

The Influence of Mineraliser Granulometry on Dense Silica Brick Microstructure

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Abstract : This entry concerned with dense silica microstructure was produced as a part of a project within the Technology Agency of the Czech Republic which is being implemented in cooperation of the biggest producer of refractories the P-D Refractories CZ company with the research organisation Brno University of Technology. The paper is focused on the influence of mixture homogenisation and the influence of grain size of the mineraliser on the resulting utility properties of the material as well as its microstructure. It has a decisive influence on the durability of the material in a building structure. This paper is a continuation of a previously published study dealing with the suitability of various types of mineralising agents in terms of density, strength and mineral composition of silica. The entry describes the influence of the method of mixture homogenisation and the influence of granulometry of the applied Fe-mineralising agent on the resulting silica microstructure. Porosity, density, phase composition and microstructure of the experimentally prepared silica samples were examined and the results were discussed in context with the technology of homogenisation and firing temperature used. The properties of silica brick samples were compared to the sample without any Fe-mineraliser.

Keywords : silica bricks, Fe-mineraliser, mineralogical composition, new developed silica material

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