CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2002

DateRun: 06/18/2002

Experimenters: Jason Marshall, Heidi Wilcox

ClientType: General

ProjectNumber: Project #1

Substrates: Wood

PartType: Coupon

Contaminants: Paints

Cleaning Methods: Low Pressure Spray

Analytical Methods: Visual, Timing

Purpose: To further evaluate new spray delivery system with the traditional delivery system for drying time based on a similar weight application.

Experimental Procedure: Using the application rate for both systems, a spray time of 5 seconds was calculated for the Enviro Caddies system to deliver approximately 1.49 grams of paint. A spray time of 13 seconds was calculated for the traditional spray system for delivery of an equivalent amount of paint. Table 1 lists the calculations made to determine the equivalent paint application.

Delivery Rate	(g/sec)	from Trial 3
Enviro Caddie	0.2984	
Traditional	0.1144	
For a 5 second EC spray, weight applied		
5 seconds *	0.2984 g/sec	= 1.492 g
For 1.492 g of Paint applied using TSC system		
1.492 grams /	0.1144g/sec	= 13.04 sec

Three clean particle board plates (6" x 12") were coated with the Enviro Caddie delivery system for 5 seconds. At the end of the application, a timer was started. The drying rate for each system was monitored at several intervals to determine when the coating was dry. Measurements were made at 10 seconds for the first minute, then every 30 seconds for the next 10 minutes and then every minute until dry. White hand held swabs were briefly touched to the surface to determine if the coating was dry or not.

The Traditional system time was close to the original drying time experiment, therefore, drying times were used from the previous trial.

Results: The Traditional Spray Can system (TSC system) required far less time to dry than the Enviro Caddie System (EC system). The TSC system need around 12 minutes to dry completely. At the 15 second spray time, the TSC applied around 1.71 grams of paint. For the EC system, drying required 13 minutes. The calculated paint delivery amount was 1.49g. The measured amount was found to be slightly more, 1.53 g. Table 2 shows the drying times made for the TSC system from trial 3. Table 3 lists the observations made for the EC system during throughout the drying cycle.

Table 2. Results of Drying Time From Trial 3

Dry @ 13 min	Dry @ 12 min	Dry @ 11 min
Average dry time is 12 minutes		

Table 3. Observations During Drying

Enviro Caddie System Drying Time

		Coupon #	
Time	1	2	3
30 sec	Good even distribution of paint. Only thick area at initial point of spray	Good even distribution of paint. Only thick area at initial point of spray	Good even distribution of paint. Only thick area at initial point of spray
60 sec	wet, paint lifting when swab	wet, paint lifting when swab	wet, paint lifting when swab

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	touched to it	touched to it	touched to it
1 min 30 sec	same	same	same
2 min	same	same	same
2min 30 sec	same	same	same
3 min	Tacky, not liquid wet. Less paint lifting when surface touched	same	Tacky, not liquid wet. Less paint lifting when surface touched
3 min 30 sec	same	same	same
4 min	same	Tacky, not liquid wet. Less paint lifting when surface touched	same
4 min 30 sec	same	same	same
5 min	Very tacky texture. Less paint lifting	same	Very tacky texture. Less paint lifting
6 min	same	Very tacky texture. Less paint lifting	same
7 min	same	same	same
8 min	No paint lifting when touched. Indentations left when surface touched.	same	No paint lifting when touched. Indentations left when surface touched.
9 min	same	No paint lifting when touched. Indentations left when surface touched.	same
10 min	same	same	same
11 min	same	same	same
12 min	No lift, very little imprint left	same	No lift, very little imprint left
13 min	Dry. No imprint	No lift, very little imprint left	Dry. No imprint
14 min		Dry. No imprint	
	Dry @ 13 min	Dry @ 14 min	Dry @ 13 min
Average dry time:	13 min 33 sec		

Summary:

Conclusion: This follow up trial verified that the Traditional Spray Can system requires less time to dry than the Enviro Caddie system. The drying time of 12 minutes for the TSC was a minute faster than the drying time of 13.33 of the EC system even with a quarter of a gram more paint applied to the surfaces.