

Applying holding primer by spray methods

Overview

This standard identifies the competences you need to apply holding primer to various substrates, using manual spray guns, in accordance with approved procedures. You will be required to obtain all necessary information in order to carry out the spraying of the holding primer. You will be required to check that all surfaces to be coated have been prepared, in accordance with the process specification and that any necessary exclusion, containment, masking, protection and ventilation requirements are implemented. You will be expected to use the appropriate and/or specified equipment and to ensure that it is correctly set up, maintained and adjusted. You will be expected to apply the coatings in a number of shipyard and shipboard environments.

Your responsibilities will require you to comply with organisational policy and procedures for the spray coating activities undertaken and to report any problems with these activities that you cannot personally resolve, or are outside your permitted 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 applying holding primer by spray methods. You will have an understanding of the spraying procedures and techniques used and their application. You will know about the substrates and their preparation requirements, holding primers and their preparation requirements, in sufficient depth to provide a sound basis for carrying out the activities and for ensuring that the coated surfaces are to the required standards.

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

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. ensure the material surfaces to be treated are suitably prepared for the finishing operations to be carried out
3. check that the finishing equipment and coatings are set up and maintained at satisfactory operating conditions and levels
4. carry out the treatment process in accordance with operating procedures and the component specification
5. apply holding primer by spray methods using appropriate methods and techniques
6. ensure that the treated workpiece achieves the required characteristics and meets the finishing specification
7. deal promptly and effectively with problems within your control and report those that cannot be solved
8. dispose of waste and excess materials in line with agreed organisational procedures
9. shut down the finishing equipment to a safe condition on completion of the processing activities

Knowledge and understanding

You need to know and understand:

1. the safe working practices and procedures to be observed when working with holding primers and spray application equipment (such as general workshop and site safety, appropriate protective equipment, protecting other workers from the effects of the work, safety in enclosed/confined spaces, working at height, use of mobile elevated work platforms (MEWPs), atmospheric controls)
2. statutory requirements, risk assessment procedures and relevant requirements of HASAWA, COSHH (such as Approved Codes of Practice (ACOP), the Management of Health and Safety at Work Regulations, the Provision and use of Work Equipment Regulations, the Noise at Work Regulations, the Confined Space Regulations, the Special Waste Regulations, the Pollution Prevention and Control Regulations, the Water Resources Act)
3. the hazards associated with the storage of, the preparation of, and the disposal of marine coating products (including the information to be found in manufacturers' data sheets and in Chemical Hazard Information and Packaging for Supply (CHIPS) data sheets)
4. the requirements for working in confined spaces and the importance of emergency procedures and safe systems of work (including safe evacuation, closing down compartments, permits to work, 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)
5. how particular procedures and materials, can result in a compartment or space (such as an accommodation space or tented enclosure) becoming a confined space
6. the importance of having regular medical examinations when using solvent based materials
7. the personal protective equipment (PPE) to be worn during the holding primer spraying activity
8. the use of manufacturers' data sheets, requirements for the application of particular primer systems and contractual specifications
9. the need to ensure that the substrates have been prepared correctly for the primer to be applied
10. the importance of maintaining appropriate environmental conditions for the application and curing of the marine coating products

Applying holding primer by spray methods

11. the procedures for the handling and safe use of coating materials and solvents
12. the use of paint thinners to adjust the viscosity of the product being applied
13. selection of the application equipment to suit the materials and the finish required (to include spray gun atomising and air control, tip size, fluid delivery rates and fan angle)
14. the correct grounding and earth continuity of the equipment
15. the importance of checking lines for damage and for kinks; the use of a 'daily check list'
16. the requirements for cleaning pumps, filters, surge chambers and the need to top up the oil cup
17. the requirements for cleaning spray guns (including the cleaning of the diffuser, tip and tip guard, the flushing of the gun and of the lines, the lubrication of the needle)
18. the techniques required for the application of holding primer to a variety of surfaces
19. the requirements for working afloat, on outer bottoms, and at heights
20. the importance of avoiding overspray; the need for containment and for exclusion zones
21. the procedure to contain and to clear away spillages
22. the identification of faults in application and their causes and correction (to include distorted patterns, tailing, dry spray, overspray, and pinholing)
23. simple non-destructive testing procedures to ensure that adhesion and other required performance qualities are achieved
24. 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
25. minimising and handling waste materials (including the environmental impact of the materials you are using and the minimisation of this impact)
26. the extent of your own responsibility and whom you should report to if you have problems that you cannot resolve

Scope/range related to performance criteria

1.

Ensure that the appropriate measures are implemented before starting the application of the coatings, to include carrying out all of the following:

- 1.1 use appropriate health and safety documentation, including CHIPS data and risk assessments
- 1.2 wear appropriate personal protective equipment (PPE) at all times during the coating operations
- 1.3 ensure that appropriate exclusion zones and containment facilities are set up
- 1.4 ensure that equipment is correctly prepared for the spraying operations (such as spray guns, air supplies)
- 1.5 carry out any necessary masking
- 1.6 confirm that appropriate emergency arrangements are in place for any confined space or hazardous work (where applicable)
- 1.7 provide weather protection for the areas to be sprayed (where appropriate)
- 1.8 ensure that environmental conditions meet the requirements for the application of the coating (such as surface temperature, air humidity)
- 1.9 provide any means required to promote the curing of the coating (such as air supply, warm air)
- 1.10 leave the work area in a safe and clean condition on completion of the activities

2.

Apply holding primer, by spraying, to marine structures incorporating six of the following features:

- 2.1 corners (such as outside corners, edges, 'obscured' corners)
- 2.2 level surfaces
- 2.3 inclined surfaces
- 2.4 round parts
- 2.5 vertical flat surfaces
- 2.6 curved surfaces
- 2.7 slender components
- 2.8 horizontal flat surfaces

3.

Apply holding primer, by spraying, in all of the following situations:

- 3.1 confined spaces (such as tanks, voids, double bottoms)
- 3.2 internal spaces
- 3.3 at height
- 3.4 outer bottoms
- 3.5 weatherwork
- 3.6 weather decks

4.

Applying holding primer by spray methods

Apply holding primer in both of the following environments:

- 4.1 ashore
- 4.2 afloat

5.

Apply holding primer using the appropriate techniques, to achieve all of the following:

- 5.1 correct film thickness
- 5.2 correct banding
- 5.3 complete coverage of the surface to be coated
- 5.4 smooth surface free from runs and drips

6.

Check coating thickness, using one of the following methods:

- 6.1 wet film thickness gauge (combs, wet film)
- 6.2 dry film thickness gauge (cured coating)

7.

Apply spray coatings of holding primer to components, in accordance with one of the following standards:

- 7.1 BS, EN or ISO standards and procedures
- 7.2 customer (contractual) standards and requirements
- 7.3 company standards and procedures
- 7.4 paint/covering manufacturer's recommendations
- 7.5 recognised compliance agency/body's standards

8.

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

- 8.1 cleaning the spraying equipment and returning all tools and excess materials
- 8.2 removing protection and exclusion arrangements (if no longer required)
- 8.3 contributing to the completion of all relevant documentation (such as condition/pre-treatment of substrates, coating material preparation, equipment settings, confirmation of standard of finish)

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

Applying holding primer by spray methods

Developed by Enginuity

Version Number 2

Date Approved 28 Feb 2018

Indicative Review Date 01 Feb 2021

Validity Current

Status Original

Originating Organisation Senta

Original URN SEMME2102

Relevant Occupations Engineering, Engineering and Manufacturing Technologies

Suite Marine Engineering Suite 2

Keywords Engineering; marine; apply; holding primer; spray; vertical; horizontal; methods; techniques
