

Applying coatings/finishes to aircraft components by hand

Overview

This standard identifies the competences you need to apply coatings/finishes to aircraft components by hand, in accordance with approved procedures. You will be required to use appropriate job instructions, specifications, tools and equipment to apply the various coatings/finishes to the components/parts of the aircraft by hand. You will be expected to use the specified or appropriate process and techniques to apply the coatings, and this will include degreasing, priming, colouring or protecting the various parts, using brushes and rollers, as applicable to the task.

Your responsibilities will require you to comply with organisational policy and procedures for the coating/finishing activities undertaken, and for the disposal of surplus product, and contaminated solvents. You will be required to report any problems with the coating/finishing activities, equipment or materials that you cannot personally resolve, or are outside your permitted authority, to the relevant people. You will need to ensure that all tools, equipment and materials used in the coating application are correctly accounted for on completion of the activities, and you must complete all necessary job/task documentation accurately and legibly.

You will be expected to work either with a high level of supervision or as a member of a team, and you will take personal responsibility for your own actions and for the quality and accuracy of the work that you carry out. Where team working is involved, you must demonstrate a significant personal contribution during the team activities in order to satisfy the requirements of this standard, and you must demonstrate competence in all the areas required by the standard.

Your underpinning knowledge will be sufficient to provide a sound basis for your work, and will provide an informed approach to the application of aircraft coating/finishing materials. You will have an understanding of the properties of the aircraft coatings/finishes 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 for ensuring that the coatings are applied to the required standards.

You will understand the safety precautions required when carrying out the coating/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

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safeguards to protect yourself and others in the workplace.

Performance criteria

You must be able to:

1. work safely at all times, complying with health and safety legislation, regulations, directives and other relevant guidelines
2. ensure the material surfaces to be coated/finished are suitably prepared for the finishing operations to be carried out
3. check that the finishing equipment and coating solutions are set up and maintained at satisfactory operating conditions and levels
4. carry out the coating/finishing process in accordance with operating procedures and the component specification
5. ensure that the coated/finished workpiece achieves the required characteristics and meets the finishing 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. shut down the finishing equipment to a safe condition on completion of the processing activities
9. complete relevant paperwork and submit to appropriate people

Knowledge and understanding

You need to know and understand:

1. the safe working practices and procedures to be observed when working with aircraft component coating/finishing materials and equipment (including items such as general workshop and site safety, protecting other workers from the effects of the work, atmospheric controls)
2. the hazards associated with carrying out coating/finishing activities on aircraft components, and with the materials and equipment used (including hazards such as inhalation of fumes, fire and explosion, contact with solvents and other chemicals), and how these hazards can be minimised
3. 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 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 (including items such as an accommodation space or tented enclosure) becoming a confined space
6. the personal protective equipment (PPE) to be worn during the coating/finishing activity, and its care and correct use
7. the environmental impact of the operations you are carrying out, and with the materials you are using, and the minimisation of this impact
8. the need to ensure that the substrates have been prepared correctly for the coatings/finishes to be applied
9. the characteristics and applications of various aircraft component coating/finishing products (including items such as sealers, primers, top coats and specialised protective coatings)
10. product 'life', stock control and the use of batch numbers
11. the storage requirements (including items such as environmental controls and containment arrangements) for aircraft component coating/finishing products and solvents (such as thinners, cleaners)
12. the procedures for the transportation, storage and safe use of the coating/finishing materials and solvents

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13. the importance of maintaining appropriate environmental conditions for the application and curing of the aircraft coating products
14. the time intervals that are required between coats, and why these must be adhered to
15. the use of paint thinners to adjust the viscosity of the coating/finish being applied
16. selection of the application equipment, to suit the materials and the coating/finish required (to include brushes, rollers, paint pads, suitable containers)
17. the equipment care and control procedures (including items such as fume extraction systems)
18. cleaning and maintenance procedures for brushes, rollers and pads
19. recognition of defects including items such as bubbles, foreign object damage, contamination and surface defects
20. problems that can occur with the coating/finishing operations, and how these can be overcome
21. the quality control requirements and techniques to be followed
22. simple non-destructive testing procedures to ensure that adhesion and other required performance qualities are achieved
23. 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
24. the procedure for the safe disposal and correct separation of waste materials
25. the recording documentation to be completed for the coating/finishing activities undertaken and, where appropriate, the importance of marking and identifying specific pieces of work in relation to the documentation
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.

Carry out **all** of the following during the coating/finishing process:

- 1.1 ensure that you have the correct documentation for the coating operations (including items such as coating manufacturer's specifications, job instructions, aircraft standards)
- 1.2 adhere to procedures or systems in place for risk assessment, COSHH, CHIPS data, personal protective equipment and other relevant safety regulations
- 1.3 obtain the correct tools and equipment for the activity, and check that they are in a safe and usable condition
- 1.4 apply appropriate and safe coating/finishing techniques and procedures at all times
- 1.5 dispose of waste items and materials in a safe and environmentally acceptable manner, in line with company procedures
- 1.6 clean and return all tools and equipment to the correct location on completion of the activities
- 1.7 leave the work area in a safe condition and free from foreign object debris

2.

Apply coatings/finishes to **two** of the following aircraft components:

- 2.1 aircraft detail components
- 2.2 major assemblies
- 2.3 blades and shafts (helicopters only)
- 2.4 sub-assemblies
- 2.5 complete aircraft
- 2.6 other specific components

3.

Apply coatings/finishes to parent materials, to include **two** of the following:

- 3.1 bare metal (ferrous)
- 3.2 bare metal (non ferrous)
- 3.3 composite
- 3.4 previously painted surfaces

4.

Apply coating/finishing materials, to include **two** of the following:

- 4.1 surface sealers
- 4.2 top coats
- 4.3 UV coatings
- 4.4 temporary protective coatings
- 4.5 primers
- 4.6 flexible coatings
- 4.7 heatproof coatings
- 4.8 speciality coatings

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5.

Use **three** of the following types of coating/finishing materials:

- 5.1 one-part finishes
- 5.2 multiple coatings
- 5.3 solvent based
- 5.4 water based
- 5.5 single coatings
- 5.6 two-part finishes
- 5.7 combination coats
- 5.8 adhesive based

6.

Apply coating/finishing materials using **two** of the following:

- 6.1 brushes
- 6.2 rollers
- 6.3 pads
- 6.4 dipping
- 6.5 other specific method

7.

Apply coatings/finishes, using appropriate techniques to achieve **three** of the following:

- 7.1 correct film thickness
- 7.2 colour match
- 7.3 uniform and complete coverage of the surface to be coated
- 7.4 gloss levels
- 7.5 smooth surface free from runs or drips

8.

Apply coatings/finishes which comply with **one** of the following standards:

- 8.1 Civil Aviation Authority (CAA)
- 8.2 customer standards and requirements
- 8.3 Ministry of Defence (MoD)
- 8.4 company standards and procedures
- 8.5 Federal Aviation Authority (FAA)
- 8.6 coating/paint manufacturer's recommendations

9.

Complete the relevant paperwork, to include **one** from the following, and pass it to the appropriate people:

- 9.1 build/production records
- 9.2 quality control documentation
- 9.3 aircraft log
- 9.4 other specific records

Behaviours

Additional Information

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

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