

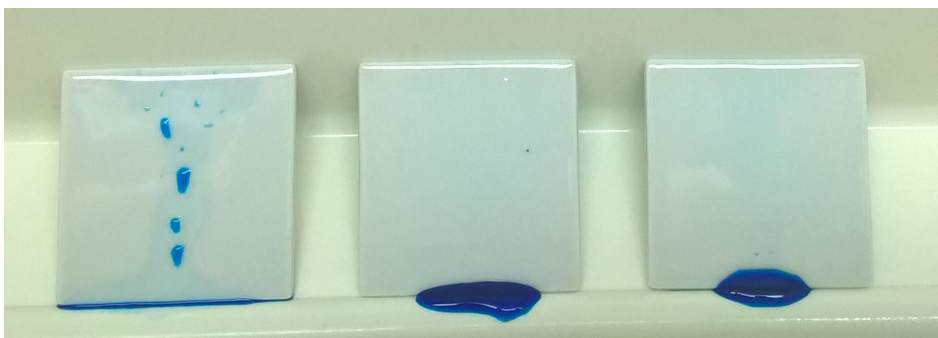
Ultra-thin, fluorine-free hydrophobic coating

Transfer offer

Hydrophobic surfaces are often needed to repel water and dirt. Corresponding coatings are based usually on fluorine-containing materials, which is not always desirable. The present hydrophobic coating is completely free of fluorine, only a few nanometers thin and abrasion-resistant on glass-like substrates according to ASTM D2486. Other substrates, e.g. plastics, can also be finished after appropriate pretreatment (Pyrosil®).

Solution

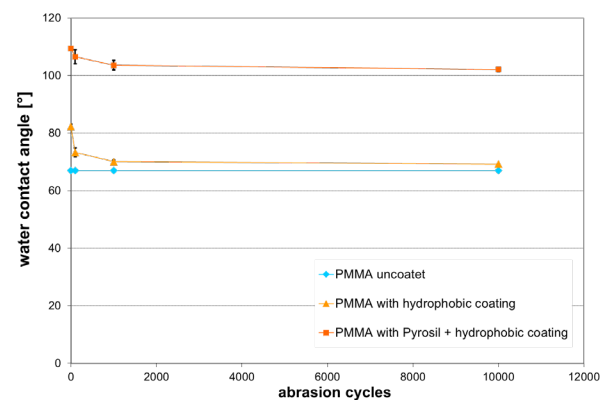
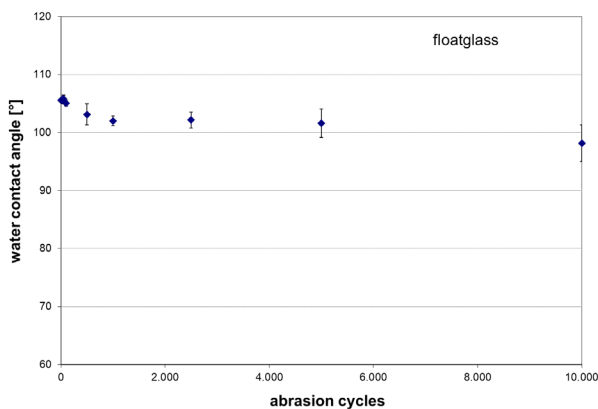
In addition to oxidic substrates like glass and ceramics, INNOVENT has appropriate pre-treatment possibilities to make alternative substrates accessible for wet chemical hydrophobicing. The coating solution can be applied to the corresponding substrates by spraying, dipping, polishing etc. As a post-treatment only a rinsing of the samples is necessary. A thermal fixation is not required. If the hydrophobic coating is used as finish on functionalized surfaces, such as glass with photocatalytically active coating, this function remains fully active. The coatings is optical transparent due to its low thickness (< 10 nm).



ceramic tiles

left: uncoated, middle: hydrophobic coating, right: hydrophobic coating after 10000 abrasion cycles (ASTM D2486)

Methylene blue solution was dropped on the upper edge of the tiles, and then the solution flowed off



Abrasion stability according to ASTM D2486, on floatglas using brushes, on PMMA-substrate using microfibre cloth

Advantages

- **Water repellend coating**
- **Wet chemical application without thermal post treatment**
- **Extremely thin (<10 nm), transparent**
- **Temperature stable until 150°C, stable against abrasion**
- **Can be applied to any substrate with appropriate pre-treatment**

Level of development and property rights

The coating can be applied to glass and ceramic substrates without any problems. Industrial property rights have been applied for the application in the field of syringes coating.

For coating other substrates, joint developments can be carried out with the customer (especially with regard to pretreatment).

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