Electrical Markets Division

Scotchkote™ Liquid Epoxy Coatings: 323+, 328, 327

Defect Repair and Accelerated Cure Procedure

1. This Procedure

1.1. This procedure outlines the processes for repairing three types of defects and using heat for Accelerating the Curing Process. The three defect types for repair are defined below. Any End User project specification or government specifications may supersede this 3M procedure.

2. 3M Products/Defects/Storage

2.1. Products used for this procedure include Scotchkote 323+, 328, and 327 products from 3M . Follow 3M's Technical Data Sheets and Application Guides for detailed information on these products.

2.2. Defect areas Defined:

2.2.1. Pinhole Defects: Defects less than 4mm in diameter.

2.2.2. Small Area Defects: Defect areas that are less than 25 sq. Inches.

2.2.3. Large Area Defects: Defect areas that are greater than 25 sq. Inches. and will likely include exposed steel.

2.3. Storage: All materials are to be stored between 40°F and 100 °F. Material should be stored out of direct sunlight, and should not be allowed to freeze.

3. Defect Repairs

3.1. Identify all Defects to be repaired and follow general application procedures for Scotchkote liquid epoxy coatings as outlined in Application Guides and Technical Data Sheets for the specific products.

3.2. Pinhole and Small Area Repairs: Abrade the area around the holiday/defect by up to 1" outside the defect area with 80-120 grit sandpaper, a power drill with 80-120 grit sandpaper, or with a brittle blaster to remove the gloss from the coating. Remove dust from the area with a clean dry cloth or compressed air.

3.3. Some method of taping off the defect or using a template to ensure a uniform repair is recommended.

3.4. Large Area Repairs: for Large Area repairs with exposed steel, abrasive blast the steel to a SSPC SP-10 near white metal finish. Brush blast (abrade) the parent coating by approximately 2" around the defect area to remove the gloss, being careful not to remove too much of the parent coating.

4. Accelerated Cure

4.1. For Accelerated Cure: Heat the area around the holiday/defect moving to a distance of 4" outside the diameter of the defect area. With a commercial heat gun or propane torch, heat the area to be repaired upto 200°F being careful not to damage the parent coating. Document the temperature of the surface with an infrared thermometer without contacting the surface. The heat should not damage the surface of the coating or char the coating. If damage to the parent coating occurs during the heating process, it must be repaired.

4.2. Application of Coating: The steel surface temperature should be at least 5°F higher than the dew point temperature of the ambient environment. The relative humidity shall be below 90%, and with the substrate temperature at 200°F or below, apply Scotchkote liquid epoxy coatings via a Cartridge or brush grade kit at a minimum of 25 mils or as specified by the End User. When applying via a Cartridge, product can be dispensed with or without the mix nozzle. When using the mix nozzle, make sure that the product being dispensed is uniform before using for the repair. When the mix nozzle is not used, dispense product into a clean dry cup and mix by hand with a stir stick until the coating is uniform and is does not have streaks.

4.3. Post Curing Process: For post curing the Application, use a commercial heat gun moving it vigorously around the area of the coating repair, being careful to not damage the coating. Heat the area for 1-3 minutes or as needed until the repaired area is dry to the touch. Allow the repair area to cool before holiday testing.

5. Holiday Inspection:

5.1. After the coating application is complete, make sure the coating is dry to the touch and has reached 80% of its average Shore D hardness value before holiday testing. Make sure you are not causing damage to the coating during the holiday detection process.

6. Return to Service:

6.1. Repair into Service: A repair can be put into service after it has reached it's standard Shore D level -5%. This is generally a Shore D hardness level of 76-84.

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