

Research Title Earthen Whiteware Body and Glaze Using Raw
Materials in Northern Thailand

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Abstract

Earthen whiteware product of low-fired type was studied.

The suitable body was found to be consisted of 30% kaolin (Vieng-pa-pao), 20% Lampang stone, 30% feldspar (Tak), 20% quartz (Tak) and further addition of 3% dolomite. The chemical analysis of this body was 19.56% Al_2O_3 , 65.37% SiO_2 , 1.34% Fe_2O_3 , 0.19% TiO_2 , 0.04% Na_2O , 1.86% K_2O , 0.22% CaO , 0.11% MgO and 4.90% ignition loss. The vitreous temperature was 1230°C by oxidation firing. The porosity and shrinkage values of fired body were 0.0% and 12.0% respectively. The best clear glaze which fit with body consisted of 64.6% feldspar, 2.1% kaolin, 15.2% quartz, 4.4% BaCO_3 , 12.7% CaCO_3 and 1.0% ZnO . When opacifiers 7-8% SnO_2 or 12% ZrSiO_4 and colourants 2% CoO , 4% MnO_2 , 7% Fe_2O_3 , 4% NiCO_3 , and others were added into clear glaze the opaque glazes and colour glazes were obtained. The compositions of the best luster glaze were 21.9% feldspar, 2.6% kaolin, 24.4% quartz, 8.1% ZnO , 43.0% Pb_3O_4 and further addition of 2.0% NH_4VO_3 , 5.0% TiO_2 .