Primary Carpet Tests and Brief Description

Listed below are the tests commonly used in the Carpet Industry for product testing and comparisons.

Test Name	Reference Method	Description
Radiant Panel	ASTM E 648	Primary flammability test for all carpets. Has horizontal orientation, with inclined panel. Burn measurement taken at 15 Min. and at point of flame out. Rating at 15 min. is required by NY Local Law 16. Class 1 requires minimum .45 watts/cm2. NY requires min. .50.
Smoke Density	ASTM E 662	NBS smoke test. Run in both flaming and smoldering modes. Vertical orientation of sample unfairly biases test toward some materials. Reading taken at 4 min. for NY Local Law 16. NY requires max 300. Test duration is limited to 20 minutes under most circumstances. Class 1 rating is 450 or less. Most vinyl tiles fail the smoldering full test, but this number is not used by anyone.
Pill Test	DOC FF1-70	Methenamine Pill Test for Flammability. The only Federal requirement for carpet flammability. Everything made from nylon passes. Has only a pass/fail criteria. Flame must burn out from the pill to touch the side of an 8 inch diameter circle to fail. May be specified for face or back.
Tunnel Test	E 84	Steiner Tunnel Test - generally not used for carpet anymore
Flammability Test	CAN/ULC-S102.2	Canadian Flammability test. A cross between a Steiner Tunnel and an NBS. Gives both flame spread and smoke numbers. More difficult to pass than the Panel/NBS combination. Requires a large sample size along with a large Purchase Order.
Taber Abrasion Test		Consists of a circular sample about 6 inches in diameter rotating on a turntable. Stone wheels are rested on the surface, abrading the pile. Generally not used much anymore as it is a severe test. Usually ran to a set number of cycles,

		sometimes to a physical endpoint
DuPont Pilling & Fuzzing		Sometimes called the DuPont Tumble test. Carpet is put into a drum along with blocks of wood, rubber, etc. Drum is rotated for specified time. Measures pile crush and fuzzing of loops. As with many wear tests, is best used for comparison purposes.
Accelerated Soiling	AATCC 123	Carpet sample is loaded into small drum. A metal vial containing laboratory-grade dirt (no I'm not kidding) with holes in lid is placed in the drum, and the whole mess is tumbled. The carpet is removed and rated before and after vacuuming. This and other accelerated soiling tests are considered questionable soiling predictors.
Phillips-Dean Chair Test		A set of preweighted chair castors are rolled across carpet for 10K to 50K cycles. Usually weighted to 150 lb. A severe test for carpet, often used by manufacturers in giving chair pad warranties (chairs can be used without pads).
Sim Floor		Carpet is placed on 12 inch diameter turntable and rotated with castors pressing onto surface. Generally ran between 3K to 24K cycles. Comparative results have shown to be somewhat difficult to interpret due to apparent inconsistencies in the test.
Hexapod Test	ASTM D 5252	Carpet is loaded into a drum with a 4 lobed, plastic-coated metal tetrapod. Drum is rotated for 6K to 12K cycles. Fast becoming the wear test of choice. Is now an ISO test method.
Electrostatic Propensity	AATCC 134	Static generating potential of carpet under standard conditions. Measured by having a person walk on the sample while holding an electrode using different shoe soles. Max 3.5 KV is passing.

… four more pages of testing descriptions