

NAPCA Bulletin 6-69-94-4

SUGGESTED PROCEDURES FOR FIELD JOINT APPLICATION USING MASTIC MIX AND FIELD MOLD

1. General

- a. These specifications may be used in whole or in part by anyone without prejudice, if recognition of the source is included. The National Association of Pipe Coating Applicators (NAPCA) assumes no responsibility for the interpretation or use of these specifications.
- b. The intended use of these coatings is to provide corrosion protection for buried pipelines. Above ground storage of coated pipe in excess of 6 months without additional Ultraviolet protection is not recommended.
- c. The following definitions apply:
 - i. Applicator - The contractor who applies the coating to the pipe.
 - ii. Company - The purchaser of the coated pipe or the entity for whom the Applicator coats the pipe.
 - iii. SSPC - The Steel Structures Painting Council.
 - iv. NACE - NACE International.
 - v. Manufacturer - The company that makes the coating materials which are applied to the pipe.

2. Scope

- a. The Applicator shall furnish all labor, equipment and material required, shall prepare all surfaces to be coated and shall apply the coating to all surfaces to be coated.
- b. The mastic mix field joint consists of a sheet metal envelope mold filled completely with a combination of asphalt, aggregate and mineral filler which provides a one-part joint system for marine use of a thickness equal to the combined thickness of the plant applied corrosion and concrete coatings.

3. Coating Material

- a. All coating materials, including repair or patch materials, purchased or used under these specifications, shall be packaged in suitable and approved containers. The containers shall be plainly marked with the name of the Manufacturer, type of material and batch or lot number where applicable. Bulk shipments shall be allowed provided the above information is included in the bill of lading.
- b. The coating material shall be packaged in containers suitable to keep the contents clean and dry during handling, shipping and storage. Storage and handling conditions shall be in accordance with the Manufacturer's recommendations.
- c. Precautions shall be taken during the handling, shipping and storage of all materials to prevent damage to the containers that would result in contamination of the coating materials. All contaminated, or otherwise damaged materials shall be discarded.

- d. Mastic mix field joint materials consist of specially graded sand, mineral filler and asphalt and usually are provided packaged in pre-proportioned units thus eliminating field measure or proportioning.
- e. The mastic mix field joint has a density of approximately 120 lbs./cu. ft. Used as described herein, the contents can be chopped and put in the remelt kettle, thus eliminating the necessity of removing the material from cartons and eliminating package disposal problems.

4. **Surface Preparation**

- a. The surface to be coated must be cleaned of all rust, mud, oil, grease, moisture, mill lacquer or other deleterious substances. Wire brushing and/or solvent washing is sufficient in most instances. Weld splatter should be removed by filing.
- b. The kraft paper shall be removed from the end of the joint of pipe for a distance equal to $\frac{1}{2}$ the diameter of the pipe or eight inches, whichever is greater.
- c. Carefully wire brush the exposed corrosion coating between the bare pipe and concrete coating.

5. **Primer Application**

Apply primer as soon as possible after weld is complete. Primer should be applied to all exposed pipe applied corrosion coating as well as the bare pipe area.

6. **Application Procedures**

- a. Heat mastic mix materials in remelt kettle to a temperature of approximately 350 to 375 degrees F. Cooling shrinkage may be kept to a minimum if material temperatures are held to the suggested range.
- b. In charging the remelt kettle, the mastic level should be maintained such that the paddle blades are visible at the top of their rotation. Do not overcharge the remelt kettle. The unit can be used as a continuous mixer by charging the cold material from the back end while drawing hot material from the gate.
- c. Accurate portable thermometers should be readily available and used for checking mastic temperatures prior to molding.
- d. If it should become necessary to hold mastic mix material in the kettle for an unusual length of time, the lid should be closed, the fire decreased and a small amount of asphalt added to replace asphalt driven off by the continued application of heat.
- e. The mastic mix form, or mold, consists of a pre-cut section of 26-28 gauge sheet metal wrapped over the field joint mold area and extending back over the pipe applied concrete coating. The form shall be securely strapped or banded at each end.
- f. Open the pre-cut opening at the top and fill the mold with mastic mix, being careful to agitate or vibrate the material and form to assure complete filling and the elimination of voids or honeycomb within the joint.
- g. After filling the mold, the opening shall be strapped shut and at this time water cooling may be used. The number of straps or bands is dependent upon the size

or weight of the joint being installed.

7. **Hot Joint Application with Field Mold**

- a. The field mold may be used with conventional coal tar enamels and with mastic field joint coatings, such as mastic mix.
- b. Preparation of the materials always should be in accordance with the appropriate Manufacturer's recommendations and safety precautions.
- c. Attach seal to one end of the band and bend the back under the clip (seal) about one inch.
- d. Then run the steel band under the pipe and bring it back over the pipe, running the band through the clip.
- e. Apply both bands loosely beyond the cut back.
- f. Wrap the field mold around the pipe, with the long end of the felt on the side you are working.
- g. Slide one of the bands to the center of the field mold and bend the band back just enough to hold the field mold snug.
- h. Slide the other band over the end of the field mold.
- i. Take banding tool and tighten the band tightly. Crimp the seal with a crimping tool. Do the same with the band you applied in the middle of the mold.
- j. Slide to the opposite end. When the seal has been crimped with the crimping tool, bend the banding tool upward and break off unused end of the band.
- k. After attaching the field mold to the pipe, start pouring at one end (high end, if any) and continue pouring at the same spot just as fast as the hot enamel will flow. Do not pour across the top of the field mold.
- l. When dope is in plain sight along the entire length of the field mold, pour to fill.
- m. If the pipeline is to go up or down a steep hill, do the following:
 - i. Cut strips of pipeline felt as wide as the opening at the top of the field mold and as long as the field mold.
 - ii. When banding the lower band on the field mold, insert this felt strip under the band.
 - iii. One worker should then pour the enamel slowly at the top of the field mold and another worker with a heavy glove hand should then follow the flow of the enamel up the field mold, forcing the felt down into the top rim of the field mold.
 - iv. This will cause the enamel flowing on top to back up the joint and completely fill the field mold.
 - v. Care should be exercised in this operation, both in pouring enamel and in forcing it up the joint with the pipeline felt.