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Evaluation of Daubert VCI PCR film vs. Cortec VpCI-126 PCR film

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Background:

The *Daubert Cromwell Blue VCI-Film, 120 microns thickness, 30% PCR-Content* sample was provided by a packer customer of Corpac AG. This packer has been buying VpCI-126 Mono-Film, 120 microns, 30%-PCR-Blue up to this day. This report will evaluate and compare the corrosion protection and mechanical properties of the supplied film and Cortec VpCI-126 PCR film.

Sample Received:

Sample received 15.05.2025. in good condition.

- Daubert Cromwell Blue VCI-Film, 120 microns thickness, 30% PCR-Content
- VpCI-126 PCR film, #62069, 120 microns thickness, produced 28.02.2024.

Method:

- Razor Blade Test, E-001*
- VIA NACE – NACE TM0208
- Thickness – ASTM D6988
- Tensile strength at Break – ASTM D882-02
- Elongation at Break – ASTM D882-02
- Yield Strength – ASTM D882-02
- Tear Strength – ASTM D1922
- Impact puncture – ASTM D3420

*Cortec Method

Materials:

1. VIA NACE Test Kit (testing jars/apparatus, steel plugs, 400grit sandpaper)
2. Razor Blade Test Kit
3. Glycerol (lot #230567-2198)
4. Methanol, ACS grade (lot #24B144036)
5. 0.005% NaCl
6. Water bath set for 50°C
7. Oakland Instrument MT-1528
8. Elmendorf Tearing Tester

Procedure:

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

Results:

The following results were found:

Table 1: Razor Blade Test- Carbon Steel Panels

Sample	Panel #1	Panel #2	Panel #3	End Result

Daubert Cromwell Blue VCI PCR Film	Pass	Pass	Pass	Pass
VpCI-126 PCR #62069	Pass	Pass	Pass	Pass
Control	Fail	--	--	Fail

Table 2: Razor Blade Test- Copper Panels

Sample	Panel #1	Panel #2	Panel #3	End Result
Daubert Cromwell Blue VCI PCR Film	Pass	Pass	Pass	Pass
VpCI-126 PCR #62069	Pass	Pass	Pass	Pass
Control	Fail	--	--	Fail

Table 3: VIA NACE Test results

Sample	Plug #1	Plug #2	Plug #3	End Result
Daubert Cromwell Blue VCI PCR Film	Grade 2	Grade 2	Grade 2	Pass
VpCI-126 PCR #62069	Grade 3	Grade 3	Grade 2	Pass
Control	Grade 0	--	--	Fail

Table 5: Mechanical Properties

Properties		Test method	Units	Daubert Cromwell Blue VCI PCR Film	VpCI-126 PCR #62069
Thickness	MD	ASTM D6988	µm	121,20	123,20
	CD			124,00	121,60
Tensile Strength at Break	MD	ASTM D882	MPa	19,032	20,293
	CD			18,300	22,822
Percent Elongation at break	MD	ASTM D882	%	674,14	674,51
	CD			822,37	928,95
Yield Strength	MD	ASTM D882	MPa	12,75	13,32
	CD			11,45	11,53
Tear Strength	MD	ASTM D1922	mN	4290,24	6016,80
	CD			8580,48	14388,00
Impact Elmendorf		ASTM D3420	mN	15120,48	17788,80
			J	1,30	1,53

Photos:

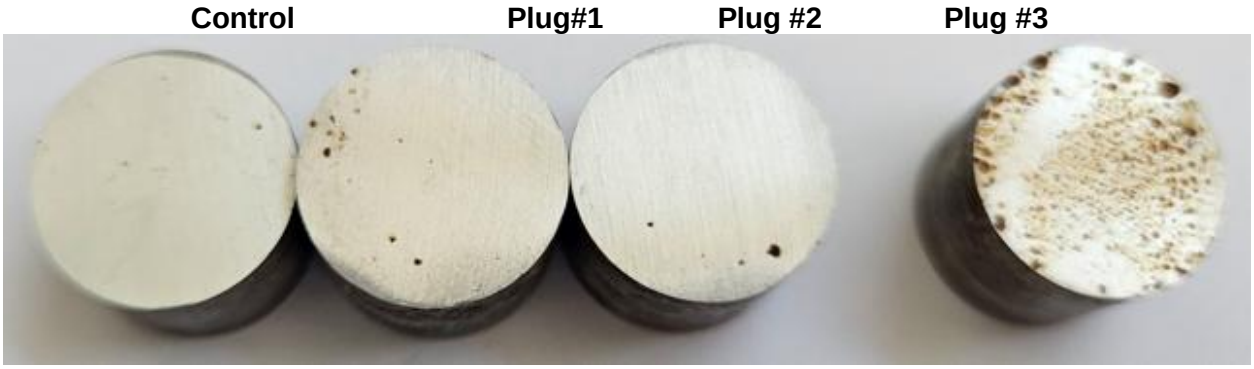
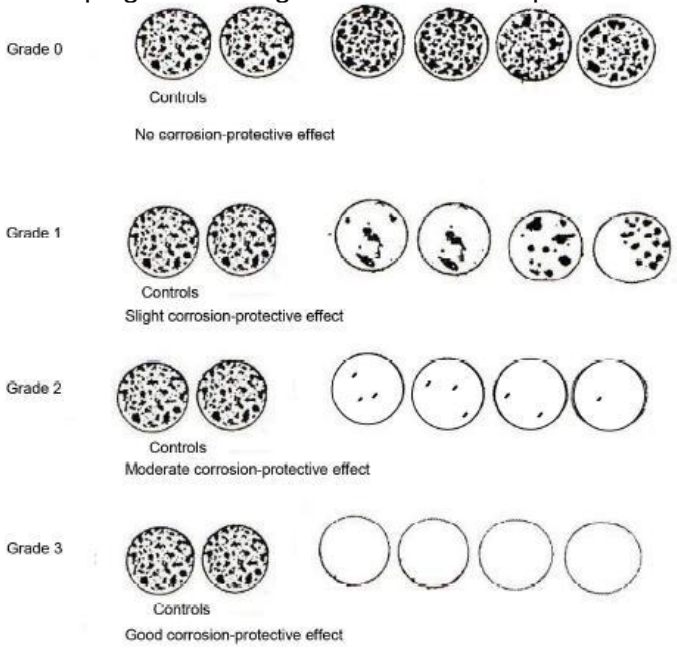


Figure 1: VIA NACETest result of Daubert Cromwell Blue VCI PCR Film

Figure 2: VIA NACE Test result of VpCI-126 PCR #62069

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



Interpretations:

The VpCI-126 PCR film provides better vapor phase corrosion protection than the submitted blue Daubert VCI PCR film according to the NACE VIA test. The results of the razor blade testing shows that VpCI-126 PCR film and the Daubert PCR film provide good contact corrosion protection for both steel and copper. However, the mechanical properties of Cortec film significantly outperform those of Dauber film of the same thickness.