CLEANING LABORATORY EVALUATION SUMMARY

SCL #:	2009
DateRun:	06/03/2009
Experimenters:	Jason Marshall, Junhee Cho
ClientType:	Cleaner Manufacturer
ProjectNumber:	Project #1
Substrates:	Plastic
PartType:	Coupon
Contaminants:	Coatings
Cleaning Methods:	Manual Wipe
Analytical Methods:	Visual
Purpose:	To evaluate supplied aerosol base-board strippers on two types of flooring materials

Experimental Procedure:

The supplied floor strippers were used at full strength. Tiles were coated with The Clean Environment Co Cycle Finish C-12 (zinc free water base floor finish). Each tile was coated with three layers of finish. Each layer was applied in 10 mil thickness using paint brush and skimmed using a Precision Gage & Tool Co Dow Film Caster and allowed to dry for 30 minutes. After the three coats were dry, the tiles were then age accelerated in an oven at 37 C (98.6 F) for two days. After aging, coupons were removed from the oven and allowed to cool to room temperature.

The tiles were sprayed with an aerosol baseboard cleaner and allowed to soak for 3-5 minutes. After soaking, the coupons were scrubbed clean using a section of a floor stripping buffing pad. The pad was placed in a Gardner Straight Line Washability unit and the unit was run for 50 cycles. During oscillations, the pad was kept wet by adding additional stripper solution drop wise onto the pad or into the coated panel. At the end of the scrubbing, the tile was blotted dry with a paper towel and then observed to determine the amount of finish remaining. If the tile was not completely stripped, additional stripper was applied and the unit was run for another 50 cycles. The total number of oscillations to remove the coatings was recorded as a measure of removability. The stripping process was repeated until complete removal was obtained or when a maximum of 200 total oscillations was performed.

Qualitative ratings were assigned according to the following terminology:
Removal Ease Number of Oscillations Required for Complete Removal
Excellent <50
Good >50 but <100
Fair >100 but <200
Poor >200

The method used followed the recommendations for GS 40 (which referenced ASTM D1792-06).

Results:

Cleaner	Coupon	50 Cycles	100 Cycles	Rating
A00808	1-1 VCT	100		Excellent
	1-2 VCT	100		Excellent
	1-3 VCT	100		Excellent
	1-1 BB	100		Excellent
	1-2 BB	100		Excellent
	1-3 BB	100		Excellent
A00806	2-1 VCT	100		Excellent
	2-2 VCT	95	100	Good
	2-3 VCT	100		Excellent
	2-1 BB	100		Excellent
	2-2 BB	100		Excellent
	2-3 BB	100		Excellent
Troubleshooter	3-1 VCT	90	100	Good
	3-2 VCT	95	100	Good
		70	100	Good

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	3-3 VCT			
	3-1 BB	100		Excellent
	3-2 BB	100		Excellent
	3-3 BB	100		Excellent
Shineline Stripper	4-1 VCT	85		Good
	4-2 VCT	70	100	Good
	4-3 VCT	100		Excellent
	4-1 BB	100		Excellent
	4-2 BB	100		Excellent
	4-3 BB	100		Excellent
Baseboard Cleaner	5-1 VCT	100		Excellent
	5-2 VCT	100		Excellent
	5-3 VCT	100		Excellent
	5-1 BB	95	100	Good
	5-2 BB	100		Excellent
	5-3 BB	100		Excellent

Gloss Readings on Baseboard Tiles

Cleaner	Untreated	Ave	Floor coating	Ave	Stripped	Ave	Initial - Final
Amrep A00808							
	11.1	58.3	8.6				
	13	54.5	11.5				
	12.3	12.1	31	47.9	6.2	8.8	3.4
Amrep A00806							
	10.2	25.4	8.5				
	12.3	39	7.8				
	5.7	9.4	25.6	30	5.6	7.3	2.1
3M Trooubleshooter							
	9.7	28.4	11.5				
	3.7	23.9	11				
	10.5	8	44.7	32.3	15.2	12.6	-4.6
Spartan Shineline stripper							
	7	15	10.5				
	14.3	54.2	10.2				
	13.2	11.5	36.8	35.3	10.9	10.5	1
Claire Baseboard cleaner							
	12.5	29.8	9.3				
	6.9	45.9	12				
	12.2	10.5	33.7	36.5	5.2	8.8	1.7

Four of five products lowered the gloss level to less than the initial on the baseboard tiles. There may have been some surface scratching from the abrasive pad used in cleaning. The one product with a higher final gloss reading also was ranked as the lowest effective baseboard stripper based on ASTM ranking methodology.

Gloss Readings on VCT Tiles

Cleaner	Untreated	Ave	Floor coating	Ave	Stripped	Ave	Initial - Final

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Amrep A00808							
	17.2	48.9	7.1				
	15.7	52.7	7.5				
	10.8	14.6	63.7	55.1	7.8	7.5	7.1
Amrep A00806							
	16.2	51.2	6				
	14.1	51	4.5				
	17.6	16	64.2	55.5	5.7	5.4	10.6
3M Troubleshooter							
	15	55.4	5.9				
	14.5	57.3	6.5				
	21	16.8	63.5	58.7	4.5	5.6	11.2
Spartan Shineline stripper							
	19.2	54.3	3.6				
	18.9	64.4	4.3				
	11.2	16.4	68.2	62.3	4.4	4.1	12.3
Claire Baseboard cleaner							
	16.6	60.6	5.6				
	14.8	23.8	5				
	16.8	16.1	56.5	47	3.7	4.8	11.3

Each product lowered the gloss levels to a level below the initial readings. There may have been some surface scratching from the abrasive pad used in cleaning.

Product	Overall Ave
A00808	1
A00806	1.2
Troubleshooter	1.5
Shineline Stripper	1.3
Baseboard Cleaner	1.2

Summary:

Substrates:	Plastic
Contaminants:	Coatings

Company Name:	Product Name:	Conc.:	Efficiency:	Effective:	Observations:
Amrep Inc	Aspire Baseboard Stripper A00808 Aerosol	100	0.00	☑	Rank = 1
Amrep Inc	Misty X-Wax Stripper Aerosol	100	0.00	☑	Rank = 2
3M	Trouble Shooter Aerosol	100	0.00	☑	Rank = 5
Spartan Chemical Company	Shineline Baseboard Stripper - Aerosol	100	0.00	☑	Rank = 4
Claire Manufacturing	Baseboard Cleaner & Wax Stripper Aerosol	100	0.00	☑	Rank = 2

Conclusion:

Aspire was the only product tested that received Excellent ratings for both substrates. All six products received a removal rating at or above good based on the ASTM ranking methodology.