

Assessment Requirements

Unit PO03K – Knowledge of Working with Plastic Materials and Components

Content:

The types of substrates likely to be found in vehicle refinishing

- a. Types of substrate to include:
 - i. all plastics
 - ii. high bake Enamels (O E finishes)
 - iii. 2 K Paints
 - iv. 1K Paints
 - v. clear over bases
 - vi. polyester fillers
 - vii. repaired panels
 - viii. primed panels
- b. Substrates to determine selection of undercoat with reference to:
 - i. condition of surface
 - ii. type of substrate
 - iii. process requirements
 - iv. material requirement
- c. list the physical properties of a substrate to include:
 - i. surface condition
 - ii. adhesion
 - iii. flexibility
 - iv. porosity
 - v. texture

Methods used in determining vehicle substrates

- a. Workshop tests to determine substrates to include:
 - i. visual test for plastics and identification of plastic type through identification code
- b. For determination of paint type:
 - i. compound small area
 - ii. solvent wipe test (1k or 2k)
 - iii. colour of flattening sludge (straight colour or C O B)

The properties and correct use of conditioning materials

- a. That a vehicle must be thoroughly washed and cleaned prior to refinishing to include:
 - i. outside body panels
 - ii. under arches
 - iii. under bonnet
 - iv. all apertures
 - v. degreased
- b. The reasons for masking components adjacent to repair areas.
- c. The correct preparation of parts prior to painting to include products used for the removal of:
 - i. wax
 - ii. grease
 - iii. skin oils
 - iv. dust
 - v. water
 - vi. abrasive contaminants

- vii. environmental pollution
- d. Materials used for conditioning processes such as:
 - i. wax and grease removers
 - ii. spirit wipes
 - iii. acid based
 - iv. water based
- e. The correct and safe use of the above materials.
- f. The properties of pre-preparation material to include:
 - i. neutralisation
 - ii. ability to alter the surface
 - iii. reaction with oxide

The types and properties of foundation materials in common use

- a. The types of undercoat in common use to include:
 - i. etch primer / adhesion promoters
 - ii. primer surfacer
 - iii. primer filler
 - iv. stopper/putty
 - v. sealers
 - vi. anti stone chip
 - vii. polyester fillers
- b. The characteristics of these undercoats such as:
 - i. protection
 - ii. flexibility
 - iii. build
 - iv. drying
 - v. flatting
- i. The types and characteristics of common protective coatings such as: bitumen based
- ii. anti stone chip
- iii. etch primer
- v. PVC

The factors affecting the choice and use of foundation materials

- a. The reasons for using paint to include:
 - i. protection
 - ii. filling
 - iii. decoration
 - iv. identification
 - v. safety
- b. Undercoat materials for plastics to include:
 - i. adhesion promoters
 - ii. surface modifiers
 - iii. flexible additives
 - iv. texture additives
- c. The procedures for the preparation of plastics to include:
 - i. identification
 - ii. cleaning
 - iii. adhesion promotion
 - iv. elastic primers
- d. Identify the preparation requirements for textured and special effect coatings to include:
 - i. spoilers
 - ii. bumpers
 - iii. exterior trim
 - iv.

The procedures for mixing foundation materials to the correct ratio with hardeners and thinners

a. Procedures for mixing undercoats such as:

- i. etch primers
- ii. anti-stone chip primers
- iii. surfacers
- iv. wash fillers
- v. primer fillers
- vi. plastic adhesion promoters
- vii. elastic primers
- viii. sealers
- ix. spraying polyester fillers

b. Listed additives such as:

- i. adhesion promoters
- ii. flexible additives
- iii. texture finishes
- iv. extenders
- v. UV absorbers
- vi. flow aids

The importance of checking and adjusting paint viscosity and its effect on surface finish

a. Why the viscosity of a paint is important to application to include:

- i. build
- ii. surface finish
- iii. speed of application
- iv. describe the procedure for checking viscosity
- v. describe the effects on viscosity of:
 - vi. temperature
 - vii. additions of thinner/reducer

Foundation material technical data sheets to extract listed information. The importance of correctly interpreting and following manufacturers' instructions and the consequences of failing to do so

a. The process data sheets to determine information such as:

- i. mixing ratios
- ii. viscosity
- iii. number of coats
- iv. flash off times
- v. build film thickness
- vi. spray gun type
- vii. spray gun set up
- viii. air pressure requirements
- ix. substrate requirements
- x. suitability as a substrate
- xi. drying times
- xii. suitability to be applied by methods other than spraying

b. The main information sourced from data sheets to include:

- i. product identification
- ii. product description
- iii. substrate suitability
- iv. pre-treatment requirement
- v. mixing ratio
- vi. pot life
- vii. method of application
- viii. spray viscosity
- ix. nozzle/air cap set up

- x. number of coats
 - xi. flash off times
 - xii. drying times
 - xiii. recoatability
- c. Common pictograms and state their meaning including those for:
- i. cleaning information
 - ii. mixing ratios
 - iii. use a measuring stick
 - iv. addition of hardener
 - v. application viscosity
 - vi. type of spray gun
 - vii. spray coats information
 - viii. flash-off
 - ix. drying time
 - x. drying with infrared
 - xi. sanding
 - xii. polishing
 - xiii. technical data required
 - xvii. hand stirring

Masking procedures for part and whole vehicles. Describe masking processes and techniques

- a. Common masking systems, materials and techniques to include:
- i. masking paper
 - ii. plastic sheeting
 - iii. masking tape
 - iv. foam tape
 - v. wheel covers
 - vi. liquid Masking
 - vii. roll-back masking
- b. The characteristics of a quality masking tape to include:
- i. ability to turn corners
 - ii. non-aggressive adhesive/non-drying
 - iii. clean edges to painted areas
- c. The properties of these masking materials such as:
- i. economy of use
 - ii. costs per unit
 - iii. absorption
 - iv. flexibility
- d. Where and how these masking materials and systems should be used.
- e. The masking procedures for listed items such as:
- i. door glass and windscreens
 - ii. handles
 - iii. lights
 - iv. mirrors
 - v. wheels
- f. Masking schedule for the type of repair to include:
- i. time efficiency
 - ii. material costs
 - iii. given protection
- g. Faults which are caused by careless masking such as:
- i. flash lines
 - ii. bridging
 - iii. creep
 - iv. hard edges