



CORPORATE PURCHASE SPECIFICATION

AA 561 13

Rev. No. 02

PREFACE SHEET

INORGANIC ETHYL ZINC SILICATE PRIMER

**FOR INTERNAL USE ONLY
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Comparable Standards:

1. INDIAN

: IS 14946-2001, Main coat

Suggested/Probable Suppliers and Grades:

1. CDC Carbolin
2. Asian paints
3. Goddlass Nerolac Paints
4. Sigma coatings

User Plants /References:

1. HARDWAR : HW 56175
2. BHOPAL
3. TRICHY
4. HYDERABAD

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Revisions :
As per 40th MOM of MRC-CPO

APPROVED :
INTERPLANT MATERIAL
RATIONALISATION COMMITTEE-MRC (CPO)

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INORGANIC ETHYL ZINC SILICATE PRIMER

1.0 GENERAL

This specification prescribes the quality requirements and application procedure for two components, air drying, Inorganic Zinc Ethyl Silicate priming paint. This priming paint when applied on steel structures provides excellent resistance to temperature, soil chemicals, salts, water, and chemical resistance under marine conditions and outside weather ability.

2.0 APPLICATION

The material shall be intended for use as a primer coat in the painting system on new steel structures internally and externally. Normally, for best performance, the surface to be coated shall be ensured free from oil, loose rust/dust etc., followed by blast cleaning to Sa 2 1/2 min. with a surface profile of 35 to 50 microns. This shall be followed by application of single coat of the priming paint by spray method so as to achieve dry film thickness t of 65-75 microns. The surface profile after blasting shall be 20 –35 microns.

3.0 COMPLIANCE WITH NATIONAL STANDARDS

The material shall comply with the requirements of following Indian standard and also, meet other requirements of this specification.

IS: 14946-2001, Main coat: Zinc Ethyl Silicate Primer, Two Components

4.0 COLOUR

The colour of the material shall be Grey.

5.0 FINISH

Smooth and Matt.

6.0 COMPOSITION

The material shall be two components moisture and self cured Inorganic Ethyl Silicate Binder pigmented with zinc metal powder conforming to IS: 14355 and having a purity of 99% and particle size of 4-5 microns, in the recommended proportion. The coating of this material attains water resistance within 30 minutes of application and remains unaffected by rains, condensation or dew etc. The manufacturer shall specify the principal type of binder used.

The supplier of the material shall declare that components of paint supplied shall meet the legislative requirements ISO: 14001.

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7.0 MIXING RATIO:

The components of paints are to be mixed in the proportion as recommended by supplier of the material.

8.0 TEST METHODS:

Unless specified otherwise, tests shall be conducted as prescribed in relevant parts and section of Indian standard IS: 101 and IS: 14946. The test panels shall preferably be prepared on blast cleaned surface.

9.0 PROPERTIES:

The material shall meet the following technical requirements:

9.1 DRYING TIME:

Surface dry	: 15 minutes, max.
Hard dry	: 2 hrs., min.
Time to topcoat	: 24 hrs., min.

9.2 CONSISTENCY:

The liquid component mixed with powder shall be suitable for application by spray as such or when thinned in the proportions at specified by the manufacturer.

9.3 FLASH POINT:

Not below 15° C

9.4 MASS PER TEN LITRES:

20 kgs., min.

9.5 VOLUME SOLIDS:

60.0 % , min.

9.6 POT LIFE OF MIX (ANNEXURE D OF IS: 14946):

4 hrs., min. at 30° C

9.7 DRY FILM THICKNESS:

65-75 microns per cot when measured after 72 hrs. of curing.

9.8 RESISTANCE TO SALT SPRAY TEST (TYPE TEST):

The material shall pass resistance to salt spray test, when test panels cured for 72 hrs. are subjected to continuous exposure for 2000 hrs.

9.9 PROTECTION AGAINST CORROSION UNDER CONDITIONS OF CONDENSATION (TYPE TEST):

The material shall pass the test, when test panels cured for 72 hrs., are subjected to exposure at specified conditions for 2000 hrs.

9.10 HEAT RESISTANCE TEST:

The film shall not show signs of cracking, blistering or flaking when coated test panels air dried for 48 hrs., are kept at $400 \pm 10^{\circ}\text{C}$ for 6 hrs followed by plunging in cold water-three cycles, min.

**9.11 COMPOSITION:****9.11.1 SOLID CONTENT:**

68%, min. by weight of mixed paint.

9.11.2 TOTAL METALLIC ZINC CONTENT (ANNEXURE B OF IS : 14946):

75%, min. by weight in non-volatile portion of the paint.

9.12 MUD-CRACKING TEST:

The coating applied to dry film thickness of 120 microns minimum, shall not show any mud cracking when viewed under 10 X magnification.

9.13 SEDIMENTATION TEST:

There shall not be any segregation of zinc powder form the base material within 2 hrs in the mixed paint.

9.14 CURE TEST:

The coated test panels air dried for 48 hrs shall pass the cure test when tested according to test procedure given in ASTM D 4752.

10.0 KEEPING PROPERTY

When stored in covered dry place in the original sealed containers under normal ambient conditions, the liquid portion shall not show thickening, curdling, gelling or hard caking and also retain the properties of mixed paint prescribed in this specification for a period of six months from date of delivery.

11.0 TEST CERTIFICATES

Unless otherwise stated, three copies of test certificates and product data sheet shall be supplied along with each consignment giving following information:

In addition, the supplier shall ensure to send one copy of test certificate along with the dispatch documents to facilitate quick clearance of the materials.

AA 561 13, Rev 02: Inorganic ethyl zinc silicate primer
BHEL order No. & Date

Manufacturers/suppliers Name:

Trade name/mark, if any:

Batch/Lot No.:

Quality supplied:

Date manufacture & expiry:

Test results as per 9.0

Mixing ratio

Technical information, if any:



12.0 PACKING AND MARKING:

Unless otherwise stated, the components of paint shall be supplied separately in moisture and leak proof containers in packing size as specified in the BHEL order.

Each container of the consignment shall bear the following information printed or pasted at suitable place so as to protect it from damage during transportation and handling.

AA 561 13: Inorganic ethyl zinc silicate primer.

BHEL order No. & Date

Manufacturers/ Supplier's name:

Trade name / mark , if any:

Batch/Lot No.:

Name of contents:

Mixing ratio:

Quantity in container:

Date of manufacture & expiry:

Technical information, If any:

13.0 ENVIRONMENTAL REQUIREMENTS:

The supplier shall furnish Material Safety Data Sheet (**MSDS**) covering all information relating to human safety and environmental impacts of the hazardous materials particularly during their transportation, storage, handling and disposal alongwith each supply.

Each container shall be marked with corresponding symbol and minimum worded cautionary notice for flammable / corrosive / toxic / harmful / irritant and oxidizing etc. as applicable.

14.0 PRECAUTIONS

- a) Use off the mixed paints within stipulated pot life i.e., 4 hrs after mixing and should be continuously agitated during application.
- b) Inorganic Zinc silicate primer should not be applied at relative humidity below 50 % and the surface should remain free from condensation at the time of application.
- c) After completion of the work, the application equipment must be cleaned thoroughly immediately with thinner and kept safely for next use.
- d) The surface to be painted must be blast cleaned to Sa 2 ½, min. and the painting shall be done by spray method uniformly. However, brush may be used for touch up of local areas only.

15.0 REFERRED STANDARDS (Latest Publications Including Amendments)

1) IS: 101	2) IS: 14355	3) IS: 14946
3) AA 067 41 01	5) ASTM D 4752	