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ASTM D6540-17 Accelerated Soiling of Pile Yarn Floor Covering

Prepared for

Process Cleaning Solutions
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CGSB Laboratory Acceptance Program

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Scope: To determine the color-fastness and re-soiling properties of carpet cleaners.

Products Tested:

Product	LC#	Date Received	Lot#
PCS Peroxy MicroClean Concentrate Formula A	22-T0446	May 6, 2022	851073605414

Standards: ASTM D6540-17 Standard Test Method for Accelerated Soiling of Pile Yarn Floor Covering

Equipment: Michael's Pre 50 Carpet Extraction Machine
Dyson Slimball Vacuum
Caron 6010 Environmental Chamber
Chroma Meter CR-410 Colorimeter
ASTM D6540 Resoiling drum

Materials: Gorecki Dry Carpet Soil (lot# GH90004)
Shaw Industries Undyed Carpet, Style # 4G036
Zytel 6,6 Nylon Pellets (type 101L color NC010)

Procedure: The L*, a*, b* color values of a 5" x 8" virgin carpet swatch are measured and noted. Each carpet swatch is treated with the test product by spraying on a pre-determined amount via one of the test methods below.

Application Method

Approximately 10 grams of test product is applied to the surface of the carpet swatches. After 10 minutes the test product is extracted off the surface by using heated tap water (40°C) and then allowed to dry overnight. L*, a*, b* color values are then remeasured to determine color fastness.

The swatches are then placed in a soiling drum along with the standard carpet soil, nylon beads, and ball bearings. The soiling drum is rotated for 30 minutes, thus ensuring an even distribution of soil on the entire carpet surface. After the 30 minutes, the carpet swatch is vacuumed twice in the direction of the carpet pile and twice against the pile. The L*, a*, b* color values are re-measured and the delta E color change is calculated and reported. This will show the degree of re-soiling.





Results:

Table I: Degree of Resoiling

Product	Dilution	Extraction	Delta E
PCS Peroxy MicroClean Concentrate Formula A	32:1	With heated tap water	36.1
Water Control	n/a	With heated tap water	36.8

Table II: Color Fastness

Product	Dilution	Extraction	Delta E
PCS Peroxy MicroClean Concentrate Formula A	32:1	With heated tap water	0.5
Water Control	n/a	With heated tap water	0.8

Delta-E Explained: Delta E is used to describe (mathematically) the distance between two colors, (i.e., before and after exposure to solution). On a typical scale, the Delta E value will range from 0 to 100.

Delta E	Perception
≤ 1.0	Not perceptible by human eyes
1-2	Perceptible through close observation
2-10<	Perceptible at a glance

Conclusion: Both test products have comparable degrees of re-soiling and color fastness.

Project Managed by: _____
Kyle Lawrence - Lab Supervisor

Approved by: _____
Michael Sutton – Quality Control & Analytical Technology Manager





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