

ABSTRAK

Putri Yani, NIM 4173540015, Pengaruh Campuran Partikel Abu Boiler Cangkang Kelapa Sawit Terhadap Kuat Tekan Beton.

Telah dilakukan penelitian mengenai Pengaruh Campuran Partikel Abu Boiler Cangkang Kelapa Sawit Terhadap Kuat Tekan Beton yang bertujuan untuk mengetahui karakteristik beton dengan campuran abu boiler cangkang kelapa sawit terhadap kuat tekan dan struktur beton. Beton dibuat dengan bentuk kubus 15 cm x 15cm x 15 cm dengan standar mutu K-225. Penelitian ini dibuat dengan variasi komposisi abu boiler cangkang kelapa sawit sebanyak 0%, 3%, 5%, dan 8%. 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 diuji. Metode pengujian yang digunakan yaitu kuat tekan, uji SEM, dan uji XRD. Dari hasil penelitian diperoleh kekuatan tekanan optimum dengan pengaruh campuran abu boiler cangkang kelapa sawit 3% yaitu sebesar 23.53 MPa. Hal ini melampaui kekuatan tekanan yang ditetapkan oleh Badan Standart Nasional K-225. Pengujian uji SEM didapatkan unsur struktur beton dengan campuran abu boiler memiliki pori-pori lebih sedikit dibandingkan beton normal dan hasil pengujian XRD diperoleh unsur-unsur berupa CaO_3 , SiO_2 , dan AlO_4 dengan intensitas CaO_3 yang paling tinggi.

Kata kunci : *Abu Boiler, Kuat Tekan, SEM, XRD.*



ABSTRACT

Putri Yani, NIM 4173540015, Effect of Ash Particle Mixture Of Oil Shell Shell Boilers On Strong Press Concrete.

Research has been conducted on the Effect of The Mixture of Ash Particles Of Oil Shell Boilers Against Strong Press Concrete which aims to find out the characteristics of concrete with a mixture of oil shell boiler ash against strong press and concrete structure. Concrete is made with a cube shape of 15 cm x 15cm x 15 cm with a quality standard of K-225. This study was made with variations in the composition of oil palm shell boiler ash by 0%, 3%, 5%, and 8%. After the concrete is 24 hours old the mold is opened and coded a sample and treated in a tub of immersion water. After going through a 28-day immersion period then the concrete was tested. The testing methods used are strong press, SEM test, and XRD test. From the results of the study obtained the optimum pressure strength with the influence of a mixture of oil palm shell boiler ash 3% which is 23.53 MPa. This exceeds the pressure force set by the K-225 National Standards Agency. SEM test test obtained elements of concrete structure with a mixture of boiler ash has fewer pores than normal concrete and XRD test results obtained elements in the form of CaO_3 , SiO_2 , and AlO_4 with the highest intensity of CaO_3 .

Keywords: *Ash Boiler, Strong Press, SEM, XRD.*

