

---

## Overview

This standard identifies the competences you need to apply surface treatments to composite mouldings (such as moulds, panels and components), in accordance with approved procedures. You will be required to use appropriate drawings, specifications and documentation to apply surface treatments, using the approved techniques.

You will apply surface treatments to composite mouldings using a range of techniques and processes where your responsibilities will require you to comply with organisational policy and procedures for the treatment activities undertaken and to report any problems with the treatment activities, equipment or materials that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You will be expected to work to instructions under supervision, taking personal responsibility for your own actions and for the quality and accuracy of the work that you produce.

Your underpinning knowledge will provide a good understanding of your work and will provide an informed approach to applying surface treatment techniques and procedures on composite mouldings. You will understand the surface treatment techniques used and their application, in adequate depth to provide a sound basis for carrying out the activities and ensuring the work output is to the required specification.

You will understand the safety precautions required when carrying out the surface finishing operations when using the associated tools and equipment. You will be required to demonstrate safe working practices throughout and will understand the responsibility you owe to yourself and others in the workplace.

---

## Performance criteria

### You must be able to:

1. work safely at all times, complying with health and safety, environmental and other relevant regulations, directives and guidelines
2. confirm the material surfaces to be treated are suitably prepared for the finishing operations to be carried out
3. confirm that the equipment and treatment solutions have been set up and maintained at satisfactory operating conditions and levels
4. apply surface treatments in accordance with operating procedures and the component specification requirements
5. visually check that the surface treatment applied meets the required specification
6. deal promptly and effectively with problems within your control and report those that cannot be solved
7. dispose of waste and excess materials in line with agreed organisational procedures
8. leave the surface treatment equipment in a safe condition on completion of the processing activities
9. complete relevant documentation
10. leave the work area in a safe and appropriate condition on completion of the activities

---

## Knowledge and understanding

### You need to know and understand:

1. the health and safety precautions to be taken and procedures used when working with composite materials, consumables, tools and equipment in the specific work area
2. the hazards associated with carrying out composite surface treatment activities and with the composite materials, consumables, tools and equipment used and how to minimise these and reduce any risks
3. the protective equipment (PPE) that is needed for personal protection and where required, the protection of others
4. the application of COSHH regulations in relation to the storage, use and disposal of composite materials and consumables
5. the specific environmental conditions that must be observed when applying surface treatments to composite mouldings (such as temperature, humidity, fume/dust extraction systems and equipment)
6. how to interpret and use information from engineering drawings, lay up manuals and related documentation (to include symbols and conventions to appropriate BS, ISO or BSEN standards) in relation to work undertaken
7. the quality procedures used in the workplace to ensure production control (in relation to currency, issue, meeting specification) and the completion of such documents
8. the basic conventions and terminology used for applying surface treatments (such as surface keying, thickness, treatment reactions)
9. the type of surface treatments applied to composites, and their applications
10. the correct methods of storing, handling and disposing of surface treatment materials
11. the preparation activities required prior to applying surface treatment
12. the importance of having the correct mixing ratios when using surface treatments and the associated working times
13. the correct methods of applying surface treatments
14. the common problems that can occur during the surface treatment process, including defects (such as contamination)
15. how defects can be prevented during the surface treatment activity
16. the tools and equipment used for the surface treatment activities and their care, preparation and safe handling
17. the extent of your own responsibility and to whom you should report if you have problems that you cannot resolve
18. the documentation to be completed during and/or on completion of the surface treatment activity

---

## Scope/range related to performance criteria

1. Carry out all of the following during the surface treatment activities:
  1. use the appropriate documentation (such as job instructions, drawings, material data sheets, specifications, planning and quality control documentation)
  2. adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment and other relevant safety regulations and procedures to realise a safe system of work
  3. maintain a safe working environment for the composite surface treatment activities
  4. confirm that all tools and equipment to be used are in a safe and usable condition
  5. follow safe practice/approved composite surface treatment techniques and procedures at all times
  6. segregate and dispose of waste materials using the correct procedure
  7. return all tools and equipment to the correct location on completion of the surface treatment activities
2. Carry out three of the following activities when preparing for the surface treatment activity:
  1. check that mouldings are correct and complete
  2. check for any defects in the mouldings
  3. confirm the availability of ancillary materials required
  4. confirm the equipment selected is correct for the activity
  5. identify and protect the moulding in the work area
3. Apply surface treatment to composite mouldings using one of the following techniques:
  1. cloth application
  2. brush
  3. spray
  4. films
  5. roller
  6. other (to be specified)
4. Prepare surfaces of composite mouldings using one of the following methods:
  1. surface masks
  2. peel ply

- 
3. abrading
  4. abrasive blasting
  5. etching
  6. water cleaning
  7. solvent cleaning
  8. priming
  9. other (to be specified)
5. Apply two of the following types of surface treatment to composite mouldings:
1. surface sealers
  2. primers
  3. top coats
  4. adhesive films
  5. UV coatings
  6. heatproof coatings
  7. flexible coatings
  8. speciality coatings
  9. other (to be specified)
6. Apply surface treatments to composite mouldings using one of the following:
1. one-part finishes
  2. two-part finishes
  3. single coatings
  4. multiple coatings
  5. combination coats
  6. water based
  7. solvent based
  8. adhesive based
  9. other (to be specified)
7. Apply surface treatments to composite mouldings using two of the following consumable materials:
1. masking tapes
  2. masking films
  3. stoppers
  4. fillers
  5. sealers
  6. primers
  7. abrasives
  8. cutting compounds
  9. polishes
  10. thinners
  11. solvents
  12. cleaning agents

- 
13. other (to be specified)
8. Apply surface treatments to composite mouldings suitable for one of the following resin types:
    1. bio resin
    2. thermoplastic
    3. polyester
    4. vinyl ester
    5. epoxy
    6. phenolic
    7. bismaleimide
    8. cyanate ester
    9. other (to be specified)
  9. Apply surface treatments to composite mouldings suitable for one of the following fibre types:
    1. natural fibre
    2. thermo plastic
    3. glass
    4. aramid
  
    5. carbon
  
    6. hybrid
  
    7. other (to be specified)
  10. Apply surface treatments to a range of mouldings in compliance with one of the following standards:
    1. BS, ISO or BSEN standards and procedures
    2. customer standards and requirements
    3. company standards and procedures
    4. recognised compliance agency/body standards
  11. Complete the relevant documentation, to include one of the following:
    1. production documentation
    2. quality control documentation
    3. job cards

---

## Behaviours

You will be able to apply the appropriate behaviours required in the workplace to meet the job profile and overall company objectives, such as:

- strong work ethic
- positive attitude
- team player
- dependability
- responsibility
- honesty
- integrity
- motivation
- commitment

SEMCOMP219

Carrying out the application of surface treatments on composite mouldings



---

Developed by	Enginuity
Version Number	2
Date Approved	28 Feb 2018
Indicative Review Date	01 Feb 2021
Validity	Current
Status	Original
Originating Organisation	Semta
Original URN	SEMCOMP219
Relevant Occupations	Composite Fitter, Composite Technician, Laminator, Moulding Technician
Suite	Composite Engineering Suite 2
Keywords	Engineering; produce; composite; mouldings; components; laminating; resin; fibre; assemblies; surface treatments; apply finishes; drawings

---