CORPORATE HEAD OFFICE
Specialty Polymer Coatings
#101, 20529 – 62nd Avenue, Langley, BC, CANADA V3A 8R4
Tel: (604) 514-9711 • Fax: (604) 514-9722

U.S.A. HEAD OFFICE
Specialty Polymer Coating USA, Inc
22503 FM521, Angleton, Texas, 77515, USA
Tel: (281) 595-3530 • Fax: (281) 595-3717

Effective: September 24, 2012 Rev. 1

SP-7888® - 100% SOLIDS EPOXY

BRUSH GRADE APPLICATION SPECIFICATION

STEEL SUBSTRATE

Certified to NSF/ANSI 61

I. GENERAL

1.1 SP-7888® Brush Grade is manufactured and marketed by **Specialty Polymer Coatings, Inc.** ("SPC"), #101 - 20529 - 62nd Avenue, Langley, B.C., Canada, V3A 8R4, Telephone: (604) 514-9711, Fax: (604) 514-9722

1.2 SP-7888® Brush Grade is applied by SPC approved applicators.

1.3 This specification covers hand applications of the material by brush or roller. For spray application, refer to the SP-7888® Spray Grade Application Specification. Only application to steel surfaces is intended.

1.4 SP-7888^{V} Brush Grade – Mixed Colour: Light Blue.

II. PACKAGING

2.1. 1. Part 'A' - Base
2. Part 'B' - Hardener

Note: Part 'A' - 3 Parts of Base (pre-measured) by volume
Part 'B' - 1 Part of Hardener (pre-measured) by volume

III. MIXING INSTRUCTIONS

3.1 Step # 1. Pre-mix Part 'A' (Base) slowly with a variable speed drill fitted with a mixing impeller. SPC mixing impellers assist in preventing the introduction of air into the coating and help to ensure a uniform mix.

Step # 2. Pour Part 'B' (Hardener) into Part 'A' (Base). The temperature of the coating components should be above 15°C (59°F) to enhance mixing.

Step # 3. Begin mixing slowly. After the initial mix has been achieved, a spatula or mixing stick should be used to remove any raw resin from the side of the container.

Step # 4. Mix at a speed that ensures a uniform mix, but does not create a vortex in the liquid. Slow the mixer down at the surface of the liquid to prevent the introduction of air into the coating. Ensure the impeller touches the container sidewall and under the container lip.

Step # 5. The ideal mixing and application temperature range is from 15°C (59°F) to 25°C (77°F).

Step # 6 Mix completely, blending both parts to create one uniform colour with no streaks.

Step # 7. Application may be done at this time by brushing or rolling. When coating pipe, do not remove application instruments from the bottom of the pipe. Always remove instruments on the up-stroke to prevent pulling material down and off the pipe bottom.

IV. POT LIFE

4.1 Workable pot life after mixing is 1 Hour 30 Minutes at 25°C (77°F). Pot life will be extended at lower temperatures and shortened at higher temperatures.

V. SURFACE PREPARATION

5.1 All surfaces to be coated shall be abrasive blasted to NACE 2, SSPC SP-10 (Near White) cleanliness or equivalent.

5.2 The resulting surface roughness profile shall be a minimum of 62.5 microns (2.5 mils) and a maximum of 125 microns (5.0 mils) peak to valley. Abrasive blast media to be used shall be dry and of a neutral pH, and contain no contaminants that may be injurious to the life expectancy of the applied coating. The abrasive blast media will be sharp and hard so as to produce an angular profile. The blast media will be deemed unacceptable if the chloride level is in excess of 5 ppm.

5.3 The underside and narrow edges of all angles, weld beads, pits and structural members must be blasted to the same surface condition as specified in Section 5.1. All surfaces must be cleaned of all blasting products, leaving no trapped particles or traces when blasting is completed.

5.4 All surfaces to be coated must be completely dry and free of moisture, grease, oil, soil, dust, and abrasive material or other contaminants at the time the coating is applied. Remove grease and oil with a suitable detergent. Remove salts and other contaminants by high-pressure fresh water cleaning. All weld spatter must be removed from the surface and rough welds must be ground smooth prior to coating. For preparation of tanks and vessels to be lined for immersion services, refer to NACE SP0178-2007 Appendix C, Weld Preparation Designation C.

5.5 Only that area that can be coated in a particular day shall be blast-cleaned. Blast-cleaning shall extend for at least 50 mm (2 in.) past the end of the coated area. Any area that is allowed to sit overnight must be returned to its original blast-cleaned condition. This requirement also applies to any blast-cleaned surface that has flash rusted as a result of exposure to rain or moisture.

5.6 If the coating operation is to continue to the following day, the edges of the area coated with SP-7888® Brush Grade are to be feathered down to the steel substrate after the coating has cured and before resumption of coating.

5.7 Blasting adjacent to freshly coated steel shall not commence until the SP-7888® Brush Grade has cured to a tack-free condition. All blasting onto existing SP-7888® Brush Grade must be directed from the coated surface to the adjacent substrate, rather than from the substrate onto the coating. The blasting should be initiated a minimum of 100 mm (4 in.) onto the existing coating.

V. SURFACE PREPARATION (cont.)

5.8 During the abrasive blast-cleaning operation, surrounding equipment shall be protected from the ingress of fine dust particles and other damage, and dust generation kept to a minimum. Spent abrasive shall be disposed of as required.

5.9 Prior to coating, all areas, including the floor, scaffolding, walkways and decks within 15 m (50 ft.) of the coating site, shall be swept or cleaned of abrasive products to prevent wind blown contamination of the coating surface.

5.10 Wetting of the ground in the vicinity of the coating operation may be necessary on new construction sites with bare ground and where high winds may occur.

VI. APPLICATION

6.1 Disposable tools such as brushes or short nap mohair rollers (available from SPC) should be used to apply SP-7888® Brush Grade.

6.2 SP-7888® Brush Grade must be applied to clean, dry surfaces only. Condensation, precipitation, water vapour or any other forms of contamination will **NOT** be acceptable on the blasted surface prior to coating. Surfaces subject to any of these conditions shall be cleaned with fresh water if necessary and re-blasted to return the surface to NACE 2, SSPC SP-10 cleanliness as per Section V.

6.3 The minimum substrate temperature is 10°C (50°F). The substrate temperature must be a minimum of 3°C (5°F) above the dew point temperature before proceeding with the coating operation. Refer to the attached Curing Table. SP-7888® - 100% Solids Epoxy is capable of curing down to 5°C (41°F) but the Dry Time will be extended.

6.4 The coating application can be performed in cold temperature conditions if the substrate is preheated. The maximum preheat temperature shall not exceed 50°C (122°F). Post-heating may be required for some applications to achieve an adequate cure depending upon ambient temperature, substrate wall thickness, and other variables. The coating must not be allowed to freeze before an adequate cure is reached.

VI. APPLICATION (cont.)

6.5 Preheating pipe may be accomplished by flame heating the surface with a propane torch prior to blasting or by the use of an induction coil or catalytic infrared heater subsequent to blasting and prior to coating. Post-heating pipe can only be done using an induction coil or catalytic infrared heater. The interior of tanks and other large vessels to be coated can be dehumidified and / or heated using forced air heaters. The resulting artificial environment must meet the conditions required by this specification for coating and curing the applied coating. All forced air heaters must be vented to the outside atmosphere.

6.6 The appropriate preheat temperature and cure time can be determined from the attached SP-7888® Curing Table. Specialty Polymer Coatings, Inc. does not recommend post-curing or force-curing SP-7888® Brush Grade at temperatures above 50°C (122°F).

6.7 SP-7888® Brush Grade cures to a tack-free condition in five (5) hours and to a hard condition in ten (10) hours at 25°C (77°F).

6.8 SP-7888® Brush Grade can be over-coated without the need for an additional tie coat. Over-coating is best accomplished while the previous coat is still tacky. Should the over-coating interval exceed 48 hours at 25°C (77°F), the surface should be blast roughened prior to application of the topcoat.

VII. APPEARANCE OF FINISHED COATING

7.1 The finished coating shall be generally smooth and free of protuberances or holidays. All surfaces shall have the required minimum DFT. In general, the surface of the coating shall be no rougher than the base or substrate material. No drips, running, sagging or other discontinuities are acceptable.

7.2 The applicator shall exercise every reasonable precaution to assure proper application of the coating and satisfactory protection of the steel surface.

VIII. INSPECTION

8.1 The owner's appointed representative must inspect the quality of all blasted surfaces, including cleaning of abrasive from these surfaces prior to the application of SP-7888® Brush Grade. Acceptance to be given by said representative to the owner and contractor's representative.

8.2 Wet Film Thickness (WFT) measurements should be continuously taken to ensure the minimum film thickness specified. WFT measurements should be taken using SPC approved WFT gauges.

8.3 After the SP-7888® Brush Grade has cured to a tack-free condition, the owner's representative and / or contractor's inspector shall measure the DFT with an SPC approved, calibrated, magnetic gauge or electronic DFT gauge. The appointed inspector shall notify the applicator of their acceptance. Notification to the applicator of all inadequately coated sections must be made immediately.

8.4 Holiday testing of the finished coating film may be performed to ensure adequate corrosion protection. The holiday testing of SP-7888® Brush Grade is to be carried out in accordance with either ASTM G 62-07 or NACE SP0188-2006.

8.5 Immediately upon completion of the work, the coating application shall be subject to final inspection by SPC and / or the owner's representative. Notification of all defects must be made within a reasonable time frame from completion of the work to allow for all repairs within the allowed time frame for the project.

IX. REPAIRS

9.1 Repair of pinholes and holidays 100 mm (4 in.) or less in diameter may be accomplished by using SP-7888® Brush Grade in accordance with the following:

- ☐ Repair areas should be roughened using carborundum cloth, sandpaper, file, or surface grinder.
- ☐ The adjacent coating should be abraded for a minimum distance of 25 mm (1 in.) to ensure inter-coat adhesion.
- ☐ If necessary on larger repairs, feather the edges of the adjacent coating.
- ☐ Wipe with a clean cloth to remove dust. Wear a dust respirator for all sanding or grinding activities.
- ☐ All surfaces to be coated shall be clean and completely dry prior to the application of the coating.
- ☐ The minimum surface temperature for coating is 10°C (50°F). The substrate temperature must be a minimum of 3°C (5°F) above the dew point temperature.
- ☐ The coating application can be performed in cold temperature conditions if the substrate is preheated. The maximum preheat temperature shall not exceed 50°C (122°F). Post-heating may be required for some applications to achieve an adequate cure depending upon ambient temperature, substrate wall thickness, and other variables. The coating must not be allowed to freeze before an adequate cure is reached.
- ☐ Preheating pipe may be accomplished by flame heating the surface with a propane torch prior to blasting or by the use of an induction coil or catalytic infrared heater subsequent to blasting and prior to coating. Post-heating pipe can only be done using an induction coil or catalytic infrared heater. The interior of tanks and other large vessels to be coated can be dehumidified and / or heated using forced air heaters. The resulting artificial environment must meet the conditions required by this specification for coating and curing the applied coating. All forced air heaters must be vented to the outside atmosphere.
- ☐ The appropriate preheat temperature and cure time can be determined from the attached SP-7888® Curing Table. Specialty Polymer Coatings, Inc. does not recommend post-curing or force-curing SP-7888® Brush Grade at temperatures above 50°C (122°F).
- ☐ Hand-mix a small quantity of SP-7888® Brush Grade in a container in the ratio of 3 parts Base to 1 part Hardener (by volume) using a variable speed drill fitted with a mixing impeller until the coating colour becomes uniform with no streaks as per Section III.
- ☐ Apply the coating to the required thickness on the area to be repaired using a paintbrush or roller.
- ☐ Extend the coating to at least 25 mm (1 in.) over the surrounding pre-roughened coating.

IX. REPAIRS (cont.)

9.2 Areas larger than 100 mm (4 in.) in diameter shall be repaired or brush striped using SP-7888® Brush Grade kits in accordance with the following:

- ☐ Areas requiring repair or brush striping shall be prepared with a surface grinder or by abrasive blasting. All edges of the surrounding area shall be feathered. Wear a dust respirator for all grinding activities.
- ☐ The surface to be coated shall be completely clean and dry prior to application of the coating.
- ☐ The minimum surface temperature for coating is 10°C (50°F). The substrate temperature must be a minimum of 3°C (5°F) above the dew point temperature.
- ☐ The coating application can be performed in cold temperature conditions if the substrate is preheated. The maximum preheat temperature shall not exceed 50°C (122°F). Post-heating may be required for some applications to achieve an adequate cure depending upon ambient temperature, substrate wall thickness, and other variables. The coating must not be allowed to freeze before an adequate cure is reached.
- ☐ Preheating pipe may be accomplished by flame heating the surface with a propane torch prior to blasting or by the use of an induction coil or catalytic infrared heater subsequent to blasting and prior to coating. Post-heating pipe can only be done using an induction coil or catalytic infrared heater. The interior of tanks and other large vessels to be coated can be dehumidified and / or heated using forced air heaters. The resulting artificial environment must meet the conditions required by this specification for coating and curing the applied coating. All forced air heaters must be vented to the outside atmosphere.
- ☐ The appropriate preheat temperature and cure time can be determined from the attached SP-7888® Curing Table. Specialty Polymer Coatings, Inc. does not recommend post-curing or force-curing SP-7888® Brush Grade at temperatures above 50°C (122°F).
- ☐ Mix SP-7888® Brush Grade as per Section III.
- ☐ Coat the area for repair or brush striping in accordance with Section VI.

9.3 Uncured areas requiring re-coating shall first have all uncured material removed and shall have the surface re-cleaned in accordance with Section V taking care to feather the edges of the surrounding coating. Re-application of the coating shall be in accordance with Sections VI, VII and VIII.

X. SAFETY PRECAUTIONS

10.1 The contractor will provide accessible, safe and secure work areas.

10.2 Other contract services will be halted as necessary so as not to interfere with the workflow of the coating application.

10.3 SPC coating products are **HARMFUL IF ABSORBED THROUGH THE SKIN, INHALED OR SWALLOWED.** They are skin and eye irritants. Personal protective equipment is required. Refer to the **Material Safety Data Sheets**.

10.3.1 Chemical resistant gloves with a long cuff that will overlap the 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.

10.3.2 Wear an appropriate, properly fitted vapour respirator (NIOSH / OSHA approved) during application where vapour / mist are 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. Wear a dust respirator for any activity such as sanding or grinding of cured coating.

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

10.3.4 Wear impervious boots.

10.3.5 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.

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

X. SAFETY PRECAUTIONS (cont.)

10.4 Keep the containers 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.

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

10.6 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 and wash thoroughly after exposure to the coating application, particularly before eating or going on breaks.

XI. MATERIALS

11.1 All coating containers must be sealed prior to use. Product exposed to the atmosphere must be protected with a blanket of dry inert gas before closing.

11.2 **NO** amount of SPC coating products shall be given, sold or exchanged without express written permission from SPC.

11.3 The acceptable shipping and storage temperature range for SP-7888® Brush Grade is between 5°C (41°F) to 40°C (104°F).

11.4 SP-7888® Brush Grade shall be stored in a cool, dry, well-ventilated area. Keep the container lids sealed when not in use. The Shelf Life of SP-7888® Brush Grade is a maximum of 24 months from the date of manufacture if the materials are in unopened containers.

XII. SUBSTRATE TYPES

12.1 This specification is applicable to standard steels only.

12.2 Exotic metals, stainless steel or other special types of steel or alloys may require different consideration as to surface preparation and SPC formulations. Notification of the use of such metals must be made to SPC.

XIII. CLEANING

13.1 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 and rollers must be disposed of after use. **DO NOT** attempt to clean and re-use.

XIV. INSURANCE

14.1 The contractor will provide all necessary insurance to protect itself and its employees during the application of SPC coating products.

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

XV. DISPOSAL

15.1 Dispose of empty Base and Hardener containers according to Federal, Provincial, and Municipal regulations in Canada and Federal, State, and County regulations in the United States of America. Allow all mixed material to complete gel prior to disposal.

SPECIALTY POLYMER COATINGS, INC. (SPC)

Corporate Head Office

#101 – 20529 – 62nd Avenue
Langley, BC, CANADA V3A 8R4

Phone: (604) 514-9711
Fax: (604) 514-9722

U.S.A. Head Office

22503 FM 521
Angleton, TX USA 77515

Phone: (281) 595-3530
Fax: (281) 595-3717

www.spc-net.com