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**Overview**

This standard identifies the competencies you need to prepare and treat surfaces in accordance with approved procedures. You will be required to identify the materials and substrates. You will be able to prepare materials and equipment, and apply both foundation and topcoats to body panels and components using spray equipment.

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**Performance  
criteria**

- You must be able to:
- P1 wear suitable personal protective equipment and use the specified environmental safety equipment throughout all vehicle refinishing operations
  - P2 prepare, test and adjust all the **tools and equipment** required following manufacturer's instructions, prior to use
  - P3 support vehicle refinishing operations by reviewing:
    - P3.1 product data
    - P3.2 the manufacturer's technical data
    - P3.3 colour libraries
    - P3.4 work instructions
  - P4 identify the correct preparation **process** prior to application using spray equipment
  - P5 apply all **refinishing materials** to body panels using approved **tools and equipment** and following:
    - P5.1 the manufacturer's instructions
    - P5.2 the approved **process** and **application techniques**
    - P5.3 health, safety and environmental requirements
  - P6 dry all refinishing applied materials following health and safety requirements and using:
    - P6.1 the manufacturer's approved process
    - P6.2 the manufacturer's approved equipment
  - P7 identify the suitability of the final finish prior to undertaking any flattening and polishing work
  - P8 ensure the finished product:
    - P8.1 meets the refinishing specification required
    - P8.2 blends with the existing finish
    - P8.3 is free from contaminants and defects
  - P9 clean and return or dispose of all painting equipment on completion of the painting activities
  - P10 clean the work area and safely dispose of waste materials in accordance with safe working practices and approved procedures
  - P11 complete all refinishing activities within the agreed timescale

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P12 report any anticipated delays in completion to the relevant person(s)

P13 complete work records as required

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## Knowledge and understanding

You need to know and understand:

### Use of technical information

- K1 how to source and use relevant **information** for planning and progressing your work
- K2 the importance of using technical **information** to inform your refinishing process
- K3 how to find, interpret and use sources of **information** relevant to the mixing and matching of vehicle paint colours

You need to know and understand:

### Legislative and organisational requirements and procedures

- K4 the health and safety and environmental legislative requirements specific to vehicle refinishing operations and why it is important that these are followed
- K5 workplace procedures and workshop practices relevant to personal and vehicle protection before, during and after vehicle refinishing operations
- K6 the importance of disposing of waste safely and the consequences of not doing so to others, the business and the environment
- K7 your workplace procedures for:
  - K7.1 the referral of problems
  - K7.2 reporting of delays to the completion of work
  - K7.3 the use of personal protection
- K8 how to work safely avoiding damage to vehicles, personal injury and injury to colleagues
- K9 the importance of leaving workshop environment and equipment in a clean and workable condition
- K10 the procedures for reporting defects to workshop **tools and equipment**
- K11 the importance of working to agreed timescales and keeping others informed of progress
- K12 the relationship between time, cost and productivity
- K13 the importance of reporting anticipated delays to the relevant person(s) promptly
- K14 the extent of your own responsibility and to whom you should report if you have problems that you cannot solve or your original specification changes

You need to know  
and understand:

- K15 the hazards associated with working on, near or with high energy electrical vehicle components
- K16 the risks of causing damage to Advanced Driver Assistance System components or affecting their calibration and the consequences this could have for the vehicle's safety

**Tools and equipment**

You need to know  
and understand:

- K17 how to prepare, test, adjust and use all the **tools and equipment** required for vehicle refinishing operations
- K18 the types and grades of abrasives and the factors governing their use for different **substrates**
- K19 how spraying equipment adjustments can alter colour
- K20 spray gun faults, their cause and their rectification
- K21 the importance of using extraction equipment and how these should be used
- K22 the implications of cross-contamination of dissimilar metals when using abrasives and extraction equipment

**Mixing and matching vehicle colours**

- K23 the principles of colour and the effects of light
- K24 how to compare, mix, test and adjust colour tones and effects, including metallic, mica and other specialist effects
- K25 the consequences of adding too much tinter and the process for correcting and adjusting it
- K26 the implications of combining different manufacturer's paint products throughout the refinishing process
- K27 the factors affecting colour variation and tone, including the effects of metamerism
- K28 how to dry test panels and colour test cards and the importance of doing so
- K29 how to identify the causes of, and rectify, colour mismatch
- K30 how to assess and evaluate the need for blending techniques to achieve an acceptable colour match
- K31 the importance and implications of correctly preparing the existing finish for colour matching and checking the match using the correct light source
- K32 the advantages of creating and storing your own colour library

K33 the varied range of technology used within the mixing and matching process

**Vehicle refinishing activities**

K34 the factors governing the choice of panel preparation **process** for the substrate identified

K35 how to rectify **substrate** defects

K36 the importance of **substrate** cleaning and identifying the correct foundation material to ensure adequate adhesion of the **refinishing system**

K37 how to apply foundation coatings to body panels

K38 how to apply top coat materials to body panels using **application techniques** avoiding contamination and defects

K39 the implications of static when working within the application process

K40 how to dry/cure foundation and top coat materials

K41 how to identify and rectify the faults associated with painting body panels and components

K42 the importance of following manufacturer's instructions and using their approved methods of working

K43 the consequences of failing to follow manufacturer's instructions

K44 the implications of rectification identified by an agreed quality control process

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**Scope/range**

- 1. Tools and equipment are:**
  - 1.1. polishing machines
  - 1.2. denibbing blocks
  - 1.3. flatting equipment
  - 1.4. masking material dispensers
  - 1.5. dust extraction
  - 1.6. paint mixing and application equipment
  - 1.7. compliant paint scheme
  - 1.8. viscosity measuring equipment
  - 1.9. air supply equipment
  - 1.10. spray booth
  - 1.11. drying/curing equipment
  
- 2. Refinishing materials are:**
  - 2.1. compounds
  - 2.2. flatting papers
  - 2.3. polishes
  - 2.4. etch primers
  - 2.5. high build primers
  - 2.6. surfacers
  - 2.7. anti-corrosion treatments
  - 2.8. cleaning agents
  - 2.9. conditioning agents
  - 2.10. adhesion promoters
  - 2.11. metallic clear over base paints
  - 2.12. non-metallic clear over base paints
  - 2.13. mica clear over base paint
  - 2.14. dilutants
  - 2.15. tinters
  - 2.16. additives
  - 2.17. hardeners
  
- 3. Process stages are:**
  - 3.1. de-greasing

- 3.2. flating
- 3.3. burnishing
- 3.4. removing materials to a sound substrate
- 3.5. feathering out
- 3.6. masking
- 3.7. recoating
- 3.8. polishing
- 3.9. plastic preparation
- 3.10. tack off

**4. Information** sources are:

- 4.1. electronically stored information
- 4.2. data sheets
- 4.3. inspection sheets
- 4.4. specifications
- 4.5. workshop manuals
- 4.6. vehicle manufacturers' technical data
- 4.7. material manufacturers' technical data
- 4.8. colour libraries/spectrometer

**5. Substrates** are:

- 5.1. new panels
- 5.2. repaired panels
- 5.3. original manufacturer's finish
- 5.4. ferrous and non-ferrous materials
- 5.5. thermo and thermo-setting plastics

**6. Defects** include:

- 6.1. runs
- 6.2. bleeding
- 6.3. contamination
- 6.4. poor adhesion
- 6.5. sanding
- 6.6. dirt nibs

- 6.7. orange peel
- 6.8. solvent popping

**7. Application techniques are:**

- 7.1. edge to edge
- 7.2. fade out
- 7.3. blending colour into adjacent panels
- 7.4. spot repair
- 7.5. respray

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**Additional  
Information**

**Glossary**

*This section contains examples and explanations of some of the terms used but does not form part of the standard.*

**Body panels include** full panels, part panel, combination of two or more panels or complete vehicle

**Large Goods and Passenger Vehicles:**

These are medium and large goods vehicles, buses and coaches of 3500kgs gross vehicle mass (GVM) and above.

**Refinishing operations**

**Includes** preparation, application, drying and polishing

**Working on, near or with high energy electrical vehicle components:**

Any work which does not include working on the high voltage systems.

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| <b>Developed by</b>             | IMI  |
| <b>Version number</b>           | 1  |
| <b>Date approved</b>            | Not yet approved   |
| <b>Indicative review date</b>   | 31 March 2025  |
| <b>Validity</b>                 | Draft  |
| <b>Status</b>                   | Original   |
| <b>Originating organisation</b> | IMI Ltd  |
| <b>Original URN</b>             | IMICB30  |
| <b>Relevant occupations</b>     | Bus and Coach Coachbuilder                                 |
| <b>Suite</b>                    | Coachbuilding  |
| <b>Key words</b>                | Bus; coach; body; panel; refinishing; paint;; maintenance. |

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