ABSTRAK

Nova Adelia, NIM 4163240011, Karakteristik Beton dengan Campuran Pasir Merah Ukuran Butiran 80 Mesh Pasca Bakar.

Telah dilakukan penelitian mengenai Karakteristik Beton dengan Campuran Pasir Merah Ukuran Butiran 80 Mesh Pasca Bakar. Penelitian ini bertujuan untuk mengetahui Karakteristik Beton dengan Campuran Pasir Merah Ukuran Butiran 80 Mesh Pasca Bakar terhadap kuat tekan, porositas, dan struktur beton. Benda uji berupa kubus 15 cm x 15 cm x 15 cm dengan mutu beton K-225. Pada penelitian ini dibuat variasi komposisi pasir merah ukuran 80 Mesh sebesar 0%, 2%, 3% dan 4%. Setelah beton berumur 24 jam cetakan dibuka dan diberi kode sampel dan dirawat dalam bak air perendaman. Setelah melalui masa perendaman 28 hari kemudian beton dibakar dalam oven dengan variasi suhu 400℃, 550℃, 700℃ dan 850℃ dan diuji. Metode pengujian yang digunakan yaitu kuat tekan, porositas dan *Scanning Electron Microscope Energy Dispersive X-Ray (SEM-EDX).* Dari hasil pengujian kuat tekan, nilai kuat tekan rata-rata maksimum diperoleh pada beton dengan campuran pasir merah 4% dengan suhu 550℃ sebesar 32.31 MPa. Hal ini melampaui kekuatan tekanan yang ditetapkan oleh Badan Standart Indonesia K-225. Dari hasil pengujian porositas, nilai porositas beton dengan campuran pasir merah lebih rendah dibandingkan dengan beton normal. Dari hasil pengujian SEM didapatkan struktur beton dengan campuran pasir merah memiliki rongga yang lebih sedikit dan lebih kecil. Dari hasil pengujian EDX pada beton dengan campuran pasir merah, unsur Calcium (Ca) dan Stibium (Sb) mengalami peningkatan intensitas jika dibandingkan dengan beton normal.

Kata kunci: *Pasir Merah, Pasca Bakar, Porositas, Kuat Tekan, SEM- EDX.*

ABSTRACT

Nova Adelia, NIM 4163240011, Characteristics of Concrete with Red Sand Mixed Grain Size 80 Mesh Post Burn.

Research has been done on the Characteristics of Concrete with a Mix of Red Sand Grain Size 80 Mesh Post-burning. This study aims to determine the characteristics of concrete with a mixture of red sand grain size 80 mesh post-burnt on the compressive strength, porosity, and structure of the concrete. The test object is a cube of 15 cm x 15 cm x 15 cm with concrete quality K-225. In this study, variations in the composition of 80 mesh size red sand were made of 0%, 2%, 3% and 4%. After the concrete is 24 hours old, the mold is opened and given a sample code and treated in an immersion water bath. After going through an immersion period of 28 days, the concrete was burned in an oven with temperature variations of 400℃, 550℃, 700℃ and 850℃ and tested. The test methods used are compressive strength, porosity and Scanning Electron Microscope Energy Dispersive X-Ray (SEM-EDX). From the results of the compressive strength test, the maximum average compressive strength value was obtained in concrete with a mixture of 4% red sand with a temperature of 550℃ of 32.31 MPa. This exceeds the strength of the pressure set by the Indonesian Standards Agency K-225. From the results of the porosity test, the porosity value of concrete with a mixture of red sand is lower than that of normal concrete. From the results of the SEM test, the concrete structure with a mixture of red sand has fewer and smaller cavities. From the results of the EDX test on concrete with a mixture of red sand, Calcium (Ca) and Stibium (Sb) elements have increased in intensity when compared to normal concrete.

Keywords: Red Sand, Post Burn, Porosity, Compressive Strength, SEM-EDX.