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Certificate # L2267 Testing

Preliminary Report: Comparing the Corrosion Inhibiting Properties of NTI Multi-Metal Film to VpCI-126 ES

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Date: March 1, 2012

Background: Mike Gabor requested that the corrosion inhibiting properties of the NTI multi-metal film be evaluated and compared to VpCI-126 2.75 mil ES.

Sample Received: NTI Multi-metal film, green, unlabeled, received 02-20-12, good condition

Sample(s) labeled:

Method:

1) VIA Test CC-027
2) Razor Blade Test CC-004*
3) FTIR Test CC-006
4) Nitrite/Nitrate Test*

*Cortec Laboratory is not accredited for the test(s) marked

Materials:

1) VIA test kit
2) Razor Blade test kit
3) Perkin Elmer Paragon 1000 Spectrophotometer
4) Nitrite/Nitrate Test Strips
5) VpCI-126 ES Lot# 31776

Procedure: The tests were performed according to standard procedures.

Results:

Razor Blade Carbon Steel

Sample	Panel 1	Panel 2	Panel 3
NTI Multi-Metal Film	Pass	Pass	Fail
VpCI-126 ES	Pass	Pass	Pass
Control	Fail	-	-

Razor Blade Copper

Sample	Panel 1	Panel 2	Panel 3
NTI Multi-Metal Film	Fail	Fail	Fail
VpCI-126 ES	Pass	Pass	Pass
Control	Fail	-	-

VIA Test Results

Sample	Plug #1	Plug #2	Plug #3
NTI Multi-Metal Film	Grade 0	Grade 0	Grade 2
VpCI-126 ES	Grade 2	Grade 2	Grade 3
Control	Grade 0	-	-

Note: The VIA grading system is attached to the end of the report

Interpretations:

1. Based on the razor blade test results, the submitted green NTI multi-metal film provided limited contact-phase protection for the carbon steel and it failed to protect copper (to provide multi-metal protection).
2. The VIA test results for the NTI multi-metal film determined that it does not provide vapor-phase corrosion inhibition.
3. Based on FTIR results, the NTI multi-metal film was found to be nitrite-based.
4. VpCI-126 ES provided vapor-phase and contact-phase corrosion inhibition.
5. The final version of this report will be published after we get the physical property test results from Cambridge.

VIA Test Grades (Grade 2 or 3 are passing)

Grade 0:	Blind test No corrosion inhibiting effect
Grade 1:	Blind test Minute corrosion inhibiting effect
Grade 2:	Blind test Medium corrosion inhibiting effect
Grade 3:	Blind test Good corrosion inhibiting effect