



AMENDMENT - NOTIFICATION

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AA 067 41 04 : PROCESS FOR PAINTING OF STEEL SURFACES BY CHEMICAL
RESISTANT EPOXIDE PRIMING PAINT FOLLOWED BY BLACK COAL
TAR EPOXIDE PAINT

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CI 6.3 Adhesion:

The following sentence is added at the end of the first para

"The time gap between final coating and adhesion test shall be 48 hours".

Please see Instructions on the reverse.

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CI 27.5.1 of MOM of MRC (C)	01	MRC (C)	CORP. R&D	15-08-99	A 2590



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PROCESS FOR PAINTING OF STEEL SURFACES BY CHEMICAL RESISTANT EPOXIDE PRIMING PAINT FOLLOWED BY BLACK COAL TAR EPOXIDE PAINT

1. GENERAL:

This standard details the process to be followed in obtaining a protective coating by using chemical resistant epoxide priming paint to AA 56105 (by brushing/spraying) followed by high build black coal tar epoxide paint to AA 56135 (by brushing) on steel surfaces of air pressure vessels, condenser water boxes, butterfly valves, etc. This standard details the schedule for the application of 2 coats of epoxide priming paint to AA 56105 generally followed by two coats of black coal tar epoxide paint to AA 56135 which will provide a total paint film thickness of 175 microns minimum in dried condition. If more than 2 coats of black coal tar epoxide paint to AA 56135 are required, then the same shall be specified on the drawing. This paint is not a decorative paint.

NOTE:

Designers should specially mention on the drawing the total thickness of paint coating required on the flanges.

2. MATERIALS:

2.1	Chemical resistant epoxide priming paint	:	AA 56105
2.2	Thinner for AA 56105	:	AA 56708
2.3	High build black coal tar epoxide paint	:	AA 56135
2.4	Thinner for AA 56135 or Thinner (Xylol 75% + MEK 25%)	:	AA 56709
2.5	White spirit	:	AA 56701
2.6	Xylol	:	AA 56703
2.7	Methyl isobutyl ketone (MIBK) thinner	:	---

3. PREPARATION OF THE PAINTS:

3.1 General:

These paints have short pot life of 4 hours only. Hence, it is important that the quantity sufficient only for immediate requirement is to be mixed and used within 4 hours from the completion of mixing.

3.2 Preparation of chemical resistant epoxide priming paint (AA 56105):

The paint as supplied consists of two separate ingredients, namely base and accelerator. Shortly before mixing and use, these shall be thoroughly stirred. The base and accelerator shall be accurately mixed together in the proportion as recommended by the supplier.

Revision:

Refer Cl.25.3 Of MOM of MRC (C)

Approved:

INTERPLANT MATERIAL
RATIONALISATION COMMITTEE - MRC(C)

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Accelerator shall be added to the base but not the base to the accelerator. The paint shall be mixed with continuous stirring until a uniform consistency is obtained. After mixing, maturing time of 30 minutes shall be allowed before appropriate thinner is added to adjust the viscosity to 30 ± 2 seconds for spraying.

In case of brushing no thinning is required, if supply viscosity of paint is 50-55 seconds at shop temperature. If supply viscosity is above 55 seconds, then bring down the viscosity to 50-55 seconds at shop temperature by adding appropriate thinner.

3.3 Preparation of high build black coal tar epoxide paint (AA 56135):

The paint as supplied consists of two separate ingredients, namely base and accelerator. Shortly before mixing and use, these shall be thoroughly stirred. The base and accelerator shall then be accurately mixed as recommended by the supplier.

The accelerator shall be added to the base slowly with continuous stirring. Stirring shall continue, after the addition of all the accelerator, until a uniform consistency is obtained. The mixing of paint can be done by hand or mechanical stirring.

NOTE:

1. For paints where no thinning is required:

No thinning is required for paints which are not high build. The maturing time for mixture (base and accelerator) before actual use shall be 30 minutes.

2. For high build paints where thinning is required:

The maturing time for mixture (base and accelerator) before use should be 30 minutes. The paint as prepared above may be thinned by adding 10% special thinner for black coal tar epoxide paint to AA 56135 or thinner containing 75% Xylol+25% MEK.

The above viscosities/consistencies for both the paints shall be maintained independent of shop temperature within normal variations.

4. SURFACE PREPARATION:

It is necessary that the surface to be painted is free from loose dust, mill scale, rust, grease, oil, old paint, etc. For surface cleaning and preparation refer BHEL Standard AA0674101.

5. APPLICATION OF PAINTS:

- 5.1 Ambient and metal temperatures must be above 10°C throughout the period of paint application, inter coat and final drying.

- 5.2 Application of first coat of chemical resistant epoxide priming paint (AA 56105):

Over the cleaned surface as mentioned above, one coat of epoxide priming paint conforming to AA 56105 at the



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appropriate consistency as specified in clause 3.2 shall be applied so as to cover the whole surface to be painted. The painted surface shall be allowed to air dry for a minimum period of 12 hours.

5.3 Application of second coat of chemical resistant epoxide priming paint (AA 56105):

Remove dust from the surface with air blast or clean dry cloth and apply the second coat of epoxide priming paint to AA 56105 and dry in accordance with clause 5.2.

Note:

The interval between successive coats shall not be more than 7 days.

5.4 Application of first coat of high build black coal tar epoxide paint (AA 56135):

The surface shall be again cleaned where necessary with white spirit (AA 56701) and one coat of black coal tar epoxide paint (AA 56135) at the appropriate consistency as specified in clause 3.3 shall be applied so as to cover the whole surface to be painted.

The painted surface shall be allowed to air dry for a minimum period of 18 hours.

5.5 Application of second coat of high build black coal tar epoxide paint (AA 56135):

Immediately before the application of second coat, the surface shall be cleaned where necessary with white spirit (AA 56701).

The black coal tar epoxide paint (AA 56135) at the appropriate consistency as specified in clause 3.3 shall then be applied so as to cover the whole surface to be painted.

The painted surface shall be allowed to air dry for a minimum period of 18 hours.

5.6 Subsequent coats of high build black coal tar epoxide paint (AA 56135) if required:

If required, subsequent coats with black coal tar epoxide paint (AA 56135) would be applied in accordance with Clause 5.5.

Note:

1. The interval between successive coats shall not be more than 7 days.
2. For components of equipment such as air coolers, condenser water boxes, etc., the painted jobs after 24 hours of drying as stated above shall be subjected to hydraulic test with water at room temperature for a period and pressure which shall be stated on the drawings.

3. The painted surfaces including that of hydraulically tested jobs shall be allowed to air dry for a period of seven days for curing.

6. INSPECTION FOR PROCESS CONTROL:

- 6.1 Quality control inspector shall visually inspect the finished component for various paint film defects such as non-uniformity of shade and gloss, wrinkles, orange peel effect, blistering, etc.

6.2 Thickness:

The thickness of dried painted film after 2 coats of AA 56105 and 2 coats of AA 56135 shall not be less than 175 microns when measured by using a suitable instrument for the non-destructive measurement of the coating as detailed in IS:6012. If a thickness of more than 175 microns is required for specific applications, it can be achieved by giving further finishing coats.

6.3 Adhesion:

This test is carried out by applying and removing pressure sensitive adhesive PVC tape over cuts made in the paint film to ensure that adhesion of the paint film to metallic substrate is adequate.

This test shall be carried out generally in line with ASTM D 3359 except that the pressure sensitive adhesive PVC tape of 25±2 mm width shall conform to BHEL CPS No. AA 51412.

Method A of ASTM D 3359 shall be followed in case the thickness of the film is greater than 125 microns and the acceptance criterion shall be 4A, viz. trace peeling or removal along incisions and method B of ASTM D 3359 shall be followed when the thickness of paint film is between 50 to 125 microns and acceptance criterion shall be 4B, viz. small flakes of the coating are detached at intersections less than 5% of the area affected.

7. REPAIR OF DAMAGED PAINT WORK:

7.1 Local damage unrusted:

Where local damage to the paint work has occurred without subsequent rusting, the damaged area shall be cleaned with white spirit. The number of paint coats shall be applied sufficient to provide a dry film thickness, not less than that of the surrounding paint.

7.2 Local damage rusted:

Where local damage to the paint work with subsequent rusting has occurred, the rust shall be removed by mechanical cleaning as per clause 4, followed by subsequent procedure laid down in clause 7.1.



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7.3 Extensive damage:

In case of extensive damage, entire old film shall be removed and surface prepared as per clause 4 and subsequently painted as per clause 5 to the required thickness.

8. REFERRED STANDARDS (Latest Publications Including Amendments):

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|------------------|--------------|--------------|
| 1) ASTM D 3359 | 2) IS:6012 | 3) AA 514 12 |
| 4) AA 561 05 | 5) AA 561 35 | 6) AA 567 01 |
| 7) AA 567 03 | 8) AA 567 08 | 9) AA 567 09 |
| 10) AA 067 41 01 | | |