

CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2023

DateRun: 10/12/2023

Experimenters: Amelia Wagner

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Ceramics, Vinyl Composite Tiles, Laminate

PartType: Coupon

Contaminants: Dirt

Cleaning Methods: Manual Wipe

Analytical Methods:

Purpose: To evaluate the effectiveness of Four Green Mountain Ammenities floor care products in comparison to two floor care products already on the market.

Experimental Procedure: Eighteen coupons per cleaner, three of each substrate, were used. The initial weights of each coupon were taken. The initial L value (measure of fluorescence) was also taken with the colorimeter. The coupons were contaminated with synthetic dirt using a handheld swab and dried overnight. The contaminated coupons were weighed and the dirty L value was measured before placing three coupons per cleaner of the same substrate into a Gardner Straight Line Washability (SLW) unit. A Kimberly-Clark Wypal reinforced paper towel was attached to the cleaning sled. The Wypal and each coupon were treated with three sprays and cleaned for 20 cycles (~30 seconds of cleaning). Clean coupons dried for 24 hours before final weights were taken to assess the amount of soil removed. The final L value was taken in order to assess the amount of staining left behind by the soil.

Results:

Cleaner	Soil	Initial wt of cont.	Final wt of cont.	%Cont Removed	% AVG	% Overall
GMA Citric Acid and Washing Soda	Vinyl	0.0232	0.0000	100.00	99.28	96.04
		0.0092	0.0002	97.83		
		0.0066	0.0000	100.00		
	Ceramic	0.0149	0.0012	91.95	91.80	
		0.0133	0.0003	97.74		
		0.0049	0.0007	85.71		
	Laminate	0.0091	0.0000	100.00	97.04	
		0.0084	0.0005	94.05		
		0.0102	0.0003	97.06		
Murphy Oil Soap 50%	Vinyl	0.0055	0.0004	92.73	88.73	89.34
		0.0059	0.0009	84.75		
		0.0062	0.0007	88.71		
	Ceramic	0.0081	0.0003	96.30	96.43	
		0.0212	0.0007	96.70		
		0.0108	0.0004	96.30		
	Laminate	0.0101	0.0014	86.14	82.86	
		0.0257	0.0031	87.94		
		0.0051	0.0013	74.51		
Fabuloso 50%	Vinyl	0.0097	0.0005	94.85	96.86	97.09
		0.0183	0.0004	97.81		
		0.0240	0.0005	97.92		
	Ceramic	0.0152	0.0001	99.34	96.29	
		0.0164	0.0004	97.56		
		0.0187	0.0015	91.98		
	Laminate	0.0055	0.0000	100.00	98.12	
		0.0107	0.0003	97.20		
		0.0177	0.0005	97.18		
GMA Etee Floor 50%	Vinyl	0.1166	0.0011	99.06	87.48	79.64
		0.0908	0.0258	71.59		
		0.1122	0.0092	91.80		
	Ceramic	0.0548	0.0256	53.28	75.29	

CLEANING LABORATORY EVALUATION SUMMARY

		1.0213	0.0207	97.97		
		0.0461	0.0117	74.62		
	Laminate	0.0425	0.0084	80.24	76.15	
		0.0179	0.0012	93.30		
		0.0366	0.0165	54.92		
GMA NaDCC 1000 ppm	Vinyl	0.1009	0.0026	97.42	92.10	82.07
		0.0688	0.0067	90.26		
		0.0712	0.0081	88.62		
	Ceramic	0.0575	0.0193	66.43	74.74	
		0.0536	0.0020	96.27		
		0.0291	0.0112	61.51		
	Laminate	0.0388	0.0197	49.23	79.38	
		0.1047	0.0070	93.31		
		0.1042	0.0046	95.59		
GMA Peracetic Acid 500ppm	Vinyl	0.0730	0.0002	99.73	99.31	90.08
		0.2599	0.0025	99.04		
		0.1315	0.0011	99.16		
	Ceramic	0.0916	0.0055	94.00	79.02	
		0.0403	0.0164	59.31		
		0.0757	0.0123	83.75		
	Laminate	0.1303	0.0063	95.17	91.92	
		0.1158	0.0220	81.00		
		0.2504	0.0010	99.60		

Gravimetric

Cleaner	Soil	Initial L	Dirty L	Clean L	% AVG	% Overall
GMA Citric Acid and Washing Soda	Vinyl	80.23	56.77	63.24	52.19%	70.54%
		79.34	58.71	68.78		
		77.73	59.41	74.1		
	Ceramic	90.21	73.75	89.73	95.22%	
		90.77	69.23	89.91		
		90.68	74.68	89.49		
	Laminate	62.47	43.8	57.96	64.21%	
		64.35	47.91	58.04		
		61.47	43.33	53.34		
Murphy Oil Soap 50%	Vinyl	79.07	53.42	61.57	31.00%	44.73%
		79.52	60.47	62.74		
		79.67	51.62	65.45		
	Ceramic	90.57	75.86	86.88	90.35%	
		90.41	64.11	90.04		
		89.91	68.66	89.39		
	Laminate	55.51	45.99	48.25	12.82%	
		59.92	40.21	48.56		
		59.83	51	48.56		
Fabuloso 50%	Vinyl	81.89	52.88	62.99	23.40%	40.87%
		80.08	55.53	59.61		
		79.69	52.71	57.76		
	Ceramic	90.38	65.68	89.65	90.69%	
		90.14	61.28	89.73		
		90.17	70.55	85.55		
	Laminate	62	48.13	48.95	8.51%	
		63.52	46.33	47.23		
		64.63	48.71	51		
GMA Etee Floor 50%	Vinyl	68.16	51.79	46.55	-15.23%	38.97%
		66.32	49.91	44.73		
		72.46	43.66	48.81		
	Ceramic	90.15	46.88	88.22	93.78%	
		90.59	68.67	88.66		

CLEANING LABORATORY EVALUATION SUMMARY

		90.55	62.34	89.03		
	Laminate	58.5	40.22	46.14	38.35%	
		58.42	43	48.34		
		55.13	45.49	50.12		
GMA NaDCC 1000 ppm	Vinyl	76.48	45.11	59.1	9.81%	56.93%
		74.64	47.39	52.56		
		73.26	54.42	47.99		
	Ceramic	90.45	53.45	87.44	87.69%	
		90.32	60.47	86.18		
		89.86	66.49	86.37		
	Laminate	52.91	40.22	46.14	73.29%	
		48.38	43	48.34		
		51.75	45.49	50.12		
GMA Peracetic Acid 500ppm	Vinyl	71.04	46.36	51.56	11.07%	32.76%
		69.92	46.85	55.61		
		69.65	55.6	51.97		
	Ceramic	90.13	42.94	89.3	86.75%	
		87.35	58.22	85.39		
		90.27	58.42	80.31		
	Laminate	55.73	38.68	43.78	0.47%	
		53.29	45	40.12		
		54.87	39.1	43.89		

Summary:

Conclusion:

All GMA products were effective in removing soil from the coupons. The GMA Citric Acid and Washing Soda performed the best out of all the GMA products and performed better than one of the comparative products, Murphy Oil Soap. The GMA Etee Floor Cleaner although an effective cleaner in removing soil, performed the worst of all products tested.

Looking at the effectiveness of removing staining, only the GMA Citric Acid and Washing Soda was effective. All other products tested were not effective. It should be noted however, that all products tested were able to remove a significant amount of staining from the ceramic coupons specifically.