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## *Evaluation of Zerust Paper*

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**Project #:** 10-227-1125(bis)

**Test conducted by:**

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**Background:** Two pieces of paper produced by Zerust were submitted for testing. One of the samples was an old formula of Zerust's paper, and the other piece of paper was their new formulation.

**Sample Received:**

1. Old Formula Zerust paper, good condition, received 11/08/10, no print
2. New Formula Zerust paper, good condition, received 11/08/10, labeled Zerust Excor

**Method:**

1. VIA test, CC-027
2. Razor Blade Test, CC-004
3. Nitrite Test

**Materials:**

- 1) VIA Test Kit
- 2) Razor Blade Test Kit
- 3) EM Quant Nitrate/Nitrite test Strips, Part#10020-1

**Procedure:** The above tests were performed according to standard procedures for each.

**Results:**

Razor Blade Test Performed on Carbon Steel Panels

Sample	Panel 1	Panel 2	Panel 3
Zerust Old Formula	Pass	Pass	Pass
Zerust New Formula	Pass	Pass	Pass
Control	Fail	-	-

Razor Blade Test Performed on Copper Panels

Sample	Panel 1	Panel 2	Panel 3
Zerust Old Formula	Pass	Pass	Pass
Zerust New Formula	Fail	Pass	Pass
Control	Fail	-	-

VIA Test

Sample	Plug #1	Plug #2	Plug #3
Zerust Old Formula	Grade 1	Grade 2	Grade 2
Zerust New Formula	Grade 3	Grade 3	Grade 2
Control	Grade 0	-	-

Note: VIA Grading system is attached below





Nitrite Test

Sample	Result
Zerust Old Formula	No Nitrite
Zerust New Formula	Heavily Nitrite Based

**Interpretations:**

- 1) Based on the VIA test results, the old formulation for Zerust paper did not provide sufficient vapor-phase corrosion protection.
- 2) The new formulation of the Zerust paper provided sufficient contact-phase and vapor-phase corrosion protection, but it was found to be heavily nitrite based. Cortec's VpCI-146 paper passes all the required tests and it is nitrite-free

**VIA Test Grades (Grade 2 or 3 are passing)**

	 <p style="text-align: center; margin: 0;">Grade 0</p>
<p>Grade 0:    Blind test               No corrosion inhibiting effect</p>	 <p style="text-align: center; margin: 0;">Grade 1</p>
<p>Grade 1:    Blind test               Minute corrosion inhibiting effect</p>	 <p style="text-align: center; margin: 0;">Grade 2</p>
<p>Grade 2:    Blind test               Medium corrosion inhibiting effect</p>	 <p style="text-align: center; margin: 0;">Grade 3</p>
<p>Grade 3:    Blind test               Good corrosion inhibiting effect</p>	