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Evaluating Zerust ExCorr film & Cortec VpCI-126 film at 2 mil

Background: An evaluation is sought on the corrosion inhibiting abilities of Zerust ExCorr film, and Cortec VpCI-126 film. Film caliper of interest is 2 mil or 0.002".

Purpose: Evaluate and compare the corrosion inhibition of Zerust ExCorr film and Cortec VpCI-126 film at 2 mil.

Method:
Razor Blade Test
VIA Test
ASTM D 1748-83
Nitrite Test
FT-IR analysis

Materials:
Razor Blade Test Kit
VIA Test Kit
Environmental Chamber
Zerust ExCorr Film, monoextruded film (2 mil)
Cortec VpCI-126 Film (2 mil)
EM Quant Nitrite/Nitrate Test Strips, Lot #HC750922, Exp 2/10
Perkin Elmer FT-IR Spectrometer

Procedure: The above tests were performed according to standard procedures for each. For ASTM D 1748-83, three carbon steel panels were wrapped in Cortec VpCI-126 film, three panels were wrapped in Zerust ExCorr film, and a control film enclosed one carbon steel panel.

Results:

Razor Blade Test

Material	Panel #1	Panel #2	Panel #3
Cortec VpCI-126 Film	Pass	Pass	Pass
Zerust ExCorr Film	Pass	Pass	Pass
Control	Fail	Fail	Fail

VIA Test

Material	Plug #1	Plug #2	Plug #3
Cortec VpCI-126 Film	Grade 3	Grade 3	Grade 3
Zerust ExCorr Film	Grade 1	Grade 1	Grade 1
Control	Fail	Fail	Fail

ASTM D 1748-83

Material	Panel #1	Panel #2	Panel #3
Cortec VpCI-126 Film (2 mil)	Corrosion observed after nine days, very slight	Corrosion observed after nine days, very slight	Corrosion observed after nine days, very slight
Zerust ExCorr Film (2 mil)	Corrosion observed after six days*	Corrosion observed after six days*	Corrosion observed after six days*
LDPE Control Film (2 mil)	Corrosion observed at three days	---	---

*This sixth day occurred on a Monday and panels were not checked during the weekend, which occurred on the fourth and fifth days. Zerust ExCorr Film protected panels, showed significant corrosion.

Nitrite Test: Zerust ExCorr Film (2 mil) is nitrite based.

Photos attached

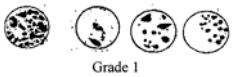
Conclusion:

(1) Zerust ExCorr film failed VIA test and provided a shorter time of protection than Cortec VpCI-126 film during ASTM D 1748-83 test.
(2) Zerust ExCorr film is nitrite based. From FT-IR analysis, nitrite, LDPE and yellow pigment are only materials observable from spectrum.

VIA Test Grades (Grade 2 or 3 are passing)


Grade 0

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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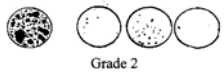
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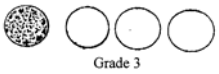
Grade 3