



## HEAT RESISTANT ALUMINIUM PAINT - Gr: 2 (TEMPERATURE UPTO 400<sup>0</sup> C)

### 1.0 GENERAL:

This specification governs the quality requirements of Heat Resistant Aluminium Paint which shall be capable to withstand temperature upto 400° C and possible to paint by brush or air spray methods without reduction in viscosity.

### 2.0 APPLICATION

The paint shall be suitable for heat resistant application on the surfaces of steam/gas turbine components and other machine parts which are exposed to a operating temperature of 400° C as well as to protect against moderate corrosion.

### 3.0 COMPLIANCE WITH NATIONAL STANDARDS:

The material shall conform to the requirements of following national standard and also shall meet other requirements of this specification.

IS:13183-1991, Gr. 2: Aluminium Paint, Heat Resistant-Specification.

### 4.0 COLOR: That of metallic Aluminium

### 5.0 FINISH: Bright, smooth & lustrous

### 6.0 FREEDOM FROM DEFECTS:

The paint shall remain free from defects like hard settling of pigments, skinning when kept in a closed container and livering (excessive viscosity build up) during its rated shelf life.

The dried coating of paint shall be free from defects like bittyness, floating of pigments, leafing/flaking of film from substrate etc.


#### Revisions :

C 33.11.42 of MOM of MRC-CPO

#### APPROVED :

INTERPLANT MATERIAL  
RATIONALISATION COMMITTEE-MRC (C)

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Rev. No. 04		
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**7.0 CHEMICAL COMPOSITION:**

The paint shall be based on special heat resistant silicone binder pigmented with fine grade of aluminium paste and extender pigments in suitable proportion so as to meet the requirements of this specification.

The supplier of the material has to certify that the paint supplied is free from natural resins and free from lead or its compound to meet requirements of ISO:14001. The supplier should provided IR-Spectrograph in support of above composition.

**8.0 TEST SAMPLES:**

Tender samples will not be required when once the type approval is given and the supplier /manufacturer declares that the materials for which tender is given is of the same quality and composition as that of type approved sample. Representative sample of the homogenised paint shall be drawn in accordance with IS:101.

**9.0 TEST METHODS:**

When tested in accordance with IS : 101 and Appendix of this specification, the test samples shall show the following properties:

**10.0 PROPERTIES :**

**10.1 Drying Time :**  
(a) Surface dry: 1hr, max.  
(b) Hard dry: 18hrs, max.

**10.2 Consistency :** 20 sec. min.

**10.3 Non-volatile matter content:** 30% by mass, min.

**10.4 Volume solids :** 20%, min.

**\*10.5 Scratch hardness :** To pass the test 6 H pencil hardness.

**\*10.6 Flexibility & adhesion:**  
To pass the test when tested after 48 hrs of air drying.

**\*10.7 Water resistance (IS:13183) :** To pass the test.

**\*10.8 Salt spray resistance (IS:13183) :** To pass the test.

**10.9 MASS IN kg/10 litres :** 10.3 ± 0.5

**10.10 Resistance to heat:**  
Film of paint when tested as per Appendix, shall show no cracking, blistering, flaking or peeling.

**NOTE:** \* These tests shall be conducted after full cure.



**11.0 KEEPING PROPERTY:**

When stored in a covered dry place in the original sealed container under normal temperature conditions, the material shall retain the properties prescribed in this specification for a period of 12 months after the date of manufacture which shall be subsequent to the date of placing the order.

**12.0 TEST CERTIFICATES**

Unless otherwise specified, three copies of test certificates shall be supplied along with each consignment.

In addition, the supplier shall ensure to send one copy of test certificates along with the despatch documents to facilitate quick clearance of the material.

The test certificates shall bear the following information:

AA 56134 (Rev.No. 04) : Heat Resistant Aluminium Paint Gr. 2.

BHEL Order No. & Date

Manufacturer's/Supplier's Name.

Trade Mark, if any.

Batch/Lot No.

Date of Manufacture & Expiry.

Quantity supplied

Test results of 7.0 and 10.0.

**13.0 PACKING AND MARKING**

The paint shall be supplied in sealed and leak proof metal containers in size as per BHEL order. Each container shall bear the following information neatly written or pasted at suitable location on it.

AA 56134: Heat Resistant Aluminium paint -Gr 2

BHEL Order No.

Manufacturer's/Supplier's Name.

Trade Mark, if any.

Batch/Lot No.

Date of Manufacture & Expiry.

Quantity supplied.

**14.0 REFERRED STANDARDS (Latest Publications Including Amendments)**

1. IS : 101

2. IS: 13183



## Appendix (10.10)

### TESTING OF HEAT RESISTANCE

Prepare and clean the test panels made from hot rolled steel . Apply the paint uniformly on the test panels. Air dry the panels for 30 minutes and bake subsequently at  $250 \pm 10^{\circ} \text{C}$  for 1 hour. Cool the test panels for room temperature. Place the panels in the oven / furnace maintained at following schedule:

4 hours at  $300^{\circ} \text{C}$   
1 hour at  $400^{\circ} \text{C}$

Remove the panels from oven/furnace, cool and examine the coating for any cracking, blistering. Flaking, peeling or leafing of paint film.

In absence of above surface defects, the material is deemed to have passed the heat resistance test.