

Assessment Requirements

Unit BP25K – Knowledge of Motor Vehicle Body Adhesive Bonding Operations

Content:

- a. The specific safety precautions to be taken when bonding engineering materials using adhesives in a fabrication environment (general workshop and site safety, appropriate personal protective equipment, accident procedure; statutory regulations, risk assessment procedures and COSHH regulations)
- b. The personal protective clothing and equipment to be worn when carrying out bonding as part of the fabrication activities (gloves, eye protection, respiratory protection, etc)
- c. The importance of good workshop practice and housekeeping, ventilation and fume control equipment, first aid procedures and actions, hazardous substances and relevant sections of COSHH
- d. The hazards associated with bonding fabricated components, and how they can be minimised
- e. How to obtain the necessary drawings and joining specifications
- f. How to extract information from research repair methodology in relation to the work undertaken

Types of adhesives:

compact
two parts
cyanoacrylate
anerobic
sealants
toughened

- g. Knowledge of Curing Mechanisms including:

moisture/solvent evaporation
chemical/thermal reaction
exposure/exclusion to oxygen
Understanding the importance of recording shelf life, pot life, setting and curing times
Knowledge of adhesion and cohesion.

Understanding:

- h. The material preparations that are required, and the equipment and consumables that are used
- i. The importance of working to organisational and bonding agent manufacturers' instructions whilst carrying out the bonding activities
- j. The methods and techniques used for bonding the materials (such as gluing, impact, chemical and thermal reaction techniques)

- k. The characteristics of the adhesives that are to be used
- l. The application of, and precautions to be taken when using, adhesives and solvents
- m. Maintenance and care of tools and equipment
- n. Methods of degreasing components and producing a keying surface
- o. Type and suitability of adhesives, setting or curing requirements and time, strength and appearance
- p. Common causes of defects associated with the bonding processes, and how to avoid them
- q. The effects of the environment on the bonding process (such as temperature humidity, cleanliness)
- r. How to identify, select, use, and clean, the appropriate bonding agent holding vessels, brushes, stirrers and spatulas, scrapers, knives, clamps and weights
- s. The importance of cleaning up after use, to ensure everything can be used again and to minimise the need for replacement of equipment
- t. Reasons for checking that components are assembled in the correct sequence, are positioned dimensionally accurately and to the correct orientation, in accordance with the specifications, prior to bonding
- u. How to check that completed joints are firm, sound and fit for purpose
- v. Procedures for cleaning off surplus adhesive and tidying up the appearance of joints
- w. The extent of your own authority and whom you should report to if you have problems that you cannot resolve
- x. Reporting lines and procedures, line supervision and technical experts