CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2015
DateRun:	01/06/2015
Experimenters:	Loc Nguyen, George Liang
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #2
Substrates:	Ceramics
PartType:	Coupon
Contaminants:	Greases, Food
Cleaning Methods:	Manual Wipe
Analytical Methods:	Gravimetric
Purpose:	To evaluate supplied product for grease removal from floor surfaces following CSPA DCC 17

Experimental Procedure:

Floor cleaning for the supplied product was tested using the CSPA DCC 17 - Greasy Soil Test Method for Evaluating Spray-and-Wipe Cleaners Used On Hard, Non-Glossy Surfaces standard. A few minor deviations from the standard were incorporated into the test conducted. The Greasy Soil Test Method is a standard method that evaluates the cleaning performance of products intended for use on washable walls or other hard, non-glossy surfaces. This method provides instructions for soil application, cleaning and evaluation of spray-and-wipe cleaners under controlled cleaning conditions. This method can be used to assess product performance for cleaning a fabricated greasy soil blend applied to painted wallboard tiles. It is not inclusive of all soil or substrates typically encountered by a consumer while using these products.

Soil Preparation
A mixture of three cooking oils/greases was made. A melt blend of 33% vegetable shortening, 33% lard, 33% vegetable oil and 1% carbon lampblack was made up fresh for the testing. Care was taken in the application of the soil onto the coupons so that light and heavy areas were avoided. Allow the soiled tiles to dry for 24 hours at room temperature. The dirty weights were then taken before running.

Cleaning Test
Place a soiled tile in the tray of the abrasion tester such that the direction of the soiling is perpendicular to the direction of the sponge. In place of using a sponge and pouring solution into dish for application, products were applied to the coated surfaces using a 1 spray from manual spray pump and 1 spray onto the reinforced Wypal X60 paper towel attached to the cleaning instrument. The cleaning was performed using Gardner Straightline washability unit and conducted for the prescribed 20 cycles. The coupons were allowed to sit and dry, then the clean weights were taken.

Visual Test
After cleaning, each coupon was examined by the lab and ranked in terms of what was thought to look cleanest. The scale range used is from 0 to 100, where 100 is the highest level of cleaning and 0 is the lowest level.

Chemistries Evaluated: 1166-150-A, 1166-150-B, 1166-150-C, 1166-150-D, 1166-150-E, 1166-150-F2

Results:

Cycle 1 (4 Wipes)

Cleaner	Initial wt	Final wt	% Removed	
1166-150-A Ceramic	1.0935	0.2515	77.00	68.62
1166-150-A Ceramic	1.0180	0.3863	62.05	
1166-150-A Ceramic	1.0477	0.3478	66.80	
1166-150-B Ceramic	1.0701	0.2596	75.74	71.39
1166-150-B Ceramic	1.0760	0.3342	68.94	
1166-150-B Ceramic	1.0547	0.3219	69.48	
1166-150-C Ceramic	1.0034	0.2122	78.85	71.47
1166-150-C Ceramic	1.0789	0.2585	76.04	

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1166-150-C Ceramic	1.0466	0.4237	59.52	
1166-150-D Ceramic	0.9941	0.1508	84.83	71.36
1166-150-D Ceramic	1.0189	0.3706	63.63	
1166-150-D Ceramic	1.0344	0.3557	65.61	
1166-150-E Ceramic	1.0281	0.1125	89.06	75.46
1166-150-E Ceramic	1.0328	0.3137	69.63	
1166-150-E Ceramic	1.0573	0.3415	67.70	
1166-150-F2 Ceramic	1.054	0.2254	78.61	66.81
1166-150-F2 Ceramic	1.0137	0.4520	55.41	
1166-150-F2 Ceramic	1.0334	0.3471	66.41	

Cycle 2 (8 Wipes)

Cleaner	Initial wt	Final wt	% Removed	
1166-150-A Ceramic	1.0935	0.0504	95.39	89.66
1166-150-A Ceramic	1.0180	0.0864	91.51	
1166-150-A Ceramic	1.0477	0.1876	82.09	
1166-150-B Ceramic	1.0701	0.0944	91.18	90.12
1166-150-B Ceramic	1.0760	0.1098	89.80	
1166-150-B Ceramic	1.0547	0.1121	89.37	
1166-150-C Ceramic	1.0034	0.0680	93.22	89.94
1166-150-C Ceramic	1.0789	0.0807	92.52	
1166-150-C Ceramic	1.0466	0.1667	84.07	
1166-150-D Ceramic	0.9941	0.0891	91.04	87.73
1166-150-D Ceramic	1.0189	0.1639	83.91	
1166-150-D Ceramic	1.0344	0.1218	88.23	
1166-150-E Ceramic	1.0281	0.0501	95.13	92.40
1166-150-E Ceramic	1.0328	0.0977	90.54	
1166-150-E Ceramic	1.0573	0.0896	91.53	
1166-150-F2 Ceramic	1.0540	0.0664	93.70	89.30

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1166-150-F2 Ceramic	1.0137	0.1407	86.12	
1166-150-F2 Ceramic	1.0334	0.1231	88.09	

Cycle 3 (12 Wipes)

Cleaner	Initial wt	Final wt	% Removed	
1166-150-A Ceramic	1.0935	0.0321	97.06	93.57
1166-150-A Ceramic	1.0180	0.0673	93.39	
1166-150-A Ceramic	1.0477	0.1020	90.26	
1166-150-B Ceramic	1.0701	0.0752	92.97	93.65
1166-150-B Ceramic	1.0760	0.0560	94.80	
1166-150-B Ceramic	1.0547	0.0719	93.18	
1166-150-C Ceramic	1.0034	0.0523	94.79	93.07
1166-150-C Ceramic	1.0789	0.0460	95.74	
1166-150-C Ceramic	1.0466	0.1185	88.68	
1166-150-D Ceramic	0.9941	0.0372	96.26	94.59
1166-150-D Ceramic	1.0189	0.0601	94.1	
1166-150-D Ceramic	1.0344	0.0682	93.41	
1166-150-E Ceramic	1.0281	0.0312	96.97	94.76
1166-150-E Ceramic	1.0328	0.0614	94.05	
1166-150-E Ceramic	1.0573	0.0713	93.26	
1166-150-F2 Ceramic	1.0540	0.0345	96.73	93.73
1166-150-F2 Ceramic	1.0137	0.0908	91.04	
1166-150-F2 Ceramic	1.0334	0.0681	93.41	

Cycle 4 (16 Wipes)

Cleaner	Initial wt	Final wt	% Removed	
1166-150-A Ceramic	1.0935	0.0241	97.80	95.01
1166-150-A Ceramic	1.0180	0.0607	94.04	
1166-150-A Ceramic	1.0477	0.0714	93.19	
1166-150-B Ceramic	1.0701	0.0625	94.16	95.20
1166-150-B Ceramic	1.0760	0.0398	96.30	

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1166-150-B Ceramic	1.0547	0.0512	95.15	
1166-150-C Ceramic	1.0034	0.0493	95.09	94.17
1166-150-C Ceramic	1.0789	0.0339	96.86	
1166-150-C Ceramic	1.0466	0.0987	90.57	
1166-150-D Ceramic	0.9941	0.0272	97.26	96.18
1166-150-D Ceramic	1.0189	0.0399	96.08	
1166-150-D Ceramic	1.0344	0.0496	95.20	
1166-150-E Ceramic	1.0281	0.0265	97.42	96.36
1166-150-E Ceramic	1.0328	0.0500	95.16	
1166-150-E Ceramic	1.0573	0.037	96.50	
1166-150-F2 Ceramic	1.0540	0.0256	97.57	95.06
1166-150-F2 Ceramic	1.0137	0.0769	92.41	
1166-150-F2 Ceramic	1.0334	0.0497	95.19	

Cycle 5 (20 Wipes)

Cleaner	Initial wt	Final wt	% Removed	
1166-150-A Ceramic	1.0935	0.0191	98.25	95.56
1166-150-A Ceramic	1.0180	0.0567	94.43	
1166-150-A Ceramic	1.0477	0.0630	93.99	
1166-150-B Ceramic	1.0701	0.0496	95.36	96.15
1166-150-B Ceramic	1.0760	0.0306	97.16	
1166-150-B Ceramic	1.0547	0.0428	95.94	
1166-150-C Ceramic	1.0034	0.0455	95.47	94.83
1166-150-C Ceramic	1.0789	0.0300	97.22	
1166-150-C Ceramic	1.0466	0.0859	91.79	
1166-150-D Ceramic	0.9941	0.0198	98.01	96.86
1166-150-D Ceramic	1.0189	0.0348	96.58	
1166-150-D Ceramic	1.0344	0.0414	96.00	
1166-150-E Ceramic	1.0281	0.0229	97.77	97.43

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1166-150-E Ceramic	1.0328	0.0325	96.85	
1166-150-E Ceramic	1.0573	0.0245	97.68	
1166-150-F2 Ceramic	1.0540	0.0202	98.08	95.63
1166-150-F2 Ceramic	1.0137	0.0648	93.61	
1166-150-F2 Ceramic	1.0334	0.0497	95.19	

Visaul Ratings

Cleaners	Substrates	Visual Removal (%)			Average	
1166-150-A	Ceramic	95	98	96	96.3	
	Ceramic	95	97	95	95.7	
	Ceramic	96	98	96	96.7	96.2
1166-150-B	Ceramic	93	96	94	94.3	
	Ceramic	95	99	97	97	
	Ceramic	96	99	97	97.3	96.2
1166-150-C	Ceramic	92	99	94	95	
	Ceramic	96	98	97	97	
	Ceramic	97	99	97	97.7	96.6
1166-150-D	Ceramic	95	98	97	96.7	
	Ceramic	96	98	96	96.7	
	Ceramic	97	98	97	97.3	96.9
1166-150-E	Ceramic	96	99	96	97	
	Ceramic	95	98	97	96.7	
	Ceramic	98	98	99	98.3	97.3
1166-150-F2	Ceramic	97	97	96	96.7	
	Ceramic	97	97	96	96.7	
	Ceramic	98	97	96	97	96.8

Summary:

Substrates:	Ceramics
Contaminants:	Greases, Food

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Elevance Renewable Sciences Inc	1166-150-A	100	93.57	☑	12 wipes
Elevance Renewable Sciences Inc	1166-150-B	100	90.12	☑	8 wipes
Elevance Renewable Sciences Inc	1166-150-C	100	93.07	☑	12 wipes
Elevance Renewable Sciences Inc	1166-150-D	100	94.59	☑	12 wipes
Elevance Renewable Sciences Inc	1166-150-E	100	92.40	☑	8 wipes
Elevance Renewable Sciences Inc	1166-150-F	100	93.73	☑	12 wipes

Conclusion:

All cleaners were effective. The cleaner 1166-150-C was least effective of the tested cleaners by removing 94.83% and cleaner 1166-150-E was the most effective removing 97.44%. Visually, all cleaners looked of the same cleanliness, but 1166-150-E looked the cleanest and was the most effective of the cleaners. Overall, the percentage of removal was consistent with the visual average. These pictures have been included in a supplementary file.