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***Evaluation of Fuchs Anticorit UNI-FI Film
Compared to Cortec's VpCI-126 film***

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Project #: 15-138-1125

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Background: A sample of Fuchs Anticorit VCI UNI-FI film has been submitted for testing, and it will be compared to Cortec VpCI-126 Blue film.

Sample Received: Green Fuchs Film, 3mil (received on 6-22-15 in good condition)

Method: VIA Test, CC-027
Razor Blade Test, CC-004*
Nitrite/Nitrate Test*
FTIR analysis, CC-006

**Cortec Laboratories, Inc. is not ISO/IEC 17025 accredited for the test(s) marked.*

Materials: VIA test kit
Razor blade test kit
Nitrite/Nitrate Test Strips
Paragon 1000 FTIR
VpCI-126 film, 4mil (batch #36225)
Plain polyethylene film, 2mil (control)

Procedure: The tests were conducted according to standard procedures for each test.

Results:

Razor Blade Test- Carbon Steel Panels

Sample	Panel #1	Panel #2	Panel #3	End Result
Fuchs Anticorit VCI UNI-FI film (front side)	Pass	Pass	Pass	Pass
Fuchs Anticorit VCI UNI-FI film (back side)	Fail	Fail	Fail	Fail
Cortec's VpCI-126 film	Pass	Pass	Pass	Pass
Control	Fail	-	-	Fail

Razor Blade Test- Copper Panels

Sample	Panel #1	Panel #2	Panel #3	End Result
Fuchs Anticorit VCI UNI-FI film (front side)	Pass	Pass	Pass	Pass
Cortec's VpCI-126 film	Pass	Pass	Pass	Pass
Control	Fail	-	-	Fail

VIA Test

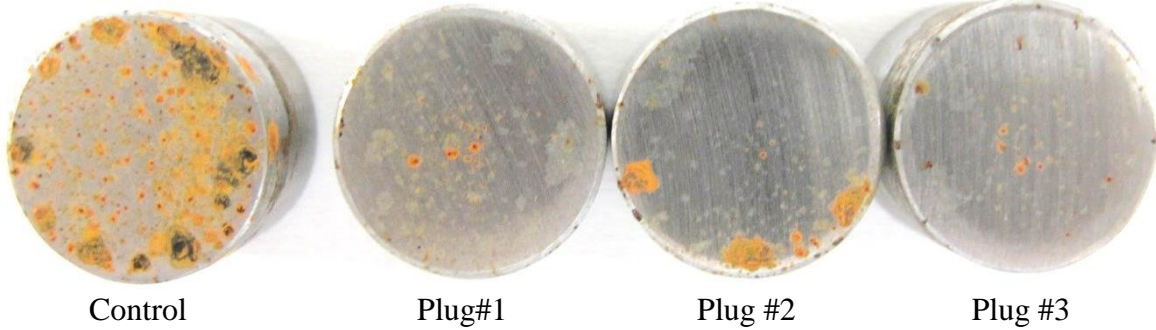
Sample	Plug #1	Plug #2	Plug #3	End Result
Fuchs Anticorit VCI UNI-FI film	Grade 1	Grade 1	Grade 2	Fail
Cortec's VpCI-126 film	Grade 3	Grade 3	Grade 2	Pass
Control	Grade 0	-	-	Fail

Nitrite/Nitrate Test Strip Results

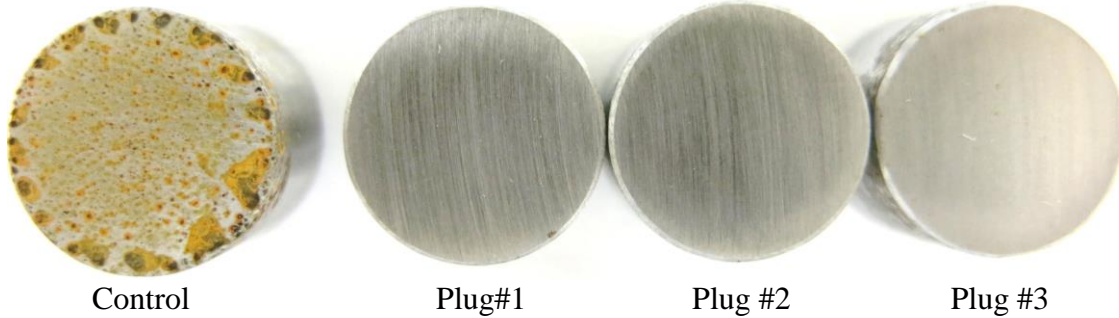
Sample	Results
Fuchs Anticorit VCI UNI-FI film	Does not contain any nitrite or nitrate

Photos from VIA Testing:

Fuchs Anticorit VCI UNI-FI film (tested with two 2"x6" strips of film per jar)



Cortec's VpCI-126 film (tested with two 1"x6" strips of film per jar)

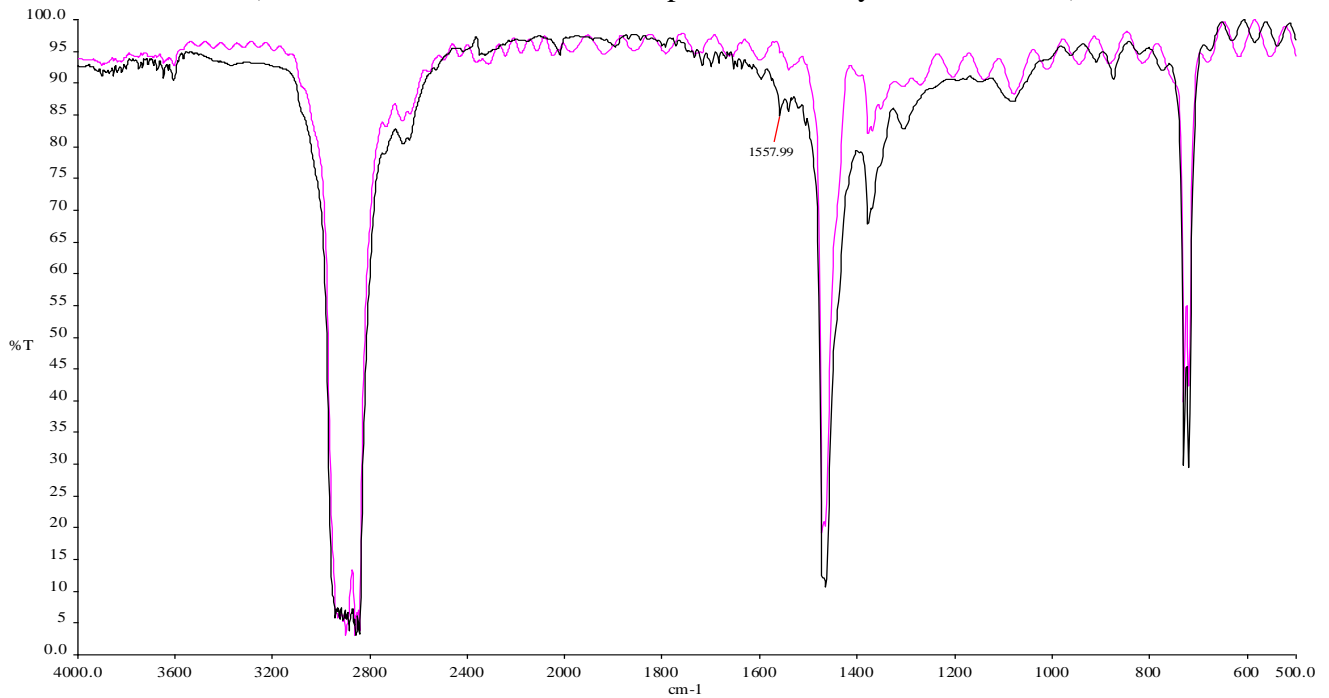


VIA Test Grades (Grade 2 or 3 are passing)
All three plugs must be grade 2 or better to pass the test

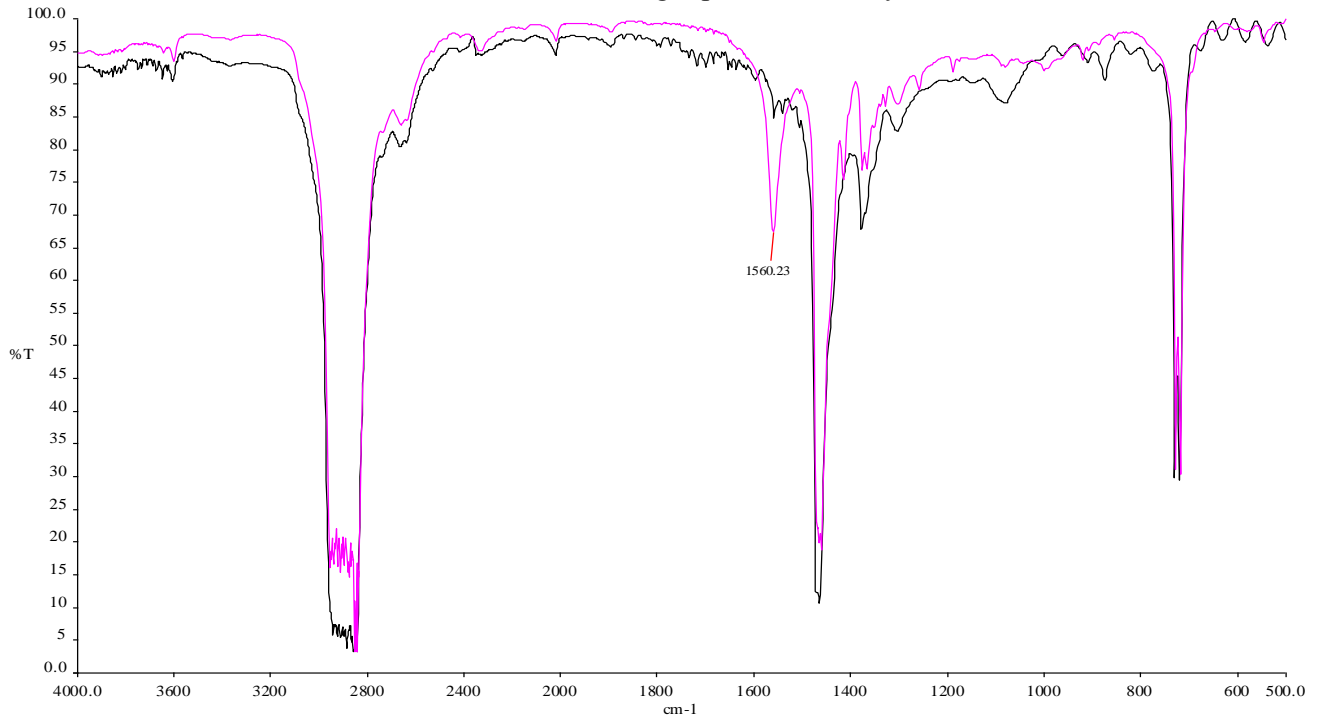
		Grade 0
Grade 0:	Blind test	
	No corrosion inhibiting effect	Grade 1
Grade 1:	Blind test	
	Minute corrosion inhibiting effect	Grade 2
Grade 2:	Blind test	
	Medium corrosion inhibiting effect	Grade 3
Grade 3:	Blind test	
	Good corrosion inhibiting effect	

FTIR Analysis

Fuchs Anticorit VCI UNI-FI film compared to plain polyethylene film
(note- Fuchs film shows a small peak of carboxylic acid at 1558)



Fuchs Anticorit VCI UNI-FI film compared to Cortec's VpCI-126 film
(note- Cortec's film shows the stronger peak of carboxylic acid at 1560)



Interpretations:

It was determined that the Fuchs Anticorit VCI UNI-FI film was co-extruded, because razor blade testing passed on one side of the film, but not the other side. Vapor phase protection was not sufficient to pass the VIA test. No nitrite or nitrate was found in the film. FTIR analysis shows a small peak of carboxylic acid. However, when comparing to Cortec's film, VpCI-126 shows a much stronger peak of carboxylates and also provides excellent vapor phase and contact corrosion protection.