

# **Casting and sintering behavior of sanitary ware containing fine fire clay**

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## **ABSTRACT**

In this study, the effect on casting and sintering behavior of fine fire clay at different particle sizes added into vitreous body recipe were investigated. Prepared sanitary ware recipes contained different sizes at 400-300-125µm fine fire clay were shaped by casting and fired at 1200°C in tunnel kiln. Shaping and sintering behaviors of recipes, such as thickening according to time, sintering temperature by optical dilatometry, phase development, physical and mechanical properties with increasing temperature, micro structural morphology were investigated. Thickening according to time increased with decreasing particle size of fine fire clay. As particle size of fine fire clay decreased in the body, firing shrinkage increased but dry shrinkage decreased. Deformation in sanitary ware containing finer particle size was higher than that in coarse grained bodies. Coarse grained fine fire clay in the body improved physical and mechanical properties. Faster casting rates were possible with fine particle sized body recipes.

**Keywords:** Sanitary ware, Fine Fire Clay, Casting, Sintering Behavior.