CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2005

DateRun: 09/07/2005

Experimenters: Jason Marshall

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Marble

PartType: Coupon

Contaminants: Calcium/lime

Cleaning Methods: Immersion/Soak

Analytical Methods: Gravimetric, Photography

Purpose: To evaluate resubmitted product for calcium removal

Experimental Procedure: Several marble chips of similar size and shape were weighed to determine the baseline weight of each piece. The selected chips were then immersed in the supplied product at full strength and allowed to sit overnight. After soaking at room temperature for 18 hours, the marble chips were removed from the products and rinsed in a tap water spray at 120 F for 30 seconds remove loose material from the chips. Then the chips were dried for 15 minutes using a Master Appliance Heat gun at 300 F. When the chips cooled to room temperature, final weights were recorded to determine weight loss, if any. Observations were made and photographs were taken after the initial immersion of the chips into solutions (5 minutes), at 60 minutes and then following the overnight immersion.

Results: From visual observations the supplied solution appeared to effect the marble chips. During the soak, the supplied solution started to bubble. This bubbling was only slightly more vigorous after 60 minutes of soaking. The solutions did not overflow the beaker overnight. The photos of the beakers show the status at 5 minutes, 1 hour and 18 hours. In addition to the beakers, there are photographs showing the baseline marble chips, the 18 hour soaks for DFC 5.
DFC 5 resulted in more than 5% loss in weight after soaking. The table lists the initial weight, final weight and weight change for each marble chip soaked.

Product	Initial wt	Final wt	% Wt loss
DFC 5	9.3674	8.8369	5.66
	18.3851	18.0034	2.08
	23.9956	23.1971	3.33
	26.6094	25.3621	4.69

Summary:

Substrates:	Marble				
Contaminants:	Calcium/lime				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**
Cogent Environmental Solutions	DFC 5	100	0.00	☑	

Conclusion: The weight loss was signified the dissolving of calcium from the marble chips.