

Abrasion Resistance of Glazed Floor Tiles (PEI)

All floor coverings are exposed to wear due to the abrasive action of dirt particles contained on the soles of the user's footwear. Over prolonged periods this causes the appearance of the tile to change. As applied to glazed ceramic floor tiles, surface abrasion is assessed by BS EN ISO 10545-7. This test is a compulsory requirement for glazed ceramic tiles intended to be used in flooring applications. This test involves subjecting the glazed tile to an abrasive load and establishing the number of revolutions required to cause visible damage to the glazed surface. The test results are classified into one of six wear resistance groups ranging from class 0 (unsuitable for floors) to class 5 (suitable for intensive pedestrian traffic). The test and the associated scale were originally developed by the Porcelain Enamel Institute (PEI) and hence the term PEI is frequently encountered in this field. Annex N of EN14411 provides informative guidance on suitable end uses for each wear class. To avoid the risk of premature wear, tiles with a wear resistance classification that meets (or exceeds) that required for the particular application should be used.

- Class 0 Not recommended for use on floors.
- Class 1 Very light traffic. Soft soled footwear or bare feet without direct access from outside (ensuite bathrooms).
- Class 2 Light traffic. Soft soled or normal footwear with very occasional exposure to scratching dirt (living rooms, main bathroom areas, bedrooms).
- Class 3 Light to Moderate Traffic. Normal footwear in the presence of small amounts of scratching dirt (any residential area with the possible exception of some entries and kitchens if extremely heavy or abrasive traffic is anticipated).
- Class 4 Moderate to Heavy Traffic with some scratching dirt (entrances, commercial kitchens, hotels, exhibitions).
- Class 5 Heavy traffic over sustained periods with some scratching dirt (shopping centres, airport concourses, hotel foyers)

BS EN ISO 10545-7 and the associated scale are only applicable to glazed tiles. Unglazed floor tiles, e.g. through body porcelain are subjected to a different wear test, namely BS EN10545-6 which measures resistance to deep abrasion.