

## Preparing marine coatings for application

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### Overview

This standard identifies the competences you need to prepare marine coating materials (paints) for application by brush, roller or spray, in accordance with approved procedures. You will be required to obtain all information necessary to carry out the preparations of the coating materials. You will be expected to select the appropriate preparation or mixing equipment and to ensure that it is fit for purpose. You will be expected to prepare a variety of coatings for a range of applications, which will include the painting of bare substrates and the overcoating of previously painted surfaces. You will be required to check that all paint has been prepared in accordance with manufacturers' recommendations for the application conditions.

Your responsibilities will require you to comply with your organisation's policies and procedures for the preparation of the coating materials and for the disposal of surplus product, arisings and contaminated solvents. You will be required to report any problems with the preparation activities that you cannot resolve, or are outside your defined authority, to the relevant people. You will be expected to work to instructions, alone or in conjunction with others, taking personal responsibility for your own actions and for the quality and accuracy of the work that you carry out.

Your underpinning knowledge will be sufficient to provide a sound basis for your work and will provide an informed approach to the preparation of liquid marine coatings. You will have an understanding of the properties of the marine coatings and the applications for which they are intended. You will know about pot life, induction times, viscosity and temperature conditioning requirements, in sufficient depth to provide a sound basis for carrying out the activities and ensuring that the coatings are prepared to the required standards.

You will understand the safety precautions required when carrying out the preparatory operations. You will be required to demonstrate safe working practices throughout and will understand the responsibility you owe to yourself and others in the workplace.

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### Performance criteria

#### You must be able to:

1. work safely at all times, complying with health and safety and other relevant regulations, directives and guidelines
2. obtain the required materials and check them for quantity and quality
3. determine how the materials need to be prepared
4. carry out the preparations using suitable equipment
5. reinstate the work area on completion of preparation activities
6. report completion of preparations in line with organisational procedures
7. deal promptly and effectively with problems within your control and report those that cannot be solved

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### Knowledge and understanding

#### You need to know and understand:

1. the safe working practices and procedures to be observed when working with marine coating materials and mixing equipment (such as general workshop and site safety, protecting other workers from the effects of the work, atmospheric controls)
2. statutory requirements, risk assessment procedures and relevant requirements of HASAWA, COSHH (such as the Provision and Use of Work Equipment Regulations, Control of Vibration at Work Regulations, the Special Waste Regulations, the Pollution Prevention and Control Regulations, the Water Resources Act, the Solvent Emissions Directive)
3. the hazard associated with the storage of, the preparation of and the disposal of marine coating products and solvents
4. the information to be found in manufacturers' data sheets and in Chemical Hazard Information and Packaging for Supply (CHIPS) data sheets
5. the use of appropriate personal protective equipment (PPE)
6. the environmental impact of the operations you are carrying out and with the materials you are using and the minimisation of this impact
7. the hazards associated with carrying out coating material preparation activities and with the materials and equipment used (such as inhalation of fumes, fire and explosion, contact with solvents and other chemicals) and how they can be minimised
8. the characteristics of and applications for marine coating products
9. product 'life', stock control and the use of batch numbers
10. the storage requirements (including environmental controls and containment arrangements) for marine coating products and solvents (such as thinners, cleaners)
11. how to obtain an estimate of the product volume to be prepared for a defined usage (including estimation of areas to be covered, practical paint consumption and loss factors)
12. the containers appropriate to defined products and usages
13. the preparation requirements (including pot life, induction times and temperature conditioning requirements)
14. the importance of stirring single pack paints (settling of pigment) and use of thinners, for marine coating products
15. the importance of mixing ratios (such as use of whole packs) for two-pack products
16. the need to reject wrongly mixed paint
17. the use of appropriate containers, hand tools and electro-mechanical/pneumatic equipment
18. the disposal procedures for redundant materials and non-returnable containers
19. why tool/equipment control is critical and what to do if a tool or piece of equipment is unaccounted for on completion of the activities

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20. the appropriate procedures for the cleaning of re-usable containers
21. the procedures to contain and to clear away spillages and the appropriate disposal of the arisings
22. the quality control requirements and techniques to be followed
23. the importance of the maintenance of records for paint and solvent consumption
24. the extent of your own responsibility and to whom you should report if you have problems that you cannot resolve

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### Scope/range related to performance criteria

1. Carry out all of the following during the preparation activities:
  1. obtain and work to job instructions and other relevant documentation (such as contractual specifications and coating manufacturer's specifications)
  2. use appropriate health and safety documentation, including CHIPS data and risk assessments
  3. use appropriate personal protective equipment (PPE) during the preparation activities, ensuring that it is in good condition and used correctly
  4. use safe and approved preparation methods and techniques at all times
  5. clean and secure all tools and equipment on completion of the preparation activities
  6. leave the work area in a safe and clean condition on completion of the activities
2. Obtain an estimate of the volume of paint to be prepared for the complete coating of bare substrate or for the overcoating of previously painted substrate, by spray or by brush, to include six of the following surfaces:
  1. outer bottom
  2. weather decks
  3. plates
  4. beams and profiles
  5. boot-top
  6. corrugated sheets
  7. pipes
  8. simple shapes
  9. topsides
  10. tanks
  11. internal compartments/spaces
3. Prepare two of the following two-pack (two component) products:
  1. water based epoxies
  2. solvent based epoxies
  3. epoxy shop primer

Plus two more of the following:

4. non-skid deck paints
5. two-component coal tar epoxy paint
6. two-component polyurethane paint

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7. zinc ethyl silicate paint
8. solvent free epoxy
9. wash primer
10. glass flake polyester

4. Prepare three of the following single pack products:

1. conventional alkyd or silicone alkyd
2. acrylic paint
3. single pack blast primer
4. vinyl paints
5. mastics
6. bituminous paint
7. vinyl tar paint
8. anti-fouling paint
9. chlorinated rubber paint

5. Prepare marine coatings for application, by carrying out all of the following activities:

1. obtaining the correct type and quantities of materials
2. ensuring that the correct mixing ratios are adhered to
3. checking that the prepared coating material is of the correct viscosity
4. ensuring that the prepared material has been in the container for the induction period (if applicable)
5. ensuring that the prepared material is at the temperature recommended for application

6. Reinstate the work area on completion of the preparation activities, to include carrying out all of the following:

1. disposing of excess or unused paint, in accordance with approved procedures
2. cleaning containers to be re-used and disposing of arisings and used solvents, in accordance with approved procedures
3. disposing of non-reusable containers, in accordance with approved procedures
4. cleaning and returning all tools and excess materials
5. removing protection and exclusion arrangements (if no longer required)
6. contributing to the completion of all required records (including for the consumption of paint and solvents)

7. Prepare marine coating materials, in accordance with one of the following standards:

1. BS, EN or ISO standards and procedures

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2. customer (contractual) standards and requirements
3. company standards and procedures
4. paint/covering manufacturer's recommendations
5. recognised compliance agency/body's standards

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### 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

## Preparing marine coatings for application

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