

## *Effects of VpCIs on Fiber Optic Cables*

**Background:** Cortec has been questioned on multiple occasions on the effects of VpCIs on equipment that utilizes fiber optics.

**Purpose:** Determine if VpCIs have a negative effect on the performance of components using Fiber Optics.

**Materials:** VpCI-130 series foam

VpCI-125 film

VpCI-105 emitter

VpCI-111 emitter

**Method:** Fotec Source and Meter

### **Procedure: TEST SAMPLES & ENVIRONMENT:**

Cortec has three (3) VCI products. There will be 3 test bags. Three (3) cables of A112-62 (orange-multi mode) and three (3) cables of A112-SM (yellow-single mode) will be placed in each of the closed bags with the inhibitor unit. Cable ends need to be exposed. In addition, one (1) of each of the two (2) types will be sitting inside a bag without the inhibitor to be used as a control.

Note: Only two (2) A112-62 (orange) cables subjected to VCI-130.

The cables are periodically removed from the bags and the attenuation is measured.

**Results:** The results were taken at the following intervals, 2 weeks, 1 month, 6 months, and finally at 1 year. The data recorded is listed in Appendix.

**Conclusion:** The fiber optic cables show no indication of attenuation change other than normal variability. This shows that VpCI product have no negative affects on the performance of fiber optic cables and are an excellent choice for corrosion protection of electronic items containing fiber optics.

**Project #:** 01-049-1725

**Estimated Cost of Project:** 2 Hours + Cost of testing performed at The Specialty Lab Inc. (15 hours)

**From:** Brian L. Wuertz

**Date:** 5-10-2002

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APPENDIX

		THE SPECIALTY LAB, INC.						S/N's 240-249 = A112-62-LC/LC-01(Orange)				
PROJECT #		21-3042				DATE		S/N's 1202-1221 = A112-SM-LC/SMA-01(Yel)				
CUSTOMER		Cortec				TESTED BY	DAT					
PART DISC.		Fiber Optic Cables, VCI				EQUIPMENT	Fotec Source and Meter					
Date		5/3/2001	5/18/2001	6/8/2001	11/8/2001	5/8/2002	5/3/2001	5/18/2001	6/8/2001	11/8/2001	5/8/2002	
Test		Initial	168 Hrs	1 Month	6 Months	12 months	Initial	168 Hrs	1 Month	6 Months	12 months	
Meas. Freq.		665nm	665nm	665nm	665nm	665nm	850nm	850nm	850nm	850nm	850nm	
Attenuation	dbm	-31.0	-31.0	-31.0	-31.0	-31.0	-15.0	-15.0	-15.0	-15.0	-15.0	
Cable S/N	VCI											
240	VCI-125	-32.1	-31.8	-31.9	-31.7	-31.7	-16.2	-16.0	-16.2	-16.3	-16.3	
241	VCI-125	-31.6	-31.5	-31.3	-31.6	-31.7	-15.9	-15.5	-15.6	-15.7	-15.7	
242	VCI-125	-32.1	-31.7	-32.1	-31.8	-31.9	-16.0	-16.1	-16.1	-16.1	-16.1	
243	VCI-130	-31.9	-31.7	-32.0	-32.0	-31.9	-15.8	-15.7	-16.0	-16.1	-16.1	
244	VCI-130	-31.9	-31.9	-31.9	-31.8	-31.9	-15.8	-16.1	-16.0	-16.0	-16.0	
245	1-MUL	-32.0	-31.9	-31.7	-31.8	-32.0	-16.0	-16.0	-15.6	-15.7	-15.7	
246	1-MUL	-32.1	-32.0	-32.1	-32.0	-32.1	-16.3	-16.2	-16.0	-16.3	-16.3	
247	1-MUL	-32.1	-32.2	-32.0	-32.3	-32.3	-16.6	-16.6	-16.2	-16.1	-16.1	
249	Control	-31.8	-31.9	-31.7	-32.0	-32.1	-15.8	-15.7	-15.9	-15.7	-15.7	
1202	VCI-125	-51.6	-51.6	-51.2	-52.0	-51.9	-41.8	-41.6	-42.0	-42.4	-42.4	
1203	VCI-125	-50.4	-50.4	-50.4	-51.0	-51.1	-40.6	-40.6	-40.5	-41.0	-41.0	
1205	VCI-	-50.7	-50.8	-50.8	-51.0	-50.9	-40.8	-41.0	-41.3	-41.4	-41.4	

	125										
<b>1206</b>	VCI-130	-50.9	-51.3	-50.9	-51.4	-51.8	-41.5	-41.2	-41.2	-41.8	-41.8
<b>1207</b>	VCI-130	-50.9	-50.9	-50.9	-51.2	-51.1	-40.9	-40.7	-40.7	-41.2	-41.2
<b>1210</b>	VCI-130	-50.6	-50.9	-50.6	-50.9	-51.1	-40.7	-40.8	-40.8	-41.0	-41.0
<b>1211</b>	1-MUL	-50.8	-51.2	-50.9	-51.0	-51.1	-41.6	-41.5	-41.6	-41.8	-41.8
<b>1213</b>	1-MUL	-50.7	-50.8	-50.5	-51.0	-51.1	-40.9	-40.9	-40.6	-41.1	-41.1
<b>1216</b>	1-MUL	-50.5	-50.3	-50.3	-50.7	-50.6	-40.6	-40.5	-40.3	-40.8	-40.8
<b>1221</b>	Control	-50.9	-50.9	-50.8	-51.1	-51.2	-41.0	-41.0	-41.1	-41.4	-41.4

The

Specialty SPL No. 21-3042

# Lab Inc.

May 8, 2002

Cortec Corporation

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## PURPOSE:

Cortec's product is a unit that is placed into enclosures and cabinets. This unit emits a chemical inhibitor that micro-coats everything with a few molecules of chemical. This is just due to the proximity of the inhibitor unit.

Cortec's customer needs to know whether this inhibitor can affect the exposed ends of fiber optic cables with respect to time (as far as attenuation).

**TEST SAMPLES & ENVIRONMENT:**

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Mr. Wuertz,

Attached are the test results after 12 month of exposure to the three (3) VCI formulations.

Results show no indication of attenuation change other than normal variability.

If you have any questions please feel free to call me at 651-482-2778.

Thanks,

*David A. Theis*

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Test Engineer

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