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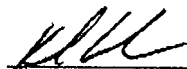
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Report #05-2165-1

Testing Performed on Spray Applied
SPC SP-2888 R.G. (Blue)

For: Bob Alliston
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By:



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November 18, 1998

INTRODUCTION

Panels spray-coated with SPC SP-2888 R.G. (Blue) were delivered to this laboratory, September 9, 1998, for testing. Testing included: flexibility, impact resistance, cathodic disbondment, hot water soak, and Taber abrasion.

TEST SECTION

Flexibility per CAN/CSA-Z245.20-M92, Clause 12.11

This test was performed on 4.76mm thick panels. Straps were cut from some of the panels which measured 25mm wide by 200mm long and placed in a cooling chamber for a minimum of one hour at -30°C. The straps were bent on a fixed-radius mandrel apparatus. (Test Date: 9-14-98)

Coating Prequalification Test Requirements : 3.0°/pd - No Cracking
Production Coating Test Requirements : 2.5°/pd - No Cracking

<u>Strap</u>	<u>Temp.</u>	<u>Avg. DFT</u>	<u>Mandrel</u>	<u>° / pd</u>	<u>Pass / Fail</u>
1	-30°C	25 mils	10"	1.600	Delamination
2	-30°C	23 mils	25"	0.640	Pass
3	-30°C	25 mils	17"	0.946	Delamination
4	-30°C	25mils	20"	0.791	Pass
5	-30°C	25 mils	20"	0.791	Pass
6	-30°C	27 mils	20"	0.800	Crack
7	-30°C	26 mils	25"	0.645	Pass

Impact Resistance per CAN/CSA-Z245.20-M92, Similar to Clause 12.12

The impactor consisted of a 1.36 kilogram falling weight with a 14.29mm spherical contact. It was supported in a guide tube which allowed it to slide freely. Each impact site was checked using a 67.5 wet sponge holiday detector. (Test Dates: 10-20-98 / 10-22-98)

Coating Prequalification Test Requirements : 1.5 J - No Holidays
Production Coating Test Requirements : 1.5 J - No Holidays

<u>Temp.</u>	<u>Avg. DFT</u>	<u>Passes</u>	<u>Failures</u>
25°C	36 mils	3 @ 1.5J 3 @ 3.0J	N/A N/A
0°C	39 mils	3 @ 1.5J N/A	N/A 3 @ 3.0J
-30°C	34 mils	3 @ 1.5J N/A	N/A 3 @ 3.0J

Cathodic Disbondment per CAN/CSA-Z245.20-M92, Similar to Clause 12.8

This test was performed on panels measuring 100mm x 100mm x 3mm. A 3mm diameter holiday was drilled through the coating in order to expose the steel substrate. A 75mm diameter PVC pipe section 150mm tall was attached to the samples using a silicone sealant, and the resulting cells were filled with a 3% sodium chloride solution. These arrangements had 50mm diameter side-arm where the platinum wire anode was separated from the cathode area by a polyester filter plug. The specimens were placed in an enclosed hot-box at 80°C for 28 days. The plate-to-solution potential was maintained at 1.5 volts, as measured with a calomel reference electrode. The solution and filter were changed every seven days. At the completion of the test, the specimens were rinsed and the cells were removed. The test areas were scribed and the specimens were allowed to return to room temperature prior to evaluation. The radius of disbondment was measured from the center of the drilled holiday to the point where the coating exhibited good adhesion. (Test Date: 10-20-98 thru 11-17-98)

Coating Prequalification Test Requirements: 10 mm - Maximum Radius / 28 Days @ 20°C

<u>Specimen</u>	<u>Temp.</u>	<u>Avg. DFT</u>	<u>Average Disbondment</u>
1	80°C	26 mils	8 mmr
2	80°C	28 mils	9 mmr
3	80°C	31 mils	9 mmr

Hot Water Soak per CAN/CSA-Z245.20-M92, Similar to Clause 12.14

This test was performed on panels measuring 100mm x 100mm x 3mm. The specimens were placed in a hot water bath which was maintained at the required temperature. Three specimens were tested at 95°C for 24 hours and three specimens were tested at 75°C for 28 days. Upon completion of the tests, the panels were removed and a 25mm x 13mm rectangle was scribed on each panel. The panels were allowed to return to room temperature prior to evaluation. (Test Date: 10-20-98 thru 10-21-98 / 10-20-98 thru 11-17-98)

Coating Prequalification Test Requirements Rating of 1 to 3
Production Coating Test Requirements Rating of 1 to 3

<u>Specimen</u>	<u>Duration/Temp</u>	<u>Avg. DFT</u>	<u>Rating</u>
1	24 hours/95°C	22 mils	#1
2	24 hours/95°C	33 mils	#1
3	24 hours/95°C	26 mils	#1
1	28 Days/75°C	30 mils	#1
2	28 Days/75°C	31 mils	#1
3	28 Days/75°C	31 mils	#1

Taber Abrasion, Similar to ASTM D4060

This test was performed on duplicate Taber panels. Each panel was tested for 5000 cycles with a 1000 gram load using CS-17 wheels. The wheels were resurfaced every 500 cycles.
(Test Date: 10-11-98)

<u>Specimen</u>	<u>Weight Loss</u>	<u>Wear Index</u>	<u>Average Lost Mils</u>	<u>Cycles Per Mil</u>
1	0.2546 grams	0.0509 grams	3	1667
2	0.2713 grams	0.0543 grams	4	1250