Standard Laboratory Test Practice For Measurement Of Surface Appearance Change Of Textile Floor Covering As A Result Of The Vacuuming Process

The Carpet & Rug Institute

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Standard Laboratory Practice for Vacuum Surface Appearance Change Of Textile Floor Covering As A Result Of The Vacuuming Process

1. Scope

1.1 This test practice provides a laboratory test for the measurement of surface appearance change of textile floor covering as a direct result of the vacuuming process.

1.2 This test practice is applicable to all residential/commercial upright, canister, central vacuum systems and combination cleaners.

1.3 This test practice may involve hazardous materials, operations, and equipment. This test practice does not purport to address all of the safety problems associated with its use. It is the responsibility of the user of this test practice to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

2. Precision & Bias

2.1 No precision and bias has been established.

3. Significance & Use

3.1 This test practice will determine the level of surface appearance change caused by the vacuuming process on a specific floor covering. The level of surface appearance change generated in the laboratory practice will differ from that in home/commercial installations due to variations in floor covering styles, soil and other solid particulate compositions which may be present, the vacuuming process employed by individual operators, and other factors.

3.2 In order to provide a uniform basis for measuring the performance in 1.1, standardized equipment and floor covering material are employed in this practice.

4. Apparatus

4.1 Conditioned laboratory at 70° F ± 5° F and 50% ± 5% relative humidity to be used for sample preparation and testing.

4.2 Conveyor with a minimum bed length of 14 feet (4.3 meters) and width of 36" (915 mm). Conveyor must be capable of maintaining specified test speed both forward and reverse. Conveyor bed must be equipped with brackets to hold the test vacuum stationary during testing and the vacuum handle at 31.5 inches (800 mm) above the test material.

4.3 Tachometer used to measure conveyor speed in feet/second.

4.4 Template comprised of the same material as test material a minimum of 4" wider than the head of the test vacuum mounted to a 1/16 inch steel panel using a full spread of double sided tape.

4.5 CRI Reference photograph for Vacuum Surface Appearance Change. See Attachment 1.

5. Vacuum Test Material

5.1 Test Material[1]	
Pile Fiber Weight / Pile Surface	**25 Oz/Sq Yd ± 7% / Cut-Pile**
Color	**71107 Light Beige**
Pile Height	**.56 Inch**
Gauge	**3/16**
Stitches/Inch	**6.5**
Yarn	**1500/2, 3.0 tpi x3.0 tpi.**
Fiber / Protectivet Treatment	**Nylon 6 (Honeywell) / Soil Resist treated (3M Scotchgard) NOTE: Fiber subject to change**
Primary Backing	**28 x 11 pick count Woven Polypropylene**
Secondary Backing	**16 x 5 pick count Woven Polypropylene**

[1] *A suitable carpet is manufactured by Shaw Industries, Inc. Style A3571 Equalizer, Color 71107*

6. Conditioning

6.1 Test room - temperature and humidity are maintained in standard laboratory conditions, 70° F ± 5° F and 50% ± 5% relative humidity in which all conditioning, sample preparation, and testing is performed.

6.2 All components involved in the test shall remain and be exposed in the standard laboratory conditions for at least 16 hours prior to the start of the test.

7. Standard Test Material

7.1 New test material shall conform to 5.1.

7.2 Cut three samples of each test material to a size of 39 3/8" (1000 mm) length direction x 10 3/8" (263 mm) width direction.

7.3 Mark the test specimen with test identification number.

7.4 Condition prepared sample a minimum of 16 hours prior to testing.

8. Vacuum Cleaner Conditioning

8.1 Preconditioning a New Test Vacuum Cleaner - Run the vacuum cleaner in at rated voltage ± 1% and rated frequency with filters in place for one (1) hour.

8.2 Preconditioning Rotating Agitator Type Vacuum Cleaner in a stationary position. Operate the vacuum cleaner for one (1) hour with the agitator bristles not engaged on any surface.

8.3 Preconditioning a Straight-Air Canister Vacuum Cleaner-Operate the vacuum cleaner for one (1) hour with a wide-open inlet (without hose).

8.4 Test Vacuum Cleaner Settings. If various settings are provided, set the motor speed setting, suction regulator, nozzle height, or combination thereof using the manufacturer's specifications as provided in the instruction manual for each type of carpet. Contact the manufacturer if no instructions are given, or if the instructions are unclear or inadequate.

9. Procedure

9.1 Prepare test carpet in accordance to 7.

9.2 Place sample in template on conveyor with pile lean if present, towards the vacuum.

9.3 Install vacuum with new bag on the template 4-6 inches in front of the test specimen. Ensure that each direction change is made on the template and off the test sample.

9.4 Calibrate conveyor speed at specified 1.8 ft/second.

9.5 Set conveyor counter for specified number of passes.

9.6 Energize test vacuum.

9.7 Activate continuous back and forth conveyor movement until specified number of passes are achieved.

9.8 De-energize vacuum and remove test sample.

9.9 Place new test specimen in template and repeat 9.2 through 9.8 for the desired number of test specimens, minimum three (3) required.

9.10 Assess the level of appearance change within 24 hours of the conclusion of the test using the CRI Reference photograph for Vacuum Surface Appearance Change.

10. Report

10.1 Vacuum cleaner manufacturer, model, filter and bag types and other descriptive information.

10.2 Complete test material description, fiber type, pile weight and pile height.

10.3 Speed of travel of vacuum cleaner expressed in feet/second.

10.4 The number of passes of the vacuum cleaner over the test carpet.

10.5 If the average level of appearance change on the three (3) test specimens is acceptable or unacceptable.

Attachment 1

NOTE: A panel of carpet manufacturing technical personnel performed a blind examination of multiple textile floor covering samples with varying degrees of surface appearance change caused by multiple passes of a vacuum in a controlled environment. Based upon current appearance retention warranties a maximum level of appearance change as presented below caused by the vacuuming process was established.

CRI Photographic Reference for Rating Vacuum Surface Appearance Change

05 / 2000

Maximum allowable appearance change per CRI Test Practice for Vacuum Surface Appearance Change

ORIGINAL VACUUMED