

CLEANABILITY OF "LAPPATO" PORCELAIN STONEWARE

Maria Soranzo,¹ Elisa Rambaldi,^{2*} Francesca Prete,²

Giuliana Bonvicini,² Maria Bignozzi.^{2,3}

¹ Fila Industria Chimica Spa, S. Martino di Lupari, Padova, Italy

² Centro Ceramico Bologna, via Martelli 26, Bologna, Italy

³ Department of Civil, Chemical, Environmental and Materials Engineering, University of Bologna, via Terracini 28, Bologna, Italy

* E-mail: rambaldi@cencerbo.it

Keywords: Porcelain stoneware tile; Lappato; Stain proofing agent; Dirt resistance

With the arrival of the market lapped stoneware tiles, several studies have been focused on the improvement of the technical characteristics of these surfaces. In fact, surface lapping of porcelain stoneware tiles induces both aesthetical improvements and deteriorations of their performances. To overcome this problem, it is possible to protect the lapped surface with commercial waterproofing materials. In some cases these protections may induce some changing of the surfaces appearance, such as color or gloss.

In this work, "Lappato" commercial porcelain stoneware tiles with a protective stain proofing agent, FILA PD15, was evaluated. The stain and chemical resistance results, color and gloss measurements, were correlated to the morphological surface characteristics of the products with and without protection. In particular, a systematic study of the surface porosity of the tiles was carried out. Results showed that a pore unprotected in the time will tend to fill with dirt hardly removable with an ordinary maintenance. If the pores are protected, the dirt from foot traffic over time will tend however to be deposited but only superficially.

The protective surface treatment reduces dirt accumulation and it is able to maintain the aesthetic appearance, such as color or gloss.