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ACID/ ALKALI RESISTANT EPOXY FLOOR FINISHES AND ALLIED WORKS

1. SCOPE

The Specification covers supply, furnishing, installation, finishing, curing, Protection, repairing, maintenance and handing over of all floor finishes and allied Epoxy Works covered under scope of this contract.

2. Objective

Epoxy is type of polymer material, that begins as a liquid and is converted to a solid state through a controlled chemical reaction. Because of this change in state epoxy flooring / lining are typically a mechanically strong and chemically resistant type.

- 2.1 The contractor shall furnish materials, labor, plant equipment and tools to complete the work as specified and / or as shown in the drawings.

3. MATERIALS

All materials shall be of best quality and shall conform to relevant IS codes where available / as specified in the order. Materials for finishing items shall be procured from well reputed manufacturer and shall be approved by the Engineer. Materials of any type and kind shall be perfect in every respect. The Contractor shall submit samples of the materials used to the Engineer for approval if asked by the engineer.

There are different type of Epoxy available. Epoxy along with different types of hardners and filler material makes numbers of combination.

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The selection of Hardner and filler material.

Different types of epoxy material and along with different type of hardner make different combination as required for the application.

Hardner: To be used as recomnded by the Epoxy Manufactuere for the application or instructed by client Engineer In Charge.

Filler Material:

Glass Fiber: Glass Matt of recomnded make used to provide the better reinforcement in the Epoxy Lining or Flooring. It should be used as recomnded by the client in the specifications itself.

Silica Quartz: Silica Quart should be fine and uniform, used to increse the thickness of Epoxy flooring as reconded by the client. By the use of the Silica Quartz the mechanical properties increse and flooring has a better impact resistance. Should be used as recomnded by the client.

Against the Ciba Geigy Material specified in the specifications we here proposed the material of M/s Atul Make which is:

Ciba Geigy Material Code	Equilent Atul Material Code
GY – 257 & GY - 250.	B – 47
HY - 840	AH – 714
HY - 830	K – 41
HY - 850	K -42

4. Epoxy Acid / Alkali Resistant Lining and Flooring.

4.1 Scope

- Epoxy Lining includes the supply and application of Epoxy with hardner or any other material for the thickness as desired. It includes complete

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supply of material required for the same along with the tools, tackles and skilled manpower for the same as per the procedure recommended and approved as per instruction of Engineers.

Area has to be decided where the Epoxy Flooring / Lining has to be done.

Surface has to be prepared for the Epoxy Lining. (Please refer Surface Preparation)

Lining has to be developed by forming different layers of Epoxy Resins plus Hardener and if required Glass Fiber, Silica Quartz etc can be used as per the defined scope of the work. Resin plus Hardener bonded with the surface in such a way that it should remain intact with its parent surface for the expected life.

Definitions:

Area : Which are prone to chemical attack and required to be protected (Area has to be decided by the user / client / consultant).

Surface Req. : For Epoxy Lining we required corrosion proof solid surface without any oil spots and foreign material.

Solid surface stand for the surface's should not have any loose particle or should not have scaling and it should be oily free and clear surface. Surface should be free from any foreign particles dust etc.

Dry surface (applicable for civil structure) stand for the surface free from traces of the moisture. To check the same we can put a piece of plastic sheet with load on the floor for one day, if moisture deposited below the sheet that shows still moisture content is there in the surface.

Metal Surface, Sand blasting is recommended to expose the fresh metal surface. If due to any reasons Sand Blasting is not possible, grinding, buffing is recommended. It should be done thoroughly and

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inspection should be offered to the customer representative after completing the surface preparation.

4.3 Workmanship

4.31 Surface Preparation

The surface shall be sufficiently dry before application of Epoxy Flooring / Lining Lining. The floor surface shall have a mild roughness like sand finish plaster and from scales, loose material, oil, grease etc.

4.32 Laying and Fixing

Select the area where Epoxy Flooring / Lining shall be done. Check the dryness and roughness of the surface before application. It shall not be too smooth clear the all loose and sand particle from the selected area. With the help of wire brush.

4.4 Floors

Floors of any kind shall be estimated on the basis of the surface area appearing between the plastered walls of the room. Dado shall be paid for the surface area up to floor level. Measurement of lining work on floor and dado shall be as per actual work done in square meters to decimal places and be measured by their actual surface, whatever shape or position the walls may have. Skirting shall be measured in linear meters. The cost of laying shall include providing of adequate cleaning of surface, application of Epoxy curing required testing, equipment and all special transition pieces , groove moulds, corners all as per specification and drawing .

IS: 1200-1992

Method of measurement of building and civil
Engineering works (part-11)



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PROCEDURE FOR FIXING OF FRP ON MS SURFACE

Material	Epoxy Resin Hardener Fiber Matt (optional if required) Silica Quartz (optional if required)
Equipments	Grinder / Cutter

Step by step procedure for Epoxy Lining or Flooring

01. Select the area where Epoxy lining has to be done.
02. Check the following in selected area.
 - Check dryness of surface
 - Roughness of Surface (For Epoxy surface requirement is clear surface with no traces of oil and it should be dust free and slightly coarse not smooth (polished surface))
 - Check loose particles if any
03. Mark location of area where Epoxy lining / flooring has to be done.
04. First apply the Primer Coat, Mix Epoxy Resin with Hardener (as recommended by the manufacturer) Mix it properly homogeneously mixed before application and if possible steerer should be used for proper mixing.
05. Use the brush or roller as comfortable; apply it uniformly on the surface.
06. Once the primer coat completed wait for 24 hrs.
07. Now the surface is ready for the Epoxy Lining coat.
08. Now mix Epoxy Resin, Hardener (as recommended by manufacture). It **Homogeneously mixed** if possible use steerer for mixing). Apply the first coat of the Epoxy Lining
09. Once the first coat just on the verge of setting/tag free apply the second coat of the Epoxy Lining.
10. Repeat the procedure for the thickness required or number of coat recommended.
11. Silica quartz or fiber matt can also be used as specified in the job.
12. For Silica quartz it should be mix properly with the solution of Epoxy Resin and Hardener.
13. Glass fiber, it should be cut to the size required where Epoxy lining has to be done.
14. Put the Fiber matt neatly on the surface, apply the Epoxy solution gently with Brush or roller.
15. After that lay the layer of Fiber Mat & applies Mix Epoxy chemical on it till the fiber mat is thoroughly wet.



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16. On completion of One layer repeat the process to achieve required thickness (Process should not be repeated more then thrice) .
17. Allow Epoxy to cure for 48-72 hrs.
18. Once the FRP Lining is cured apply sand paper over the surface
19. After complete curing check the Epoxy lining.
20. Area can be put in use only after 72 hrs.

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