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Effect of Porosity on Staining of Polished Porcelain Tile

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Abstract

The susceptibility to staining of polished porcelain tiles has been investigated by various authors for over a decade. However, the literature offers little information about the characteristics the finished product should present in terms of final porosity in order to prevent staining. In addition to seeking practical solutions to eliminate the problem, a return to the discussion about its origin – final porosity – may be an alternative toward gaining a better understanding of the phenomenon. This paper discusses the results of a comparative analysis of the final porosity of two types of commercial polished products without impermeabilizing resin, which show dissimilar staining behaviors. The approach to this theme differs from that of other works reported in the literature in that it allows for the clear identification of the main types of pores responsible for staining under the conditions evaluated here.

Keywords: stain resistance, porcelain tile, porosity, electron microscopy