



SOA S-401 (RS) Test Method for Resoiling of Spot Remover and Pet Stain & Odor Solutions

1. Scope

- 1.1. This test method is intended to evaluate the resoiling characteristics of solution residue on carpet.
- 1.2. This test method is applicable to all Spot Remover and Pet Stain & Odor cleaning solutions.

2. Safety

- 2.1. This practice does not purport to address all the safety concerns, if any, associated with its use. It is the responsibility of the user of this practice to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

3. References

- 3.1. ASTM D6540 Standard Test Method for Accelerated Soiling of Pile Yarn Floor Coverings
- 3.2. AATCC Evaluation Procedure 2 – Gray Scale for Staining
- 3.3. SOA Test Carpet Specifications
- 3.4. SOA S-100 Preparation of Solution and Test Method for pH and Optical Brightener
- 3.5. AATCC LP4 Laboratory Procedure for Synthetic Soil

4. Terminology

- 4.1. Resoiling – a propensity of cleaning solution residue to attract soil at an accelerated rate.

5. Apparatus and Materials

- 5.1. Hexapod tumble tester drum meeting specifications as stated in ASTM D6540
- 5.2. Tape – double-sided, pressure-sensitive adhesive, 2.0 in. (50 mm) width
- 5.3. Vacuum Cleaner – upright-type, SOA-specified vacuum with a rotating brush
- 5.4. Polyamide pellets having a maximum size of 2-3 mm
- 5.5. Weighing scale accurate to 0.01 gram and having a capacity of at least 2000 grams
- 5.6. Chrome alloy ball bearings 9.5 mm (0.375”) diameter
- 5.7. AATCC Standard Soil as specified in AATCC LP4 Laboratory Procedure for Synthetic Soil
- 5.8. AATCC Gray Scale for Staining
- 5.9. Illumination system capable of providing a minimum of 1000 (\pm 50) lux (100 lumens/sq. ft) of north sky light or equivalent light source.
- 5.10. Plexiglass template with three six-inch circle cut-outs for spray application
- 5.11. Trigger pump spray bottle with adjustable spray nozzle
- 5.12. Paper towels – white, absorbent, and unprinted
- 5.13. Conveyor with a minimum bed length of 10 feet and stroke of 7 feet and minimum bed width of 35 inches. Conveyor must be capable of maintaining specified test speed both forward and reverse. Conveyor must be equipped with brackets to hold the test equipment stationary, exert no horizontal or vertical force.
- 5.14. Tachometer used to measure conveyor speed in meters/second (feet/second).
- 5.15. Carpet mounting platform comprised of the same material as test carpet a minimum of 102 mm (4 inches) wider than the head of control extractor mounted to conveyor plate using double sided tape.
- 5.16. Test room – temperature and humidity maintained in standard laboratory conditions, 50% (+/- 5%) relative humidity and 70 (+/- 5) degrees in which all conditioning and testing is done.

6. Test Specimen

- 6.1. Test carpet description: Residential Cut Pile (See SOA Test Carpet Specifications)
- 6.2. Cut one sample of the test carpet to fit the inside wall of the Hexapod tumble tester drum. Test samples are 8.5 inches by 37.4 inches. The long dimension should be parallel to the machine direction.
- 6.3. Mark the test specimen with the test identification number.
- 6.4. Prepare carpet for testing by clipping selvedge edge and vacuuming to remove loose fibers with the control
- 6.5. Vacuum, using 10 passes at 0.55 m/second (1.8 ft/second)
- 6.6. Condition prepared samples in test room a minimum of 16 hours prior to testing.

7. Preparation of the Soiling Media

- 7.1.1. Place 3 (+/- 0.05) grams of the AATCC standard soil for each 1000 (+/- 1) grams of polyamide pellets in the Hexapod tumble tester drum.
- 7.1.2. Mix the soil and pellets in the Hexapod tumble tester drum for 20 minutes ensure a homogeneous mixture of the soil and polyamide pellets.
- 7.1.3. The soiled pellets are ready to use.

8. Test Format

- 8.1. Review COC for additional cleaning instructions prior to following the test method below. Follow cleaning instructions provided in the COC. If no cleaning instructions are provided, follow the test method as written.
- 8.2. Applying Spot Remover and Pet Stain & Odor Solution:
 - 8.2.1. Prepare solution as described in SOA S-100 Preparation of Solution and Test Method for pH and Optical Brightener.
 - 8.2.2. Place plexiglass template on carpet surface to restrict spray to cut-out areas only.
 - 8.2.3. Spray cleaning solution evenly across the entire exposed surface of the test carpet until saturated and allow to dwell for 2-3 minutes or apply in accordance with the cleaning instructions provided on the COC. Solutions shall be applied using the same number of applications used for SOA S-400 (CE) Test Method for the Evaluation of Cleaning Effectiveness of Spot Remover and Pet Stain and Odor.
 - 8.2.4. Blot the treated area by pressing with a clean paper towel. Continue blotting with paper towels until all evidence of liquid transfer is gone.
 - 8.2.5. Allow carpet to dry in conditioning rack for at least 16 hours not to exceed 72 hours.

8.3. Soiling of the Test Carpet

- 8.3.1. Secure the carpet to the inside wall of the Hexapod tumble tester drum with the pile lay direction if present in the opposite direction of the Hexapod tumble tester drum rotation (double-sided tape may be used.)
- 1.1.1. Place 1000 (+/- 2) grams of chrome alloy ball bearings into the Hexapod tumble tester drum. Place 250 grams (+/- 0.2) of previously prepared soiled pellets into the Hexapod tumble tester drum for resoil testing.
- 8.3.2. Start the Hexapod tumble tester drum and allow it to rotate for 30 minutes.
- 8.3.3. Remove the test carpet and physically remove any loose pellets from the carpet.
- 8.3.4. Using the vacuum conveyor and control vacuum, vacuum the test carpet using 4 passes in the long direction at 1.8 feet per second. (**Note:** Ensure the last stroke of the vacuum is in the direction of the pile lay.)

9. Evaluation

- 9.1. Grade each treated carpet circle using the AATCC Gray Scale for Staining in accordance with AATCC EP2 using the untreated carpet outside the circle as the control.
- 9.2. Step 9.1 above is completed by three different trained technicians.

10. Report

- 10.1. Record date pellets were soiled.
- 10.2. Record the grams of pellets used to soil the carpet.
- 10.3. Record date carpet was soiled.
- 10.4. Record the average gray scale grade.
- 10.5. Report any deviations from this test method.