CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2002
DateRun:	06/18/2002
Experimenters:	Jason Marshall, Heidi Wilcox
ClientType:	General
ProjectNumber:	Project #1
Substrates:	Steel
PartType:	Coupon
Contaminants:	Paints
Cleaning Methods:	Low Pressure Spray
Analytical Methods:	Tactile, Timing
Purpose:	To compare new spray delivery system with traditional spray can method for drying time
Experimental Procedure:	Three clean steel plates (12” x 12”) were coated with each delivery system for 15 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.
Results:	Systems Evaluated: Enviro Caddie; Aerosol Spray Can 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 where as the EC system needed over 25 minutes. Table 1 lists the observations made for each system during throughout the drying cycle.

Table 1. Drying	Time	Enviro Caddie	
Coupon #	8	9	10
Time (sec)			
10	Very uneven distribution of paint. Some "puddles" or drip areas. Paint thick and when touched with a swab paint is left on swab.	Very uneven distribution of paint. Some "puddles" or drip areas. Paint thick and when touched with a swab paint is left on swab.	Distribution of paint is better. Not many thick, dripping areas
20	wet	wet	wet
30	wet	wet	wet
40	wet	wet	wet
50	wet	wet	wet
60	wet	wet	wet
1 min 30	wet	wet	wet
2 min	wet	wet	Thin areas more sticky then wet. Thick areas still wet
2 min 30	wet	wet	Same
3 min	wet	Thin areas more sticky then wet. Thick areas still wet	Same
3 min 30	Thin areas more sticky than wet. Thick areas still wet	Same	Same
4 min	Same	Same	Same
4 min 30	Same	Same	Same
5 min	Same	Same	Thin areas are tacky, not much paint lifting. Thick

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			areas are sticky not wet.
5 min 30	Same	Same	Same
6 min	Same	Same	Same
6 min 30	Same	Same	Same
7 min	Same	Thin areas tacky and not much paint lifting. Thick areas sticky not liquid wet	Same
7 min 30	Same	Same	Same
8 min	Thin areas tacky and not much paint lifting. Thick areas sticky not liquid wet	Same	Same
8 min 30	Same	Same	Same
9 min	Same	Same	Same
9 min 30	Same	Same	Same
10 min	Same	Thin areas are tacky with no paint pulling off but indentations are left in paint where touched. Thick areas tacky with paint still lifting.	Thin areas are tacky with no paint pulling off but indentations are left in paint where touched. Thick areas tacky with paint still lifting.
12 min	Thin areas are tacky with no paint pulling off but indentations are left in paint where touched. Thick areas tacky with paint still lifting.	Same	Thin areas dry to touch but indentations still left in paint where touched. Thick areas tacky with very little paint lifting
14 min	Same	Same	Same
16 min	Thin areas dry to touch but indentations still left in paint where touched. Thick areas tacky with very little paint lifting	Thin areas dry to touch but indentations still left in paint where touched. Thick areas tacky with very little paint lifting	Same
18 min	Same	Same	Thin dry to touch and no indentation. Thick is dry to touch but indentions in paint when touched.
20 min	Thin areas are dry. NO indentations when touched. Thick areas tacky with NO paint pulling off. Indentations left in paint in thick areas.	Same	Same
22 min	Same	Thin areas are dry. NO indentations when touched. Thick areas tacky with NO paint pulling off.	Thin and thick areas are dry to touch and no indentations left when touched with swab.

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		Indentations left in paint in thick areas.	
24 min	Same	Same	
26 min	Same	Thin and thick areas are dry to touch and no indentations left when touched with swab.	
28 min	Thin and thick areas are dry to touch and no indentations left when touched with swab.		
	Dry @ 28 min	Dry @ 26 min	Dry @ 22 min
	Average dry time is 25 1/3 minutes		
		Traditional Spray Can Method	
Coupon #	5	6	7
Time (sec)			
10	Paint is more evenly distributed with less puddles or thick areas. Less paint is delivered, paint is thinner all over.	Paint is more evenly distributed with less puddles or thick areas. Less paint is delivered, paint is thinner all over.	Paint is more evenly distributed with less puddles or thick areas. Less paint is delivered, paint is thinner all over.
20	wet	wet	wet
30	wet	wet	wet
40	wet	wet	wet
50	wet	wet	Thin areas sticky not liquid wet. Paint lifting off coupon when area touched showing how thin paint has been applied. Thick area wet
60	Thin areas sticky not liquid wet. Paint lifting off coupon when area touched showing how thin paint has been applied. Thick area wet	Thin areas sticky not liquid wet. Paint lifting off coupon when area touched showing how thin paint has been applied. Thick area wet	Same
1 min 30	Same	Same	Same
2 min	Same	Same	Thin area tacky, very little paint lifting. Thick area sticky
2 min 30	Thin area tacky, very little paint lifting. Thick area sticky	Thin area tacky, very little paint lifting. Thick area sticky	Same
3 min	Same	Same	Same
3 min 30	Same	Same	Same
4 min	Same	Same	Same
4 min 30	Same	Same	Thin area dry to touch, no paint lifting. Minor indentions due to thinness of layer.

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			Thick spot tacky, lifting very little.
5 min	Same	Thin area dry to touch, no paint lifting. Minor indentions due to thinness of layer. Thick spot tacky, lifting very little.	Same
5 min 30	Thin area dry to touch, no paint lifting. Minor indentions due to thinness of layer. Thick spot tacky, lifting very little.	Same	Same
6 min	Same	Same	Same
6 min 30	Same	Same	Thin area dry with no indentations. Thick area tacky, very little paint lifting. Still indentations
7 min	Same	Thin area dry with no indentations. Thick area tacky, very little paint lifting. Still indentations	Same
7 min 30	Thin area dry with no indentations. Thick area tacky, very little paint lifting. Still indentations	Same	Same
8 min	Same	Same	Same
8 min 30	Same	Same	Same
9 min	Same	Same	Thin area fry. Thick area dry to touch, no paint lifting. Indentations still present.
9 min 30	Same	Thin area fry. Thick area dry to touch, no paint lifting. Indentations still present.	Same
10 min	Thin area fry. Thick area dry to touch, no paint lifting. Indentations still present.	Same	Same
11 min	Same	Same	Thick and thin areas dry. No paint lift and no indentations.
12 min	Same	Thick and thin areas dry. No paint lift and no indentations.	
13 min	Thick and thin areas dry. No paint lift and no indentations.		
	Dry @ 13 min	Dry @ 12 min	Dry @ 11 min
	Average dry time is 12 minutes		

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Observations	Enviro Caddie delivers more paint overall then the traditional method.

Substrates: Steel Plate;
Coating Type: Paint;
Delivery System: Average Drying Time
Enviro Caddie 25.33 minutes
Traditional Spray Can 12 minutes

Summary:

Conclusion: The Traditional Spray Can system required half the time to dry. This may be due to the fact that the Enviro Caddie System applied more paint to the surface than the Traditional Spray Can system. A follow study could be performed to compare drying time of equal amounts of applied paint.