

Assessment Requirements

Unit BP13K – Knowledge of Removing and Replacing Structural Motor Vehicle Body Panels

Content:

Selection and use of tools and equipment

- a. How to prepare, test and use the tools and equipment required for the removal and replacement of vehicle body panels and ancillary fittings.
- b. How to operate spot welding and gas shielded arc-welding equipment to achieve welds to the current industry standard.

Selection and use of materials

- a. The properties of sealants, adhesives and anti-corrosion materials and the requirement for their safe use.
- b. The type of sealants and anti corrosion materials to use and the manufacturer's recommended methods of their application and thickness.
- c. How to use adhesive bonding materials.
- d. How to select and apply sealants and anti-corrosion materials.
- e. The properties and different types of materials used in the construction of vehicle bodies

Removing and replacing vehicle body panels

- a. The principles governing how unitary and separate chassis vehicle bodies are constructed.
- b. How to identify and remove spot and gas shielded arc welds to meet manufacturers and current Industry Standards.
- c. How to identify the difference between manufacturer's processes and repair processes.
- d. The principles of resistance spot welding, gas shielded arc plug welding, gas shielded arc welding and gas shielded brazing.
- e. Correct procedures for the removal and replacement of vehicle body panels.
- f. The manufacturers approved methods of working for the removal and replacement of vehicle body panels.
- g. The different types of mechanical fixings for vehicle body panels and when and why they should be used.
- h. The repair and welding implications of working with:
 - i. high strength steels (HSS)
 - ii. low carbon steels (LCS)
 - iii. aluminium alloys
 - iv. galvanized coatings
 - v. Boron steels.
 - vi. TRIP
 - vii. TWIP
 - viii. Laminated
- i. How panel removal and refitting affects the overall body structure of the vehicle.
- j. The cause and rectification of distortion resulting from welding.
- k. How to find, interpret and use sources of information relevant to the removal and replacement of vehicle body panels and assemblies.
- l. How to remove and replace vehicle body panels and assemblies.
- m. How to remove and replace door skins.
- n. How to establish cut lines for partial panel replacement.
- o. How to prepare all edges to be joined.

- p. How to select the correct joints and joining process to match the repair area.
- q. The importance and implications of panel clamping and alignment to match existing contours and gaps.
- r. How to test spot weld strength.
- s. How to load a vehicle onto a jig system to ensure correct alignment and positioning of new panels.
- t. How to remove and replace supplementary restraint systems (SRS) using the manufacturers approved method.
- u. How to work safely avoiding damage to the vehicle and its systems.
- v. The importance and implications of checking accuracy of repair work.
- w. 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.
- x. The method of storing removed panels and the importance of storing them correctly.