

IMICB29

## Prepare and treat surfaces and apply paint coats to large goods and passenger vehicles



### 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 a brush, roller or aerosol.

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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 work instructions
  - P4 identify the body panel substrates accurately prior to undertaking any refinishing work
  - P5 prepare all the **refinishing materials**, following health and safety requirements and using:
    - P5.1 materials which conform to the specification required
    - P5.2 the manufacturer's approved method
    - P5.3 the manufacturer's approved equipment
    - P5.4 workplace procedures
  - P6 apply all **refinishing materials** using approved **tools and equipment** and following:
    - P6.1 the manufacturer's instructions
    - P6.2 the approved **methods** and **techniques**
    - P6.3 health, safety and environmental requirements
  - P7 dry all refinishing applied materials following health and safety requirements and using:
    - P7.1 the manufacturer's approved method
    - P7.2 the manufacturer's approved equipment
  - P8 ensure the finished product meets the refinishing specification required
  - 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
  - P12 report any anticipated delays in completion to the relevant person(s)

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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

### Legislative and organisational requirements and procedures

You need to know and understand:

- K3 the health and safety and environmental legislative requirements specific to vehicle refinishing operations and why it is important that these are followed
- K4 workplace procedures and workshop practices relevant to personal and vehicle protection before, during and after vehicle refinishing operations
- K5 the importance of disposing of waste safely and the consequences of not doing so to others, the business and the environment
- K6 your workplace procedures for:
  - K6.1 the referral of problems
  - K6.2 reporting of delays to the completion of work
  - K6.3 the use of personal protection
- K7 how to work safely avoiding damage to vehicles, personal injury and injury to colleagues
- K8 the importance of leaving workshop environment and equipment in a clean and workable condition
- K9 the procedures for reporting defects to workshop **tools and equipment**
- K10 the importance of working to agreed timescales and keeping others informed of progress
- K11 the relationship between time, cost and productivity
- K12 the importance of reporting anticipated delays to the relevant person(s) promptly
- K13 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
- K14 the hazards associated with working on, near or with high energy electrical vehicle components
- K15 the risks of causing damage to Advanced Driver Assistance System

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You need to know  
and understand:

components or affecting their calibration and the consequences this could have for the vehicle's safety

#### Tools and equipment

- K16 how to prepare, test, adjust and use all the **tools and equipment** required for vehicle refinishing operations
- K17 the types and grades of abrasives and the factors governing their use for different **substrates**
- K18 the importance of using extraction equipment and how these should be used
- K19 the implications of cross-contamination of dissimilar metals when using abrasives and extraction equipment

You need to know  
and understand:

#### Vehicle refinishing activities

- K20 the vehicle work specification agreed
- K21 how to identify the body panel **substrates** accurately prior to undertaking any vehicle refinishing work
- K22 the factors governing the choice of panel preparation methods for the substrate identified
- K23 how to rectify substrate defects
- K24 methods of protecting panels, any parts adjacent to the areas being painted and the circumstances in which they should be used
- K25 methods when masking (including paper and sheet masking) and the circumstances in which they should be used
- K26 the methods used to prepare **body panels** and components prior to accepting foundation materials
- K27 the importance of substrate cleaning and identifying the correct foundation material to ensure adequate adhesion of the **refinishing system**
- K28 how to apply foundation and top coat materials to **substrates** using application **techniques** avoiding contamination and defects
- K29 how to dry/cure foundation and top coat materials
- K30 how to identify and rectify the faults associated with painting body panels and components
- K31 the importance of following manufacturer's instructions and using their approved methods of working

Commented [CH1]: Are K24 and K25 the same thing?

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K32 the consequences of failing to follow manufacturer's instructions

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**Scope/range**

**1. Tools and equipment are:**

- 1.1. brushes
- 1.2. rollers
- 1.3. aerosols
- 1.4. masking material dispensers
- 1.5. dust extraction
- 1.6. paint mixing equipment
- 1.7. drying/curing equipment

**2. Refinishing materials are:**

- 2.1. etch primers
- 2.2. high build primers
- 2.3. surfacers
- 2.4. anti-stone chip treatments
- 2.5. anti-corrosion treatments
- 2.6. cleaning agents
- 2.7. conditioning agents
- 2.8. adhesion promoters
- 2.9. coloured primer
- 2.10. direct gloss
- 2.11. dilutants
- 2.12. additives
- 2.13. hardeners

**3. Methods are:**

- 3.1. de-greasing
- 3.2. identification of substrate materials
- 3.3. flatting and sanding
- 3.4. removing materials to a sound substrate
- 3.5. feathering out
- 3.6. masking
- 3.7. application of foundation and top-coat materials
- 3.8. tack off

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- 4. Substrates** are:
- 4.1. new panels
  - 4.2. repaired panels
  - 4.3. original manufacturer's finish
  - 4.4. ferrous and non-ferrous materials
  - 4.5. thermo and thermo-setting plastics
- 5. Techniques** used for:
- 5.1. full panel
  - 5.2. part panel
  - 5.3. combination of two or more panels
- 6. Defects** include:
- 6.1. runs
  - 6.2. bleeding
  - 6.3. contamination
  - 6.4. poor adhesion
  - 6.5. sanding
  - 6.6. roller and brush marks



**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** covers preparation, application, drying and polishing

**Sources of information:**

Examples **include:** electronically stored information, data sheets, inspection sheets, specifications, workshop manuals, vehicle manufacturers' technical data, material manufacturers' technical data

**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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Relevant occupations (needs update)

Suite Maintenance and Repair – Heavy Vehicle

Key words Bus; coach; body; panel; refinishing; paint;; maintenance.

**Commented [CH2]:** This will depend on where the unit sits, either within Heavy Vehicle M&R or new coachbuilder/Bodybuilder

**Commented [CH3]:** Suggestions please! Do we take these from the functional analysis? Is it just Bus and Coach? Probably yes at this stage.

**Commented [CH4]:** Suggestions please!