Monitoring reinstatement of modular surfaces and concrete footways

Certificate Aim

This certificate has been designed to allow the candidate to demonstrate the skills and knowledge required to monitor the reinstatement of modular surfaces and concrete footways. The candidate 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 candidate 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 road on which the reinstatement of concrete blocks is carried out
2.2 define the factors that influence the selection of materials and equipment for reinstating concrete blocks
2.3 state how to identify different potential sub-base defects
2.4 state how to rectify different sub-base defects
2.5 define the procedures and quality checks and tests relating to:
  (a) laying of bedding materials
  (b) laying concrete blocks
  (c) jointing
2.6 define the factors that affect the quality of the finished modular surface
2.7 define the checks required to ensure the quality of the finished modular surface
2.8 state the potential problems with reinstatement of concrete blocks and the appropriate remedial action.

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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 identify the types of road on which the reinstatement of paving slabs is carried out

4.2 define the factors that influence the selection of materials and equipment for reinstating paving slabs

4.3 state how to identify different potential sub-base defects

4.4 state how to rectify different sub-base defects

4.5 define the procedures and quality checks and tests relating to:
- (a) laying bedding materials
- (b) laying paving slabs
- (c) jointing

4.6 define the factors that affect the quality of the finished modular surface

4.7 define the checks required to ensure the quality of the finished modular surface

4.8 state 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 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 define the factors that influence the selection of materials and equipment for reinstating concrete footways
6.3 state how to identify different potential sub-base defects
6.4 state how to rectify different sub-base defects
6.5 define the procedures and quality checks and tests relating to:
  (a) laying concrete
  (b) compacting concrete
  (c) curing concrete
  (d) affect the quality of the finished surface
6.6 define the checks required to ensure the quality of the finished surface
6.7 state the 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 define the purpose of a site-specific risk assessment
8.2 state the health and safety requirements for site operations
8.3 define the health and safety requirements for particular site conditions
8.4 define the safety equipment required during site operations and how to ensure that it is fit for purpose
8.5 state the safe working practices on site
8.6 define the potential risks to site safety and the appropriate remedial action
8.7 state 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 25/30 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** include (AC 2.1 & AC4.1)

(a) modular surfaced carriageways & footways
(b) high duty footways
(c) high amenity footways

7. **Factors that affect selection of materials and equipment** include (AC2.2)
(a) requirement to match materials with existing modular surface
(b) suitable bedding materials
(c) suitable grouting materials

8. **Factors that affect modular surface** include (AC2.7)
(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. **Quality checks for finished surface** include (AC 2.8 & AC 4.7)
(a) visual inspection – surface defects, edge depression, surface crowning, surface regularity, jointing
(b) measurement of surface profile

10. **Factors that affect selection of materials** include (AC 4.2)
(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** include (AC 6.1)
(a) concrete surfaced footways
(b) high duty footways
(c) high amenity footways

12. **Procedures for reinstating compacting concrete** include (quality control of site-mixed and ready–mix concrete) AC 6.4

13. **Quality Checks for finished surface** include (AC 6.6)
(a) visual inspection for transverse, longitudinal and random cracking
(b) profile checks on finished level in respect of surrounding surface and surface fixture

Assessment Requirements and Guidance
Assessment for this unit consists of practical observations and a multiple-choice knowledge examination to cover the requirements of the learning outcomes. Current requirements for practical observations, including Assessor and Internal Quality Assurer qualifications and facilities requirements are provided in the HAUC (UK) The Street Works Assessment Strategy and The Streetworks Centre Compliance Document.