



Roughening Cream for Ceramic Tile and Natural Stone

SP Singapore Polytechnic

Technology Licensing Opportunity

Technology Overview

Overlay of epoxy flooring on existing tile floors has gained popularity in residential, commercial and industrial spaces due to the durability and maintainability of epoxy floors. While epoxy can be coated on tile floors, the top layer of ceramic glaze must first be removed to ensure high bonding strength. It is typically removed by mechanical grinding, which is noisy and dusty, and may be physically challenging in confined spaces like bathrooms and toilets.

The present invention is a cream that will chemically etch various types of commonly used ceramic tiles, porcelain tiles and natural stone surfaces. It is easily applied and can be used as an alternative to mechanical grinding when the surface must be roughened to improve resinous coating adhesion. Compared to mechanical grinding, the cream does not generate dust and provides a uniformly rough surface without gouge marks that could show through the floor coating.

In addition, it is economical and simple for renovation contractors and applicators of resinous coatings to produce and use.

Potential Applications

Industry:

- Construction and renovation

Applications:

- Cleaning, etching, and roughing ceramic tile, porcelain tile, natural stone and concrete

Products:

- Ceramic tile, porcelain tile, natural stone and concrete cleaner
- Ceramic tile, porcelain tile, natural stone and concrete etchant for surface preparation before coating or waterproofing
- Ceramic tile, porcelain tile, natural stone and concrete etchant to achieve a rough anti-skid/anti-slip surface

Commercialization / R&D Opportunities

- ✓ Ready for commercialization
- ✓ Looking collaborators for further development / to develop new applications
- ✓ Available for licensing
- ✓ Accepting business plans from interested parties

Intellectual Property -

- Know-how / Trade Secret

Technology Features & Specifications

This technology relates to an etching cream composition and method of chemically cleaning, etching, and roughing ceramic and porcelain tiles and natural stones.

- No dust generated unlike sanding or mechanical grinding
- Effective on various types of ceramic tiles, porcelain tiles and natural stones
- Cream-like consistency for easy application and removal by brush, spatula, or trowel
- Can be applied on horizontal and vertical surfaces without splashing or dripping
- Gives a uniform, dull surface without scratch marks
- Economical as cream can be reused up to 3 times
- Easy to clean up with water
- Promotes adhesion between tile surface and decorative coatings and waterproof coatings
- Low-cost formula and easy production process
- Ideal collaboration partners: renovation contractors, coating applicators

Unique Value Proposition

- The market potential of tile etching creams can be estimated by looking at related markets such as the resinous coating and waterproofing coating markets. Epoxy coating over tile in bathrooms has significant market potential due to its durability, ease of maintenance, and attractive aesthetic options. Tile etching creams are attractive to the market because it eliminates the need to either hack and remove the tiles or grind the surface of the tiles before applying the epoxy flooring. This makes the renovation process quieter and less dusty. Moreover, grinding the floor in confined spaces like bathrooms is physically difficult, so the comparative ease of using tile etching creams could lead to improved efficiency and workmanship.

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