

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002
 DateRun: 06/12/2002
 Experimenters: Jason Marshall
 ClientType: General
 ProjectNumber: Project #1
 Substrates: Wood
 PartType: Coupon
 Contaminants: Paints
 Cleaning Methods: Low Pressure Spray
 Analytical Methods: Gravimetric, Timing

Purpose: To compare new spray delivery system with traditional spray can method for complete surface coating

Experimental Procedure: Six preweighed particle board tiles were placed into a spray chamber to be coated one a time. Three 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 until the tile was completely coated, moving from left to right and back right to left across the face of the tile. A stop watch was used to record the time required for the coating process. After completely coating the surface, 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: The Enviro Caddie system (EC system) applied more paint in less time than the Traditional Spray Can system (TSC system). The EC system applied about 2.5 grams of paint in 9 seconds where as the TSC system applied about 1.2 grams of paint in 11 seconds. The TSC system was more consistent in its delivery resulting in a lower standard deviation. Table 1 below lists the calculated delivery amounts for both systems.

Table 1 below lists the weights and calculated delivery rates

System	Coupon #	Base	After Coating	Coating Weight	Average Wt	Std Deviation
Enviro Caddie	11	310.17	313.07	2.9		
	12	306.64	309.05	2.41		
	13	298.61	300.89	2.28	2.53	0.33
Traditional	14	307.01	308.18	1.17		
	15	298.79	299.94	1.15		
	16	303.58	304.7	1.12	1.15	0.03

System	Time to Coat	Average Time	Std Deviation
Enviro Caddie	9		
	10		
	8	9	1
Traditional	10		
	11		
	12	11	1

Weight/area/time			
System	g/mm2/ sec	Average	
Enviro Caddie	0.061		0.550
	0.046		0.457
	0.054	0.054	0.008 0.433
Traditional	0.022		0.222
	0.020		0.218
	0.018	0.020	0.002 0.213

The EC system produced small craters in the coating surface, where as the TSC system did not. The EC system coating was much darker and shinier than the TSC system. Figures 1 and 2 show the coatings for both systems.

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Figure 1. Enviro Caddie System

Figure 2. Traditional Spray Can System

Substrates: Particle Board;

Coating Type: Paint;

Delivery System: Average coating weight per Area per time

Enviro Caddie 0.000537 g/cm²/sec

Traditional Spray Can 0.000199 g/cm²/sec

Summary:

Conclusion:

The Enviro Caddie system provided a heavier coating in less time than the Traditional Spray Can system. The quality of the coating for the Enviro Caddie system was questionable due to the appearance of small craters throughout the tile.