

**-SQA- SCOTTISH QUALIFICATIONS AUTHORITY**

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**NATIONAL CERTIFICATE MODULE DESCRIPTOR**

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**-Module Number- 4130252 -Session- 1992-93**  
**-Superclass- TK**

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**-Title- ROADWORKING: MODULAR PAVING - FLEXIBLE CONSTRUCTION**

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**-DESCRIPTION-**

**Purpose** This module is designed to develop an understanding of the skills required to identify, prepare, and lay modular paving.

It is aimed at those following a career in the construction industry and receiving complementary industrial experience.

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**Preferred Entry Level** 65600 General Building: Paths and Paving or general Civil Engineering experience.

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**Outcomes** The candidate should:

1. identify the types and uses of a range of materials commonly used in flexible construction modular paving;
2. prepare a designated area for flexible construction modular paving;
3. construct a laying course for flexible construction modular paving;
4. lay a section of flexible construction modular paving incorporating a trap cover or grating;
5. set up specialist ironwork in relation to flexible construction modular paving.

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**Assessment Procedures** Acceptable performance in this module will be satisfactory achievement of all the Performance Criteria specified for each Outcome.

The following abbreviations are used below:

PC Performance Criteria  
IA Instrument of Assessment

**Note:** The Outcomes and PCs are mandatory and cannot be altered. The IA may be altered by arrangement with SQA. (Where a range of performance is indicated, this should be regarded as an extension of the PCs and is therefore mandatory.)

**OUTCOME 1 IDENTIFY THE TYPES AND USES OF A RANGE OF MATERIALS COMMONLY USED IN FLEXIBLE CONSTRUCTION MODULAR PAVING**

- PCs
- (a) Correct identification is made of the materials commonly used in flexible construction modular paving, to include common block and flag sizes and types, and common types of sand.
  - (b) The materials identified are defined in accordance with the terminology used to describe block and small element paving in the relevant section of the current BSI manual.
  - (c) Coarse sand and jointing sand are defined with reference to the differences between the methods of laying them.
  - (d) Accurate identification is made of the range of use of the materials identified.

IA Objective Items

The candidate will be presented with an exercise consisting of objective items, to test the knowledge and understanding required to identify the types and uses of a range of materials commonly used in flexible construction modular paving.

The exercise will consist of 3 questions allocated as follows:

Identification of types of materials commonly used in flexible construction modular paving	1
Range of use of types of materials identified	1
Differences between laying coarse sand and jointing sand	1

Objective items could be either short answer questions, multiple choice questions, matching exercise or completion exercise.

Satisfactory achievement of the Outcome will be based on the candidate attaining all the Performance Criteria. This will be demonstrated by the candidate answering all the questions correctly.

**OUTCOME 2                      PREPARE A DESIGNATED AREA FOR FLEXIBLE CONSTRUCTION MODULAR PAVING**

PCs

- (a) The preparation is correct in terms of:
- (i) accurate interpretation of materials specification;
  - (ii) setting out as specified in the working drawings;
  - (iii) using an approved method and appropriate tools and equipment.
- (b) The preparation is correct in terms of the transferring of lines and levels within specified tolerances.
- (c) The preparation is correct in terms of identifying changes in direction and areas of pedestrian and vehicular traffic.
- (d) The interpretation of the specification is accurate and takes account of the manufacturers' instructions applicable to the materials and fixings.

**IA      Practical Exercise**

The candidate will be set a practical exercise to test the knowledge and skills required to prepare a designated area for flexible construction modular paving.

The candidate will be provided with detailed drawings and instructions, tools, plant, equipment and sufficient materials for the exercise and will be required to prepare a designated area of 4m x 4m minimum, levelled and suitably prepared (including edge restraint) to receive block or small element paving as a flexible surface.

The exercise will consist of the following 2 tasks:

- (i) use appropriate instruments or equipment to create falls and levels from site datum;
- (ii) set out reference lines.

Satisfactory achievement of the Outcome will be based on the candidate attaining all the Performance Criteria.

**OUTCOME 3                    CONSTRUCT A LAYING COURSE FOR FLEXIBLE CONSTRUCTION MODULAR PAVING**

PCs

- (a) The surface provided is inspected to confirm that:
- (i) the regulation and compaction are within the required tolerances;
  - (ii) no contamination of materials has occurred;
  - (iii) the surface is tight and dense enough to prevent laying course materials being lost into it during construction.
- (b) Screed rails are set up and secured to the required line and level.
- (c) The construction of the laying course is correct in terms of:
- (i) adequate compaction by using a vibrating plate compactor;
  - (ii) achieving the required level by re-screeding if necessary.
- (d) The working practices followed by the candidate are safe and in accordance with current relevant regulations and codes of practice.

**IA    Practical Exercise**

The candidate will be set a practical exercise to test the knowledge and skills required to construct a laying course for flexible construction modular paving. The exercise will be carried out using an area of actual or simulated road, not less than 4 metres square, which has been suitably prepared. The candidate will be required to perform the following 3 tasks:

- (i) inspect the surface provided;
- (ii) set up screed rails;
- (iii) compact and screed laying course materials.

For this exercise, the candidate will be provided with the necessary tools, plant, equipment and materials, together with detailed instructions.

Satisfactory achievement of the Outcome will be based on the candidate attaining all the Performance Criteria.

**OUTCOME 4            LAY A SECTION OF FLEXIBLE CONSTRUCTION  
MODULAR PAVING INCORPORATING A TRAP COVER  
OR GRATING**

- PCs
- (a) The laying is correct in terms of:
    - (i) conforming to the appropriate laying pattern;
    - (ii) maintaining an alignment within line deviation tolerances.
  - (b) The infill blocks are cut to the correct size and shape.
  - (c) The infill blocks are laid to complete the laying pattern.
  - (d) Adequate compaction of the surface course is achieved using appropriate equipment.
  - (e) Jointing sand is spread and brushed over the surface area to adequately fill the joints.
  - (f) Surplus materials are removed to leave work clean and tidy.
  - (g) The working practices followed by the candidate are safe and in accordance with current relevant regulations and codes of practice.

**IA    Practical Exercise**

The candidate will be set a practical exercise to test the knowledge and skills required to lay a section of flexible construction modular paving incorporating a trap cover or grating.

The exercise will be carried out using an area of actual or simulated road, not less than 4 metres square, which has been suitably prepared. The candidate will be required to complete the following 5 tasks:

- (i) identify and assemble the required materials and lay a section of flexible construction modular paving incorporating a pedestrian area and a vehicular or crossing point;
- (ii) prepare the area around the trap cover or grating to receive block paving;
- (iii) install cut portions of blocks into the laying pattern;
- (iv) compact the surface of the modular paving to achieve a sound surface finish;
- (v) seal the surface of the modular paving with jointing sand;
- (vi) clean off surface materials.

For this exercise the candidate will be provided with the necessary tools, equipment and a range of materials, and will be given detailed instructions.

Satisfactory achievement of the Outcome will be based on the candidate attaining all the Performance Criteria.

**OUTCOME 5                    SET UP SPECIALIST IRONWORK IN RELATION TO FLEXIBLE CONSTRUCTION MODULAR PAVING**

- PCs
- (a) The setting up is correct in terms of:
    - (i) adjusting the level of the ironwork to suit the finished surface of the modular paving;
    - (ii) positioning the ironwork to suit the laying pattern and line of the modular paving.
  - (b) The ironwork is secured to prevent movement.
  - (c) The working practices followed by the candidate are safe and in accordance with the current relevant regulations.

**IA      Practical Exercise**

The candidate will be set a practical exercise to test the knowledge and skills required to set up specialist ironwork in relation to flexible construction modular paving.

The exercise will be carried out using an area of actual or simulated modular paved road, of not less than 4 square metres, which has been suitably prepared. The candidate will be required to position the ironwork at a designated spot within the modular paving.

For this exercise, the candidate will be provided with the necessary tools, equipment and materials, and will be given detailed instructions.

Satisfactory achievement of the Outcome will be based on the candidate attaining all the Performance Criteria.

**The following sections of the descriptor are offered as guidance.  
They are not mandatory.**

### CONTENT/CONTEXT

Corresponding to Outcomes 1-5:

1. Identifying materials commonly used to lay block and small element paving eg. coarse and fine sand, block and flag sizes and types.
  2. Reading, interpreting and extracting details from drawings; carrying out manufacturers' instructions; interpreting specifications for materials.  
  
Setting up of site locational line and level positions; transfer of linear and level datum to required positions;  
identifying areas of pedestrian and vehicular traffic and changes in direction.
  3. Regulating and compacting soils and granular materials, setting up screeds, laying screed, and compacting bedding materials.
  4. Selecting, cutting and laying paving blocks, application of joint-filling materials, use of compaction plant, cleaning and finishing surfaces.
  5. Handling of specialist ironwork, infill and surround materials, securing ironwork i.e. gratings, covers, edgings, drainage components, infill and surround surfacing materials.
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### SUGGESTED LEARNING AND TEACHING APPROACHES

The candidate should follow an activity-based learning approach.

Each procedure should be explained, demonstrated and followed by supervised participation by the candidate.

Copies of the current British Standards Institute manual, or relevant sections of it, should be made available to the candidate. This should be contained in a reference handout which is made available to the candidate.

The identification of materials in relation to the current British Standards should be discussed in a tutorial situation.

Films, videos, slides and visits to larger completed works or works in progress can be utilised to reinforce the simulated situation.

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