
Overview

This standard is about removing a variety of exterior and sub-structure body panels and panel sections, including permanently fixed panels, where these are damaged and replaced with new or repaired replacements. The ability to weld vehicle panels is required.

Performance criteria

You must be able to:

1. prior to working on the vehicle identify component materials involved in the construction of the vehicle in the areas that will be worked on during repair
2. wear suitable Personal Protective Equipment (PPE) throughout all vehicle body panel removal and replacement activities
3. inspect, prepare and use all the tools and equipment required, following manufacturers' instructions, prior to use
4. remove replace and/or refit all necessary vehicle body panels and assemblies following the manufacturer's methods/instructions, recognised researched repair methods, your workplace procedures as well as health, safety and legal requirements
5. seek guidance from the relevant person(s) promptly where there is the potential for your work to disturb other vehicle systems
6. use replacement body panels and assemblies which conform to the vehicle specifications for dimensions, materials and functional capability
7. use and apply sealants and weld primers and anti-corrosion treatments conforming to the material or vehicle manufacturer's specification
8. ensure all test weld pieces conform to the current British Standard for appearance and penetration
9. ensure permanently fixed panels are replaced without incurring damage to the vehicle systems
10. ensure all refitted body panels are aligned correctly with adjacent panels and fittings to manufacturers tolerances (panel gaps)
11. complete all removal and replacement activities within the agreed timescale
12. report any anticipated delays in completion to the relevant person(s) promptly

Knowledge and understanding

You need to know and understand:

1. the health and safety legislation and workplace procedures relevant to workshop practices, personal and vehicle protection when removing and replacing vehicle body panels
2. the requirements of manufacturer's warranty agreements
3. the vehicle work specification agreed
4. your workplace procedures for the referral of problems, reporting of delays to the completion of work and personal protection
5. the requirements for protecting the vehicle and contents from damage before, during and after removing and replacing vehicle body panels
6. the importance of working to agreed timescales and keeping others informed of progress
7. the relationship between time, cost and profitability
8. the importance of reporting anticipated delays to the relevant person(s) promptly
9. how to prepare, test and use the tools and equipment required for the removal and replacement of vehicle body panels and ancillary fittings
10. how to operate resistance spot welding and Metal Inert Gas (MIG)/Metal Active Gas (MAG) welding equipment to achieve welds to the current British Standard
11. how to test Resistance Spot weld strength
12. the properties of component materials involved in the construction of the vehicle in the areas that will be worked on during repair
13. the properties of sealants, adhesives and anti corrosion materials and the requirements for their safe use
14. the type of sealants and anti-corrosion materials to use and the manufacturer's recommended methods for their application and thickness
15. how to use adhesive bonding materials
16. how to select and apply sealants and anti-corrosion materials
17. the principles of chassis frame and monocoque vehicle construction
18. how to remove vehicle manufacturers original joining techniques
19. how to identify manufacturer's joining techniques and how they may differ to the repair method
20. the principles of thermal and non-thermal joining techniques ie Spot welding, Metal Inert Gas (MIG)/Metal Active Gas (MAG), Bonding etc
21. the different types of mechanical fixings for vehicle body panels and when and why they should be used

22. the repair and welding implications of working with galvanised coatings, mild steels, HSS, UHSS and aluminium alloys
23. how panel removal and refitting affects the overall body structure of the vehicle
24. the causes and rectification of distortion resulting from welding
25. how to find, interpret and use sources of information relevant to the removal and replacement of vehicle body panels and assemblies
26. how to remove and replace vehicle body panels and assemblies
27. how to remove and replace door skins
28. how to establish cut lines for partial panel replacement
29. how to prepare all edges to be joined
30. how to select the correct joints and joining processes to match the repair area
31. the importance and implications of panel clamping and alignment to match existing contours and gaps
32. how to work safely avoiding damage to the vehicle and its systems
33. the importance and implications of checking the accuracy of repair work
34. the types of quality control checks that can be used to ensure correct alignment and contour of panels and the operation of components to manufacturer's specification
35. the methods of storing removed components and the importance of storing them correctly and in accordance with legal requirements

Scope/range

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

Range:

1. Body panels are:

- a) non-permanently fixed body panels
- b) welded exterior
- c) welded sub-structure panels (e.g. rear quarter panel, rear panel, roof, chassis legs, inner wheel housing, boot floors, complete sill, A post, B post, C post, D post and cross members)
- d) bonded panels (e.g. any panel that is fixed by adhesive bonding as part of the original manufacturer's process or approved repair process)

2. Fitting methods are:

- a) Welding
- b) mechanical fastening
- c) adhesive bonding

3. Tools and Equipment are:

- a) Workshop equipment
- b) generic hand tools
- c) manufacturer's specified and specialist tools

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Remove and Replace Motor Vehicle Body Panels Including Permanently Fixed Panels



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Relevant Occupations Accident Repair Technicians; Body Repair and Alignment Technician (Automotive); Body Repair Technician (Automotive)

Suite Accident Repair - Body

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