



## National Unit specification: general information

**Unit title:** Reassessed Monitoring Reinstatement and Compaction of Backfill Materials (112)

**Unit code:** F92V 04

**Superclass:** TK

**Publication date:** July 2010

**Source:** Scottish Qualifications Authority

**Version:** First

## Credit points and level

1 National Unit credit(s) at SCQF level 6: (1 SCQF credit points at SCQF level 6\*)

*\*SCQF credit points are used to allocate credit to qualifications in the Scottish Credit and Qualifications Framework (SCQF). Each qualification in the Framework is allocated a number of SCQF credit points at an SCQF level. There are 12 SCQF levels, ranging from Access 1 to Doctorates.*

## Guidance on Assessment of this Unit

Assessment will be by a multiple choice question examination marked out of 10. Candidates must correctly answer at least 8 (80%) of the questions to achieve this unit.

The examination will sample the knowledge elements of this unit.

## **Unit 12 Monitoring reinstatement and compaction of backfill materials**

This unit covers the requirements that you must meet when monitoring the reinstatement and compaction of backfill materials. **You must ensure that you act in accordance with all current specifications and procedures and that you follow safe working practices at all times when carrying out the activities covered in this unit. The Code of Practice specified in this unit is *Specification for the Reinstatement of Openings in Highways*.**

The unit contains the following five elements, which you must cover:

- 12.1 Monitor selection and storage of backfill materials in carriageway and footway reinstatement
- 12.2 Monitor selection of plant for compaction of backfill material
- 12.3 Monitor construction of backfill layer
- 12.4 Monitor action taken to avoid damage to underground apparatus during backfill operations
- 12.5 Monitor site safety

In element 12.1, you will monitor the correct identification, selection and storage of excavated and imported materials for use as backfill, and you will need to ensure that suitable quantities of the appropriate materials are available for the backfill operation. You must also ensure that materials identified for disposal are safely stored. You must demonstrate that, where you identify any problems with the procedures used for selecting and storing backfill materials, you know the appropriate remedial action to take.

In element 12.2, you will monitor the selection of equipment for the compaction of backfill material, ensuring that a variety of factors are considered before the compaction plant is selected. These factors include its efficiency, its suitability to the location, materials, dimensions and access provisions of the site and that it is the most suitable plant to use when compared with other permitted options. You must also ensure that the necessary safety checks have been carried out to ensure that the compaction plant is fit for purpose. Where you identify any problems with the selection of the plant, you must show that you know the appropriate remedial action to take.

In element 12.3, you will monitor the construction of the backfill layer, checking that it conforms to the specification, the existing pavement structure and road type and that the appropriate equipment is used for the operation. You must also check the backfill layer to ensure that the appropriate compaction level is achieved, materials are used appropriately, and that the layer is of the required thickness and degree of compaction. You will need to show that you know the remedial action to take in the event of any problems identified with the construction of the backfill layer.

In element 12.4, you will monitor the action taken to avoid damage to underground apparatus during backfill operations, ensuring that exposed utilities' apparatus is correctly identified, supported and protected. You must ensure that where a risk of damage to utilities' apparatus is identified, precautions are taken to minimise it, and that you know the appropriate remedial action to take should damage to utilities' apparatus occur.

In element 12.5, you will monitor site safety throughout the excavation, ensuring that health and safety requirements are met in respect of site operations and site conditions. You will need to ensure that the appropriate equipment is available on site, in sound working condition, and that safe working practices are followed throughout the operation. You must show that you know what action must be taken to remedy any risks to site safety.

**Please note:** You must use the following units of measurement when undertaking this unit:

- linear metric
- volume (cubic metres)
- percentage
- density (tonnes (Mg) per cubic metre)

Where the term **utilities' apparatus** is used within these qualifications, this includes the following:

- gas mains (plastic and metallic)
- water mains (plastic and metallic)
- sewers and drains
- electricity cables (low- and high-voltage)
- telecommunications and television cables

# Unit 12 Monitoring reinstatement and compaction of backfill materials

## Element 12.1 Monitor selection and storage of backfill materials in carriageway and footway reinstatement

Performance criteria	
You must show that:	
<ul style="list-style-type: none"> <li>a) you ensure that <b>materials</b> selected for re-use and imported materials are checked against the range of backfill materials permitted in the current specification</li> <li>b) you ensure that the correct backfill <b>materials</b> are selected for use as surround to utilities' apparatus and in sensitive areas</li> <li>c) you ensure that the storage arrangements made for re-usable and imported <b>materials</b> are appropriate and safe and meet the requirements of current <b>specifications and procedures</b></li> <li>d) you ensure that temporary storage arrangements for <b>materials</b> that are unsuitable for re-use are appropriate and safe and meet the requirements of current <b>specifications and procedures</b></li> <li>e) you ensure that the quantities of <b>materials</b> selected for re-use are suitable to the requirements of the reinstatement</li> <li>f) you ensure that <b>safe working practices</b> are followed for the selection and storage of backfill materials, that are in accordance with the current relevant <b>specifications and procedures</b></li> <li>g) you identify any problems with the selection and storage of backfill <b>materials</b> and demonstrate that you know the appropriate remedial action to be taken</li> </ul>	
Knowledge requirements	Related performance criteria
You need to know:	
1 the range of backfill materials permitted in the current specification	a
2 the factors influencing the selection of materials for use as backfill or for disposal, and the consequences of using unsuitable materials for backfill	a
3 how to ensure that suitable material is selected for surround to utilities' apparatus and for use in sensitive areas	b
4 appropriate and safe storage procedures for re-usable and imported materials, and how their characteristics affect the storage provision	c
5 appropriate and safe temporary storage arrangements for materials that are unsuitable for re-use	d
6 how to ensure that the correct quantities of materials are selected for re-use	e
7 safe working practices for the selection and storage of backfill materials	all
8 problems which occur when selecting and storing backfill materials and appropriate remedial action to take	f
Range to be covered	
<ul style="list-style-type: none"> <li>I. You must show that <b>materials</b> include: <ul style="list-style-type: none"> <li>i. Class A</li> <li>ii. Class B</li> <li>iii. Class C</li> <li>iv. Class D</li> <li>v. Class E</li> </ul> </li> <li>II. You must show that <b>specifications and procedures</b> include: <ul style="list-style-type: none"> <li>i. Health and Safety Executive Guidelines (<i>HSG 185: Health and Safety in Excavations</i>)</li> <li>ii. Specification for the Reinstatement of Openings in Highways</li> </ul> </li> </ul>	

# Unit 12 Monitoring reinstatement and compaction of backfill materials

## Element 12.1 Monitor selection and storage of backfill materials in carriageway and footway reinstatement

### Range to be covered (contd.)

- III. You must show that **safe working practices** include:
- i. safe use of tools and equipment
  - ii. use of appropriate personal protective equipment, including as necessary:
    - high visibility jacket or waistcoat
    - hard hat
    - ear defenders
    - gloves
    - protective footwear
    - waterproof clothing
  - iii. use of risk assessment methods to identify and control hazards on site
  - iv. precautions to minimise danger or inconvenience to road users
  - v. precautions to minimise danger or inconvenience to site personnel
  - vi. precautions to minimise damage to equipment or apparatus

### Evidence requirements

- Your evidence must cover all the performance criteria, all the knowledge requirements and all the range items listed in this element.
- You must complete the following tasks for an excavated area:
  - A. Monitor the selection of excavated and imported backfill materials.
  - B. Monitor the storage arrangements made for materials to be re-used.
  - C. Monitor the temporary storage arrangements made for materials that are unsuitable for re-use.

### Specification of works

- The assessment must take place at a site with physical characteristics that conform to the definition of 'street' at section 48 or 'road' at section 107 of the New Roads and Street Works Act 1991.

### Assessment conditions

- The assessment will be undertaken by a qualified assessor, who will observe you monitoring the reinstatement and compaction of backfill materials.
- The site at which you are assessed must conform to the specifications listed above. Real equipment must be used, that complies with the requirements of the Code of Practice.
- It is recognised that candidates for this unit are sometimes observed monitoring excavation in the highway as shown on video. Where this takes place, the video used must meet the following requirements:
  - a) the excavation activities shown must conform to the specification detailed above
  - b) the activities shown must allow candidates to carry out all the tasks specified above, and must cover the performance standards for this element in full.
- If you are observed monitoring reinstatement and compaction of backfill materials as shown on a videotape, you must provide supplementary evidence of competence from the workplace. Where this includes a documented observation report, a qualified Street Works supervisor or assessor must provide this.

### Additional information for candidates and assessors

- The adopted specification for the works should correspond to the *Specification for the Reinstatement of Openings in Highways*. The following sections of the Specification provide particular guidance on various items within the performance criteria:
  - i. S5.1 (*Backfill Material Classification*) classifies backfill materials, whether imported to site or derived on-site from excavated materials.
  - ii. Appendix A1 (*Backfill materials*) defines different classes of backfill material (including Classes A to E).
  - iii. NG5.1 (*Backfill Material Classification*) provides the limited performance (CBR values) for the five classes of backfill material defined in Appendix A1.
  - iv. S5.3.3 (*Surround to Apparatus as Backfill*) relates to material used for surround to apparatus.

# Unit 12 Monitoring reinstatement and compaction of backfill materials

## Element 12.2 Monitor selection of plant for compaction of backfill material

Performance criteria	
<p>You must show that:</p> <p>a) you ensure that the efficiency of the <b>compaction plant</b> selected is checked for suitability to the location and materials</p> <p>b) you ensure that the selected <b>compaction plant</b> is checked for suitability to the dimensions and access provisions of the site</p> <p>c) you ensure that the <b>compaction plant</b> selected is checked for suitability to the location and materials, against other permissible options</p> <p>d) you ensure that safety checks have been carried out to ensure that the selected <b>compaction plant</b> is fit for purpose</p> <p>e) you ensure that <b>safe working practices</b> for the selection and use of plant are followed, that are in accordance with the current relevant <b>specifications and procedures</b></p> <p>f) you identify any problems with the selection of plant for compaction of backfill material and demonstrate that you know the appropriate remedial action to be taken</p>	
Knowledge requirements	Related performance criteria
<p>You need to know:</p> <p>1 the factors influencing the selection of the compaction plant for suitability to the location and materials</p> <p>2 how to check the suitability of a compaction plant to the dimensions and access provisions of the site</p> <p>3 how to select the most suitable compaction plant from several permitted options</p> <p>4 how to ensure that the compaction plant is fit for purpose</p> <p>5 safe working practices for the selection and use of compaction plant</p> <p>6 problems which occur when selecting compaction plant and appropriate remedial action to take</p>	
	<p>a</p> <p>b</p> <p>c</p> <p>d</p> <p>all</p> <p>f</p>
Range to be covered	
<p>I. You must show that <b>compaction plant</b> includes:</p> <p>i. vibrotamper</p> <p>ii. vibrating plate</p> <p>iii. vibrating roller</p> <p>iv. percussive rammer</p> <p>II. You must show that <b>safe working practices</b> include:</p> <p>i. safe use of tools and equipment</p> <p>ii. use of appropriate personal protective equipment, including as necessary:</p> <ul style="list-style-type: none"> <li>• high visibility jacket or waistcoat</li> <li>• hard hat</li> <li>• ear defenders</li> <li>• eye protection visor/goggles</li> <li>• dust mask</li> <li>• gloves</li> <li>• protective footwear</li> <li>• waterproof clothing</li> </ul> <p>iii. use of risk assessment methods to identify and control any hazards on site</p> <p>iv. precautions to minimise danger or inconvenience to road users</p> <p>v. precautions to minimise danger or inconvenience to site personnel</p> <p>vi. precautions to minimise damage to equipment or apparatus</p>	

# Unit 12 Monitoring reinstatement and compaction of backfill materials

## Element 12.2 Monitor selection of plant for compaction of backfill material

### Range to be covered

- III. You must show that the **specifications and procedures** are:
- i. Health and Safety Executive Guidelines (*HSG 185: Health and Safety in Excavations*)
  - ii. Specification for the Reinstatement of Openings in Highways
  - iii. manufacturer's operating procedures for powered equipment

### Evidence requirements

- Your evidence must cover all the performance criteria, all the knowledge requirements and all the range items listed in this element.
- You must complete the following tasks for an actual or simulated site situation.
  - A. Monitor the selection of compaction plant for the compaction of backfill material.

#### Specification of works

- The assessment must take place at a site with physical characteristics that conform to the definition of 'street' at section 48 or 'road' at section 107 of the New Roads and Street Works Act 1991.

#### Assessment conditions

- The assessment will be undertaken by a qualified assessor, who will observe you monitoring the selection of plant for the compaction of backfill material.
- The site at which you are assessed must conform to the specifications listed above. Real equipment must be used, that complies with the requirements of the Code of Practice.
- It is recognised that candidates for this unit are sometimes observed monitoring excavation in the highway as shown on video. Where this takes place, the video used must meet the following requirements:
  - a) the excavation activities shown must conform to the specification detailed above
  - b) the activities shown must allow candidates to carry out all the tasks specified above, and must cover the performance standards for this element in full.
- If you are observed monitoring reinstatement and compaction of backfill materials as shown on a videotape, you must provide supplementary evidence of competence from the workplace. Where this includes a documented observation report, a qualified Street Works supervisor or assessor must provide this.

#### Additional information for candidates and assessors

- The adopted specification for the works should correspond to the *Specification for the Reinstatement of Openings in Highways*. The following sections of the Specification provide particular guidance on various items within the performance criteria:
  - i. S10.3 (*Equipment Operation and Restrictions*) requires all compaction equipment to be used in accordance with the requirements of Appendix A8.
  - ii. NG10.3.6 (*Other Compaction Equipment*) permits the use of other compaction plants not referenced in Appendix A8, including machine-mounted, modified and other alternative compaction equipment, may be permitted for the compaction of reinstatement materials, in accordance with the relevant requirements.
  - iii. Appendix A8 (*Compaction requirements*) provides details regarding the amount of compaction necessary for various compaction plants.
  - iv. NG1.6 (*Alternative Compaction Equipment*) allows the use of alternative compaction equipment, including any compaction devices not specifically permitted within Section S10 and Appendix A8, provided it has been proven to be capable of achieving the same degree of compaction as any other option permitted in Appendix A8.

# Unit 12 Monitoring reinstatement and compaction of backfill materials

## Element 12.3 Monitor construction of backfill layer

Performance criteria			
<p>You must show that:</p> <ol style="list-style-type: none"> <li>you ensure that the <b>backfill</b> layer is constructed in accordance with the specification, the existing pavement structure and the road type, and is checked using the appropriate <b>measuring equipment</b></li> <li>you check the construction of the <b>backfill</b> layer, using the appropriate <b>powered equipment</b>, with regard to the achieved compaction level, use of materials, layer thickness and degree of compaction</li> <li>you check for correct construction of the <b>backfill</b> layer used in sensitive areas</li> <li>you ensure that <b>safe working practices</b> are followed for constructing the backfill layer, that are in accordance with current relevant <b>specifications and procedures</b></li> <li>you identify any deficiencies in the construction of the <b>backfill</b> layer and demonstrate that you know the appropriate remedial action to be taken</li> </ol>			
Knowledge requirements	Related performance criteria		
<p>You need to know:</p> <ol style="list-style-type: none"> <li>how to interpret the specification accurately with regard to the construction of the backfill layer in reinstatement of footways and carriageways</li> <li>how to check the construction of the backfill layer to ensure the correct achieved compaction level, use of materials, layer thickness and degree of compaction</li> <li>the appropriate equipment to use for carrying out checks on the construction of the backfill layer</li> <li>how to check the construction of the backfill layer used in sensitive areas</li> <li>safe working practices for constructing the backfill layer</li> <li>problems which occur when constructing the backfill layer and the appropriate remedial action to take</li> </ol>	<p>a</p> <p>b</p> <p>a, b</p> <p>c</p> <p>all</p> <p>e</p>		
Range to be covered			
<ol style="list-style-type: none"> <li>You must show that <b>backfill</b> materials include:               <ol style="list-style-type: none"> <li>Class A</li> <li>Class B</li> <li>Class C</li> <li>Class D</li> <li>Class E</li> </ol> </li> <li>You must show that the <b>measuring equipment</b> used includes:               <ol style="list-style-type: none"> <li>measuring devices, rule and tape</li> </ol> </li> <li>You must show that the <b>powered equipment</b> used includes:               <ol style="list-style-type: none"> <li>vibrotamper, vibrating plate, vibrating roller and percussive rammer</li> </ol> </li> <li>You must show that <b>safe working practices</b> include:               <ol style="list-style-type: none"> <li>safe use of tools and equipment</li> <li>use of appropriate personal protective equipment, including as necessary:                   <table border="0"> <tr> <td> <ul style="list-style-type: none"> <li>• high visibility jacket or waistcoat</li> <li>• hard hat</li> <li>• ear defenders</li> <li>• eye protection visor/goggles</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• dust mask</li> <li>• gloves</li> <li>• protective footwear</li> <li>• waterproof clothing</li> </ul> </td> </tr> </table> </li> <li>use of risk assessment methods to identify and control any hazards on site</li> <li>precautions to minimise danger or inconvenience to road users</li> <li>precautions to minimise danger or inconvenience to site personnel</li> <li>precautions to minimise damage to equipment or apparatus</li> </ol> </li> </ol>		<ul style="list-style-type: none"> <li>• high visibility jacket or waistcoat</li> <li>• hard hat</li> <li>• ear defenders</li> <li>• eye protection visor/goggles</li> </ul>	<ul style="list-style-type: none"> <li>• dust mask</li> <li>• gloves</li> <li>• protective footwear</li> <li>• waterproof clothing</li> </ul>
<ul style="list-style-type: none"> <li>• high visibility jacket or waistcoat</li> <li>• hard hat</li> <li>• ear defenders</li> <li>• eye protection visor/goggles</li> </ul>	<ul style="list-style-type: none"> <li>• dust mask</li> <li>• gloves</li> <li>• protective footwear</li> <li>• waterproof clothing</li> </ul>		

# Unit 12 Monitoring reinstatement and compaction of backfill materials

## Element 12.3 Monitor construction of backfill layer

### Range to be covered (contd.)

- V. You must show that **specifications and procedures** are:
- Health and Safety Executive Guidelines (*HSG 185: Health and Safety in Excavations*)
  - Specification for the Reinstatement of Openings in Highways
  - manufacturer's operating procedures for powered equipment

### Evidence requirements

- Your evidence must cover all the performance criteria, all the knowledge requirements and all the range items listed in this element.
- You must complete the following task, for an excavated area in a footway or carriageway:
  - Monitor the construction of the backfill layer.

#### Specification of works

- The assessment must take place at a site with physical characteristics that conform to the definition of 'street' at section 48 or 'road' at section 107 of the New Roads and Street Works Act 1991.

#### Assessment conditions

- The assessment will be undertaken by a qualified assessor, who will observe you monitoring the construction of the backfill layer.
- The site at which you are assessed must conform to the specifications listed above. Real equipment must be used, that complies with the requirements of the Code of Practice.
- It is recognised that candidates for this unit are sometimes observed monitoring excavation in the highway as shown on video. Where this takes place, the video used must meet the following requirements:
  - the excavation activities down must conform to the specification detailed above
  - the activities shown must allow candidates to carry out all the tasks specified above, and must cover the performance standards for this element in full.
- If you are observed monitoring reinstatement and compaction of backfill materials as shown on a videotape, you must provide supplementary evidence of competence from the workplace. Where this includes a documented observation report, a qualified Street Works supervisor or assessor must provide this.

#### Additional information for candidates and assessors

- The adopted specification for the works should correspond to the *Specification for the Reinstatement of Openings in Highways*. The sections of the Specification that provide particular guidance on various items within the performance criteria are listed below:

- S1.10.3 (*Precautions during reinstatement*)
- S4 and NG4 (*Surround to apparatus*)
- S5.3.3 (*Surround to apparatus as backfill*)
- S5.3.4 (*Protective measures*)
- S6.1 (*Reinstatement methods*)
- S7.2 (*Sub-base reinstatement*)
- S7.7 (*Modular roads*) reinstatement
- S8.1 (*Reinstatement methods*) in footways, footpaths and cycle tracks
- Appendix A9 (*Alternative reinstatement materials, ARMs*)

# Unit 12 Monitoring reinstatement and compaction of backfill materials

## Element 12.4 Monitor action taken to avoid damage to underground apparatus during backfill operations

Performance criteria	
<p>You must show that:</p> <ul style="list-style-type: none"> <li>a) you ensure that exposed <b>utilities' apparatus</b> is correctly identified</li> <li>b) you ensure that exposed <b>utilities' apparatus</b> is safely supported and protected using <b>appropriate equipment</b></li> <li>c) you ensure that the working methods followed during backfill operations minimise the risk of damage to <b>utilities' apparatus</b></li> <li>d) you ensure that <b>safe working practices</b> are followed for backfill operations that are in accordance with current relevant <b>specifications and procedures</b></li> <li>e) you identify damage to underground <b>utilities' apparatus</b> during backfill operations and demonstrate that you know the appropriate remedial action to be taken</li> </ul>	
Knowledge requirements	Related performance criteria
<p>You need to know:</p> <ul style="list-style-type: none"> <li>1 the different types of utilities' apparatus likely to be encountered during backfill operations and how to identify them correctly</li> <li>2 methods of supporting and protecting exposed underground utilities' apparatus safely</li> <li>3 the risks of and implications of damage to underground utilities' apparatus</li> <li>4 precautions to take to avoid damage to utilities' apparatus during backfill operations</li> <li>5 safe working practices for backfill operations</li> <li>6 problems which occur in the event of damage to utilities' apparatus and the appropriate remedial action to take</li> </ul>	<p>a</p> <p>b</p> <p>c</p> <p>c</p> <p>all</p> <p>e</p>
Range to be covered	
<ul style="list-style-type: none"> <li>I. You must show that <b>utilities' apparatus</b> includes: <ul style="list-style-type: none"> <li>i. gas mains (plastic and metallic)</li> <li>ii. water mains (plastic and metallic)</li> <li>iii. sewers and drains</li> <li>iv. electricity cables (low-and high-voltage)</li> <li>v. telecommunications and television cables</li> </ul> </li> <li>II. You must show that <b>appropriate equipment</b> used to support and protect exposed utilities' apparatus includes: <ul style="list-style-type: none"> <li>i. slings</li> <li>ii. ropes</li> <li>iii. props</li> </ul> </li> <li>III. You must show that <b>safe working practices</b> are: <ul style="list-style-type: none"> <li>i. safe use of tools and equipment</li> <li>ii. use of appropriate personal protective equipment, including as necessary: <ul style="list-style-type: none"> <li>• high visibility jacket or waistcoat</li> <li>• hard hat</li> <li>• ear defenders</li> <li>• eye protection visor/goggles</li> <li>• dust mask</li> <li>• gloves</li> <li>• protective footwear</li> <li>• waterproof clothing</li> </ul> </li> <li>iii. use of risk assessment methods to identify and control any hazards on site</li> <li>iv. precautions to minimise danger or inconvenience to road users</li> <li>v. precautions to minimise danger or inconvenience to site personnel</li> <li>vi. precautions to minimise damage to equipment or apparatus</li> </ul> </li> </ul>	

## Unit 12 Monitoring reinstatement and compaction of backfill materials

### Element 12.4 Monitor action taken to avoid damage to underground apparatus during backfill operations

#### Range to be covered (contd.)

IV. You must show that **specifications and procedures** are:

- i. Health and Safety Executive Guidelines (*HSG 185: Health and Safety in Excavations*)
- ii. Specification for the Reinstatement of Openings in Highways

#### Evidence requirements

- Your evidence must cover all the performance criteria, all the knowledge requirements and all the range items listed in this element.
- You must complete the following tasks for an excavated area in a footway or carriageway:
  - A. Ensure that exposed utilities' apparatus is correctly identified, supported and protected.
  - B. Monitor the precautions taken to minimise the risk of damage to utilities' apparatus during excavation and take appropriate remedial action where damage occurs.

#### Specification of works

- The assessment must take place at a site with physical characteristics that conform to the definition of 'street' at section 48 or 'road' at section 107 of the New Roads and Street Works Act 1991.

#### Assessment conditions

- The assessment will be undertaken by a qualified assessor, who will observe you monitoring the action taken to avoid damage to underground apparatus during backfill operations.
- The site at which you are assessed must conform to the specifications listed above. Real equipment must be used, that complies with the requirements of the Code of Practice.
- It is recognised that candidates for this unit are sometimes observed monitoring excavation in the highway as shown on video. Where this takes place, the video used must meet the following requirements:
  - a) the excavation activities shown must conform to the specification detailed above
  - b) the activities shown must allow candidates to carry out all the tasks specified above, and must cover the performance standards for this element in full.
- If you are observed monitoring reinstatement and compaction of backfill materials as shown on a videotape, you must provide supplementary evidence of competence from the workplace. Where this includes a documented observation report, a qualified Street Works supervisor or assessor must provide this.

#### Additional information for candidates and assessors

- The adopted specification for the works should correspond to the *Specification for the Reinstatement of Openings in Highways*. The following sections provide particular guidance on various items within the performance criteria:
  - i. S4.1.3 and S5.3.4 (*Protective measures*) allow the use of preformed modules or other protective measures to be placed within the backfill during reinstatement.
  - ii. S12.2 (*Safety Requirements*) states that "should a reinstatement fail any safety requirements of this Specification, the surface shall be restored to comply with such requirements, in accordance with section 71 (for England and Wales) or section 130 (for Scotland) of the New Roads and Street Works Act 1991."

# Unit 12 Monitoring reinstatement and compaction of backfill materials

## Element 12.5 Monitor site safety

Performance criteria	
<p>You must show that:</p> <ul style="list-style-type: none"> <li>a) you monitor site operations in accordance with health and safety requirements</li> <li>b) you assess site conditions in accordance with health and safety requirements</li> <li>c) you ensure that checks have been carried out to ensure that appropriate <b>safety equipment</b> is available and is fit for purpose</li> <li>d) you ensure that the site is left in a clean and safe condition</li> <li>e) you ensure that <b>safe working practices</b> are followed on-site throughout the reinstatement and compaction operation, that are in accordance with health and safety requirements and current relevant <b>specifications and procedures</b></li> <li>f) you identify risks to site safety and demonstrate that you know the appropriate remedial action to be taken</li> </ul>	
Knowledge requirements	Related performance criteria
<p>You need to know:</p> <ul style="list-style-type: none"> <li>1 health and safety requirements for site operations</li> <li>2 health and safety requirements for particular site conditions</li> <li>3 the appropriate safety equipment to use during site operations, and how to ensure that it is fit for purpose</li> <li>4 the action that should be taken to leave the site in a clean and safe condition</li> <li>5 safe working practices on site and for reinstatement and compaction of backfill materials</li> <li>6 potential risks to site safety and the appropriate remedial action to take</li> </ul>	<ul style="list-style-type: none"> <li>a</li> <li>b</li> <li>c</li> <li>d</li> <li>e</li> <li>f</li> </ul>
Range to be covered	
<ul style="list-style-type: none"> <li>I. You must show that the following <b>safety equipment</b> is used on site as necessary:               <ul style="list-style-type: none"> <li>i. adequate range of signing, lighting and guarding equipment, including:                   <ul style="list-style-type: none"> <li>• signs</li> <li>• cones</li> <li>• signals</li> <li>• lamps</li> <li>• footway boards</li> <li>• barriers</li> <li>• portable traffic signals</li> </ul> </li> <li>ii. high visibility safety equipment</li> <li>iii. suitable materials to construct ramps</li> </ul> </li> <li>II. You must show that <b>safe working practices</b> include the following:               <ul style="list-style-type: none"> <li>i. safe use of tools and equipment</li> <li>ii. use of appropriate personal protective equipment, including as necessary:                   <ul style="list-style-type: none"> <li>• high visibility jacket or waistcoat</li> <li>• hard hat</li> <li>• ear defenders</li> <li>• eye protection visor/goggles</li> <li>• dusk mask</li> <li>• gloves</li> <li>• protective footwear</li> <li>• waterproof clothing</li> </ul> </li> <li>iii. use of risk assessment methods to identify and control any hazards on site</li> <li>iv. precautions to minimise danger or inconvenience to road users</li> <li>v. precautions to minimise danger or inconvenience to site personnel</li> <li>vi. precautions to minimise damage to equipment or apparatus</li> </ul> </li> <li>III. You must show that <b>specifications and procedures</b> are:               <ul style="list-style-type: none"> <li>i. Health and Safety Executive Guidelines (<i>HSG 185: Health and Safety in Excavations</i>)</li> <li>ii. Specification for the Reinstatement of Openings in Highways</li> <li>iii. Safety at Street Works and Road Works – A Code of Practice</li> </ul> </li> </ul>	

## **Unit 12 Monitoring reinstatement and compaction of backfill materials**

### **Element 12.5 Monitor site safety**

#### **Evidence requirements**

- Your evidence must cover all the performance criteria, all the knowledge requirements and all the range items listed in this element.
- You must provide evidence of monitoring safety on site *throughout* an actual or simulated site situation.

#### **Assessment conditions**

- The assessment will be undertaken by a qualified assessor, who will observe you monitoring the reinstatement and compaction of backfill materials.
- The site at which you are assessed must conform to the specifications listed for this unit. Real equipment must be used, that complies with the requirements of the Code of Practice.
- It is recognised that candidates for this unit are sometimes observed monitoring excavation in the highway as shown on video. Where this takes place, the activities shown on the video used must allow candidates to carry out the task specified above, and must cover the performance standards for this element in full.
- If you are observed monitoring the reinstatement and compaction of backfill materials as shown on a videotape, you must provide supplementary evidence of competence from the workplace. Where this includes a documented observation report, a qualified Street Works supervisor or assessor must provide this.

#### **Additional information for candidates and assessors**

- The adopted specification for the works should correspond to the *Specification for the Reinstatement of Openings in Highways and Safety at Street Works and Road Works – A Code of Practice* under the New Roads and Street Works Act 1991. S12.2 of the Specification (*Safety requirements*) states that “*should a reinstatement fail any safety requirements of this Specification, the surface shall be restored to comply with such requirements, in accordance with section 71 (for England and Wales) or section 130 (for Scotland) of the New Roads and Street Works Act 1991.*”