CLEANING LABORATORY EVALUATION SUMMARY

SCL #: 2014

DateRun: 10/19/2014

Experimenters: Junhee Cho, Carla De La Cruz

ClientType: Cleaner Manufacturer

ProjectNumber: Project #1

Substrates: Vinyl Composite Tiles

PartType: Coupon

Contaminants: Hucker's Soil

Cleaning Methods: Manual Wipe

Analytical Methods: Gloss-Color Meter

Purpose: To evaluate supplied products' efficiency in cleaning VCT tiles

Experimental Procedure: Supplied products were used according to the directions on the respective box. Three supplied cleaners and water were used. For this test, three VCT tile coupons were used (12*12 inch, one for each solution). These tiles were soiled with a mixture of Hucker soil. Hucker's Soil Formulation (Jif Creamy Peanut Butter 9.2%, Salted Butter 9.2%, Arrowhead Mills stone ground wheat flour 9.2%, Egg Yolk 9.2%, Evaporated milk 13.8%, Distilled water 45.8%, Printer's ink with boiled linseed oil 0.9%, Shaws saline solution 2.7%) using a handheld swab and allowed to dry for 24 hours at room temperature.

Their initial glosses were measured using a gloss meter before soiling and the glosses were measured again. After manual cleaning by direction, the glosses were measured one last time. The coupons were cleaned in the following fashion:
1. An eraser was taken and depending on whether it was an Eco eraser or a conventional one it was soaked in water for five seconds (the Eco eraser did not need the addition of water).
2. A subsection of the tile was then scrubbed for twenty seconds using gentle circular motions.
3. The entire section was then scrubbed for two minutes, using the same gentle circular motions.
4. Finally, the entire tile was cleaned one last time for 4 minutes.

Chemistries Evaluated: Water; Eco Eraser; Magic Eraser; Eraser Pads;

Preparation of Erasers:
Two of the erasers, the Magic Eraser, and the Eraser Pads were soaked in water for five seconds and then squeezed to get rid of excess water. The Eco Eraser did not require any preparation but had to be rinsed after each use.

Cleaning data can be calculated as percent detergency in the following equation:
% DET = R(cleaned) - R(soiled) / R(Initial) - R(soiled) X 100

Results: After manual wipe cleaning for 2min with Magic Eraser and Eraser Pad, we found that soil on VCT was diffused due to cleaning process; two VCTs were dirtier than we soiled. Therefore, the final glosses were lower than soiled gloss except Eco Erase. After manual clearing for 4 min, all final glosses of VCT were higher than soiled. In our analysis, Eco Eraser showed the higher efficacy of cleaning rather than other comparable products.

The table lists the cleaners and their respective gloss meter readings after the cleanings.

Gloss meter results

Cleaner	Initial (L)	Soiled (L)	Cleaned (2 min)	Avg. Clean
Eco Erase	81.88	65.8	73.72	49.25
Magic Eraser	82.36	72.76	72.16	-6.25
Eraser Pads	82.32	69.41	67	-18.67
Cleaner	Initial (L)	Soiled (L)	Cleaned (4min)	Avg. Clean
Eco Erase	81.88	65.8	75.54	60.57
Magic Eraser	82.36	72.76	76.91	43.23
Eraser Pads	82.32	69.41	73.19	29.28

Summary:

Substrates:	Vinyl Composite Tiles				
Contaminants:	Hucker's Soil				
Company Name:	**Product Name:**	**Conc.:**	**Efficiency:**	**Effective:**	**Observations:**

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A & C Green Cleaner LLC	A & C Eraser	100	60.57	☑	
Mr Clean	Mr Clean Magic Eraser	100	43.23	☐	

Conclusion: The Eco Erasers worked best at cleaning the tiles.