



PLANT STANDARD RUDRAPUR

PROCESS SPECIFICATION

NO.: RU00099 / REV 00

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THIS SPEC. NOT REVISED

Painting of Bus Ducts and components of Aluminium by Synthetic Enamel, Epoxide or Matt Black Paint Externally & Internally, by spraying

These instructions apply to the painting procedure for painting of Bus Ducts and components of aluminium. These instructions also include surface preparation and pre-treatment for painting.

1.0 MATERIAL FOR SYNTHETIC ENAMEL PAINT:

- 1.1 White spirit or Thinner (CORPORATE STANDARD AA 56701)
- 1.2 Self Etch Primer (CORPORATE STANDARD AA 56103)
- 1.3 Anti corrosive priming paint (CORPORATE STANDARD AA 56101)
- 1.4 High quality full glossy enamel paint (CORPORATE STANDARD AA 56126)
(Colour as specified in the project)

2.0 MATERIAL FOR EPOXY PAINT:

- 2.1 White spirit or Thinner (CORPORATE STANDARD AA 56701)
- 2.2 Self Etch Primer (CORPORATE STANDARD AA 56103).
Chemical resistant epoxide red oxide Zinc phosphate priming paint
(CORPORATE STANDARD AA 56105)
- 2.3 Chemical resistant epoxide finishing paint (CORPORATE STANDARD AA 56131)
(Colour as specified in the project)

3.0 MATERIAL FOR MATT BLACK PAINT:

- 3.1 White spirit or Thinner (CORPORATE STANDARD AA 56701)
- 3.2 Self Etch Primer (CORPORATE STANDARD AA 56103)
- 3.3 Anti corrosive priming paint (CORPORATE STANDARD AA 56101)
- 3.4 High quality Matt Black Paint

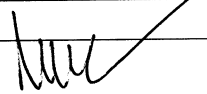
4.0 MEASURING APPARATUS:

- 4.1 Alcometer for checking the paint thickness
- 4.2 Ford cup no. 4 for measuring the viscosity of paint
- 4.3 Cutter & self adhesive tape for adhesion test
- 4.4 Gloss Meter for checking glossiness of paint

5.0 PROCEDURE FOR PAINTING:

5.1 SURFACE PREPARATION:

- 5.1.1 Blowing by compressed air should be done for overall cleaning
- 5.1.2 Clean the surface with Acetone to remove the dry penetration test chemicals.

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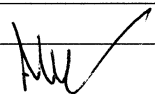
- 5.1.3 Clean the surface with General Purpose Thinner (White Spirit)
- 5.1.4 Emery paper of no. 180 can be used to remove oxide coating.
- 5.1.5 Wipe the surface with clean cotton cloth.
- 5.1.6 All the cut edges, weld spatters, any imperfection and layer of oxide from the painting surface shall be dressed by Sander (with 40 grit sanding sheet) so as to leave no sharp edges, dents, marks or protrusion.
- 5.1.7 ~~Before application of each coat of primer / paint the surface should be cleaned & dried. All oil, grease, dirt etc. should be removed by means of solvent / thinner with clean cloth and blowing by compressed air~~

5.2 GENERAL:

- 5.3.1 Composition of the etch primer shall be as per details given at Sl.5 of corp standard AA56103. The primer shall consist of two pack system, i.e. base and accelerator. Subsequently, Application of normal primer over etch primer is essential. Mixing ratio shall be as specified by the manufacturer.
- 5.3.2 Primer coating should be done on the same day of surface preparation.
- 5.3.3 Paint, Primer & thinner etc should be from reputed supplier and should confirm to the standard specified above.
- 5.3.4 All paints, primers & thinners should be stored in original sealed containers with clear identification w.r.t., manufacturer's name, shade, expiry date, drying method & time and instructions for mixing and application. These details should be available with vendor in documented form
- 5.3.5 Paints, primers of expired shelf life should NOT be used.
- 5.3.6 Open the containers just before application and seal the same immediately after
- 5.3.7 Thoroughly examine the surface to be painted prior to commencement of work. Correct any condition that may adversely affect cleaning & coating application.
- 5.3.8 Check at each step of painting operation before proceeding with the next step
- 5.3.9 Verify that all painted surfaces are free from defects. If any defective area is found, repair and recheck before next operation.
- 5.3.10 Painting shall not be performed when the temperature is less than 3°C above the dew point of the surrounding air or when the relative humidity of the air is greater than 85%.
- 5.3.11 Paints shall not be applied within 50mm of edges which will later have to be welded. Such weld areas should be taped for a distance of 50mm on either side of the weld line.

5.3 PAINTING PROCEDURE (for external surface):

- 5.3.1 Etch primer: One coat of etch primer shall be applied within 3 – 4 hours after cleaning. Before application of Etch Primer coat, dust should be

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removed with brush / clean cloths. The painted surface should be allowed to dry for approx. 4 hours and the thickness of the coat should be 5 – 10 microns.

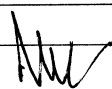
- 5.3.2 First coat of primer (AA 56101 for synthetic enamel and AA 56105 for Epoxy Paint): First coat of primer shall be applied by spraying. Thickness of the coat shall be 15 – 20 microns. The painted surface shall be allowed to dry for approx. 4 hours.
- 5.3.3 Second coat of primer (AA 56101 for synthetic enamel and AA 56105 for Epoxy Paint): Second coat of primer shall be applied after 4 hours by spraying. The painted surface shall be allowed to air dry for approx. 4 hours. Thickness of the coat shall be 15 – 20 microns.
- 5.3.4 Final finishing coat of paint (AA 56126 for synthetic enamel and AA 56131 for Epoxy Paint): Finishing paint of required shade shall be applied after 4 hours by spraying. The painted surface shall be allowed to air dry for approx. 4 hours. Thickness of the coat shall be 25 – 30 microns. Total DFT of primer & finish coats shall be ≥ 65 microns

5.4 PAINTING PROCEDURE (for internal surface for enclosure and outer surface of conductor):

- 5.4.1 Etch primer: One coat of etch primer shall be applied within 3 – 4 hours after cleaning. Before application of Etch Primer coat, dust should be removed with brush / clean cloths. The painted surface should be allowed to dry for approx. 4 hours and the thickness of the coat should be 5 – 10 microns.
- 5.4.2 First coat of primer (AA 56101): First coat of primer shall be applied by spraying. Thickness of the coat shall be 15 – 20 microns. The painted surface shall be allowed to dry for approx. 4 hours.
- 5.4.3 Final finishing coat of paint (Matt Black): Two coats of Matt Black paint shall be applied after 4 hours by spraying. The painted surface shall be allowed to air dry for approx. 4 hours. Thickness of the coat shall be 40 – 50 microns. Total DFT of primer & finish coats shall be ≥ 65 microns

6 ACCEPTANCE CRITERIA:

- 6.1 Painted surface shall be visually checked for defects like rundown, bubbles, blisters, wrinkles etc., and for areas not covered by coat.
- 6.2 Dry Film Thickness (DFT) shall be checked after drying of final coat.
- 6.3 Adhesion test shall be carried out as per ASTM D 3359 – 83
- 6.4 Glossiness should be checked with Gloss Meter. Values should be within limits as specified in specification for the respective type of paint.

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7 PRECAUTIONS:

- 7.1 Mix only a sufficient quantity of paint required for immediate use and the same should be used within 2 hours.
- 7.2 Do not use left-over paint which progressively hardens and becomes unusable even by adding more thinner.
- 7.3 For wiping or cleaning the dust or loose particles from painted surface, use clean cotton cloth only. Do not use cotton waste as it leaves loose fibre on the surface.
- 7.4 Painted surface, if damaged, should be re-painted with similar procedure.
- 7.5 Refer standard number AA 0674106 Rev 00 for Log Sheet for surface preparation and painting.
- 7.6 For paint shade and DFT requirements, refer standard drawing issued against the project.

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