IMIARC13
Identify and rectify automotive paint defects and faults

Overview

This NOS is about rectifying a range of faults which may often require the removal of materials to a sound substrate in order for rectification to take place. This standard requires the ability to undertake the complete rectification process, including the preparation and application of foundation materials and top coats.

Performance criteria

You must be able to:

P1 use the appropriate personal protective equipment when carrying out the repair of paint defects and faults

P2 protect the vehicle and its contents effectively when carrying out the repair of paint defects and faults

P3 support your rectification activities by reviewing:

- P3.1 product data
- P3.2 the vehicle manufacturer's technical data
- P3.3 colour libraries
- P3.4 work instructions

P4 prepare, test and adjust all the tools and equipment required following manufacturer's instructions, prior to use

P5 identify the body panel **substrate** accurately prior to undertaking any rectification work

P6 identify and correct paint defects and faults effectively using the approved tools, equipment, refinishing systems and materials following:

- P6.1 manufacturer's instructions
- P6.2 the correct methods and techniques
- P6.3 health and safety requirements
- P6.4 environmental requirements

P7 ensure the finish produced is free from contamination and defects and meets the required work specification

P8 dispose of waste materials to conform with legal, environmental and workplace requirements

P9 complete all paint repair activities within the agreed timescale

P10 report any anticipated delays in completion to the relevant person(s) promptly

Knowledge and understanding

Legislative and organisational requirements and procedures

You need to know and understand:

K1 the health and safety legislation and workplace procedures relevant to workshop practices and personal and vehicle protection

K2 the importance of disposing of waste safely and the consequences of not doing so to others, the business and the environment

K3 the importance of selecting, using and maintaining the appropriate personal protective equipment when repairing paint defects and faults

K4 the vehicle work specification agreed

K5 your workplace procedures for:

- K5.1 the referral of problems
- K5.2 reporting of delays to the completion of work
- K5.3 personal protection

K6 the requirements for protecting the vehicle and contents from damage before, during and after repairing paint defects and faults

K7 the importance of working to agreed timescales and keeping others informed of progress

K8 the relationship between time, cost and profitability

K9 the importance of reporting anticipated delays to the relevant person(s) promptly

Tools and equipment

You need to know and understand:

K10 how to prepare, test, use and adjust all the refinishing tools and equipment required for the identification and repair of paint defects and faults

K11 spray gun faults, their cause and their rectification

K12 the types of fault that can be caused by faulty and misused refinishing tools and equipment and how to rectify them

Materials

You need to know and understand:

K13 how to select, prepare and use refinishing systems and materials

K14 the properties of refinishing systems and materials and the factors affecting

their choice and use

Foundation and top coat preparation

You need to know and understand:

K15 how to recognise damage to **substrates** and ancillary fittings
K16 how to recognise **substrates**
K17 how the **substrate** affects the preparation process
K18 how to interpret manufacturer's preparation schedules
K19 how to prepare new and repaired panels using the appropriate **methods and techniques**
K20 how to carry out masking procedures to avoid material wastage and vehicle contamination for each stage of the preparation process
K21 how to prepare panels and parts adjacent to the area being painted
K22 the factors governing the choice of panel preparation methods for appropriate **substrate**
K23 the types and grades of available abrasives and the factors governing their use for different **substrates**
K24 the implications of not following the correct abrasive process and its effect on the overall quality process
K25 the implications of static when working with plastic components
K26 the importance of using and how to use extraction equipment
K27 the implications of cross-contamination of dissimilar metals when using abrasive and extraction equipment
K28 methods of protecting panels and parts adjacent to the areas being painted and the circumstances in which they should be used
K29 methods and techniques of masking (including paper and sheet masking) and the circumstances in which they should be used

Preparation and application of foundation materials

You need to know and understand:

K30 how to find, interpret and use sources of information relevant to the mixing and application of foundation coatings
K31 how to condition and clean **substrates** prior to the application of foundation coats

K32 how to rectify **substrate** defects
K33 how to apply foundation coatings
K34 how to avoid application defects
K35 how to dispose of waste foundation materials following environmental requirements
K36 the importance of viscosity and its effect on the **substrate** finish
K37 the importance of proper cleaning and using the correct foundation material to ensure adequate adhesion of the paint system
K38 the importance of using and how to use extraction equipment
K39 the manufacturer's approved instructions for working when applying foundation materials

Applying top coats

You need to know and understand:

K40 how to find, interpret and use sources of information relevant to the refinishing of vehicles
K41 how to apply top coat materials using edge to edge, fade out and blending techniques when undertaking a complete repaint and spot repairs, avoiding contamination and defects
K42 how to dry top coats
K43 how to assess and evaluate colour match, blending and the final finish
K44 how to dispose of waste materials following environmental requirements
K45 how to work safely avoiding damage to vehicles, personal injury and injury to colleagues
K46 how to minimise the spray area when carrying out spot repairs
K47 the effect of the spray environment and natural environment on vehicle finishes
K48 how application can affect colour variation and tone
K49 the importance of using and how to use extraction equipment

Rectification of paint faults

You need to know and understand:

K50 how to find, interpret and use sources of information relevant to the rectification of paint faults and defects
K51 how to identify the existing paint finish on which the defect has occurred

K52 how to identify the cause of, and rectify, **paint defects and faults**

K53 how to carry out **methods and techniques** to correct paint faults and defects

K54 the importance of using and how to use extraction equipment

K55 how to prevent further paint damage during rectification

K56 how to dispose of waste materials following environmental requirements

K57 how to work safely avoiding damage to vehicles, personal injury and injury to colleagues

K58 the importance of proper cleaning prior to and after paint rectification work

K59 the importance of keeping tools, equipment and materials clean and free from contamination during rectification work

K60 the importance of following manufacturer's instructions and using their approved methods of working (including use of materials and equipment)

K61 the consequences of failing to follow manufacturer's instructions

K62 the importance of working to agreed timescales and keeping others informed of progress and anticipated delays promptly

Additional information

Scope/range

1 **Paint defects and faults** are those arising from:

1.1. poor application
1.2. environmental conditions
1.3. contamination
1.4. corrosion
1.5. wear and tear
1.6. adverse chemical reactions
1.7. panel deformations
1.8. poor preparation

2 **Methods and techniques** are for:

2.1. de-greasing
2.2. flatting
2.3. burnishing
2.4. removing materials to a sound substrate
2.5. feathering out
2.6. masking
2.7. recoating
2.8. polishing
2.9. plastic preparation

3 **Tools and equipment** are:

3.1. polishing machines
3.2. denibbing blocks
3.3. flatting equipment
3.4. masking material dispensers
3.5. dust extraction
3.6. paint mixing and application equipment
3.7. viscosity measuring equipment
3.8. air supply equipment
3.9. spray booth
3.10. drying equipment

4 **Refinishing systems and materials** are:

4.1. compounds
4.2. flatting papers
4.3. polishes
4.4. etch primers
4.5. fillers
4.6. surfacers
4.7. anti-stone chip treatment
4.8. anti-corrosion treatments
4.9. cleaning agents
4.10. conditioning agents
4.11. adhesion promoters
4.12. metallic clear over base paints
4.13. non-metallic clear over base paints
4.14. mica clear over base paints
4.15. dilutants
4.16. tinters
4.17. additives
4.18. hardeners

5 **Substrates** are:

5.1. electro-coated panels
5.2. repaired panels
5.3. original manufacturer's finish
5.4. plastic components
5.5. zinc coated panels
5.6. steel panels
5.7. aluminium panels
5.8. composite panels
5.9. previously primed panels

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