

Carry out aluminium body panel welding repairs

Overview

This standard is about repairing aluminium panels correctly and effectively using appropriate welding techniques, materials and procedures.

Note: This standard is **NOT** to be used for structural aluminium work.

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Performance criteria

You must be able to:

P1 use the appropriate **personal protective equipment (PPE)** and check that it is fit for purpose before carrying out aluminium welding repairs

P2 protect the vehicle and its contents effectively when carrying out aluminium welding repairs

P3 prepare material and align to enable suitable join to be achieved, ensuring mating flanges are treated following manufacturers' procedures before joining

P4 select, set up and use the correct **tools and equipment** in order to correctly carry out aluminium welding repairs

P5 ensure that the **tools, equipment** and **PPE** you require are in a safe working condition and are correct for the joining operation that you are to be completing

P6 set up your **equipment** to carry out aluminium welding repairs checking:

P6.1 suitability of gas/filler wire and size for material to be joined

P6.2 the parameters are set correctly

P6.3 the consumables are correct

P6.4 feed rollers and welding tip

P6.5 test kit

P7 carry out aluminium welding repairs following:

P7.1 recognised researched repair methods

P7.2 test procedures and provide test coupons on equivalent material in accordance with recognised standards

P7.3 manufacturers' processes, methods and procedures,

P7.4 your workplace procedures

P7.5 health, safety and legal requirements

P8 avoid damaging other components, units, panels and surfaces on the vehicle and the surrounding work area

P9 recognise when your weld is not forming correctly and what action needs to be taken

P10 inspect and assess aluminium weld quality in accordance with recognised standards

P11 dress the joint area without reducing material thickness and protect the repaired area to inhibit corrosion where applicable

P12 clean and store **PPE** and other relevant **equipment** in the appropriate manner

P13 promptly report any additional faults you notice during the course of your work to the relevant person(s)

P14 promptly report any delays in completing your work to the relevant person(s)

P15 carry out aluminium welding repairs within the agreed timescale

P16 complete work records accurately, in the format required and promptly pass them to the relevant person(s)

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Knowledge and understanding

You need to know and understand:

- K1 the health, safety and legal requirements relating to aluminium welding repairs
- K2 your workplace procedures for carrying out appropriate risk assessment(s), the referral of problems, reporting of delays to the completion of work and completion of work records
- K3 the work that needs to be done and the standard required
- K4 the requirements for protecting the vehicle and contents from damage before, during and after aluminium welding repairs
- K5 the importance of selecting, using and maintaining the appropriate **PPE** for aluminium welding repairs
- K6 how to find, interpret and use sources of information applicable to aluminium welding repairs and the implications of not fully understanding the repair methods presented
- K7 how to select, check, maintain and set up all of the **tools and equipment** required for aluminium welding repairs
- K8 the different types of welding processes, techniques, materials and joints used for aluminium welding repairs
- K9 the correct surface preparation methods to ensure a good aluminium welding repair is achieved and the reasons why surface preparation is important
- K10 the faults and defects that can occur when carrying out aluminium welding repairs and the common causes of these faults
- K11 the need for correct alignment of materials and the methods used to achieve this
- K12 the different types of joint that can be used to join materials using aluminium welding, including:
 - K12.1 plug
 - K12.2 lap joint
 - K12.3 butt joint
- K13 when aluminium welding repairs should be used
- K14 how to ensure cross contamination does not occur and the effect of cross contamination on aluminium welding repairs and the environment
- K15 the implications of electro-magnetic fields and the effects on medical devices

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Scope/range

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

1. Personal protective equipment (PPE) for non-structural aluminium welding operations includes:

- 1.1. face mask with appropriate eye protection
- 1.2. protective/flame retardant coveralls
- 1.3. protective/flame retardant gauntlets
- 1.4. steel toe cap boots
- 1.5. appropriate vehicle protection
- 1.6. appropriate protection for others in the workshop
- 1.7. appropriate fume mask

2. Tools and equipment are:

- 2.1. anti-static extraction
- 2.2. designated aluminium environment
- 2.3. designated aluminium tooling
- 2.4. fume extraction

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