CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 06/11/2002

Experimenters: Jason Marshall

ClientType: General

ProjectNumber: Project #1

Substrates: Wood

PartType: Part

Contaminants: Paints

Cleaning Methods: Low Pressure Spray

Analytical Methods: Gravimetric, Photography

Purpose: To compare new spray delivery system with traditional spray can method.

Experimental Procedure: Ten preweighed particle board tiles were placed into a spray chamber to be coated one a time. Five tiles were to be coated with one of the two spray application methods. The paint spray nozzle was placed 12 inches perpendicular to the tile. The spray system was operated for 5 seconds moving from left to right and back right to left across the face of the tile. After the 5 seconds, the tile was removed from the spray chamber and placed flat to dry. Once the paint was dry, a second weight was recorded and coating amounts were calculated. The results of each system were compared.

Results: After applying the paint to the tile for 5 seconds and reweighing after drying, it was determined that the Enviro Caddie system (EC system) applied about 3 times as much paint to the surface than the traditional spray can system (TSC system) did. The EC system applied about 1.5 grams of paint compared to 0.57 grams from the TSC system. The TSC system did have a lower standard deviation of paint application levels as compared to the EC system. Table 1 below lists the weights and calculated delivery rates.

Table 1. Short Application Comparison

Performance Evaluation #1							
Short Coating							
Substrate	Tile						
Analysis Method	Gravimetric, Photography, Visual						
				weight in grams			Weight/ time
System	Coupon #	Base	After Coating	Coating Weight	Average Wt	Std Deviation	g/sec
Envirocaddie	1	313.71	314.96	1.25			0.250
	2	299.20	300.52	1.32			0.264
	3	304.70	306.28	1.58			0.316
	4	308.64	310.41	1.77			0.354
	5	298.53	300.07	1.54	1.49	0.21	0.308
Traditional	6	300.05	300.64	0.59			0.118
	7	309.00	309.57	0.57			0.114
	8	286.86	287.36	0.50			0.100
	9	308.48	309.16	0.68			0.136
	10	298.62	299.14	0.52	0.57	0.07	0.104

When comparing the application appearance, the EC system provided a thicker, glossier finish but did have small crater like formations across the tile. The TSC system resulted in a thin, flat coating. The EC system nearly coated the entire tile within the 5 second time period. The TSC system covered less surface than the EC system. The figures below show the appearance of the spray application.
Figure1. Enviro Caddie System Short Application

Figure 2. Traditional Spray Can System Short Application

Delivery System:	Average Coating Weight per time
Enviro Caddie	0.298 g/sec
Traditional Spray Can	0.114 g/sec

Summary:

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Conclusion:	The Enviro Caddie system was found to apply more paint than the Traditional Spray Can system in a set time period.