

## Apply liquid membrane systems

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### Overview

This standard is about applying liquid waterproofing systems on new and re-roofing contracts including liquid preparation and the base and finishing coats

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This standard will also involve interpreting information, adopting safe, healthy and environmentally responsible work practices, selecting and using materials, components, tools and equipment, in accordance with organisational requirements which are equal to or exceed current statutory and legislative requirements

This standard is for people working in the occupational area of waterproof membrane roofing systems and can be used by operatives, supervisors and managers

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### Performance criteria

#### You must be able to:

##### **P1 Interpretation of information**

interpret the following information to confirm its relevance to the work:

- drawings
- specifications
- schedules
- method statements
- risk assessments
- permits to work
- manufacturers' information
- electronic data
- oral and written procedures
- current regulations
- site inductions

##### **P2 Safe work practices**

comply with the relevant legislation and official guidance to carry out the work and maintain safe and healthy work practices relating to the following:

- methods of work
- safe use of health and safety control equipment
- safe use of access equipment
- safe use, storage, handling and distribution of materials, tools and equipment
- specific risks to health
- specific risks associated with asbestos containing materials
- specific risk associated with respirable crystalline silica (RCS)

##### **P3 Selection of resources**

select the required quantity and quality of the following resources for the methods of work:

- materials
- components and fixings
- tools and ancillary equipment

##### **P4 Minimise the risk of damage**

comply with site specific organisational procedures to minimise the risk of damage to the work and surrounding area by:

- protecting the work and its surrounding area from damage
- maintaining a safe, clean and tidy work area
- disposing of waste in accordance with current legislation

##### **P5 Meet the contract specification**

comply with the contract information to apply single ply membrane roofing systems efficiently to the required specification by:

- demonstrating work skills to:

- measure

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- cut
  - mark out
  - fit
  - position
  - secure
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- use and maintain hand tools, power tools and ancillary equipment
  - install air and vapour control layers (warm and cold roofs) and insulation
  - apply two of the following single ply membrane roofing systems
    - adhered
    - ballasted
    - mechanically fixed  
to given working instructions, relating to the following:
      - protection layers
      - separation layers
      - water control membranes (inverted roofs only)
      - edges and upstands
      - penetrations, pipes and vents
      - perimeters, gutters and rainwater outlets

### **P6 Allocated time**

complete the work within the estimated, allocated time in accordance with the organisational procedures and to meet the needs of other occupations and/or client

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## Knowledge and understanding

## You need to know and understand:

**P1 Interpretation of information**

K1 why organisational procedures have been developed and how they are implemented

K2 The following types of information, their source and how they are interpreted:

- drawings
- specifications
- schedules
- method statements
- risk assessments
- permits to work
- manufacturers' information
- electronic data
- oral and written procedures
- current legislation
- site inductions

K3 the importance of reporting and rectifying inappropriate information

K4 the range of relevant digital services, tools and systems, and how they are used

**P2 Safe work practices**

K5 information for relevant, current legislation and official guidance and how it is applied

K6 the following types of fire extinguishers and how and when they are used:

- water
- CO2
- foam
- powder

K7 how emergencies should be responded to in accordance with organisational authorisation and personal skills in relation to:

- fires, spillages, injuries
- emergencies relating to occupational activities
- identification of and reporting of asbestos containing materials
- identification of silica

K8 the organisational security procedures for tools, equipment and personal belongings in relation to:

- operative
- site
- workplace
- vehicles
- company
- customer
- the general public

K9 how to report risks and hazards identified by the following:

- methods of work
- risk assessment

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- personal assessment
- manufacturers' technical information
- statutory regulations
- official guidance

• Control of Substances Hazardous to Health (COSHH)

K10 the accident reporting procedures and who is responsible for making the report

K11 why, when and how health and safety control equipment identified by the principles of prevention should be used in relation to:

- collective protective measures
- personal protective equipment (PPE)
- respiratory protective equipment (RPE)
- local exhaust ventilation (LEV)

K12 how to comply with environmentally responsible work practices to meet current legislation and official guidance

K13 the organisational procedure when dealing with potential accidents, health hazards and the environmental impact whilst working:

- below ground level
- in confined spaces
- at height
- at proximity to fragile roofs
- with tools and equipment
- with materials and substances
- moving and storing materials by manual handling and mechanical lifting

### **P3 Selection of resources**

K14 why the characteristics, quality, uses, sustainability, limitations and defects associated with the resources are important and how defects should be rectified

K15 the organisational procedures to select resources, why they have been developed and how they are used

K16 how to confirm the resources and materials conform with the specification and how any problems associated with the resources are reported

K17 how the following resources should be used and how any problems associated with the resources are reported:

- single pack
- multi pack and heated liquid components
- air and vapour control layers (AVCL)
- insulation
- preparation coats
- base coats
- topcoats
- reinforcements
- solvents
- adhesives
- pedestrian surfacing
- protection layers
- separating layers
- outlets
- gutters

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- pipes
- vents
- flashings
- trims
- movement joints
- rooflights
- associated materials
- components
- fixings and fittings
- brushes
- rollers
- trowels
- squeegees
- spray equipment
- hand and/or power tools
- ancillary equipment

K18 how to identify the hazards associated with the resources and methods of work and how they are overcome

K19 methods of calculating the quantity length and wastage associated with the method and procedure to apply liquid membrane systems

### **P4 Minimise the risk of damage**

K20 how to protect work and its surrounding area from damage and the purpose of protection from general workplace activities, other occupations and adverse weather conditions

K21 how to minimise the damage to existing building fabric

K22 why and how the disposal of waste must be carried out safely in accordance with the following:

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

K23 why it is important to maintain a safe, clear and tidy work area

### **P5 Meet the contract specification**

K24 how to meet the contract specification in relation to the following:

- install air and vapour control layers (AVCL)
- install insulation materials
- prepare single pack, multi pack and heated liquid components by mixing and heating techniques
- apply liquid membrane systems with control of application thickness by brush, roller, trowel, squeegee and spray application
- apply multiple coats including base and finish coats, implementing applicable control and constraints
- install reinforcement systems utilising both fleece and glass fibre
- install vertical upstands, including internal/external corners, joints and junctions, straight and curved and incorporating changes of plane and treatment of internal angles

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- install terminations (cover flashing, external trim, termination bar, junctions to other materials)
- install to perimeters (eaves, mono ridge, verges and drips), outlets (spigot, sump parapet, overflow), pipes, structural penetrations (vertical, pitched and horizontal, including plinths and hand rolled collars), safety systems, internal gutters, stop ends, rooflights, hips, valleys and pedestrian finishes, incorporating vertical surfaces
- take account of the effects of temperature and weather conditions
- implement snagging procedures and appropriate remedial work, including preparation for test procedures
- the relevance of an assessment of significance
- how to recognise specific requirements for structures of special interest, traditional construction, hard-to-treat buildings and historical significance
- work with, around and in close proximity to plant and machinery
- safely work at height using access and fall prevention equipment
- how to use all hand and power tools and ancillary equipment
- how and why operative care and maintenance of all hand, power tools and ancillary equipment is carried out

K25 the importance of teamwork and communication

K26 the importance of mental health awareness and wellbeing

K27 the importance of applying Fairness, Inclusion and Respect (FIR) when dealing with others

K28 the needs of other occupations associated with apply liquid membrane systems

### **P6 Allocated time**

K29 the programme of work to be carried out including the estimated and allocated time and why deadlines should be kept

K30 the types of progress charts, timetables and estimated times and the organisational procedures for reporting circumstances which will affect the work programme

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