SEMPEO1-33 - SQA Unit Code H032 04
Applying coatings or coverings to finish surfaces

Overview

This standard covers a range of basic competences that you need, to finish surfaces by the application of coatings or coverings. It will prepare you for entry into the engineering or manufacturing sectors, creating a progression between education and employment, or it will provide a basis for the development of additional skills and occupational competences in the working environment.

You will be expected to prepare for the finishing activities by obtaining all the necessary job instructions, materials, tools, equipment and any documentation that may be required.

You will be required to use the specified techniques to prepare the surfaces in readiness for the application of the coatings or coverings. The finishing activities which will include the application of protective or decorative coatings or coverings, using hand tools, brushes, rollers, pads, cloths, or spray equipment, as applicable to the task.

Your responsibilities will require you to comply with health and safety requirements and organisational policy and procedures for the finishing activities undertaken. You will need to report any difficulties or problems that may arise with the finishing activities, and to carry out any agreed actions. You will work under a high level of supervision, whilst taking responsibility for your own actions and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will provide an understanding of your work, and will enable you to apply appropriate hand finishing techniques and procedures safely. You will understand the preparation and finishing techniques used, and their application, and will know about the equipment, materials and consumables, to the required depth to provide a sound basis for carrying out the activities to the required specification.

You will understand the safety precautions required when carrying out the finishing activities, and when using the associated tools and equipment. You will be required to demonstrate safe working practices throughout. You will also understand your responsibilities for safety, and the importance of taking the necessary safeguards to protect yourself and others in the workplace.

Specific Standard Requirements
At least one of the finished surfaces must require a combination of different finishing techniques to be used: such as preparing the surface by rubbing down, filling any blemishes and applying a finishing coat or covering to the prepared surface.

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Performance criteria

You must be able to:

P1 work safely at all times, complying with health and safety legislation, regulations and other relevant guidelines

P2 prepare the work surfaces in readiness to receive the appropriate coating or covering

P3 prepare the required coating or covering materials for use

P4 apply the coatings or coverings to the surfaces, using appropriate techniques and procedures

P5 report any difficulties or problems that may arise with the surface finishing activities, and carry out any agreed actions

P6 dispose of waste material safely and correctly, in line with organisational procedures

P7 leave the work area in a safe condition on completion of the finishing activities

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Knowledge and understanding

You need to know and understand:

K1 the specific health and safety precautions which must be taken when preparing surfaces, and when applying surface coatings and coverings (such as wearing protective clothing and protective equipment, using fume and dust extraction equipment)

K2 the hazards associated with preparing surfaces and applying surface coatings and coverings (such as using chemical for cleaning activities, dust and fume inhalation, use of power tools and abrasive discs; including the information to be found in manufacturers' data sheets), and how they can be minimised

K3 the personal protective equipment (PPE) that should be used (such as eye protection, overalls, face masks, breathing equipment); how to obtain it and check that it is in a safe and usable condition

K4 the requirements for working in confined spaces and safe systems of work (including required air quantities (RAQs) and local exhaust ventilation (LEV)) to maintain safe conditions; the provision of adequate and safe lighting and avoidance of sources of ignition

K5 the importance of ensuring that fume extraction equipment is operating effectively, and that good housekeeping and fire prevention procedures are observed

K6 the importance of following job instructions and defined surface finishing procedures

K7 the surface preparation methods and techniques to be undertaken, prior to applying the coatings or coverings (such as carrying out repairs to the surface or making good any damaged or defective surfaces; stripping off old materials; using solvents to remove dirt and grease; masking surfaces to prevent overspill/spray)

K8 the specific coatings or coverings to be used (such as liquid coatings, coverings in sheet, roll or tile form), and the types of surface for which they are best suited

K9 the preparation methods and techniques for mixing paints, varnishes, lacquers, stains and polishes

K10 the various methods of applying the required finishes (such as using brushes, rollers, paint pads, cloths adhesive spreaders and spray equipment)

K11 the safe operation of spray equipment, and the effects of air pressure variance on the spray quality

K12 the time intervals that are required between coats, and why these must be adhered too

K13 the use of lamps and heaters to aid the drying of the coatings or coverings

K14 cleaning and maintenance procedures for the tools and equipment that are used (such as brushes, rollers adhesive spreading tools and spray equipment)

K15	the procedures for dealing safely and correctly with used consumables and surplus coatings or coverings
K16	the problems that can occur with the finishing operations, and how these can be overcome
K17	when to act on your own initiative and when to seek help and advice from others
K18	the importance of leaving the work area and equipment in a safe and clean condition on completion of the finishing activities (such as returning tools and equipment to the designated location, cleaning the work area, and removing and disposing of waste)

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Additional Information

Scope/range related to performance criteria

You must be able to:

1. Carry out **all** of the following during the surface finishing activities:
   - 1.1 adhere to procedures or systems in place for risk assessment, COSHH, personal protective equipment (PPE) and other relevant safety regulations
   - 1.2 follow job instructions and finishing specifications and procedures
   - 1.3 check that the tools and finishing equipment you need are in a safe and usable condition (such as brushes, rollers spray equipment, hoses, hand tools)
   - 1.4 where appropriate, ensure that dust extraction and air filtering equipment is functioning correctly
   - 1.5 provide a suitable means for curing the coating (such as heating, or air supply to assist curing)

2. Prepare the surface to be finished, to include carrying out **four** of the following:
   - 2.1 stripping old finishes
   - 2.2 flattening down
   - 2.3 filling
   - 2.4 pre-surface treatments
   - 2.5 cleaning/degreasing
   - 2.6 masking up
   - 2.7 sealing
   - 2.8 re-activating treatments
   - 2.9 mechanical surface preparation

3. Prepare the coating or covering materials for application, to include carrying out **all** of the following:
   - 3.1 obtaining the correct types and quantities of materials
   - 3.2 ensuring that the correct mixing rations are adhered to
   - 3.3 checking that the prepared coating material is of the correct viscosity/consistency
   - 3.4 ensuring that the prepared coating material has been left for the required induction period (if applicable)
   - 3.5 ensuring that the prepared coating material is at the temperature recommended for application

4. Apply coatings or coverings to **one** of the following materials:
   - 4.1 wood based

4.2 composite (such as glass fibre, Kevlar)
4.3 ceramic
4.4 ferrous material
4.5 pre-painted surfaces
4.6 plaster/brick/concrete
4.7 non-ferrous material

5. Apply liquid coatings (such as primer/undercoat and finishing coats) using **two** of the following finishing materials:
   5.1 sanding sealer
   5.2 petroleum based
   5.3 French polish
   5.4 water based paints
   5.5 polyurethane varnish
   5.6 temporary protective coatings
   5.7 oil/alkyd based paints
   5.8 lacquer
   5.9 mastics
   5.10 synthetic paints
   5.11 stain
   5.12 bituminous or rubber paints
   5.13 two-component polyurethane paint
   5.14 wax
   5.15 other special finishes (specify)

   OR Apply coverings which are decorative, insulative or protective, to include two of the following:
   5.16 paper based
   5.17 composite
   5.18 wood
   5.19 polymer based
   5.20 metallic
   5.21 ceramic

6. Apply finishes to a range of surfaces, to include **two** of the following:
   6.1 flat
   6.2 overhead
   6.3 horizontal
   6.4 curved or cylindrical
   6.5 vertical
   6.6 corners (such as outside corners, edges, `obscured' corners)

7. Check that the completed surface finishes or coverings comply with **all** of the following:
   7.1 the final finish or covering is in line with the specification or job requirements
   7.2 the finished surface is free from defects (such as runs, drips,

bubbles, unevenness)

7.3 the finished surface meets customer/company requirements

8. Tidy up the work area on completion of the coating or covering activities, to include carrying out **all** of the following:
   - 8.1 cleaning tools, equipment and containers to be reused
   - 8.2 returning all tools and excess materials to their designated location
   - 8.3 disposing of waste materials, non-reusable containers and used solvents, in accordance with approved procedures

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Developed by	SEMTA
Version number	2
Date approved	December 2011
Indicative review date	December 2016
Validity	Current
Status	Original
Originating organisation	SEMTA
Original URN	33
Relevant occupations	Engineering; Engineering and manufacturing technologies; Blacksmith
Suite	Performing Engineering Operations Suite 1; Craft (Blacksmithing)
Key words	performing engineering operations, applying coatings, applying coverings, finish surfaces, manufacturing, protective coatings, brushes, rollers, pads, spray equipment, Blacksmithing;