. Cement bound materials
 - vii. Concrete type C30 and C40
 - viii. Backfill materials Class A, B, C, D and E

030.2 Monitor action to be taken to avoid damage to underground apparatus during excavation

030.2.1

Know how to monitor excavation in the highway and identify the methods and equipment to minimise risk of remedial work or damage to the environment.

- a. Identify risks from carrying out highway excavations
 - i. Sub-structures
 - ii. Highway and utility fixed ironwork and surface features
 - iii. Bad ground conditions
 - iv. Proximity to trees
 - v. Location of buried services
 - vi. Control of ground and surface water
- b. Know how to select appropriate tools and equipment for excavation
- c. Know how to confirm the suitability of plant and equipment for use
- d. Know how to determine the trench dimensions to facilitate work and the subsequent reinstatement
- e. Know how to minimise remedial work from highway excavations
- f. Understand reasons for separating excavated materials for re-use or disposal
- g. Know how to protect materials for re-use or disposal
- h. Understand the consequences of using unsuitable materials for reinstatement
- i. Know how to apply safe working practices for carrying out highway excavations
- j. Know the remedial action to be taken where methods used fail to meet specifications.

030.2.2

Know how to identify underground services.

- a. Identify types of underground services likely to be encountered during excavation in the highway;
 - i. Gas
 - ii. Water
 - iii. Electric
 - iv. Telecommunications
 - v. Highway drainage
- b. Know the actions to minimise damage to buried services
- c. Know how to report damage to underground services
- d. Understand the action required to report unmarked services to the appropriate highway authority or utility company
- e. Understand the requirement for trench support
- f. Know how to monitor safe working practices for locating and avoiding damage to underground apparatus

030.3 Monitor the selection, storage and disposal of excavated materials

030.3.1

Know how to identify excavated materials for suitability

- a. Know how to field test excavated materials to determine their suitability for reuse or disposal;
 - i. Granular grading
 - ii. Silt content
 - iii. Clay condition
 - iv. Fine and course aggregates
 - v. Particle size
 - vi. Moisture content
 - vii. Contamination
- b. Know the characteristics of chalk materials
- c. Know how to determine chalk materials suitability and requirements for reuse
- d. Know how to identify the following material types;
 - i. Class A Graded Granular
 - ii. Class B Granular
 - iii. Class C Cohesive Granular
 - iv. Class D Cohesive
 - v. Class E Unacceptable materials
- e. Know the remedial action to be taken where materials selected do not meet specification.

030.3.2

Know how to monitor protection or disposal of excavated materials for reuse or disposal

- a. Know how materials are stored on-site safely
- b. Understand the reasons for separating materials for reuse or disposal
- c. Know how materials are protected reusable materials from;
 - i. Contamination
 - ii. Moisture loss or gain
 - iii. Loss of fines
 - iv. Weather conditions
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how unsuitable materials are disposed of safely and in accordance with legislation
- f. Understand the safe working practices to follow in protecting or disposing of materials
- g. Know the remedial action to be taken where specifications are not met

030.4 Monitor site safety

030.4.1

Know how to Monitor of site safety.

- a. Understand the general health and safety requirements for safe working on the highway and safe operations
- b. Understand the health and safety requirements for site conditions
- c. Know the appropriate safety equipment to be used during site operations
- d. Know how to ensure safety equipment is fit for purpose
- e. Know the requirements for high visibility clothing in accordance with specifications for working on the highway
- f. Know the risks associated with site operations and conditions
- g. Know the remedial action to be taken where site operations and conditions to not meet health and safety standards

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 012, 6156-21 Unit 212, 6156-23 Unit 232 or 6157-02 Unit 012 Monitoring Reinstatement and Compaction of Backfill Materials and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 031.1 Monitor the selection and storage of backfill materials**
- 031.2 Monitor the selection of plant and equipment for the placement and compaction of backfill materials.**
- 031.3 Monitor action taken to avoid damage to underground apparatus**
- 031.4 Monitor the reinstatement of the backfill materials.**
- 031.5 Monitor site safety**

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- Specifications for the Reinstatement of Openings in Highways
- National Joint utilities Group publications.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%. The examination is 'open book' that allows candidates to use the appropriate documents listed above.

The examination will only take place at an approved centre in accordance with the scheme guidance and standards set out for conducting internally marked examinations.

Access to examination

The examination may only take place at a location approved by the Awarding Body as an Examination Centre. Access to examination will require candidates to show their current Streetworks Registration Card and one other means of photo identity such as a current driving licence or passport to the invigilator prior to the examination.

Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

031.1 Monitor the selection and storage of backfill materials

031.1.1

Know how to monitor the selection of backfill materials for suitability

- a. Know testing of backfill materials to determine their suitability for reuse or disposal is carried out covering;
 - i. Granular grading
 - ii. Silt content
 - iii. Clay condition
 - iv. Chalk condition
 - v. Fine and coarse aggregates
 - vi. Particle size
 - vii. Moisture content
 - viii. Contamination
- b. Know the characteristics of chalk materials
- c. Know how to determine chalk materials suitability and requirements for reuse
- d. Know how to identify the following material types;
 - i. Class A Graded Granular
 - ii. Class B Granular
 - iii. Class C Cohesive Granular
 - iv. Class D Cohesive
 - v. Class E Unacceptable materials
- e. Know the factors to consider when selecting backfill materials for use
- f. Know the consequences of using unsuitable materials for backfill

031.1.2

Know how to monitor the protection of backfill materials for use

- a. Know how to calculate the amount of backfill material required
- b. Know how to unload and protect backfill materials for re-use
- c. Know how to prevent backfill materials from degradation
- d. Understand the requirement for surround to apparatus materials
- e. Know how to select suitable materials for surround to apparatus
- f. Know the remedial action required where backfill materials fail to meet specifications
- g. Know the safe working practices for storing and protecting backfill materials

031.2 Monitor the selection of plant and equipment for the placement and compaction of backfill materials.

031.2.1

Know how to monitor the selection of appropriate tools and equipment to reinstate the backfill

- a. Know the factors which will determine the tools and equipment for use
 - i. Trench dimensions
 - ii. Trench depth
 - iii. Materials to compact
 - iv. Proximity to services
- b. Understand how to check the suitability of tools and equipment against specifications
- c. Know how to tools and equipment are used to minimise damage to underground services
- d. Know how to protect street furniture and highway ironwork
- e. Know how to confirm plant equipment is operating efficiently
- f. Know the remedial action to take where tools and equipment do not meet specifications
- g. Know the safe working practices for using tools and equipment

031.3 Monitor action taken to avoid damage to underground apparatus

031.3.1

Know how to identify underground services.

- a. Identify types of underground services likely to be encountered during excavation in the highway;
 - i. Gas
 - ii. Water
 - iii. Electric
 - iv. Telecommunications
 - v. Highway drainage
- b. Know the actions to minimise damage to buried services
- c. Know how to report damage to underground services
- d. Understand the action required to report unmarked services to the appropriate highway authority or utility company
- e. Understand the requirement for trench support
- f. Know how to monitor safe working practices for reinstating and avoiding damage to underground apparatus

031.3.2

Know how to monitor the prevention of damage to underground apparatus during reinstatement.

- a. Know the methods to protect and support underground apparatus
- b. Know the risks and implications of damage to underground apparatus during reinstatements
- c. Know the requirement for finefill around underground apparatus
- d. Know the remedial action to be taken where the reinstatement does not meet specifications
- e. Know the actions to take in the event of damage to underground apparatus
- f. Know how to apply safe working practices during the reinstatement of backfill

031.4 Monitor the reinstatement of the backfill layer.

031.4.1

Know how to reinstate the backfill layers

- a. Know how to apply the specification to the type of carriageway or footway
- b. Know how to minimise damage to substructures and underground services
- c. Know the requirements for reinstatement around trees
- d. Know how to select suitable compaction equipment for the trench size, access and materials to be compacted
- e. Understand the requirements of adequate compaction for the type of materials and layer thickness
- f. Know the depth of the backfill layer to meet specifications
- g. Understand how to minimise the risk of subsequent remedial work
- h. Know the remedial action to take where the reinstatement fails to meet specifications
- i. Know the safe working practices when carrying out reinstatement

031.4.2

Know how to monitor the disposal of surplus materials

- a. Identify materials for disposal or re-use
- b. Know how to store materials on-site safely for disposal
- c. Understand the reasons for separating materials for reuse or disposal
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how to separate and dispose of unsuitable materials safely in accordance with legislation
- f. Know how to leave the site in a clean and safe condition
- g. Know the safe working practices to follow in protecting or disposing of materials

031.5 Monitor site safety

031.5.1

Know how to Monitor of site safety.

- a. Understand the general health and safety requirements for safe working on the highway and safe operations
- b. Understand the health and safety requirements for site conditions
- c. Know the appropriate safety equipment to be used during site operations
- d. Know how to ensure safety equipment is fit for purpose
- e. Know the requirements for high visibility clothing in accordance with specifications for working on the highway
- f. Know the risks associated with site operations and conditions

Know the remedial action to be taken where site operations and conditions do not meet health and safety standards.

Unit 032

Reassessed monitoring reinstatement of sub-base and base (Roadhouse) in non-bituminous materials

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 013, 6156-21 Unit 213, 6156-23 Unit 233 or 6157-02 Unit 013 Monitoring Reinstatement of Sub-base and Base (Roadbase) in Non-bituminous Material and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 032.1 Monitor the selection and storage of non-bituminous materials for use in carriageway and footway reinstatements
- 032.2 Monitor the selection of plant and equipment for the placement and compaction of sub-base and base (roadbase) material.
- 032.3 Monitor construction of sub-base and base (roadbase) pavement layers.
- 032.4 Monitor site safety

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- Specifications for the Reinstatement of Openings in Highways
- National Joint utilities Group publications.

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

The examination is 'open book' that allows candidates to use the appropriate documents listed above.

The examination will only take place at an approved centre in accordance with the scheme guidance and standards set out for conducting internally marked examinations.

Access to examination

The examination may only take place at a location approved by the Awarding Body as an Examination Centre. Access to examination will require candidates to show their current Streetworks Registration Card and one other means of photo identity such as a current driving licence or passport to the invigilator prior to the examination.

Examination marking

The examination will be marked internally and the candidate informed of the result on the

same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

032.1 Monitor the selection and storage of non-bituminous materials for use in carriageway and footway reinstatements

032.1.1

Know how to monitor the selection of sub-base and base (roadbase) materials for suitability.

- a. Know the range of materials permitted by specification for the reinstatement of sub-base and base (roadbase);
- b. Know how to carry out field testing of materials to determine their suitability for sub-base and base (roadbase);
 - i. Granular Sub-base Type 1
 - ii. Granular Sub-base Type 2
 - iii. Class A Graded Granular
- c. Know the factors to consider when selecting sub-base and base (roadbase) materials for use
 - i. Specifications
 - ii. Availability
 - iii. Pavement type
- d. Know how to calculate material quantities
 - i. Volume
 - ii. Cubic metres
- e. Know how Alternative reinstatement materials are classified and their suitability for use as base (roadbase) and sub-bases
 - i. Structural materials for reinstatement
 - ii. Stabilised materials for fill
- f. Know the consequences of using unsuitable materials for sub-base and base (roadbase) and remedial action

032.1.2

Know how to monitor the protection of sub-base and base (roadbase) materials for use.

- a. Know how to unload and protect sub-base and base (roadbase) materials for re-use
- b. Know how to prevent sub-base and base (roadbase) materials from degradation
- c. Understand the requirement for surround to apparatus materials
- d. Know how to select suitable materials for surround to apparatus
- e. Know the remedial action required where sub-base and base (roadbase) materials fail to meet specifications
- f. Know the safe working practices for storing and protecting sub-base and base (roadbase) materials

032.2 Monitor the selection of plant and equipment for the placement and compaction of sub-base and base (roadbase) materials.

032.2.1

Know how to monitor the selection of appropriate tools and equipment to reinstate the sub-base and base (roadbase).

- a. Know the factors which will determine the tools and equipment for use
 - i. Trench dimensions
 - ii. Trench depth
 - iii. Materials to compact
 - iv. Proximity to services
- b. Understand how to check the suitability of tools and equipment against specifications
- c. Know how tools and equipment are used to minimise damage to underground services
- d. Know how to protect street furniture and highway ironwork
- e. Know how to confirm plant equipment is operating efficiently
- f. Know the remedial action to take where tools and equipment do not meet specifications
- g. Know the safe working practices for using tools and equipment

032.3 Monitor construction of sub-base and base (roadbase) pavement layers.

032.3.1

Know how monitor the reinstatement of the sub-base and base (roadbase) pavement layers.

- a. Know how to apply the specification to the type of carriageway or footway
- b. Know how to minimise damage to substructures and underground services
- c. Know the requirements for reinstatement around trees and sensitive areas
- d. Know how to identify where the backfill layer does not meet specification and the remedial action required
- e. Know how to select suitable compaction equipment for the trench size, access and materials to be compacted
- f. Understand the requirements of adequate compaction for the type of materials and layer thickness to meet specifications
- g. Know the depth of the sub-base and base (roadbase) layers to meet specifications
- h. Understand how to minimise the risk of subsequent remedial work
- i. Know the remedial action to take where the reinstatement fails to meet specifications
- j. Know the safe working practices when carrying out reinstatement

032.3.2

Know how to monitor the disposal of surplus materials.

- a. Identify materials for disposal or re-use
- b. Know how to store materials on-site safely for disposal
- c. Understand the reasons for separating materials for reuse or disposal
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how to separate and dispose of unsuitable materials safely in accordance with legislation
- f. Know how to leave the site in a clean and safe condition
- g. Know the safe working practices to follow in protecting or disposing of materials

032.4 Monitor site safety

032.4.1

Know how to Monitor of site safety.

- a. Understand the general health and safety requirements for safe working on the highway and safe operations
- b. Understand the health and safety requirements for site conditions
- c. Know the appropriate safety equipment to be used during site operations
- d. Know how to ensure safety equipment is fit for purpose
- e. Know the requirements for high visibility clothing in accordance with specifications for working on the highway
- f. Know the risks associated with site operations and conditions
- g. Know the remedial action to be taken where site operations and conditions do not meet health and safety standards.

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 014, 6156-21 Unit 214, 6156-23 Unit 234 or 6157-02 Unit 014 Monitoring Reinstatement in Bituminous Materials and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 033.1 Monitor the selection of bituminous materials for use in flexible carriageway and footway reinstatements.
- 033.2 Monitor the selection of plant and equipment for the placement and compaction of bituminous material.
- 033.3 Monitor the construction of bituminous base (roadbase) and surfacing pavement layers.
- 033.4 Monitor site safety.

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- Specifications for the Reinstatement of Openings in Highways

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

The examination is 'open book' that allows candidates to use the appropriate documents listed above.

The examination will only take place at an approved centre in accordance with the scheme guidance and standards set out for conducting internally marked examinations.

Access to examination

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Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

033.1 Monitor the selection of bituminous materials for use in flexible carriageway and footway reinstatements

033.1.1

Know how to monitor the selection of bituminous materials for suitability.

- a. Know the range of materials permitted by specification for the reinstatement of bituminous base (roadbase) and pavement surfacing
- b. Know the factors to consider when selecting bituminous materials for use in reinstatements to include;
 - i. Road type
 - ii. Existing pavement surfacing materials
 - iii. Hot and cold-lay materials
 - iv. Polished stone values
 - v. Aggregate abrasion values
 - vi. Penetration grades of bitumen
 - vii. Highway authority intervention
- c. Know how to calculate bituminous material quantities from given information
 - i. Area
 - ii. Rates of spread
- d. Know how the quality checks to be made for bituminous materials prior to use
 - i. Delivery note
 - ii. Visual
 - iii. Temperatures
- e. Know the consequences of using unsuitable bituminous materials
- f. Know the remedial action to be taken where material specification is not met
- g. Know the remedial action to be taken where material selection does not meet specification
- h. Know the safe working practices to be followed in handling and storing hot and cold-lay materials

033.2 Monitor the selection of plant and equipment for the placement and compaction of bituminous material.

033.2.1

Know how to monitor the selection of appropriate tools and equipment to reinstate the base (roadbase) and pavement surfacing layers in bituminous materials.

- a. Know the factors which will determine the tools and equipment for use
 - i. Trench dimensions
 - ii. Trench depth
 - iii. Materials to compact
- b. Understand how to check the suitability of tools and equipment against specifications
- c. Know how to protect street furniture and highway ironwork
- d. Know how to confirm plant equipment is operating efficiently
- e. Know the remedial action to take where tools and equipment do not meet specifications
- f. Know the safe working practices for using tools and equipment

033.3 Monitor the construction of bituminous base (roadbase) and surfacing pavement layers.

033.3.1

Know how to monitor the reinstatement of base (roadbase) and pavement surfacing layers in bituminous materials.

- a. Know how to apply the specification to the type of carriageway or footway
- b. Know how to identify where the base (roadbase) layer does not meet specification and the remedial action required prior to the placement of surfacing materials
- c. Know how to select suitable compaction equipment for the trench size, access and materials to be compacted
- d. Know how to ensure cavity edges are prepared to receive surfacing materials
- e. Know the requirement for the application of edge sealant, tack coat and over banding
- f. Understand the requirements of adequate compaction for the type of materials and layer thickness to meet specifications
- g. Know the depth of the base (roadbase) and pavement surfacing layers to meet specifications
- h. Know how to apply the proximity rule to surfacing reinstatements
- i. Know how to check texture depth and skid resistance of surfacing layers
- j. Understand how to minimise the risk of subsequent remedial work
- k. Know tolerance checks to be made on completed surfacing reinstatements
 - i. As-laid profile
 - ii. Edge
 - iii. Intervention limits
- l. Know the remedial action to take where the reinstatement fails to meet specifications
- m. Know the safe working practices when carrying out reinstatement

033.3.2

Know how to monitor the disposal of surplus materials.

- a. Identify materials for disposal or re-use
- b. Know how to store materials on-site safely for disposal
- c. Understand the reasons for separating materials for reuse or disposal
- d. Know the consequences of using unsuitable materials for reinstatement
- e. Know how to separate and dispose of unsuitable materials safely in accordance with legislation
- f. Know how to leave the site in a clean and safe condition
- g. Know the safe working practices to follow in protecting or disposing of materials

033.4 Monitor site safety

033.4.1

Know how to Monitor of site safety.

- a. Understand the general health and safety requirements for safe working on the highway and safe operations
- b. Understand the health and safety requirements for site conditions
- c. Know the appropriate safety equipment to be used during site operations
- d. Know how to ensure safety equipment is fit for purpose
- e. Know the requirements for high visibility clothing in accordance with specifications for working on the highway
- f. Know the risks associated with site operations and conditions

Know the remedial action to be taken where site operations and conditions do not meet health and safety standards.

Unit 034

Reassessed monitoring the reinstatement in concrete slabs

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 015, 6156-21 Unit 215, 6156-23 Unit 235 or 6157-02 Unit 015 Monitoring the Reinstatement of Concrete Slabs and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 034.1 Monitor the preparation of sub-base to receive the concrete slab reinstatement
- 034.2 Monitor the preparation of edges of an existing slab to receive concrete reinstatement, lay mesh reinforcement and place dowel bars
- 034.3 Monitor the reinstatement and compaction of the concrete slab
- 034.4 Monitor site safety

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- Specifications for the Reinstatement of Openings in Highways

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

The examination is 'open book' that allows candidates to use the appropriate documents listed above.

The examination will only take place at an approved centre in accordance with the scheme guidance and standards set out for conducting internally marked examinations.

Access to examination

The examination may only take place at a location approved by the Awarding Body as an Examination Centre. Access to examination will require candidates to show their current Streetworks Registration Card and one other means of photo identity such as a current driving licence or passport to the invigilator prior to the examination.

Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

034.1 Monitor the preparation of sub-base to receive the concrete slab reinstatement

034.1.1

Monitor the preparation of sub-base to receive concrete slab.

- a. Know the requirement to remove loose and deleterious material from the area to be reinstated
- b. Know how to identify sub-base and cavity defects
 - i. Ingress of moisture
 - ii. Excessive drying
 - iii. Adequate compaction
 - iv. Cavity depth to receive the concrete slab
 - v. Contamination
 - vi. Camber and trench shape
- c. Know the range of suitable sub-base materials
- d. Know how monitor the placement of sub-base materials
- e. Know how to select compaction equipment for the compaction of sub-base materials
- f. Know the remedial action to be taken where specifications are not met
- g. Know the safe working practices to follow when preparing the work area and cavity for reinstatement

034.2 Monitor the preparation of edges of an existing slab to receive concrete reinstatement, lay mesh reinforcement and place dowel bars

034.2.1

Monitor the preparation of the cavity edge to receive concrete slab reinstatement.

- a. Know how to ensure the cavity edges meet specifications
 - i. Proximity to existing joints
 - ii. Saw cutting
 - iii. Taper edge support
 - iv. Exposure of existing reinforcement
- b. Know how to ensure joints are prepared to receive the concrete slab reinstatement
 - i. Transverse joints
 - ii. Warping joints
 - iii. Expansion and contraction joints
 - iv. Longitudinal joints
- c. Know the remedial action to be taken where specifications are not met
- d. Know the safe working practices to be followed for edge preparation

034.2.2

Monitor the placement of mesh reinforcement.

- a. Know how existing mesh is exposed to allow for tying in of replacement mesh
- b. Know how reinforcing mesh is cut to size to allow for overlap
- c. Know how replacement reinforcement is tied or welded to the existing mesh
- d. Know the tolerance to finished slab levels to be obtained for mesh reinforcement
- e. Know the remedial action to be taken where specifications are not met
- f. Know the safe working practices to be followed for the placement of reinforcement

034.2.3

Monitor the placement of dowel bars.

- a. Know how to confirm the requirement of the placement of dowel bars
- b. Know the minimum diameter for dowel bars
- c. Know how to calculate the length of dowel bars
- d. Know how to select appropriate tools and equipment to be used for the cutting and placement of dowel bars
- e. Know how to ensure the positioning of dowel bars meets specification
- f. Know the remedial action required where the placement of dowel bars do not meet specifications.
- g. Know the safe working practices to be followed for the placement of dowel bars

034.3 Monitor the reinstatement and compaction of the concrete slab

034.3.1

Monitor the reinstatement of concrete slab

- a. Know how to confirm the cavity depth meets specification for a rigid road reinstatement
- b. Know how to calculate material quantities
- c. Know how to confirm the suitability of concrete
 - i. Delivery note
 - ii. Visual inspection
 - iii. Ready mix and site batched concrete
 - iv. Slump test
 - v. Cube test
- d. Know how to check for proximity to adjacent features and action required where it does not meet specification
- e. Know the requirement for the placement of the membrane prior to the reinstatement of the concrete surface
- f. Know how to select tools and equipment to place and compact concrete slab reinstatement
- g. Know how to prepare the cavity edges in preparation for placing concrete
- h. Know how concrete materials are placed and compacted
- i. Know how textured finishes are applied to match the existing area
- j. Know the tolerances for as-laid profile for rigid road reinstatements
- k. Know how to cure concrete in differing weather conditions
- l. Know when the reinstated concrete slab may be opened for trafficking
- m. Know the remedial action to be taken where specifications have not been met
- n. Know the safe working practices to be followed when reinstating concrete surfacing

034.4 Monitor site safety

034.4.1

Know how to Monitor site safety.

- a. Understand the general health and safety requirements for safe working on the highway and safe operations
- b. Understand the health and safety requirements for site conditions
- c. Know the appropriate safety equipment to be used during site operations
- d. Know how to ensure safety equipment is fit for purpose
- e. Know the requirements for high visibility clothing in accordance with specifications for working on the highway
- f. Know the risks associated with site operations and conditions
- g. Know the remedial action to be taken where site operations and conditions do not meet health and safety standards

Introduction

This unit is only suitable for those who hold a current 6156-01 Unit 016, 6156-21 Unit 216, 6156-23 Unit 236 or 6157-02 Unit 016 Reinstatement of Modular Surfaces and Concrete Footways and are to re-qualify and be able to re-register their qualification within the permitted timescales set out in the Street Works (Qualifications of Supervisors and Operatives) (England) Regulations 2009. This unit covers the knowledge required to be prepared to undertake reassessment. This unit will also apply in Wales, Scotland and Northern Ireland under devolved Regulation.

- 035.1 Monitor the removal or existing modular or concrete surfacing
- 035.2 Monitor the preparation of sub-base
- 035.3 Monitor the laying of bedding materials
- 035.4 Monitor the reinstatement of modular surfaces, concrete paving and concrete footway surfacing
- 035.5 Monitor site safety

The documents referred to in undertaking examination for this unit are:

- Safety at Streetworks and Roadworks Approved Code of Practice
- Specifications for the Reinstatement of Openings in Highways

Those undertaking the reassessment will be examined on their current knowledge of the standards, principles and application of the current documents and Approved Codes of Practice by a pre-set 10 question multiple-choice examinations. The pass mark for the examination is set at 80%.

The examination is 'open book' that allows candidates to use the appropriate documents listed above.

The examination will only take place at an approved centre in accordance with the scheme guidance and standards set out for conducting internally marked examinations.

Access to examination

The examination may only take place at a location approved by the Awarding Body as an Examination Centre. Access to examination will require candidates to show their current Streetworks Registration Card and one other means of photo identity such as a current driving licence or passport to the invigilator prior to the examination.

Examination marking

The examination will be marked internally and the candidate informed of the result on the same day. Re-sits will be permitted where time allows at the discretion of the approved centre.

Outcome

Candidates will be informed of a pass or fail on the same day.

035.1 Monitor the removal or existing modular or concrete footway surfacing

035.1.1

Monitor the removal of existing modular or concrete footway surfacing.

- a. Identify the bond types commonly used within the confines of the highway
- b. Know the definition of high amenity and high duty area
- c. Know how to select tools and equipment for the removal of modular paving and concrete surfaces
- d. Know how modular paving and concrete footway surfacing is removed
 - i. Concrete blocks
 - ii. Concrete paving slabs
 - iii. Small element paving
 - iv. Concrete footway surfacing
- e. Know how modular paving is prepared for re-use
- f. Know how to monitor the storing of suitable modular paving for re-use or disposal
- g. Know the requirements for using temporary materials for interim reinstatement
- h. Know the remedial action to be taken where the removal of modular and concrete surfacing does not meet specifications
- i. Know the safe working practice to follow when removing modular or concrete surfacing

035.2 Monitor the preparation of sub-base

035.2.1

Monitor the preparation of the sub-base to receive modular or concrete surfacing.

- a. Know the requirement to remove loose and deleterious material from the area to be reinstated
- b. Know how to identify sub-base defects
 - i. Ingress of moisture
 - ii. Excessive drying
 - iii. Adequate compaction
 - iv. Cavity depth to receive the concrete slab
 - v. Contamination
 - vi. Camber and trench shape
- c. Know how to replace sub-base materials that do not conform to specifications
- d. Know how to select compaction equipment for the compaction of sub-base materials
- e. Know the remedial action to be taken where sub-base does not meet specifications.
- f. Know the safe working practices to follow when preparing the work area for reinstatement

035.3 Monitor the laying of bedding materials

035.3.1

Monitor the laying of bedding materials for modular and concrete paving reinstatement.

- a. Know the types of bedding materials permitted by specification
- b. Know how to confirm the suitability of bedding materials
- c. Know how to select appropriate tools and equipment for laying and compaction of bedding materials
- d. Know how bedding materials are laid uniformly
- e. Know the allowances for compaction and bedding in of modular surfacing
- f. Know how compaction of bedding materials prior to laying modular paving is carried out
- g. Know the tolerances to achieve in laying bedding materials
- h. Know the remedial action to be taken where specifications have not been met
- i. Know the safe working practices to be followed when laying bedding materials

035.4 Monitor the reinstatement of modular surfaces, concrete paving and concrete footway surfacing

035.4.1

Monitor the reinstatement of modular and concrete paving surfacing materials.

- a. Know how to identify the bond type to match the existing surfacing
- b. Know how modular and concrete paving slabs are laid to match the existing bond or pattern
- c. Know how handling and transportation of modular and concrete paving slabs is carried out safely
- d. Know how to select appropriate tools and equipment to lay modular block paving and concrete paving slabs
- e. Know the procedures to compact modular block paving
- f. Know the procedures for bedding in concrete paving slabs
- g. Know the requirement for application of jointing materials
 - i. Kiln dried sand
 - ii. Mortar
- h. Know the tolerances permitted in accordance with specifications
 - i. As-laid profile
 - ii. Edge
 - iii. Surface crowning and depression
 - iv. Intervention limits
- i. Know the remedial action to be taken where specifications have not been met
- j. Know the safe working practices to be followed when reinstating modular block paving or concrete paving slabs

035.4.2

Monitor the reinstatement of concrete footway surfacing

- a. Know how to confirm the cavity depth meets specification for footway reinstatement
- b. Know how to calculate material quantities
- c. Know how to confirm the suitability of concrete
 - vi. Delivery note
 - vii. Visual inspection
 - viii. Slump test
 - ix. Cube test
- d. Know how to check for proximity to adjacent features and action required where it does not meet specification
- e. Know the requirement for the placement of plastic membrane prior to the reinstatement of the concrete surface
- f. Know how concrete materials are placed and compacted
- g. Know how textured finishes are applied to match the existing area
- h. Know the tolerances for as-laid profile for concrete footways
- i. Know the remedial action to be taken where specifications have not been met
- j. Know the safe working practices to be followed when reinstating concrete surfacing

035.5 Monitor site safety

035.5.1

Know how to Monitor site safety.

- a. Understand the general health and safety requirements for safe working on the highway and safe operations
- b. Understand the health and safety requirements for site conditions
- c. Know the appropriate safety equipment to be used during site operations
- d. Know how to ensure safety equipment is fit for purpose
- e. Know the requirements for high visibility clothing in accordance with specifications for working on the highway
- f. Know the risks associated with site operations and conditions
- g. Know the remedial action to be taken where site operations and conditions do not meet health and safety standards

Appendix 1 SWQR Referencing

The SWQR reference numbers and their equivalent City & Guilds unit reference numbers are indicated in the table below:

SWQR Reference Number	City & Guilds Unit Reference Number
LA Location and avoidance of underground apparatus	020 Reassessed Location and Avoidance of Underground Apparatus
O1 Signing, lighting and guarding	021 Reassessed Signing, Lighting and Guarding
O2 Excavation in the highway	022 Reassessed Excavation in the Road/Highway
O3 Reinstatement and compaction of backfill materials	023 Reassessed Reinstatement and Compaction of Backfill Materials
O4 Reinstatement of sub-base and base in non-bituminous materials	024 Reassessed Reinstatement of Sub-base and Roadbase in Non-bituminous Materials
O5 Reinstatement in cold lay bituminous materials	025 Reassessed Reinstatement in Cold-lay Bituminous Materials
O6 Reinstatement in hot-lay bituminous materials	026 Reassessed Reinstatement in Hot-lay Bituminous Materials
O7 Reinstatement of concrete slabs	027 Reassessed Reinstatement of Concrete Slabs
O8 Reinstatement of modular surfaces and concrete footways.	028 Reassessed Reinstatement of Modular Surfaces and Concrete Footways
S1 Monitoring signing, lighting and guarding	029 Reassessed Monitoring Signing, Lighting and Guarding
S2 Monitoring excavation in the highway	030 Reassessed Monitoring Excavation in the Road/Highway
S3 Monitoring reinstatement and compaction of backfill materials	031 Reassessed Monitoring Reinstatement and Compaction of Backfill Materials
S4 Monitoring reinstatement of sub-base and base in non-bituminous materials	032 Reassessed Monitoring Reinstatement of Sub-base and Roadbase in Non-bituminous Materials
S5 Monitoring reinstatement in bituminous materials	033 Reassessed Monitoring Reinstatement in Bituminous Materials
S6 Monitoring reinstatement of concrete slabs	034 Reassessed Monitoring Reinstatement of Concrete Slab
S7 Monitoring reinstatement of modular surfaces and concrete footways.	035 Reassessed Monitoring Reinstatement of Modular Surfaces and Concrete Footways