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➢ *ORAL PRESENTATION*

The impact of wall tile body raw material grouping on industrial grinding efficiency

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Abstract

In ceramic wall tile body preparation, three different kinds of material such as calcite/dolomite, siliceous kaolin and illitic clay are used and prepared according to their specific properties. The hard materials are ground and sieved in ball mills in order to reduce the particle size to a specific value that is determined by the working conditions. On the other hand, the plastic materials are mixed and sieved to enrich agglomerated clay minerals by bringing to fine size in aqueous medium. Calcite/dolomite minerals have to be in very fine-sized because thermal shock problems may occur in case of moisture expansion due to the remainder free CaO in the composition after sintering. That is why calcite/dolomite and siliceous kaolin group raw materials were ground in different mills. Nowadays, it is important to use local resources to decrease raw materials costs so different kinds of siliceous kaolin ores are used in the wall tile body preparation stage and the grinding characteristics may differ from one raw material to another. In this study, it was aimed to save capacity, time and energy spent in grinding process of wall tile body composition by grouping raw materials according to their grinding characteristics. In this context, the grinding characteristics of the siliceous kaolin raw materials that was belong to an industrial wall tile recipe were determined. Then the raw materials were grouped with the similar grinding characteristics and the impact on capacity and energy consumption was analyzed and compared to current situation by using discontinuous industrial mill with flint and alumina ball mediums, separately.

Keywords: Wall tile body, Raw materials, Industrial grinding.

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