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UGLJENA PRAŠINA U ENERGETSKI EFIKASNOJ PROIZVODNJI OPEKE: OD LABORATORIJSKIH DO INDUSTRIJSKIH PROBA

Rezime: U ovoj studiji utvrđena je optimalna mešavina opekarske gline i otpadne ugljene prašine u laboratorijskoj proizvodnji šupljih blokova sa ciljem promovisanja održivog razvoja u smislu uštede resursa i energije. Glina koja sadrži karbonate može se koristiti uz dodatak do 3 % visokokalorične otpadne ugljene prasine, što je ocenjeno kao optimalno. Šuplji blokovi industrijskih razmera pečeni su u tunelskoj peći i zabeležen je režim pečenja. Utvrđeno je da se režim mora korigovati u zoni pečenja i hlađenja jer su razlike bile do 180 °C. Industrijski prototip je bio zadovoljavajućeg kvaliteta koji ispunjava zahteve vezane za upijanju vode i čvrstoću na pritisak prema evropskim i drugim međunarodnim standardima.

Ključne reči: Karbonatna glina, ugljena prašina, režim pečenja u tunelskoj peći, optimizacija

GRANITE WASTE AS A REPLACEMENT OF PART OF THE NATURAL RAW MATERIALS IN THE MIXTURES FOR THE PRODUCTION OF CERAMIC TILES

Abstract: The optimal mixture of brick clay and waste coal dust was determined in the laboratory production of hollow blocks to promote sustainable development in terms of saving resources and energy. A selected mixture of carbonate clays with the addition of up to 3% of high-calorie waste coal dust is considered optimal. Industrial-scale hollow blocks were fired in a tunnel kiln and the firing regime was recorded. It was found that the regime had to be corrected in the firing and cooling zones since the differences were up to 180 °C. The industrial prototype was of the satisfactory quality that meets the requirements of water absorption and compressive strength according to European and other international standards.

Keywords: Carbonate clay, coal dust, firing regime in a tunnel kiln, optimization

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previsoke (do 180 °C). Nakon korekcije režima, utvrđeno je da je kvalitet dobijenih uzoraka zadovoljavajući.

Dalja istraživanja u smislu definisanja trajnosti dobijenih proizvoda testovima odmrzavanja, zatim toplotne provodljivosti, kao i određivanje izluživanja teških metala su predmet predstojećih istraživanja.

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