

COSVR772 – SQA Unit Code HM5K 04

Operate and control operations of road plant, machinery or equipment for laying flexible and semi-flexible paving materials



Overview

This standard is about interpreting information, adopting safe, healthy and environmentally responsible work practices, selecting and using materials, components and tools, preparing, setting up, completing pre-use checks and operating plant, machinery or equipment, for preparing, laying and finishing flexible paving materials

This standard is for people working independently or as part of a team in the occupational area of pavement construction and maintenance and can be used by operatives, technicians, supervisors and managers

Performance criteria

- You must be able to:
- P1 interpret the given operating information relating to the use of plant or machinery and confirm its relevance
 - P2 organise with others the sequence in which the work is to be carried out
 - P3 comply with the relevant, current legislation, special legal status documents, official guidance and organisational procedures to maintain safe and healthy work practices
 - P4 request resources to sustain plant or machinery operations to complete the programme of work
 - P5 select plant or machinery resources for the methods of work and operations to be carried out
 - P6 comply with organisational procedures to minimise the risk of damage to the work and surrounding area
 - P7 comply with the given contract information to carry out the work efficiently to the required specification
 - P8 complete the work within the allocated time, in accordance with the programme of work

Knowledge and understanding

You need to know and understand:

Performance Criteria 1

Interpretation of information

- K1 the organisational procedures developed to report and rectify inappropriate **information** and unsuitable **resources**, and how they are implemented
- K2 the types of **information**, their source and how they are interpreted
- K3 the organisational procedures to solve **problems** with the **information** and why it is important they are followed

Performance Criteria 2

Organise with others

- K4 **communication** of ideas between team members
- K5 organisation of **resources** in conjunction with the progress of work
- K6 the **skills** required to carry out the work

You need to know and understand:

Performance Criteria 3

Safe work practices

You need to know and understand:

- K7 the level of understanding operatives must have of **information** for relevant, current **legislation, Approved Codes of Practice and official guidance** and how it is applied
- K8 the types of **fire extinguishers** and how and when they are used
- K9 how **emergencies** should be responded to and who should respond
- K10 the organisational **security procedures** for plant and/or machinery, tools, equipment and personal belongings
- K11 what the accident reporting procedures are and who is responsible for making the report
- K12 why, when and how **health and safety control equipment** should be used
- K13 how to comply with environmentally responsible working practices to meet the requirements of current **legislation and official guidance**

Performance Criteria 4

Request resources

You need to know and understand:

K14 the organisational procedures for requisitioning consumables and other **resources**

Performance Criteria 5

Selection of resources

You need to know and understand:

- K15 the characteristics, quality, uses, sustainability, limitations and defects associated with plant **resources** and how defects should be rectified
- K16 how the **resources** should be used and how any **problems** associated with the **resources** are reported
- K17 the organisational procedures to select **resources**, why they have been developed and how they are used
- K18 the **hazards** associated with the **resources** and **methods of work** and how they are overcome

Performance Criteria 6

Minimise the risk of damage

You need to know and understand:

- K19 how to **protect work** from damage and the purpose of protection
- K20 why **disposal of waste** should be carried out safely and how it is achieved

Performance Criteria 7

Meet the contract specification

You need to know and understand:

- K21 how **methods of work**, to meet the specification, are carried out and **problems** reported
- K22 how **maintenance** of plant and/or machinery, tools and equipment is carried out

Performance Criteria 8

Allocated time

You need to know and understand:

- K23 what the **programme** is for the work to be carried out in the estimated, allocated time and why deadlines should be kept

Additional Information

Scope/range related to performance criteria

Performance Criteria 1

- 1 interpretation of drawings, specifications, schedules, method statements, risk assessments and manufacturers' information related to the plant, machinery or equipment operations and the work to be carried out

Performance Criteria 2

- 2 organisation of own work
- 3 communication with team members and other associated occupations about the plant, machinery or equipment operations and the work to be carried out

Performance Criteria 3

- 4 avoidance of risk by complying with the given safety information relating to the following
 - 4.1 methods of work
 - 4.2 safe use of health and safety control equipment
 - 4.3 safe use, storage and handling of plant, machinery, equipment and tools
 - 4.4 safe use, storage and handling of materials
 - 4.5 specific risks to health

Performance Criteria 4

- 5 follow organisational procedures for the requisition of consumables, materials and other resources

Performance Criteria 5

- 6 selection of resources associated with own work
 - 6.1 tools and ancillary equipment and/or accessories

Performance Criteria 6

- 7 protection of the work and its surrounding area from damage
- 8 maintain a clear and tidy work space
- 9 disposal of waste in accordance with current legislation

Performance Criteria 7

- 10 demonstration of work skills to check, set up, adjust, communicate, operate, control, secure, lay, compact, mark, level and finish
- 11 use and maintain hand tools, ancillary equipment and/or accessories
- 12 prepare, operate or control the operations of plant, machinery or equipment for at least one of the following to given working instructions
 - 12.1 paver screedman (screed operator) maintaining line and level
 - 12.2 paver (tracked or wheeled) operator maintaining consistency of surface materials, line and direction
 - 12.3 roller operator ensuring compaction, transverse and longitudinal evenness
 - 12.4 chipping machine operator maintaining speed and distribution
 - 12.5 loader compressor or 180 degree excavator operator maintaining supply of materials and/or preparing surfaces
 - 12.6 spray tanker operator maintaining speed, line, direction and distribution
 - 12.7 geosynthetic (membrane or steel mesh) installation equipment operator maintaining uniformity, line, direction, overlap and adhesion
 - 12.8 spray injection operator ensuring compaction and finish
- 13 shut down and secure plant, machinery or equipment

Performance Criteria 8

- 14 completion of own work within the estimated, allocated time to meet the needs of other occupations and/or client

Additional Information
Scope/range related to knowledge and understanding

Communication

- 1 discussions, sketches, electronic information and briefings

Disposal of waste

- 2 environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance

Emergencies

- 3 operative's response to situations in accordance with organisational authorisation and personal skills when involved with
 - 3.1 fires, spillages, injuries
 - 3.2 emergencies relating to occupational activities

Fire extinguishers

- 4 water, CO₂, foam, powder and their uses

Hazards

- 5 those identified by methods of work, risk and Control of Substances Hazardous to Health (COSHH) assessments, manufacturers' technical information, statutory regulations and official guidance

Health and safety control equipment

- 6 identified by the principles of prevention for occupational use, types and purpose of each type, work situations and general work environment
 - 6.1 collective protective measures
 - 6.2 personal protective equipment (PPE)
 - 6.3 respiratory protective equipment (RPE)

Information

- 7 drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, verbal, written and graphical instructions, current regulations and official guidance governing the operation of plant, machinery and accessories for laying flexible and semi-flexible paving materials

Legislation, Approved Codes of Practice and official guidance

- 8 this relates to the operative's responsibilities regarding potential accidents, health hazards and the environment whilst working in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement and storage of materials and by manual handling and mechanical lifting

Maintenance

- 9 operative care of plant or machinery, hand tools, ancillary equipment and/or accessories

Methods of work

- 10 application of knowledge for safe and healthy work practices, procedures and skills relating to the method and area of work and materials used to
- 10.1 identify installation requirements
 - 10.2 conform to agreed specifications
 - 10.3 confirm the area and location of work, the operations, safety and security requirements including temporary traffic management and immediate area protection
 - 10.4 identify the characteristics of flexible paving materials e.g. hot rolled asphalt, stone mastic asphalt, mastic asphalt, asphalt concrete mixtures and geosynthetic material
 - 10.5 identify the characteristics of semi-flexible paving materials e.g. cement bound granular material (CGBM) and roller compacted concrete (RCC)
 - 10.6 prepare and install mesh reinforcement membrane
 - 10.7 prepare, set up and carry out pre-start and running checks of the plant, machinery and accessories
 - 10.8 confirm and monitor temperature and workability of flexible and semi-flexible paving materials throughout the process
 - 10.9 recognise the causes of poor performance and factors that will affect the finished product
 - 10.10 carry out and control operations according to your role and the required performance of plant, machinery or equipment
 - 10.11 adjust the work in relation to prevailing weather conditions

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- 10.12 work around street furniture and ironwork
 - 10.13 recognise sampling, testing and quality control processes
 - 10.14 recognise, monitor and control processes e.g. treatment and preparation of joints, line, level, thickness, compaction and finishes
 - 10.15 recognise the duties of the paver screwman, paver operator, roller operator, chipping machine operator, loader compressor operator, 180 degree machine operator, spray tanker operator, geosynthetic installation equipment operator and spray injection operator to ensure cohesive operations
 - 10.16 return infrastructure to operational status
 - 10.17 recognise and determine when specialist skills and knowledge are required and report accordingly
 - 10.18 shut down and secure plant, machinery or equipment
 - 10.19 use hand tools, ancillary equipment and accessories
 - 11 team work and communication
 - 12 needs of other occupations associated with operating plant, machinery or equipment for laying flexible and semi-flexible paving materials

Problems

- 13 those arising from information, resources and methods of work
 - 13.1 own authority to rectify
 - 13.2 organisational reporting procedures

Programme

- 14 types of productivity targets and time scales
- 15 how times are estimated
- 16 organisational procedures for reporting circumstances which will affect the work programme

Protect work

- 17 protect work against damage from general workplace activities, other occupations and adverse weather conditions

Resources

18 materials, components and equipment relating to types, quantity, quality, sizes and the sustainability of standard and/or specialist

18.1 consumables, lubricants and fuels

18.2 attachments

18.3 flexible paving materials

18.4 hand tools, ancillary equipment and accessories

19 identify weight, bearing pressure, pressure, quantity, length and area associated with the method and procedure to operate plant, machinery or equipment for laying flexible and semi-flexible paving materials

20 how to confirm resources and materials conform with agreed specification

Security procedures

21 site, workplace, company and operative

Skills

22 own occupation and occupations related to the work

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