



Review

Utilization of inorganic industrial wastes in producing construction ceramics. Review of Russian experience for the years 2000–2015

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ABSTRACT

This paper analyzes the significant scientific publications worldwide for the last 15 years concerning construction ceramics (predominantly brick) made with various inorganic industrial wastes added to the ceramic raw material for the improvement of properties and for eco-friendly disposal. The information gap resulting from the lack of mentions of the Russian publications on this subject in English-language reviews is filled. The paper includes brief summaries of 34 dissertations and 29 patents issued in Russia since 2000. The waste additives described in these summaries are grouped by origin type (mining industry waste, ore enrichment waste, metallurgical waste, sludge, ashes, cullet, large-capacity building wastes and waste from various chemical production processes) with the ceramic mixture compositions, molding and firing conditions, final strength, water absorption and other parameters of the final ceramic samples reported. Russian scientists have expanded the nomenclature of each group of wastes significantly upon addition to the list described in English-language reviews for 2000–2015. References to the recent Russian developments in the field of ecological management in ceramic industry are provided.

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