

SP-2888[®] R.G. BRUSH GRADE APPLICATION SPECIFICATION / STEEL SUBSTRATE



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SPECIALTY POLYMER COATINGS, INC. (SPC)

SP-2888[®] R.G. BRUSH GRADE APPLICATION SPECIFICATION STEEL SUBSTRATE

I. GENERAL

- 1.1 SP-2888[®] R.G. Brush Grade is a 100% solids, epoxy-urethane 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, and applied by SPC approved applicators.
- 1.2 This specification covers hand applications of the material by brush or roller. Spray application of SP-2888[®] R.G. Brush Grade **is not covered.**
- 1.3 SP-2888[®] R.G. 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. SURFACE PREPARATION

- 3.1 All bare steel surfaces shall be a minimum of 3°C (5°F) or more above the dew point and will be abrasive blasted to SSPC SP-10, NACE #2 (Near White) cleanliness or equivalent. 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.
- 3.2 All surfaces must be cleaned of all blasting products, leaving no trapped particles or traces when blasting is completed.

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- 3.3 All surfaces to be coated must be completely dry, free of moisture, soil, dust and abrasive material at the time the coating is applied. All weld spatters must be removed from the surface.
- 3.4 Only that area that can be coated in a particular day shall be blast-cleaned and should extend for at least 50 mm (2") past the end. 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.
- 3.5 If the coating operation is to continue to the following day, the edges of the area coated with SP-2888[®] R.G. Brush Grade are to be feathered down to the steel substrate after the coating has cured and before resumption of coating.
- 3.6 Blasting of all bare steel shall meet the requirements of this specification and the parent coating shall be blast roughened for a minimum distance of 50mm (2").
- 3.7 Excess abrasive shall be removed from the pipe and work area to prevent contamination of the coating surface.
- 3.8 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.

IV. MIXING INSTRUCTIONS

- 4.1 Step # 1. SPC mixing impellers assist in preventing the introduction of air into the coating and help to ensure a uniform mix. The ideal mixing temperature is between 15°C (59°F) and 35°C (95°F).
- Step # 2. Care must be taken to ensure that only Base and Hardener with the same colour coded dots (shown on the container lids) are mixed together. The kit sizes are also identified on the container lids. Only mix Base and Hardener identified by the same kit size.

Refer to the Colour Chart at the end of this application specification.

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IV MIXING INSTRUCTIONS (cont.)

- Step # 3. Pre-mix base for one (1) minute at temperatures between 15°C (59°F) and 20°C (68°F). Pour Part B Hardener into Part A base and blend together. Scrape walls of container to remove unmixed material and re-introduce to center of kit. Continue blending until uniform in color with no streaks present.
- 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.
- Step# 5 Applications may be done at this time by brushing or rolling.
- Step # 6 Prior to container disposal, a small amount of mixed material shall be placed in the hardener container. This is mixed sufficiently to allow the unused hardener to activate.

V. POT LIFE

- 5.1 Workable pot life after mixing is 15 +/- 5 minutes at 25°C (77°F). Pot life will be extended at lower temperatures and shortened at higher temperatures.

VI. APPLICATION

- 6.1 Disposable tools such as brushes or rollers (also available from SPC) should be used to apply SP-2888[®] R.G. Brush Grade.
- 6.2 SP-2888[®] R.G. Brush Grade must be applied to a visually clean, dry surfaces in accordance with section III of this specification
- 6.3 The acceptable substrate temperature range for application of SP-2888[®] R.G. Brush Grade is 10°C (50°F) to 100°C (212°F). The substrate temperature must be a minimum of 3°C (5°F) above the dew point temperature before proceeding with the coating operation.

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VI APPLICATION (cont.)

- 6.4 Coating application can be performed in cold temperature conditions if the substrate is preheated. For some applications, post-heating may be required to achieve an adequate cure depending upon ambient temperature, pipe wall thickness, and other variables. The coating must not be allowed to freeze before an adequate cure is reached. Preheating and post-heating may also be utilized if a rapid cure time is required.
- 6.5 Preheating may be accomplished with direct flame, induction heat, catalytic infrared heater or heat gun. Preheating after blasting can be accomplished using induction coil, catalytic infrared heater or heat gun. Post-heating can be performed with induction coil, catalytic infrared heater, heat gun or indirect heat.
- 6.6 SP-2888[®] R.G. 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. The maximum overcoat interval is described as when the coating is still thumbnail soft. Any coating beyond thumbnail hard will require surface preparation in accordance with this standard prior to re-coating.

VII. APPEARANCE OF FINISHED COATING

- 7.1 The finished coating shall be generally smooth and free of protuberances. All surfaces shall have the required minimum DFT. No drips, running, sagging or other discontinuities are acceptable.

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-2888[®] R.G. Brush Grade. Acceptance to be given by said representative to the owner and contractor's representative.
- 8.2 Wet Film Thickness (WFT) measurements can be taken as a guideline for dry film thickness requirements.
- 8.3 After the SP-2888[®] R.G. Brush Grade has cured to a dry-hard condition, the owner's representative and / or contractor's inspector shall measure the DFT with an approved, calibrated, magnetic gauge and / 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 suggested voltage used for holiday detection will be 3,000DCV for standard corrosion protection of 20-50 mils, and 5,000DCV for ARO coating of 40-70 mils. All other holiday detection procedures shall be in accordance with NACE SP0188-2006.

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8.5 Once the coating has reached a dry hard condition, the coating application shall be subject to final inspection. 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. Shore D Hardness readings can be taken periodically to verify the coating procedure is resulting in Shore D Hardness of 80 or more prior to handling and/or backfilling.

IX. REPAIRS

9.1 Repair of pinholes and holidays may be accomplished by using SP-2888[®] R.G. Cartridges and/or brush grade kits.

- Repair areas 12” diameter or less should be roughened mechanically or manually using 80 grit or coarser, sandblasting or MBX Bristle Blaster. All repairs in excess of 12” diameter will be prepared by sandblasting or MBX Bristle Blaster.
All gloss must be removed from parent coating in abraded area.
- The adjacent coating should be abraded for a minimum distance of 25 mm (1”) to ensure inter-coat adhesion.
- A dust respirator should be worn for all sanding or grinding activities. A dry clean brush should be used to remove dust or blow off with dry clean air.
- All surfaces to be coated shall be visibly 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.
- For some applications, pre-heating and post-heating may be required to achieve an adequate cure depending upon ambient temperature, pipe wall thickness, and other variables. The coating must not be allowed to freeze before an adequate cure is reached. The maximum preheat temperature shall not exceed 100°C (212°F).
- Preheating may be accomplished with heat gun or indirect heat. Post heating can be performed with heat gun or indirect heat.
- Eject the required amount of material from the cartridge onto a clean tray using the manual dispenser.
- For Repair cartridges, hand-mix the product with a stir stick until the coating colour becomes uniform with no streaks. Alternately, attach a static mixer to the cartridge and dispense through the mixer. For Brush Kits, mix in accordance with Section IV Mixing Instructions.

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- Apply the coating to the required thickness on the area to be repaired using a spatula, paintbrush, tongue depressor or trowel.
- All abraded areas must be completely covered with repair material.

X. SAFETY PRECAUTIONS

- 10.1 Emergency eyewash 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.
- 10.2 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.
- 10.3 No open flames, smoking or welding will be allowed in the immediate vicinity during the coating application.
- 10.4 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.

XI. MATERIALS

- 11.1 SP-2888® R.G. Brush Grade containers must be sealed prior to use.
- 11.2 **NO** amount of SP-2888® R.G. Brush Grade shall be given, sold or exchanged without express written permission from SPC.
- 11.3 The acceptable shipping and storage temperature range for SP-2888® R.G. Brush Grade is between 5°C (41°F) to 40°C (104°F).
- 11.4 Store SP-2888® R.G. Brush Grade in a cool, dry, well-ventilated area. Keep the lids sealed. The Shelf Life is a maximum of 24 months in unopened containers. Expiration dates are marked on the containers and the boxes they are packaged in.

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XII. SUBSTRATE TYPES

- 12.1 This specification is applicable to standard steels only.
- 12.2 Polyolefin, 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 substrates must be made to SPC.

XIII. CLEANING

- 13.1 – 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 SP-2888® R.G. Brush Grade.
- 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 completely gel prior to disposal.

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SP-2888® R.G. BRUSH CURING TABLE

SUBSTRATE TEMPERATURE	Brush Grade
90°C (194°F)	2 Minutes
80°C (176°F)	3 Minutes
70°C (158°F)	5 Minutes
60°C (140°F)	9 Minutes
50°C (122°F)	37 Minutes
40°C (104°F)	1 Hour 20 Minutes
30°C (86°F)	1 Hour 45 Minutes
20°C (68°F)	5 Hours 40 Minutes
10°C (50°F)	16 Hours











Substrate: 12 mm (0.5 in.) Thick Steel Panels

Brush Grade Material Temperature: Base and Hardener: 25°C (77°F)

Dry Film Thickness: 0.50 mm (20 mils) DFT as per ASTM D1640

Note: The information above is to serve as a guide only. The test results were compiled under laboratory-controlled conditions. Field results may vary due to variable conditions such as radiant heat loss and the cooling effects of wind.

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SPECIALTY POLYMER COATINGS, INC. (SPC)				
BRUSH GRADE COATING KITS				
<u>COLOUR CHART</u>				
Match Base & Hardener Based on Colour Coded Dots Below				
<u>SIZE</u>	<u>COLOUR</u>		<u>VOLUME</u>	
			<u>BASE</u>	<u>HARDENER</u>
0.50 Litres	PINK		0.3750 Litres	0.1250 Litres
0.75 Litres	FL GREEN		0.5625 Litres	0.1875 Litres
1.00 Litres	RED		0.7500 Litres	0.2500 Litres
1.25 Litres	PURPLE		0.9375 Litres	0.3125 Litres
1.50 Litres	YELLOW		1.1250 Litres	0.3750 Litres
1.75 Litres	ORANGE		1.3125 Litres	0.4375 Litres
2.00 Litres	BLACK		1.5000 Litres	0.5000 Litres
2.25 Litres	BLUE		1.6875 Litres	0.5625 Litres
2.50 Litres	GREEN		1.8750 Litres	0.6250 Litres
2.75 Litres	WHITE		2.0600 Litres	0.6900 Litres

Note: FL = Fluorescent