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**Overview**

This standard is about repairing body panels using a variety of techniques.

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## Performance criteria

- You must be able to:
- P1 identify component materials involved in the construction of the vehicle in the areas that will be worked on during repair, prior to working on the vehicle
  - P2 use the appropriate personal protective equipment when carrying out repairs to exterior body panels
  - P3 protect the vehicle and its contents effectively when carrying out repairs to exterior body panels
  - P4 inspect, prepare and use all the tools and equipment required following manufacturers' instructions
  - P5 use technical information to check that a repair is allowed
  - P6 carry out repairs to non-structural body panels following:
    - P6.1 manufacturers' methods/instructions
    - P6.2 recognised researched repair/replacement methods
    - P6.3 your workplace procedures
    - P6.4 health, safety and legal requirements
  - P7 use specialist dent removal tools effectively to reform all damaged panels
  - P8 complete repairs to exterior body panels so they are restored to their original contour using hand tools and filling materials effectively
  - P9 avoid damaging other components, standards and panels on the vehicle
  - P10 replace correctly any sealer, anti-corrosion and sound deadening materials which were removed prior to the repair
  - P11 ensure all plastic repairs regain the strength of the original part
  - P12 complete repaired components to an agreed condition ready for refinishing processes
  - P13 complete all activities within the agreed timescale
  - P14 promptly report any anticipated delays in completion to the relevant person(s)

## Knowledge and understanding

### You need to know and understand:

- K1 the health and safety legislation and workplace procedures relevant to workshop practices and personal and vehicle protection when repairing body panels
- K2 the vehicle work specification agreed
- K3 the importance of working to agreed timescales and keeping others informed of progress
- K4 the relationship between time, cost and profitability
- K5 your workplace procedures for the referral of problems
- K6 the importance of promptly reporting anticipated delays to the relevant person(s)
- K7 the requirements for protecting the vehicle and contents from damage before, during and after repair activities
- K8 the principles of the selection and use of hand tools for metal finishing and plastic filling repairs
- K9 how to select the correct tools and equipment to carry out reshaping work, including specialist dent removal tools
- K10 how to prepare, test, use and maintain the hand and power tools required to prepare damage and reshape damaged areas
- K11 the properties of component materials involved in the construction of the vehicle in the areas that will be worked on during repair
- K12 how to mix and apply plastic fillers
- K13 the properties and use of metals used to manufacture body panels
- K14 the properties and safe use of types of filling materials used to repair panels
- K15 the different types and grades of abrasive and their use
- K16 the techniques for identifying the type of plastics used for manufactured components
- K17 how to interpret and use sources of information relevant to the removal of body components
- K18 how to prepare the vehicle to avoid contamination
- K19 how to prepare damaged areas to facilitate repairs

- K20 how to repair plastic components using thermal and adhesive techniques
- K21 how to rough out and metal finish body panels
- K22 how to reshape filling materials to match the original panel contour
- K23 how to finish repairs to a suitable agreed condition for refinishing
- K24 how to work safely avoiding damage to the vehicle and its systems
- K25 the techniques for reshaping damaged body panels using hand and specialist tools
- K26 the procedures for reinstating anti-corrosion, sealant and sound deadening materials
- K27 the procedures for repairing damage to plastic components
- K28 the techniques and processes for plastic repairs
- K29 the implications of not filling to the correct specification
- K30 the techniques used to regain the contours of repaired plastic components
- K31 methods of checking reshaped panel contours for accuracy
- K32 standards of finish required to enable the next stage of repairs to proceed
- K33 the manufacturer's approved methods of working for the preparation and repair of non-structural body panels and the implications of not following them
- K34 the pedestrian safety aspects of repairability of vehicles
- K35 understand what can/can't be repaired for safety reasons (ADAS for example), manufacturer and industry agreed standards for these and why these standards must be adhered to

**Scope/range**

*All of the items listed below form part of this National Occupational Standard.*

**1. Repairs are:**

- 1.1. body filling and finishing of flat areas of a panel
- 1.2. repairs to dents that are over 70 mm in diameter in body panels, including curvature panels and swage lines
- 1.3. repairs to splits and scuffs on plastic components

**2. Vehicle body panels are:**

- 2.1. non-permanently fixed panels
- 2.2. permanently fixed component

**3. Techniques and processes are:**

- 3.1. plastic repairs
- 3.2. shrinking
- 3.3. panel pulling
- 3.4. metal finishing
- 3.5. plastic filling
- 3.6. panel beating
- 3.7. indirect hammering
- 3.8. direct hammering
- 3.9. spring hammering
- 3.10. body filing
- 3.11. application of body filling/stopper

**4. Tools and Equipment are:**

- 4.1. workshop equipment
- 4.2. generic hand tools
- 4.3. manufacturer's specified and specialist tools

<b>Developed by</b>	IMI
<b>Version number</b>	3
<b>Date approved</b>	31 March 2023
<b>Indicative review date</b>	31 March 2026
<b>Validity</b>	Current
<b>Status</b>	Original
<b>Originating organisation</b>	IMI Ltd
<b>Original URN</b>	IMIARBBP06
<b>Relevant occupations</b>	Accident Repair Technicians; Body Repair and Alignment Technician (Automotive); Body Repair Technician (Automotive)
<b>Suite</b>	Accident Repair - Body
<b>Key words</b>	Minor; repairs; motor; vehicle; body; panels

