

To qualify for Seal of Approval, extractors must meet testing requirements for three important elements of performance. Each of these tests is explained in the brief overviews below:

1. Standard Test Practice to Evaluate Cleaning Effectiveness of Carpet Cleaning Equipment Using X-Ray Fluorescence

X-ray Fluorescence (XRF) is used to detect elements of each compound used to soil a control carpet, then to determine their concentrations after a cleaning process. XRF is a technique that detects elements by ionizing the constituent atoms and recording the characteristic energy signatures given off by the elements as they seek to regain greater stability.

Five compounds containing suitable elements for XRF detection were chosen with consideration given to particle size (Fe_3O_4 at < 1 micron to ZnO at < 74 microns), hardness, solubility, and surface characteristics.

Each compound is first applied to nylon pellets at 6 grams of compound per 1000 grams of pellets (3g/1000 for strontium carbonate). Fifty grams of each of the five compound coated pellets are used to soil a 400 square-inch carpet following procedures found in ASTM-D 6540. Each soiled carpet is vacuumed with a straight suction air tool before it is scanned using XRF to verify the starting concentration of each compound. All XRF scans are with the carpet on a conveyor such that in the 3-minute scan approximately 120 square inches of the 400 square inch carpet are analyzed. The soiled test carpet is then cleaned with the extraction equipment submitted for evaluation. Two wet and two dry passes at 1.0 foot / second are applied unless otherwise specified. Three samples per test are used and the average result for amount removed is reported.

- Soil Removal Standard – Percent of soil removed after water only cleaning operation..
 - 55 - 69% to obtain SOA Bronze Certification
 - 70 - 79% to obtain SOA Silver Certification
 - 80 - 89% to obtain SOA Gold Certification
 - 90 - 100% to obtain SOA Platinum Certification

2. Standard Test Practice for Determining Residual Moisture as a result of Water Extraction

This test practice is intended to determine the moisture left in a specific carpet as a result of simulated cleaning with a standard hot water extraction machine. The resultant difference in weight is measured and reported as ounces of residual moisture per square yard.

- Residual Moisture in carpet immediately after cleaning operation..
 - $\leq 271 \text{ g/m}^2$ (8 oz/yd²)

3. Standard Test Practice for Determining Surface Appearance Change as a result of Wet Extraction

This test practice provides a laboratory test for the measurement of surface appearance change of textile floor covering as a direct result of multiple cleaning passes in a controlled environment.

This test practice is applicable to all residential/commercial cleaning systems. Six cleaning cycles are applied to residential cut pile carpet for residential specific systems. Eleven cleaning cycles are applied to commercial cut pile carpet for commercial specific systems. Texture appearance change is visually rated.

- Appearance Retention:

The degree of surface appearance change between the exposed and unexposed sample is worse than, equal to, or better than the appropriate reference photograph based on the rating scale in Table 1.

Table 1	
Surface Appearance Change Rating Scale	
Better	+1
Equal	0
Worse	-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 caused by the vacuum process was established.