



Crescent PPG Lining Pvt Ltd.,
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Acid Resistant Tiles / Brick Lining

1. Objective

Since the Corrosion Technology found, Acid Proof Bricks & Tiles are Prime material amongst all other anti-corrosive systems developed over the years.

Acid Resistant Bricks along with other materials used to protect the Civil / Concrete Surface from the erosion or chemical attack of the Chemicals.

The contractor shall furnish materials, labor, plant equipment and tools to complete the work as per IS 4860 or specified and / or as shown in the drawings.

2. Acid Resistance Brick Lining

Acid Resistant Brick Lining includes supply and application along with other materials required to carry out the complete job as per the requirement of the site conditions or specified here as (BR/38/KS/F or PH) along with complete tools and tackles.

Area has to be decided where the Acid Resistant Brick Lining has to be done. Surface has to be prepared for the Acid Resistant Brick Lining. **(Please refer Surface Preparation)**

Lining has to be developed by forming different material as specified (in this case its **BR/38/KS/F ### or PH** in a combination of the Acid Resistant Bricks as per the lay down procedure **(Please refer Procedure for Acid Resistance Bricks Lining)**. in such a way that it should remain intact with its parent surface for the expected life.

3. MATERIALS

There are different thickness of Acid Resistant Bricks available along with different combination of Bedding and Pointing material. It should be used as specified by the Client.

The material to be used for **BR/38/KS/F or PH** as under:

1. **BR38** Bricks 38 MM Th of the size of 230MM X 114MM as per IS 4860



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(Test Report of the same should be handed over at the time of delivery). 1 SQM of the Brick Lining approx required 38 Bricks of the size.

For 25MM and 75MM the Size of the Bricks will be 230MM X 114 MM and follow IS 4860. Test report of the Brick must be reviewed. Where as for 20MM or less then (follows IS4457) that it varies. For 20MM its in general available in the size of 200MM X 100MM or 300X 300MM

2. **KS** Is a mixture of Potassium Silicate Powder and Potassium Silicate Liquid Resin in a combination of 75 : 25 by parts. It should be mixed thoroughly before applying on the surface and known as Potassium Silicate Mortar. For each SQM job its required 14 Kg to 20Kg of Mix as per the surface conditions for approx 5MM Th. Prepare the mixture for the quantity can be consumed in next 1-2 hrs.
3. **F or PH** Is a mixture Furan/Phenolic Powder and Furan/Phenolic Liquid Resin in a combination of 75:25 by parts. It should be mixed thoroughly before applying in the joints and known as Pointing Material. For SQM job its required 1.4 Kg to 2.0 Kg as per the job conditions. Prepare the mixture for the quantity can be consumed in next 1-2 hrs.
4. **Bitumen Primer** Its in liquid form and should be applied on the prepared civil Surface. The Consumption will be around 0.3 Kg Per SQM.
5. **Bitumen Mastic** Its a mixture of Bitumen and Silica Quartz by the ratio of 15:85 by parts. The consumption of the Bitumen Mastic will be 1.7 for each SQM of Job against each MM of thickness. It can be brought in ready mix conditions or can be mixed at site. Before applying the Bitumen Mastic its should be heated so that it should get semi liquid condition.

Thickness of the Bitumen Mastic will be as specified. The IS follows is IS1580

All materials shall be of best quality and shall conform to specifications required to carry out the specific work and objective desired.



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Test Certificate of all the material should be produced before the application to the Client for his approval.

This the in general specifications. Where as as per specific requirement as per the site Conditions. The Specifications change for Example we here gives few different specifications as:

1. With Furan Bedding and pointing.
2. Vinyl Ester Bedding and pointing.
3. Epoxy Bedding and Pointing.
4. General with Epoxy Pointing....

And many more combinations are there.

Work Procedure

Definitions:

Area : Required for the Acid Resistant Brick Lining / Flooring has to be decided by the user / client / consultant.

Surface Req. : For Acid Resistant Brick Lining or Flooring we required solid surface without any oil spots and foreign material. If there are any foreign materials it should be removed by using wire brush or angle grinder.

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.



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Surface must be free from any cracks and undulations. The structure must be checked for the water leakage or seepage before going for the Acid Resistant Brick Lining Flooring. If any seepages or cracks are observed should be attended by the Civil Persons before Acid Resistant Brick Lining or Flooring

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.

PROCEDURE LAYING ACID RESISTANT BRICKS

Material	Acid Resistant Bricks of 38MM Bitumen Primer. Bitumen Mastic. Potassium Silicate Mortar. Furan Mortar / Phenolic Mortar
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Equipments	Grinder / Cutter /Brush
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Step by step procedure for ART Flooring and Lining.

01. Select the area where ART Flooring or Lining has to be done.
02. Check the following in selected area.
 - Check dryness of surface
 - Roughness of Surface (For ART Lining surface requirement is clear surface with no traces of oil and it should be dust free and rough finish.
 - Check loose particles if any
03. Mark location of area where ART Flooring / flooring has to be done.



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04. First apply the Bitumen Primer Coat on the complete area where the ART Lining or Flooring is required.
05. Once the primer coat completed wait for 24 hrs.
06. Heat up the Bitumen Mortar near the site location. Apply the same for the thickness as specified. This can be done on the complete area of the unit or part of it as per site conditions.
07. Once the Bitumen Mastic work completed wait for 24 hrs.
08. Apply the Potassium Silicate Mortar for the area in which we can complete the Acid Resistant Bricks Lining or Flooring in another 1 or 2 hrs.
09. Now place the tiles on the Potassium Silicate Mortar gently and fix it properly as per the required orientation. Complete the process of fixing Acid Resistant Bricks for the area where Potassium Silicate Mortar has been laid down.

Once that area where the Potassium Silicate Mortar has been laid down covered with the Acid Resistant Bricks, apply the Potassium Silicate Mortar for adjoining area in which Acid Resistant Bricks Lining or Flooring completed in another 1-2 hrs.

Repeat the process to complete the unit / area.
10. Fill the gap of the two Bricks with Furan/Phenolic Mortar gently in 2-3 stages. Fill the gap in such a way so that top 2 -3 mm of the Bricks should not be filled with Mortar.
11. Now apply Resin Rich mix of the mortar and apply it with brush / or any other means in the gap of the two Bricks. The Resin Rich mix should be filled till the top of the Bricks.
12. Complete the process for the entire area or unit where Acid Resistant Bricks Lining has been done.
13. Curing with Acidic Water has to be carried out for the pointing material after 48 hrs of the pointing work or part work completed.
14. After Acid Water curing area can be taken in to the use after 4 days.