



## **National Unit specification: general information**

**Unit title:** Monitoring Reinstatement of Modular Surface and Concrete Footways

**Unit code:** F93G 04

**Superclass:** TG

**Publication date:** October 2014

**Source:** Scottish Qualifications Authority

**Version:** Second

## **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.*

**Unit Aim**

This unit is designed to allow the learner to demonstrate the skills and knowledge required to monitor the reinstatement of modular surfaces and concrete footways. The learner will be able to monitor the reinstatement of concrete blocks (or similar modules) in carriageways or footways, the reinstatement of paving slabs in footways and the reinstatement of concrete footways. The learner will also be able to monitor site safety throughout modular surface and concrete footway reinstatement.

**Learning Outcome 1 Monitor the reinstatement of concrete blocks in carriageways or footways****Assessment criteria:**

- 1.1 ensure that the **materials** selected for use are identified and checked against the current **specification**
- 1.2 ensure that the **equipment** is:
  - (a) suitable to the site conditions and **materials**
  - (b) suitable to the prescribed operation
  - (c) in working condition and safe to use
- 1.3 ensure that sub-base defects are identified and made good using specified **materials**
- 1.4 monitor the reinstatement operation including:
  - (a) the laying of bedding material
  - (b) the thickness of the surcharge and compactive effort
  - (c) the treatment of joints
  - (d) matching and bonding of modules with existing modules
- 1.5 assess the **finished modular surface** to ensure the quality of the reinstatement operation
- 1.6 check for any problems with the reinstatement of concrete blocks and confirm the appropriate action.

**Learning Outcome 2 Understand how to monitor the reinstatement of concrete blocks in carriageways or footways****Assessment criteria:**

- 2.1 identify the **types of roads** on which the reinstatement of concrete blocks is carried out
- 2.2 explain the **factors that influence the selection** of **materials** and **equipment** for reinstating concrete blocks
- 2.3 explain how to identify different potential sub-base defects
- 2.4 explain how to rectify different sub-base defects
- 2.5 describe the **procedures** and quality checks and tests relating to:
  - (a) laying of bedding **materials**
  - (b) laying concrete blocks
  - (c) jointing
- 2.6 explain the **factors that affect the quality** of the finished modular surface
- 2.7 describe potential problems with reinstatement of concrete blocks and the appropriate remedial action.

### Learning Outcome 3 Monitor the reinstatement of paving slabs in footways

#### **Assessment criteria:**

- 3.1 ensure that **materials** selected for use are identified and checked against the current **specification**
- 3.2 ensure that the **equipment** is:
  - (a) suitable to the site conditions and **materials**
  - (b) suitable to the prescribed operation
  - (c) in working condition and safe to use
- 3.3 ensure that sub-base defects are identified and made good using specified **materials**
- 3.4 monitor the reinstatement operation including:
  - (a) the laying of bedding material
  - (b) the thickness of the surcharge and compactive effort
  - (c) the treatment of joints
  - (d) matching and bonding of modules with existing modules
- 3.5 assess the **finished modular surface** to ensure the quality of the reinstatement operation
- 3.6 check for any problems with the reinstatement of paving slabs and confirm the appropriate action.

### Learning Outcome 4 Understand how to monitor the reinstatement of paving slabs in footways

#### **Assessment criteria:**

- 4.1 explain the **factors that influence the selection** of **materials** and **equipment** for reinstating paving slabs
- 4.2 explain how to identify different potential sub-base defects
- 4.3 explain how to rectify different sub-base defects
- 4.4 explain the **factors that affect the quality** of the finished modular surface
- 4.5 describe potential problems with reinstatement of paving slabs and the appropriate remedial action.

### Learning Outcome 5 Monitor the reinstatement of concrete footways

#### **Assessment criteria:**

- 5.1 ensure that the **materials** selected for use are identified and checked against the current **specification**
- 5.2 ensure that the **equipment** is:
  - (a) suitable to the site conditions and **materials**
  - (b) suitable to the prescribed operation
  - (c) in working condition and safe to use
- 5.3 ensure that sub-base defects are identified and made good using specified **materials**
- 5.4 monitor the reinstatement operation including:
  - (a) laying the concrete
  - (b) compaction operations
  - (c) concrete curing method
- 5.5 assess the **finished concrete surface** to ensure the quality of the reinstatement operation
- 5.6 check for any problems with the reinstatement of concrete footways and confirm the appropriate action.

## Learning Outcome 6 Understand how to monitor the reinstatement of concrete footways

### **Assessment criteria:**

- 6.1 identify the **types of footway** on which concrete reinstatement is carried out
- 6.2 explain the factors that influence the selection of **materials** and **equipment** for reinstating concrete footways
- 6.3 explain how to identify different potential sub-base defects
- 6.4 explain how to rectify different sub-base defects
- 6.5 describe the **procedures** and quality checks and tests relating to:
  - (a) laying concrete
  - (b) compacting concrete
  - (c) curing concrete
- 6.6 explain the factors that affect the quality of the concrete surface finish
- 6.7 describe the checks required to ensure the quality of the **finished concrete surface**
- 6.8 describe potential problems with reinstatement of concrete footways and the appropriate remedial action.

## Learning Outcome 7 Monitor site safety

### **Assessment criteria:**

- 7.1 ensure that a risk assessment has been carried out
- 7.2 monitor site operations in accordance with health and safety requirements
- 7.3 assess site conditions in accordance with health and safety requirements
- 7.4 ensure that **safety equipment** is available and fit for purpose
- 7.5 ensure that **safe working practices** are followed in line with health and safety requirements and current relevant **specifications**
- 7.6 check for risks to site safety, and confirm the appropriate action required
- 7.7 ensure that the site is left in a clean and safe condition.

## Learning Outcome 8 Understand how to monitor site safety

### **Assessment criteria:**

- 8.1 explain the purpose of an on-site risk assessment
- 8.2 describe the health and safety requirements for site operations
- 8.3 describe the health and safety requirements for particular site conditions
- 8.4 describe the **safety equipment** required during site operations and how to ensure that it is fit for purpose
- 8.5 describe **safe working practices** on site
- 8.6 describe the potential risks to site safety and the appropriate remedial action
- 8.7 describe how to leave the site in a clean and safe condition.

## Evidence Requirements / Scope

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

1. **Materials** include:
  - (a) appropriate sub-base materials for making good defects
  - (b) bedding and grouting materials for use in modular reinstatement (including sand and mortar)
  - (c) pre-cast concrete blocks (or similar modules) to match the existing paving for reinstatement
  - (d) natural or pre-cast paving slabs to match the existing surface for reinstatement
  - (e) Class 30 concrete for concrete footway reinstatement
  - (f) slip membrane (for concrete footway reinstatement)
  - (g) curing material (for concrete footway reinstatement).
2. **Specifications and procedures** include:
  - (a) Specification for the Reinstatement of Openings in Highways
  - (b) BS 7533 Series
  - (c) Health and Safety Guidance 150, *Health and Safety in Construction*
  - (d) manufacturers' operating procedures for powered tools and plant
  - (e) Application Guide 26
  - (f) *Safety and Street Works and Road Works – A Code of Practice*.
3. **Safe working practices** include:
  - (a) safe use of tools and equipment
  - (b) use of PPE (including, as necessary: high visibility jacket or waistcoat, hard hat, ear defenders, gloves, protective footwear, waterproof clothing, eye protection visor or goggles, dust mask)
  - (c) use of risk assessment methods to identify and control hazards on site
  - (d) precautions to minimise danger or inconvenience to road users
  - (e) precautions to minimise danger or inconvenience to site personnel
  - (f) precautions to minimise damage to equipment or apparatus.
4. **Equipment** includes:
  - (a) hand tools – including as necessary square and round mouth shovels, lifting and clearing tools (hand pick, crowbar, bolster, club hammer, wire brush, hard bristle broom, rake), hand rammer, straight edge (or suitably cut) timber, trowel, textured roller.
  - (b) powered equipment – including as necessary concrete cutting equipment, concrete saw, vibrotamper, vibrating plate.
5. **Safety equipment** may include as necessary:
  - (a) adequate range of signing, lighting and guarding equipment (including signs, cones, signals, lamps, footway boards, barriers, portable traffic signals)
  - (b) high visibility safety equipment
  - (c) suitable materials to construct ramps.
6. **Types of roads** (AC 2.1) include:
  - (a) modular surfaced carriageways and footways
  - (b) high duty footways
  - (c) high amenity footways .
7. **Factors that influence the selection** of materials and equipment for reinstating concrete blocks (AC2.2) include:

- (a) requirement to match materials with existing modular surface
  - (b) suitable bedding materials
  - (c) suitable grouting materials.
8. **Factors that affect the quality** of the finished modular surface (AC 2.6 & AC 4.4) include:
- (a) moisture content of bedding sand
  - (b) thickness of surcharge and compactive effort
  - (c) treatment of joints
  - (d) matching of and bonding with existing modules.
9. Assessment of the **finished modular surface** (AC 1.5 & AC 3.5) include:
- (a) visual inspection – surface defects, edge depression, surface crowning, surface regularity, jointing
  - (b) measurement of surface profile.
10. **Factors that influence the selection** of materials and equipment for reinstating paving slabs (AC 4.1) include:
- (a) matching and bonding modules with existing modules
  - (b) suitable bedding materials
  - (c) suitable grouting materials
  - (d) replacement of damaged modules
  - (e) treatment of joints.
11. **Types of footway** (AC 6.1) include:
- (a) concrete surfaced footways
  - (b) high duty footways
  - (c) high amenity footways.
12. Assessment of the **finished concrete surface** (AC 5.5) includes:
- (a) visual inspection for transverse, longitudinal and random cracking
  - (b) profile checks on finished level in respect of surrounding surface and surface texture.
13. **Procedures** for reinstating concrete (AC 6.5) include:
- (a) quality control of site-mixed and ready –mix concrete.

### Assessment Requirements

Assessment for this unit consists of practical observations and knowledge questioning to cover the requirements of the learning outcomes.

Current requirements for practical observations, including assessor and verifier qualifications and facilities requirements are provided in the joint awarding organisation centre document.