

Method statement for applying coal tar epoxy mastic for tank lining or waterproofing.

This process involves surface preparation, application, and curing of coal tar epoxy for optimal performance and durability.

1. Introduction:

Coal tar epoxy mastic is a high-build, corrosion-resistant coating typically used in environments exposed to water and chemicals. It is a thick protective layer that can be applied on metal, concrete, or other surfaces to prevent corrosion and chemical attacks.

2. Scope of Work:

The scope of this method statement includes the surface preparation, application, curing, and inspection of coal tar epoxy mastic on tanks, pipes, or other structures requiring corrosion protection.



3. Materials:

Coal Tar Epoxy Mastic: BC Mastic 300 M
Two-part system consisting of epoxy resin and a coal tar-based hardener.
Thinners (if required): As per the manufacturer's recommendation.
Clean water: For washing down and cleaning surfaces.
Abrasive material (for blasting): Garnet or other suitable abrasives.

Tools:

Spray gun, rollers, brushes, trowels.
Safety Gear:
PPE including respirators, gloves, protective clothing, and eye protection.

4. Surface Preparation:

4.1. Metal Surface Preparation:

Remove any existing coatings, rust, or loose material via abrasive blasting to achieve a minimum standard of SA 2.5 (near-white metal finish).

Ensure the surface is dry, clean, and free from grease, oil, or contaminants. Use solvent cleaning (as per SSPC-SP1).

Inspect for any pitting or defects in the metal and repair as necessary before proceeding.

4.2. Concrete Surface Preparation:

Remove all dirt, dust, grease, and loose material. Use high-pressure water blasting or mechanical scarifying.

Ensure the surface is dry, clean, and free of laitance (the weak surface layer).

Fill cracks, voids, or honeycombing with an epoxy-based filler and allow them to cure before application.

4.3. Surface Roughness:

Ensure the required profile or roughness on both metal and concrete surfaces to promote good adhesion of the coal tar epoxy mastic. For metal, a roughness of 50–75 microns is typically recommended.

5. Mixing:

5.1. Coal Tar Epoxy Mastic: BC Mastic 300 M

Mix the two components (epoxy resin and coal tar hardener) in the recommended ratio.

Use a mechanical stirrer to ensure thorough mixing for at least 3–5 minutes.

Avoid mixing excess material; only mix enough to be applied within the pot life of the product.

6. Application Procedure:

6.1. Method:

The coal tar epoxy mastic can be applied by airless spray, roller, or brush.

Ensure the surface and ambient temperatures are as per the manufacturer's recommendation (generally between 10°C to 40°C).

6.2. Application of First Coat:

Apply the first coat of coal tar epoxy mastic at the recommended wet film thickness (WFT) (usually 150–300 microns).

Ensure uniform coverage without excessive sagging or dripping.

Allow the first coat to cure as per the manufacturer's specification (depending on temperature and humidity) before applying the second coat.

6.3. Application of Second Coat:

Once the first coat is cured and inspected, apply the second coat at the same thickness to ensure total DFT (dry film thickness) of 300–600 microns.

Avoid excessive delays between coats to ensure proper inter-coat adhesion.

6.4. Touch-Up and Repairs:

Inspect for any areas with insufficient coverage, pinholes, or other defects.

Carry out touch-ups with the same coal tar epoxy mastic, following the same procedures.

7. Curing:

The curing time depends on the ambient temperature and humidity. Follow the manufacturer's guidelines for curing time.

Avoid exposing the coated surface to water or chemicals until fully cured.

8. Inspection and Quality Control:

8.1. Visual Inspection:

Inspect the surface for uniformity, defects like pinholes, holidays, or sags.

8.2. Dry Film Thickness (DFT) Measurement:

Use a DFT gauge to ensure that the coating thickness meets the specified range (typically 300–600 microns).

8.3. Adhesion Test:

Perform an adhesion test after curing to ensure the coating has bonded well to the substrate (cross-hatch or pull-off tests can be used as per ASTM standards).

8.4. Holiday Testing:

Conduct a holiday test (spark test) to detect any pinholes or holidays in the coating.

9. Safety Precautions:

Ensure proper ventilation in confined spaces.

Workers should wear appropriate PPE, including respirators for protection against harmful vapors.

Avoid open flames or sparks near the work area, as coal tar epoxy may be flammable in its uncured state.

10. Final Cleaning and Handover:

Clean all tools and equipment using the recommended thinner before the material hardens.

Prepare a handover report, including inspection results, DFT readings, curing details, and any touch-ups performed.