

ABSTRAK

Romiduk A.L Sianturi, NIM 4183540003 (2022). Analisis Pengaruh Abu Ampas Tebu Dan Superplasticizer Terhadap Sifat Mekanik Beton Mutu Tinggi

Telah dilakukan penelitian tentang beton mutu tinggi dengan campuran abu ampas tebu dan superplasticizer dengan tujuan untuk mengetahui pengaruh abu ampas tebu dan superplasticizer terhadap sifat mekanik beton mutu tinggi. Benda uji yang digunakan berupa silinder dengan ukuran 10 cm x 20 cm dengan standarisasi SNI 03-2834-2000 dengan mutu K-400 dengan perbandingan semen 1: 1,1 : 1,8 dengan FAS 0,38. Pengujian sifat mekanik yang dilakukan adalah daya serap air, kuat tekan beton dan kuat tarik belah beton setelah 28 hari perendaman dan dikeringkan 24 jam. Dari hasil campuran abu ampas tebu (0%, 1,5%, 3% dan 4,5%) dan superplasticizer (0%, 0,4%, 0,8% dan 1,2%) memiliki daya serap air rata-rata secara berturut sebesar 0,04%, 0,08%, 0,08% dan 0,07%. Hasil Pengujian kuat tekan beton rata-rata secara berturut sebesar 39,97 MPa, 25,88 MPa, 23,88 MPa, dan 18,89 MPa. Hasil pengujian kuat tarik belah beton rata-rata secara berturut sebesar 9,99 MPa, 6,47 MPa, 5,97 MPa, dan 4,72 MPa. Dimana pengujiannya dilakukan setelah umur 28 hari. Dari hasil pengujian yang dilakukan campuran (0%, 1,5%, 3% dan 4,5%) dan superplasticizer (0%, 0,4%, 0,8% dan 1,2%) untuk daya serap air mengalami kenaikan hingga menghasilkan daya serap maksimum sebesar 0,08%. Hasil pengujian kuat tekan beton mengalami penurunan di tiap penambahan bahan campuran dan hasil maksimum kuat tekan beton sebesar 25,88 MPa dengan persentase abu ampas tebu (1,5%) dan superplasticizer (0,4%). Hasil pengujian kuat tarik belah maksimum adalah sebesar 6,47 MPa dengan persentase campuran abu ampas tebu sebesar 1,5% dan superplasticizer sebesar 0,4%.

Kata Kunci : *Kuat Tekan Beton, Daya serap Air, Kuat Tarik Belah Beton, Abu Ampas Tebu.*



ABSTRACT

Romiduk A.L Sianturi, NIM 418354003 (2022). Analysis Of The Influence Of Sugarcane Base Ash And Superplasticizer On Properties High Quality Concrete Mechanic

Research has been carried out on high-strength concrete with a mixture of bagasse ash and superplasticizer in order to determine the effect of bagasse ash and superplasticizer on the mechanical properties of high-strength concrete. The test object used is a cylinder with a size of 10 cm x 20 cm with the standardization of SNI 03-2834-2000 with a quality of K-400 with a cement ratio of 1: 1.1: 1.8 with FAS 0.38. Tests of mechanical properties carried out were water absorption, concrete compressive strength and split tensile strength of concrete after 28 days of immersion and 24 hours of drying. From the results of the mixture of bagasse ash (0%, 1.5%, 3% and 4.5%) and superplasticizer (0%, 0.4%, 0.8% and 1.2%) has an average water absorption the average of 0.04%, 0.08%, 0.08% and 0.07% respectively. The results of testing the average compressive strength of concrete are 39.97 MPa, 25.88 MPa, 23.88 MPa, and 18,89 MPa. The test results of the average split tensile strength of concrete are 9.99 MPa, 6.47 MPa, 5.97 MPa, and 4.72 MPa, respectively. Where the test is carried out after the age of 28 days. From the results of the tests carried out the mixture (0%, 1.5%, 3% and 4.5%) and superplasticizer (0%, 0.4%, 0.8% and 1.2%) for water absorption increased. to produce a maximum absorption of 0.08%. The results of the compressive strength test of concrete decreased with each addition of mixed materials and the maximum compressive strength of concrete was 25.88 MPa with the percentage of bagasse ash (1.5%) and superplasticizer (0.4%). The results of the maximum split tensile strength test were 6.47 MPa with the percentage of bagasse ash mixture of 1.5% and superplasticizer of 0.4%.

Keywords : Compressive Strength of Concrete, Water Absorption, Split Tensile Strength of Concrete, Sugarcane Bagasse Ash.

