CORPORATE HEAD OFFICE
Specialty Polymer Coatings, Inc.
100 - 5350 - 272nd Street, Langley, BC, V4W 1S3, Canada
Tel: (604) 514-9711 • Fax: (604) 514-9722

U.S.A. HEAD OFFICE
Specialty Polymer Coatings USA, Inc.
22503 FM 521 RD, Angleton, TX, 77515, USA
Tel: (281) 595-3530 • Fax: (281) 595-3717

Effective: December 13, 2019

SPECIALTY POLYMER COATINGS, INC. (SPC)

SP-3888® FAST CURE CARTRIDGE APPLICATION

SPECIFICATION ACCELERATED CURE FOR HOLIDAY REPAIR

I. GENERAL

1.1 SP-3888® Fast Cure Cartridge coating is 100% solids, epoxy manufactured and marketed by Specialty Polymer Coatings, Inc. ("SPC"), #100 – 5350 – 272nd Avenue, Langley, BC, Canada, V4W 1S3, Telephone: (604) 514-9711, Fax: (604) 514-9722, and applied by SPC approved applicators.

1.2 This specification outlines the procedures and methods for using Specialty Polymer Coatings, Inc.'s SP-3888® Fast Cure Cartridge as an Accelerated Cure for Holiday Repair. The procedures may be used for either pinhole holidays or mechanical damage with exposed steel not exceeding 323 cm^2 (50 in^2).

II. EQUIPMENT

2.1 Preheating and post-heating may be carried out with a heat gun or owner approved equivalent.

III. PROCEDURES

3.1 After detecting a holiday, the holiday may be shielded from the spring with a dielectric material to determine if there are other holidays at the circumference of pipe. Mark all holidays for repair.

3.2 Prepare the surface for coating:

- Pinhole holidays: The repair area shall be roughened using carborundum cloth, sandpaper (80 grit or coarser), MBX® Bristle Blaster®, or as directed by the Owner. Ensure all gloss has been removed from the repair area. The adjacent coating shall be abraded for a minimum distance of 25 mm (1") all around to ensure inter- coat adhesion. Dust shall be removed by wiping with a clean cloth, paint brush or with compressed air. A dust respirator shall be worn for all sanding or grinding activities. All surfaces to be coated shall be clean and completely dry prior to the application of the coating.

- Holidays/damage with exposed steel: The repair area shall be mechanically abraded using a MBX® Bristle Blaster®, blast cleaned, or as directed by the owner. Ensure all gloss has been removed from the repair area. Dust shall be removed by wiping with a clean cloth, paint brush or with compressed air. A dust respirator shall be worn for all sanding or grinding activities. All surfaces to be coated shall be clean and completely dry prior to the application of the coating.

III. PROCEDURES (cont.)

3.3 Preheating the area: With a heat gun or Owner approved equivalent, heat the repair area for at least 75 mm (3") around the holiday to be coated to a recommended temperature of 85°C (185°F) The minimum allowable substrate temperature is 10°C (50°F) when applying SP-3888® FC Cartridges. Hold the end of the gun approximately 50 mm (2") from the substrate moving the gun briskly back and forth over the area. Measure the temperature with an infrared non-contact thermometer. It should take approximately two minutes to reach 85°C (185°F). A slight darkening of the parent coating is acceptable but any charred coating must be removed.

3.4 Coat all abraded areas with SP-3888® Fast Cure Cartridge using one of the following two methods:

1. Attached static mixer: The first few pumps may not be completely mixed; eject the first few pumps and dispose of them as solid waste after they solidify. Pump out enough material to coat the abraded area directly onto the substrate. Spread out the coating to a uniform thickness with a spatula or paintbrush to a minimum DFT of 0.60 mm (25 mils). SP-3888® Fast Cure will harden in the static mixer in four minutes at 25°C (77°F). If more than four minutes elapse between repairs, replace the mixer.

2. Without a static mixer: To mix by hand, eject the required amount of coating material from the cartridge onto a non-absorbent, clean tray or cup and hand mix the product with a stir stick until the coating colour becomes uniform with no streaks. Apply the coating to a minimum of 0.60 mm (25 mils) DFT on the area to be repaired using a spatula or paintbrush.

3.5 Post-heating: Using a heat gun or Owner approved equivalent, post-heat the coating to a Shore D Hardness of 75. Shore D Hardness shall be conducted in accordance with ASTM D2240. Hold the end of the gun at least 50 mm (2") from the substrate so that the repair area does not bubble or char. Heating times will vary depending upon the type of heat gun used, the existing substrate temperatures and ambient temperatures. Allow the coating to cool for approximately one minute.

3.6 Holiday Inspection:

- After the coating has reached a Shore D Hardness rating of 75 and cooled, the coating should be "hard-dry" as per ASTM D-1640. While this is not adequate for backfilling, holiday detection may be conducted over the repair coating at this time. Please ensure while holiday detection is occurring that if using a spring, it does not leave an impression on the applied repair material. Holiday Inspection voltages may be referenced from NACE SP0188.

- If the entire circumference has been tested by shielding the holiday and retesting with a spring holiday detector prior to patching, then a conductive rubber probe may be used for holiday detection of the repair. While the conductive rubber probe must be in physical contact with the holiday repair, pressure does not need to be exerted. Therefore, once the SP-3888® Fast Cure has reached a Shore D Hardness 75, holiday detection may proceed.

III. PROCEDURES (cont.)

3.7 SP-3888® Fast Cure must be cured to a Shore D Hardness of 80 before backfilling may commence. Also, in order to accelerate curing times, pre-heat and post heat may be used.

IV. SAFETY PRECAUTIONS

4.1 SP-3888® Fast Cure Cartridge coating is **HARMFUL IF ABSORBED THROUGH SKIN, INHALED OR SWALLOWED.** It is a skin and eye irritant. Personal protective equipment is required. Refer to the Material Safety Data Sheets.

4.1.1 Chemical resistant gloves with a long cuff that overlap clothing sleeves should be worn when handling this product. The glove/clothing overlaps should be sealed by tape. Check with the glove manufacturer to determine the proper glove type.

4.1.2 Wear an appropriate, properly fitted vapour respirator (NIOSH/OSHA approved) during application where vapour/mist is likely to be encountered, e.g. confined spaces and during winter construction or when the substrate is preheated. For outdoor application and areas with adequate ventilation, the use of a respirator is normally not required. Follow the respirator manufacturer's recommendations. A dust respirator should be worn for any activity such as sanding or grinding of cured coating.

4.1.3 Wear splash proof chemical safety goggles and/or face shield.

4.1.4 Wear impervious boots.

4.1.5 Long-sleeved clothing is to be worn over regular clothing to cover all exposed areas of arms, legs or torso during mixing and application of the coating. Breathable clothing, such as cotton or disposable coveralls, is recommended.

4.1.6 Where possible, emergency eyewash and a shower should be in close proximity. A barrier cream may be used, in conjunction with the stated protective measures, as an additional safeguard against skin contact.

IV. SAFETY PRECAUTIONS (cont.)

4.2 Keep the cartridge lids closed when not in use. In case of spillage, absorb with inert material and dispose of in accordance with Federal, Provincial, and Municipal regulations in Canada and Federal, State, and County regulations in the United States of America.

4.3 No open flames, smoking or welding will be allowed in the immediate vicinity during the coating application.

4.4 All personnel on the application crew shall be informed of regulations regarding smoking, auto traffic restrictions, the meaning of warning bells, horns and whistles, fire warnings and restricted areas. Members of the coating crew shall maintain good personal hygiene, wash thoroughly after exposure to the coating application, particularly before eating or going on breaks.

V. MATERIALS

5.1 Please ensure that all SP-3888® Fast Cure Cartridges are properly sealed during storage.

5.2 **NO** amount of SP-3888® Fast Cure Cartridges shall be given, sold or exchanged without express written permission from SPC.

5.3 The acceptable shipping and storage temperature range for SP-3888® Fast Cure Cartridges is between 5°C (41°F) to 40°C (104°F).

5.4 Store SP-3888® Fast Cure Cartridges in a cool, dry, well-ventilated area. Keep the lids sealed. The shelf life is a maximum of 24 months in unopened containers.

VI. CLEANING

6.1 If cleaning is necessary, the following materials can be used:

- Use SP-100 Equipment Wash to clean uncured material on spatulas.
- Use SP-110 Tool Cleaner to clean cured material on objects such as putty knives or mixing blades.
- Brushes must be disposed of after use. **DO NOT** attempt to clean and re-use.

VII. INSURANCE

7.1 The contractor will provide all necessary insurance to protect itself and its employees during the application of SP-3888® Fast Cure Cartridge coating.

7.2 SPC will provide all necessary coverage to protect SPC Employees on site.

VIII. DISPOSAL

8.1 Dispose of completely empty Base and Hardener tubes according to Federal, Provincial, and Municipal regulations in Canada and Federal, State, and County regulations in the United States of America.

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