

UTILISATION OF BILECIK-TURKEY REGION PEGMATITES IN MATT FLOOR TILES GLAZES

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**Abstract**

In this study, sodium feldspar, kaolin, quartz and zircon were replaced by local pegmatites in an attempt to develop matt floor tile glaze formulations. Thermal behaviour of the studied glazes prepared with and without pegmatite was investigated using hot stage microscopy. When the pegmatite ratio was in the range of 5 to 20 wt. %, no significant change in colour and brightness was observed. In addition, there was no negative effect observed with the pegmatite incorporation on the technological properties such as thermal shock resistance, vapour pressure resistance, resistance to chemicals, abrasion resistance and stain resistance. X-ray diffraction (XRD) was used to analyse the phases formed after firing. Scanning electron microscopy (SEM) in combination with energy dispersive X-ray spectroscopy (EDS) was further employed in order to observe the microstructural characteristics of the selected fired samples. As a result, it was concluded that feldspar type pegmatite raw materials could be used in floor tile glazes in place of currently used expensive raw materials.

**Key Words:** Pegmatite, floor tile glaze, hot stage microscope

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