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119 White Bear Pa Phone: (651) 429-1 Foll Free: (800) 4-C ortecvci.com • cort	arkway, St. Paul, N 1100, Fax: (651) 4 CORTEC, E-mail: in teclaboratories.com	NN 55110 USA 29-1122 nfo@cortecvci.com n	Certificate # L2267 Testing
	And	ulysis of MCI-2005 in Concrete S	amples
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Project	#:11-202-14	425(bis)	
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Date:	November	3, 2011	

Background: Customer is running ASTM G109 with MCI-2005 and the results are not positive. The two samples were sent to confirm that MCI-2005 is present at the correct dosages in the test blocks

Sample Received: The samples were received on September 26, 2011.

Sample(s) labeled: The sample came in small sample bags and were labeled D11-

131286/1 and D11-131286/3 and dated September 7, 2011. Sample

D11-131286/1 was powdered at Cortec when it was received.

Method: UV Spectroscopy Test

Materials:

Concrete samples 4 oz. sample containers Concrete crusher Funnel Filter paper

Procedure:

- UV Spectroscopy
 - 1. The concrete of sample D11-131286/1 was powdered with the concrete crusher.
 - 2. Both samples were added to a 4 ounce plastic container and water was added at a 1:1 ratio and then allowed to sit for two days.
 - 3. The crushed concrete was filtered out of the extract water by running it through filter paper.
 - 4. The water samples were then sent to Aspen Labs to be tested with UV spectroscopy.

Results:

UV Spectroscopy

	Absorbance	Concentration (mg/L)
D11-131286/1	0.9492	11.2
D11-131286/3	9.40	110.9

Interpretations:

- 1. Both samples contain MCI-2005.
- 2. Based on the absorbance sample 1 contains the correct amount of MCI-2005.
- 3. The results indicate that sample 3 contains a quantity of MCI-2005 that is higher than sample 1. The discrepancy is likely due to the sample composition. Sample 3 was completely powdered cement without aggregate. The chemical that is being detected only binds to the cement paste/powder and leaches from it during the extraction process. Thus the chemical that is being detected will appear to be much more abundant in the sample that was completely powdered cement.
- 4. In order to make a quantitative determination of concentration it would be necessary to make a calibration curve using the concrete mix design used for the original blocks and remove the aggregate from the sample.