

Title : Effects of Chemical Composition and Temperature on Crawling Glaze

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ABSTRACT

Glaze crawling is a frustrating issue that can occur when firing ceramic pieces, including those made from porcelain. It happens when the glaze retracts during firing, leaving bare patches of clay exposed. Glaze Crawling causes poor glaze adhesion. If the glaze does not bond well with the porcelain body, it's more likely to crawl. This can be due to a dusty or oily surface on the porcelain, or a glaze that is too thick or too thin. Some glazes are simply not compatible with certain porcelain bodies. This can be due to differences in their thermal expansion rates or chemical compositions. The objectives of this research were to study the effect of chemical composition and the thickness of glaze on crawling effect of porcelain body and to investigate the effect of grease and vegetable oil on glaze crawling. The glaze was prepared by using the mixture of kaolinite, feldspar, dolomite and zinc oxide. The dolomite was used as a catalyst for the formation of glaze and chromium oxide provides the color of glaze. The experiment results were found that the thickness of the coating layer has an effect on the occurrence of glaze crawling. The thin coating gave more crawling effect than thick coating. Grease and vegetable oil were applied on porcelain surface. It was found that grease provides stronger crawling effect than vegetable oil.

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