

## **Unit 2    Signing, lighting and guarding**

This unit covers the requirements that you must meet when signing, lighting and guarding a work site. **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 *Safety at Street Works and Road Works - A Code of Practice*, effective from 1 February 2002 (the 'Red Book').**

All traffic signs must comply with the Traffic Signs Regulations and General Directions (TSRGD) currently in force.

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

- 2.1    Survey the work site
- 2.2    Protect pedestrians, vehicular traffic and site personnel
- 2.3    Provide portable traffic signals

In element 2.1, you will need to carry out a survey of the work site to establish signing, lighting and guarding requirements. You will need to take into account the requirements of the site location, and identify ways to ensure the safety of pedestrians and road users, including those with special needs. You will also need to identify ways of minimising disruption and ensuring the safety of vehicular traffic, and you must plan to make satisfactory provision for vehicles and plant within the confines of the working area. You must carry out an on-site risk assessment to ensure that a safe system of working in respect of signing, lighting and guarding is in place at all times.

In element 2.2, you will need to ensure that pedestrians, vehicular traffic and site personnel are protected. You must ensure that you use the correct equipment (including personal protective equipment), and that all equipment used is appropriate to the requirements of the site and is safe to use. You will also need to position and remove all equipment accurately and according to the required sequence. When creating footways, traffic lanes and safety zones, you must ensure that appropriate provision is made for the safety of all personnel, pedestrians and vehicles, with the minimum disruption.

In element 2.3, you will need to provide portable traffic signals, using both proprietary electrical or engine powered portable traffic signals and Stop/Go boards. You must ensure that signals are positioned accurately and adjusted, dismantled and removed in the correct sequence, according to the requirements of the location and the traffic conditions.

**Please note:** *Linear measurements shown on signs (e.g. distance) MUST be in imperial units. Width and height restrictions MUST be imperial, but in these cases metric dimensions may be shown in addition, provided this is done as prescribed in TSRGD.*

*All linear measurements used when placing signing, lighting and guarding equipment must be metric.*

### **Location of assessments**

*For reasons of safety, observed assessments of candidates undertaking signing, lighting and guarding activities must take place at a centre, or at a location linked to a centre, that has been approved by the centre's external verifier.*

## Unit 2 Signing, lighting and guarding

### Element 2.1 Survey the work site

Performance criteria	
<p>You must show that:</p> <ol style="list-style-type: none"> <li>you carry out a survey of the site, in accordance with Health and Safety regulations and requirements, to determine footways, traffic lanes and safety zones</li> <li>you identify provision for the requirements of the site location</li> <li>you identify provision for the safe passage of pedestrians</li> <li>you identify ways of minimising disruption and ensuring safety of vehicular traffic</li> <li>you identify provision for any <b>special needs</b></li> <li>you provide a plan that makes satisfactory provision for vehicles and plant within the confines of the working area</li> <li>you identify <b>safe working practices</b> that are in accordance with current relevant specifications and procedures as specified in the Code of Practice</li> <li>you carry out an on-site risk assessment to ensure that a safe system of working is in place in respect of signing, lighting and guarding and to ensure that provision is made to control any hazards identified</li> </ol>	
Knowledge requirements	Related performance criteria
<p>You need to know:</p>	
1 the purpose of carrying out a survey of the site	a
2 potential requirements of the site location and how to make satisfactory provision for them in signing, lighting and guarding a work site, including: <ul style="list-style-type: none"> <li>proximity to schools and hospitals</li> <li>users of the route (including those with special needs)</li> <li>weather conditions (including icy roads, heavy rain, snow, fog, etc.)</li> <li>volume of traffic</li> <li>speed of traffic</li> <li>lighting on highways</li> <li>highway situations (including lack of footways; pedestrianised areas; emergency service access; widths of traffic lanes, footways and safety zones; inadequate lane widths; evidence of serious congestion; private access; bus stops, parking places, etc.; obstruction of driver's view at bends and summits; roundabouts and junctions; footways, ramps, boards and road plates; railway level crossings; tramways; cycle lanes and cycle tracks)</li> <li>different requirements for working during the day and at night</li> <li>mobile works and minor works</li> <li>the safety zone (length of lead-in taper of cones (T); sideways clearance (S); longways clearance (L); length of exit taper of cones)</li> </ul>	b
3 the factors to consider when making provision for the safe passage of pedestrians	c
4 the factors to consider in minimising disruption and ensuring the safety of vehicular traffic	d
5 potential requirements of people with special needs	e
6 what to consider in making provision for vehicles and plant within the working area	f
7 safe working practices for signing, lighting and guarding activities	all
8 the purpose of an on-site risk assessment	h

## Unit 2 Signing, lighting and guarding

### Element 2.1 Survey the work site

#### Range to be covered

- I. You must show that you consider the requirements of those with **special needs**, including:
  - i. visually impaired people
  - ii. people with disabilities
  - iii. users of prams and pushchairs
  - iv. users of wheelchairs and other physically impaired people
  - v. cyclists
  - vi. young children
  - vii. horse riders
- II. You must show that you take the following **safe working practices** into account:
  - i. safe use of tools and equipment
  - ii. use of appropriate personal protective equipment for signing, lighting and guarding activities, including as necessary:
    - high visibility jacket or waistcoat
    - hard hat
    - ear defenders
    - gloves
    - protective footwear
    - waterproof clothing
  - iii. precautions to minimise danger or inconvenience to road users
  - iv. precautions to minimise danger or inconvenience to site personnel
  - v. 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 for this element.
- You must complete the following tasks, for an actual or simulated excavation in a footway, with the specifications and assessment conditions listed below:
  - A. Survey the site and establish the requirements of the location.
  - B. Plan for the control of the movement of pedestrians, vehicles and plant in the work area.
  - C. Carry out an on-site risk assessment, which must be documented.

#### Specification of works

- The work area and working space occupy the whole width of the footway.
- The site length does not exceed 300 metres.
- The working space and safety zones do not exceed 80 metres.
- The carriageway is single 2-way, 2-lane, with a speed limit of 30 mph.
- The unobstructed width of carriageway is between 3.25 and 3.7 metres.
- There are no parked vehicles or works vehicles within the area of the site.
- There must be a safety zone sideways clearance of at least 0.5 metres.
- The duration of the work is in excess of 24 hours.
- There is no alternative footway available for pedestrians.
- The supervisor has decided that portable traffic signals will be used.

#### Assessment Conditions

- You will be assessed by a qualified Street Works assessor, who will observe you carrying out the tasks, at a site on or off the highway that conforms to the specifications listed for this unit.
- Where you are observed at a site off the highway, which is not subject to unpredictable traffic use, you must provide supplementary evidence of competence from the workplace. Where this includes a documented observation report, this must be produced and signed by a qualified Street Works operative, supervisor or assessor.

## Unit 2 Signing, lighting and guarding

### Element 2.2 Protect pedestrians, vehicular traffic and site personnel

Performance criteria	
<p>You must show that:</p> <ol style="list-style-type: none"> <li>a) you select and use the appropriate <b>personal protective equipment</b></li> <li>b) footways, traffic lanes and safety zones are created to provide for the requirements of the site location, the safe passage of pedestrians, ways of minimising disruption and ensuring safety of vehicular traffic and any <b>special needs</b></li> <li>c) movement of pedestrians, vehicles and plant is controlled within the confines of the working area</li> <li>d) you select <b>equipment</b> that is appropriate to the site location and any <b>special needs</b></li> <li>e) you ensure that <b>equipment</b> is fit for purpose prior to use</li> <li>f) you position <b>equipment</b> accurately in accordance with the sequence specified</li> <li>g) you remove <b>equipment</b> in accordance with the sequence specified</li> <li>h) you follow <b>safe working practices</b> in accordance with the current relevant specifications and procedures as specified in the Code of Practice</li> </ol>	
Knowledge requirements	Related performance criteria
<p>You need to know:</p> <ol style="list-style-type: none"> <li>1 the appropriate personal protective equipment to use for signing, lighting and guarding activities</li> <li>2 the confines of the working area and how to control the movement of pedestrians, vehicles and plant within the area</li> <li>3 the requirements of the site location</li> <li>4 the requirements of people with special needs</li> <li>5 how to ensure that equipment is fit for purpose</li> <li>6 the specified sequence for positioning of equipment</li> <li>7 the specified sequence for removal of equipment</li> <li>8 safe working practices for signing, lighting and guarding activities</li> </ol>	
	<p>a</p> <p>b, c</p> <p>b, d</p> <p>b, d</p> <p>e</p> <p>f</p> <p>g</p> <p>all</p>
Range to be covered	
<ol style="list-style-type: none"> <li>I. You must show that you use the following <b>personal protective equipment</b> as necessary:             <ol style="list-style-type: none"> <li>i. high visibility jacket or waistcoat</li> <li>ii. hard hat</li> <li>iii. ear defenders</li> <li>iv. gloves</li> <li>v. protective footwear</li> <li>vi. waterproof clothing</li> </ol> </li> <li>II. You must show that you ensure the safety of those with <b>special needs</b>, including:             <ol style="list-style-type: none"> <li>i. visually impaired people</li> <li>ii. people with disabilities</li> <li>iii. users of prams and pushchairs</li> <li>iv. users of wheelchairs and other physically impaired people</li> <li>v. cyclists</li> <li>vi. young children</li> <li>vii. horse riders</li> </ol> </li> </ol>	

## Unit 2 *Signing, lighting and guarding*

### Element 2.2 *Protect pedestrians, vehicular traffic and site personnel*

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

- III. You must show that you use the following **equipment** as necessary:
- adequate range of signing and guarding equipment, including:
    - signs
    - cones
    - lamps
    - footway boards
    - barriers
  - high visibility safety equipment
  - suitable materials to construct ramps
- IV. You must show that **safe working practices** include the following:
- safe use of tools and equipment
  - use of appropriate personal protective equipment
  - precautions to minimise danger or inconvenience to road users
  - precautions to minimise danger or inconvenience to site personnel
  - 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 for this element.
- You must complete the following tasks, for an actual or simulated excavation in a footway, with the conditions listed below:
  - Select and use all appropriate personal protective equipment.
  - Control the movement of vehicles, plant and pedestrians in the work area.
  - Construct footways, traffic lanes and safety zones.
  - Select and inspect all signs, cones, lamps, footway boards and barriers.
  - Position all signs, cones, lamps, footway boards and barriers.
  - Remove all signs, cones, lamps, footway boards and barriers.

#### Specification of works

- The work area and working space occupy the whole width of the footway.
- The site length does not exceed 300 metres.
- The working space and safety zones do not exceed 80 metres.
- The carriageway is single 2-way, 2-lane, with a speed limit of 30 mph.
- The unobstructed width of carriageway is between 3.25 and 3.7 metres.
- There are no parked vehicles or works vehicles within the area of the site.
- There must be a safety zone sideways clearance of at least 0.5 metres.
- The duration of the work is in excess of 24 hours.
- There is no alternative footway available for pedestrians.
- The supervisor has decided that portable traffic signals will be used.

#### Assessment Conditions

- The assessment will be undertaken by a qualified assessor, who will observe you carrying out the tasks, at a site on or off the highway that conforms to the specifications listed above.
- Where you are observed at a site off the highway, which is not subject to unpredictable traffic use, you must provide supplementary evidence of competence from the workplace. This can include a documented observation report, provided by a qualified Street Works operative, supervisor or assessor.
- You must carry out the tasks using real equipment that complies with the requirements of the Code of Practice.

#### Supplementary evidence

Oral questions in connection with the safety implications and the special traffic management measures required by different locations.

## Unit 2 *Signing, lighting and guarding*

### Element 2.3 *Provide portable traffic signals*

Performance criteria	
<p>You must show that:</p> <ul style="list-style-type: none"> <li>a) you inspect and test <b>signals</b> for correct operation</li> <li>b) you position <b>signals</b> accurately to meet the requirements of the site location</li> <li>c) you position <b>signals</b> in the correct sequence</li> <li>d) you adjust signal controls to suit traffic conditions</li> <li>e) you dismantle and remove <b>signals</b> in the correct sequence</li> <li>f) you follow <b>safe working practices</b> in accordance with current relevant specifications and procedures as specified in the Code of Practice</li> </ul>	
Knowledge requirements	Related performance criteria
<p>You need to know:</p> <ul style="list-style-type: none"> <li>1 how to ensure that signals are operating correctly</li> <li>2 the requirements of the site location and how they affect the positioning of signals</li> <li>3 the correct sequence for placing signals</li> <li>4 the traffic conditions and how they affect the adjustment of signal controls</li> <li>5 the correct sequence for dismantling and removal of signals</li> <li>6 safe working practices for the provision of portable traffic signals</li> </ul>	<ul style="list-style-type: none"> <li>a</li> <li>b</li> <li>c</li> <li>d</li> <li>e</li> <li>all</li> </ul>
Range to be covered	
<ul style="list-style-type: none"> <li>I. You must show that <b>signals</b> include the following:               <ul style="list-style-type: none"> <li>i. proprietary electrical or engine powered portable traffic lights</li> <li>ii. set of Stop/Go boards</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>• gloves</li> <li>• protective footwear</li> <li>• waterproof clothing</li> </ul> </li> <li>iii. precautions to minimise danger or inconvenience to road users</li> <li>iv. precautions to minimise danger or inconvenience to site personnel</li> <li>v. precautions to minimise damage to equipment or apparatus</li> </ul> </li> </ul>	

## Unit 2 *Signing, lighting and guarding*

### Element 2.3 *Provide portable traffic signals*

#### **Evidence requirements**

- Your evidence must cover all the performance criteria, all the knowledge requirements and all the range items listed for this element.
- You must complete the following tasks, for an actual or simulated excavation in a footway, with the conditions listed below:
  - A. Inspect and test all signal equipment.
  - B. Position signals and associated equipment.
  - C. Adjust controls on signals.
  - D. Dismantle and remove signals.

#### **Specification of works**

- The work area and working space occupy the whole width of the footway.
- The site length does not exceed 300 metres.
- The working space and safety zones do not exceed 80 metres.
- The carriageway is single 2-way, 2-lane, with a speed limit of 30 mph.
- The unobstructed width of carriageway is between 3.25 and 3.7 metres.
- There are no parked vehicles or works vehicles within the area of the site.
- There must be a safety zone sideways clearance of at least 0.5 metres.
- The duration of the work is in excess of 24 hours.
- There is no alternative footway available for pedestrians.
- The supervisor has decided that portable traffic signals will be used.

#### **Assessment Conditions**

- The assessment will be undertaken by a qualified assessor, who will observe you carrying out the tasks, at a site on or off the highway that conforms to the specifications listed above.
- You must carry out the tasks using real equipment that complies with the requirements of the Code of Practice.
- It is recognised that some operatives do not use portable traffic signals on a regular basis in their workplace. In consequence, candidates who are assessed at a site that is not subject to unpredictable traffic use are not required to provide supplementary evidence of competence from the workplace, although they may do so if they wish. *Candidates must, however, be observed by an assessor against the requirements for element 2.3 in order to gain Unit 2.*
- Where supplementary evidence of competence from the workplace is provided for this element, that includes a documented observation report, this must be provided by a qualified Street Works operative, supervisor or assessor.

#### **Supplementary evidence**

Oral questions on the importance of early removal of portable traffic signals.