



- 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
- Internet <http://www.cortecvci.com>

Comparing anticorrosion properties of Daubert and Armor films with VpCI-126

Background: The Customer wanted the anticorrosion characteristics of VpCI-126 film compared to Daubert .004 Premium Metal Guard and Armor Poly VCI SWS.

Purpose: Evaluate anticorrosion properties of VpCI-126 film, Daubert .004 Premium Metal Guard, and Armor Poly VCI SWS.

Materials: Carbon Steel Panels
 Copper Panels
 VpCI-126 film, 4 mil, lot # 700240
 Daubert .004 Premium Metal Guard, 4 mil
 Armor Poly VCI SWS, 4 mil
 Uncoated Polyethylene film, 4 mil (control film)
 Perkin Elmer FT-IR 1000 Spectrometer
 Razor Blade test kit
 VIA test kit
 Nitrite Test Kit

Method: Razor Blade test
 VIA test
 FT-IR test

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

Results:

Razor Blade Test Performed on Carbon Steel Panels

Film	Panel 1	Panel 2	Panel 3
Daubert	Pass	Pass	Pass
Armor	Pass	Pass	Pass
VpCI-126 (typical results)	Pass	Pass	Pass
Control	Fail	Fail	Fail



Razor Blade Test Performed on Copper Panels

Film	Panel 1	Panel 2	Panel 3
Daubert	Fail	Fail	Fail
Armor	Fail	Fail	Fail
VpCI-126 (typical results)	Pass	Pass	Pass
Control	Fail	Fail	Fail

VIA Test

Film	Plug 1	Plug 2	Plug 3
Daubert	1	2	2
Armor	1	0	1
VpCI-126 (typical results)	3	3	3
Control	0	0	0

FT-IR results are attached at the end of the report.

Conclusion:

1. The results determined that Armor Poly VCI SWS provided insufficient protection against corrosion. It failed the VIA test and the razor blade test on copper but passed the razor blade test for steel. The FT-IR showed insufficient amounts of corrosion inhibitor.
2. Daubert .004 Premium Metal Guard exhibited inadequate anticorrosion properties. It inhibited contact corrosion for carbon steel but it failed to protect the yellow metals and barely passed the VIA test.
3. According to FT-IR, Armor and Daubert films contain sodium benzoate and sodium nitrite as an inhibitor package.
4. VpCI-126 was the only film that inhibited contact corrosion for carbon steel and copper and it also provided excellent vapor phase corrosion inhibition.

Project #: 07-270-1125

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



Grade 0



Grade 1



Grade 2



Grade 3





