



The comparison of firing temperature on physicals properties of crystalline glaze for stone ware body

Narita Wongkongkham^{1,*}, Tamonwat Hirunchat-a-nan¹, Soravich Mulita¹

¹*Department of Ceramics Industrial, Faculty of Industrial Technology,
Lampang Rajabhat University, Thailand*

*e-mail: Ceramicslpru@gmail.com

The aim of the study was to comparison of firing temperature on the appearance of crystalline glaze for stoneware production. The experiment started with the seger formula containing basic groups of 0.12mole soda-feldspar($\text{Na}_2\text{O}\cdot\text{Al}_2\text{O}_3\cdot 6\text{SiO}_2$), 0.28mole calcium carbonate(CaCO_3) and 0.6mole zinc oxide(ZnO), media group of 0.13–0.17mole aluminum oxide(Al_2O_3) and acid group of 1.02–1.82mole silicon dioxide(SiO_2), 2.0% copper oxide (CuO). The physical properties of raw glaze used specific gravity of glaze 1.44–1.50 g/mm, then glazed it by dripping. Finally, the specimens of firing temperature at 1200 and 1220°C in oxidation atmosphere, the soaking temperature at 1170°C for 4 hours in electric kiln. The specimens obtained were tested using optical microscopy, glaze texture, flow of glaze and crystals appearance. The results showed that the component ratio of 30-32% soda-feldspar, 14-17% calcium carbonate, 25-27% zinc oxide, 2% lampang kaolinite 22-27% quartz and 2.0% copper oxide were optimum properties for crystalline glaze at 1220°C.

Keywords: Crystalline Glaze; Oxidation Atmosphere; Electric Kiln