-SQA- SCOTTISH QUALIFICATIONS AUTHORITY

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NATIONAL CERTIFICATE MODULE DESCRIPTOR

-Module Number- **2210971** **-Session-1991-92**
-Superclass- **XR**

-Title- **VEHICLE PAINT MATCHING AND SPOT REPAIRING**

-DESCRIPTION-

Purpose

This module is designed to enable the student to develop the skills and knowledge required to repair damaged or defective paintwork on motor vehicles or other industrial/commercial equipment with paint finishes similar to those used on motor vehicles.

It is intended for those employed in the vehicle body, paint and repair trades but is also suitable for those employed in the repairing paintwork on industrial or commercial equipment.

The standards contained in this module cover the work and the associated Transkill assessments for the RTITB Skills Tests BR112 Paint Matching and Tinting and BR115 Repair of Paint Finishes - Spot Repair, Fade Out and Blending.

Preferred Entry Level

85333	Conventional Spray Painting (x 1.1/2).
74494	Vehicle Paint Surface Preparation 1.
74495	Paint Surface Coatings 1: Cellulose and Acrylic Finishes.
74497	Paint Surface Coatings 4: Two-Pack Finishes.
2210991	Pearlescent Paint Applications (X 1/2).

Outcomes

The student should:

1. select a paint for a stated application;
2. prepare a colour test panel;
3. complete a paint repair.

Assessment Procedures

Acceptable performance in this module will be satisfactory achievement of all the Performance Criteria specified for each Outcome.

The following abbreviations are used below:

PC Performance Criteria
IA Instrument of Assessment

Note: The Outcomes and PCs are mandatory and cannot be altered. The IA may be altered by arrangement with SQA. (Where a range of performance is indicated, this should be regarded as an extension of the PCs and is therefore mandatory.)

OUTCOME 1 SELECT A PAINT FOR A STATED APPLICATION

PCs

(a) The selection of reference publications for use in identifying the vehicle Paint Code is correct in terms of use for a stated vehicle.
(b) The selection from the use of reference publications, of a vehicle paint specification is correct in terms of use for a stated vehicle.
(c) The paint selected from the use of a paint specification is correct in terms of use for a stated application.

IA Assignment

The student will be set an assignment consisting of 4 exercises set in a workshop environment to test the application of skills and knowledge required to select a paint suitable for a stated application.

The student will be required to select paints for 4 different applications.

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student selecting the correct paint for each of the 4 applications.

OUTCOME 2 PREPARE A COLOUR TEST PANEL

PCs

(a) The selection of the material for the test panel is correct in terms of equality of shape and porosity to the component surface to be matched.
(b) The selection of the size of test panel is correct in terms of handling, the materials necessary to paint and comparison of colour match.

(c) The preparation of the test panel provides a primed surface with properties the same as those of the component to be matched.

(d) The paint applied to the test panel produces a finish free from defects caused by:

(i) spray equipment: air pressure, fan width, type of gun cap, gun needle control;
(ii) manual technique: gun speed, gun distance, direction of spray;
(iii) paint preparation: viscosity, type of thinners, drying time, flash off time, use of retarders;
(iv) paint shop environment: temperature, humidity, air cleanliness.

(e) The comparison the test panel with the original colour gives an assessment of the colour match which is correct in terms of the action necessary to improve the colour match.

(f) The addition of tinters produces a test panel colour that cannot be distinguished from the original colour.

(g) Tools used are appropriate to the task and working practices followed are in accordance with current safety regulations.

IA Assignment

The student will be set an assignment consisting of practical tasks and restricted response questions set in a workshop environment to test the application of skills and knowledge required to prepare a colour test panel which matches the original colour of a given component.

The assignment will consist of two parts as follows:

Part (I): 4 practical exercises relating to PCs (a) to (f) which will require the student to prepare 4 different colour test panels which match the original colours as follows:

Test panel 1 - straight colour
Test panel 2 - cellulose metallic colour
Test panel 3 - two-pack metallic colour
Test panel 4 - pearlescent colour

Part (II): A total of 28 Restricted Response Questions relating to PC (e) with 7 questions set on each of the 4 test panels to test the students understanding of:

(i) white light and spectral hues;
(ii) chromatic and achromatic colours;
(iii) Munsell notation of colour;
(iv) face, side and flip metallic colour tones
(v) effects of artificial light;
(vi) causes of metamerism;
(vii) analysis of colour in terms of: lighter, darker, bluer, redder, yellower, greener.

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student for:

Part (I): producing 4 test panels, the colours of which are a true match with the original colours.

Part (II): producing 7 correct responses to the questions set on each test panel.

OUTCOME 3 COMPLETE A PAINT REPAIR

PCs

(a) The selected method of repair for a given defect is appropriate in terms of costs, type of damage, type of paint finish and available materials and equipment.
(b) The preparation of the damaged area provides a surface to which, on visual inspection, will permit the repair procedure to be implemented to achieve an acceptable repair.
(c) The application of the repair produces a finished paint surface on which the repair cannot be visually distinguished from the surrounding paintwork.
(d) Tools used are appropriate to the task and working practises followed are in accordance with current safety regulations.

IA Practical Exercise

The student will be set an exercise consisting of 4 practical tasks set in a workshop environment to test the application of skills and knowledge required to repair damaged or defective paint finishes.

The student will be required to rectify damage to 4 different panels, each bearing a different form of damage selected from the following:

blooming;
cracking;
runs or sags;
streaking;
water spotting;
orange peel;
low gloss;
scratching or scoring;
pin holing;
poor adhesion;
sinkage.

Of the 4 exercises set, 1 should involve repair by polishing or burnishing and the other 3 should each require repair by a different method and a different paint system selected from the following:

Methods of repair:

spot paint repair;
panel fade out;
blending clear;
fade out thinners;
edge to edge repair.

Paint systems:

cellulose - straight colour or metallic;
base coat and clear - straight colour or metallic;
two-pack - straight colour or metallic.

Satisfactory achievement of the Outcome will be based on all Performance Criteria being met. This will be demonstrated by the student producing 4 completed paint repairs on which the repaired section cannot be visually distinguished from the surrounding paintwork.

The following sections of the descriptor are offered as guidance.
They are not mandatory.

CONTENT/CONTEXT

The selection of practical exercises should reflect the types of vehicles, materials, paint systems and equipment each student will most commonly use in the course of his/her work.

The requirements of the relative safety regulations should be applied throughout the module, with particular reference to:

handling of chemicals;
storage of chemicals;
procedures in the event of spillage;
procedures in the event of fire;
disposal of unused supplies;
ventilation of the work place.

SUGGESTED LEARNING AND TEACHING APPROACHES

All Outcomes should be taught and assessed in a workshop environment and may be delivered as part of an integrated programme of modules covering more than one aspect of vehicle painting.

On completion of each exercise, the vehicle or goods should be presented to the standards required for return to the owner.

The requirements of any Industry Body such as the RTITB Transkills Scheme should be investigated for inclusion and assessment in the module.

09/02/98 JH/AM