

- 4119 White Bear Parkway, St. Paul, MN 55110 USA
- Phone: (651) 429-1100, Fax: (651) 429-1122
- Toll Free: (800) 4-CORTEC, E-mail: info@cortecvci.com
- cortecvci.com • corcelaboratories.com

Evaluation of Corrosion Protection Offered by Competitor Films

From: Cortec Laboratories, Inc.
4119 White Bear Parkway
St. Paul, MN 55110

cc: Boris Miksic
Cliff Cracauer
Robert Kean
Ming Shen
Jay Zhang
Mike Gabor
Ivana Radic Borsic
Markus Bieber

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Results reported by:



John Wulterkens
Technical Service Supervisor



Cindy Mason
Lab Technician



Background:

A client of Cortec Middle East is currently using a competitor's film to protect their assets outdoors. Cortec Middle East can offer Cortec's films as an alternative and would like the competitor's films evaluated for their corrosion protection performance. The competitor films will be tested against Cortec's MilCorr and VpCI-126 HP UV films, which are also recommended for outdoor asset protection.

Sample Received:

Two film samples were received for testing in good condition, and labeled as follows:

1. VCI Lamina
2. VCI White UV

Method:

- VIA Test, CC-027
- Razor Blade Test, CC-004*

*Cortec laboratories, Inc. is not accredited for the test(s) marked.

Materials:

1. VpCI-126 HPUV (Lot #41795)
2. MilCorr (Lot #43236)
3. VIA test kit (testing jars and lids, steel plugs, 400 grit sandpaper)
4. Copper panels and Carbon Steel panels (SAE 1010)
5. Methanol (Lot #032916C)
6. 40 °C Oven (Oven #10)
7. Plain polyethylene film (control film)

Procedure:

Testing was conducted according to the standard written procedures for both the VIA and Razorblade tests.

Results:

Table 1: VIA Testing Results

Sample	Plug #1	Plug #2	Plug #3	End Result
MilCorr	Grade 3	Grade 3	Grade 3	Pass
VpCI-126 HP UV	Grade 3	Grade 3	Grade 3	Pass
VCI Lamina	Grade 1	Grade 1	Grade 1	Fail
VCI White UV	Grade 1	Grade 1	Grade 1	Fail
Control	Grade 0	Grade 0	Grade 0	Fail

Table 2: Carbon Steel Razorblade Testing Results

Sample	Panel #1	Panel #2	Panel #3	End Result
MilCorr	Pass	Pass	Pass	Pass
VpCI-126 HP UV	Pass	Pass	Pass	Pass
VCI Lamina	Fail	Fail	Fail	Fail
VCI White UV	Fail	Fail	Fail	Fail
Control	Fail	Fail	Fail	Fail

Table 3: Copper Razorblade Testing Results

Sample	Panel #1	Panel #2	Panel #3	End Result
MilCorr	Pass	Pass	Pass	Pass
VpCI-126 HP UV	Pass	Pass	Pass	Pass
VCI Lamina	Fail	Fail	Fail	Fail
VCI White UV	Fail	Fail	Fail	Fail
Control	Fail	Fail	Fail	Fail

Photos:

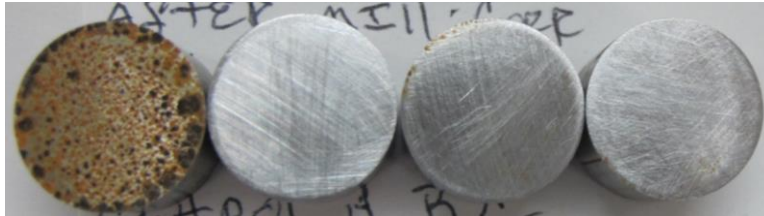


Figure 1: MilCorr Film: Control, Plug #1, Plug #2, Plug #3 (from left to right).



Figure 2: VpCI-126 HP UV Film: Control, Plug #1, Plug #2, Plug #3 (from left to right).



Figure 3: VCI Lamina Film: Control, Plug #1, Plug #2, Plug #3 (from left to right).



Figure 4: VCI White UV Film: Control, Plug #1, Plug #2, Plug #3 (from left to right).

Interpretations:

Both film samples submitted for testing by Cortec Middle East showed inferior corrosion protection to Cortec's VpCI-126 HPUV and MilCorr films. Both competitor films failed the razor blade tests for carbon steel and copper, showing insufficient contact corrosion protection. Both the VCI Lamina and VCI White UV films also failed the VIA test, demonstrating inferior vapor phase corrosion protection.

Both the MilCorr and VpCI-126 films tested passed all corrosion tests, showing excellent contact and vapor phase corrosion protection.