The University of Sydney
Faculties of Health Sciences and Architecture
The Home Modification:
Information Clearinghouse Project

# Consumer Factsheet:

## Selecting coatings for tiled floors

### 1. Slip resistance and mobility

Slips and falls happen everyday, but people with mobility impairment are at a greater risk, which can lead to injuries and even secondary disabilities.

Slip resistance is the force that resists the tendency of a shoe, sole, prosthetic or walking aid tip to slide along a surface. A slip resistive surface can reduce the risk of falls and related injuries.

### 2. What are tile coatings?

Tile coatings are a treatment applied to tiles which sit on the tile surface above the tile glaze. Their purpose is to improve the slip resistance of the surface, which should reduce the likelihood of slips and falls.

### 3. How is slip resistance measured?

There are many different ways to measure slip resistance. Slip resistance often is expressed as a number ranging from 0-1. This value is known as the “coefficient of friction” or COF. The continuum of 0-1 represents a very slippery surface (0) to a very slip resistant surface (1).

### 4. What COF should I look for in slip resistant products?

Generally a slip resistance of 0.4 is recommended for tiles. However, people with mobility impairment may need a higher slip resistance.

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## 5. Are some tiles more slip resistant than others?

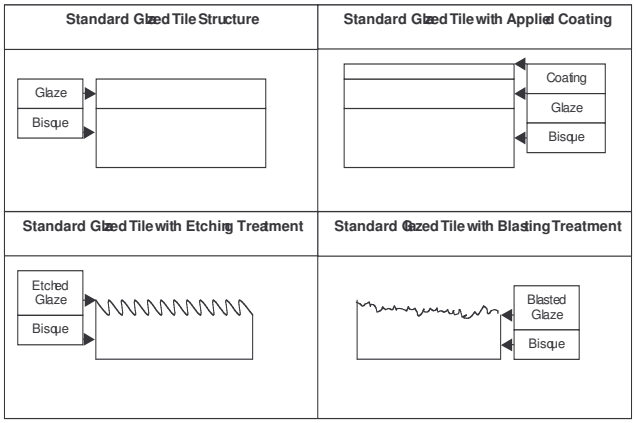
Generally unglazed tile such as stoneware or natural stone is more slip resistant than glazed tile. However, a slip resistant coating can eliminate any significant difference between the two. It is also desirable for the floor surface to have little warpage, as this affects where material is deposited on the tile which could grab footwear and lead to slips/trips. There is conflicting information about how tile size affects slip resistance but generally it is believed that smaller tiles with a high grout to tile ratio are more slip resistant.

## 6. Are there other ways to increase the slip resistance of tile surfaces besides tile coatings?

Etching and blasting also increase surface roughness, which improves slip resistance of tile floors. Etching involves the use of an etching agent, such as hydrochloric acid, which decomposes bits to form ridges and alleys on the surface. Blasting involves either shooting abrasive particles onto the tiled surface at high pressure or using lasers to create pits in the surface.

## 7. What advantages do tile coatings have over etching and blasting?

Etching and blasting reduce the tile's water resistance; tile coatings do not. If water seeps through or between the tiles, it can damage the floor base underneath, and repairs are costly. Because tile is often used in "wet" areas of the home (bathroom, laundry room, kitchen, toilet), it is important to maintain the tile's water resistance.




## 8. What types of tile coatings are available?

Tile coatings can be either chemical or abrasive. Chemical coatings are made from a plastic or resin base to which chemicals are added. Abrasive coatings contain grit or other particles that provide tread.

Tile coatings can also be classified by the application method. There are preformulated coatings that are ready to apply. There also are dry products that consumers can add to coatings or glazes. Finally there are dry products that are spread over a tile surface while the coating or glaze is still wet.



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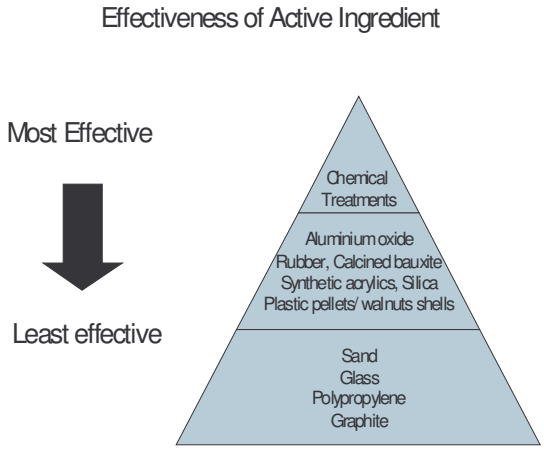
## 9. Are some tile coatings more effective than others?

Chemical treatments are regarded as the most effective, followed by abrasive coatings containing aluminium oxide or synthetic particles. The least frequently recommended coatings contain sand, glass, polypropylene and graphite. In general, additives that are heavy, easily dislodged or crushed under heavy traffic are less effective.

Preformulated coatings may be more effective than coatings that consumers must mix or coatings that required particles to be spread on them while wet.




## 10. Can I use slip resistant coatings in areas where shoes are not worn?

Yes, but choose a product that is appropriate for such areas. Abrasives that are recommended for industrial use should not be used in private homes because they can damage skin. It also has been suggested that ceramic tile with a protruding pattern could be used to provide slip resistance in areas where shoes are not worn.

## 11. How do I maintain a slip resistant coating on my tile floor?

No matter what kind of coating you use, it is important to use correct cleaning products and methods to keep the floor slip resistant. Some cleaning products may interact with ingredients in the coating and make it less slip resistant. If the coating is not labelled with maintenance instructions, contact the manufacturer and ask for them.

Coatings also will wear off and need to be reapplied periodically. Again, the coating manufacturer should be able to tell you how often you need to reapply and whether you need to strip the old coat off before applying a new coat. The lifespan of coating products vary from 6 months to ten years, with an average suggested life of about 3 years. Remember that the life of a coating will vary depending on traffic!

## 12. What do I need to know about manufacturers' claims and specifications about slip resistant tile coatings?

It is important to read manufacturers' information carefully and make sure you understand what they claim. For example, if a manufacturer claims its product is endorsed by a particular organisation, you need to know whether that organisation watches out for consumers or manufacturers. If a manufacturer claims that its product complies with or meets the

requirements of a certain law or regulation, you need to know whether that law or regulation actually imposes any requirements.

It also is important to understand what manufacturers claim about a product's slip resistance. Measuring the slip resistance of one surface with two different methods may yield two different results. You need to know which methods were used in order to compare claims about various products. The slip resistance of a floor also will vary if it is wet or contaminated, so it also is important to know the conditions when a test was done.

## 13. Are there regulations that govern tile coatings?

There are no regulations that impose specific requirements on tile coatings or on the use of tile coatings. Many laws and regulations, however, make recommendations and provide useful information about slip resistance, flooring materials, and floor treatments.

Both the Disability Discrimination Act 1992 and the Building Code of Australia recommend certain areas be slip resistant, but neither impose any specific slip resistance requirements for private homes or specifies how to achieve the recommend slip resistance.

Several Australian Standards (AS) provide guidance about slip resistance. AS 1428 requires that accessible paths of travel be slip resistant and identifies some flooring materials that are suitable. It does not, however, address floor treatments. AS 4226 recommends that specific "wet areas" be slip resistant and rates various floor materials according to their slip resistance. It does not, however, rate floor coatings. AS 3661.2 provides guidelines for selection and installation of surfaces, improvement of existing surfaces, and care and maintenance of surfaces. AS 4586 sets out a way to classify materials (including surface treatments) according to their slip resistance, and AS 4663 describes ways to measure the slip resistance of surfaces.

## 14. Where can I find more information?

a. Regional home modification and maintenance service provider
b. Occupational Therapist
c. Architect or builder
d. Resource library on the HMinfo website