

ANDOVA TILE SPECIFICATION GUIDE AND INDUSTRY STANDARDS BREAKDOWN

The American Society for Testing and Materials (ASTM) and the American National Standards Institute (ANSI) are nationally recognized organizations, which identify and develop industry test methods and technical standards.

SCOF, DCOF

The tile industry uses ASTM C1028-06 to measure the Coefficient of Friction (COF), or the relative slip resistance of tile surfaces. This procedure measures the maximum force required to initiate motion, or slip, across the tile surface. The values are recorded and averaged to determine the Static COF (SCOF).

A newer standard, called Dynamic Coefficient of Friction (DCOF) AcuTest, is an evaluation of the COF of a tile surface under known conditions using a standardized sensor prepared according to a specific protocol ANSI A326.3.

Measurements are made using a tribometer, under wet conditions using a 0.05% sodium lauryl sulfate solution to establish a thin film as would be present when a slip occurs. Because many variables affect the risk of a slip occurring, the SCOF and DCOF measurement shall not be the only factor in determining the appropriateness of a tile for a particular application

Water Absorption

Water Absorption, ASTM C373-88 Water absorption is measured using ASTM C373-88. Individual tiles are weighed, saturated with water, then weighed again. The percent difference between the two conditions is referred to as the water absorption value. Tiles are classified according to water absorption percentages as follows: value. Tiles are classified according to water absorption percentages as follows:

Impervious Tiles exhibiting 0.5% or less.

Vitreous Tiles exhibiting more than 0.5%, but not more than 3.0%.

Semi-Vitreous Tiles exhibiting more than 3.0%, but not more than 7.0%.

Non-Vitreous Tiles exhibiting more than 7.0%.

Scratch Hardness – Mohs Scale Ratings

The relative hardness is an important specification on glazed tiles. The test is performed by scratching the surface of the tile with different minerals and subjectively assigning a "Mohs Scale of Mineral Hardness" number to the glaze. The softest mineral used is talc ("1" rating)—the hardest is a diamond ("10" rating).

Other minerals of varying hardness providing Mohs Scale of Mineral Hardness values of 5 or more are suitable for most residential floor applications.

A value of 7 or greater is normally recommended for commercial applications.

Break Strength

ASTM C648-04 Ceramic tiles used on floors and walls must be able to withstand the expected load bearing capacity of various installations. The tile industry uses ASTM C648-04 to determine the strength and durability of the tile. A force is applied to an unsupported portion of the tile specimen until breakage occurs. The ultimate breaking strength is then recorded in pounds. Final selection of the tile should be based upon the breaking strength and the appropriate installation method. Tile integrity is critically dependent upon proper installation.



ANDOVA

LIFESTYLES REDEFINED

TILES

Chemical Resistance

ASTM C650-04 Chemical resistance is measured using ASTM C650-04. A tile sample is placed in continuous contact with a variety of chemicals for 24 hours, rinsing the surface and then examining the surface for visible variation.

Shade Variations

Tiles range from complete consistency to a more random appearance. Here's an overview of color and shading of individual tile selections.

MONOCHROMATIC (V0) Very uniform, monochromatic color

LOW (V1) Consistent color within each tile and from tile to tile

MEDIUM (V2) Color variation within each tile

HIGH (V3) Some variation from tile to tile, and within each tile

RANDOM (V4) Considerable variation from tile to tile

Abrasion Resistance

ASTM C1027-99 The durability of glazed tile is measured subjectively by observing the visible surface abrasion of the tile when subjected to the ASTM C1027-99 testing procedure.

Tiles are classified into the following classes according to their durability:

PEI 0/CLASS ZERO Not recommended for use on floors

PEI 1/CLASS ONE Light Residential Light traffic Residential floor coverings in areas subject to soft-soled footwear or normal footwear traffic, without scratching dirt (i.e. domestic bathrooms and bedrooms without exterior access).

PEI 2/ CLASS TWO Residential Medium to Light traffic Residential floor coverings in areas subject to soft-soled footwear or normal footwear traffic with small amounts of scratching dirt (i.e. rooms in the living areas of homes except kitchens, entrances and other areas that may be subjected to high usage).

PEI 3/ CLASS THREE Heavy Residential or Light Commercial Medium to Heavy Traffic Residential or light commercial may withstand normal footwear and regular traffic, with some dirt and/or other abrasives present in limited quantities. Tile in this class may be used in light commercial installations with limited foot traffic and with no direct access to the outside. Examples may include residential kitchens and hallways with limited traffic from the outside.

PEI 4/ CLASS FOUR Commercial Heavy Traffic Residential and commercial floor coverings subjected to considerable traffic and scratching dirt (i.e. entrances, workrooms, inns, exhibition halls, and sales rooms, as well as other rooms in public and private buildings). Floors should be adequately protected against scratching dirt at the entrances to buildings by either floor mats or some other footwear cleaning device.

PEI 5/ CLASS FIVE Heavy Commercial Heavy Traffic Heavy commercial floor coverings subject to heavy traffic with very abrasive soil.

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