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. 2K 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 contaminates
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