

ABSTRAK

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Program Studi : S1 Teknik Sipil

Judul : Analisis Kuat Tekan Beton Menggunakan Serbuk Kaca Sebagai
Tambahan Agregat Halus Pada Beton $f'c$ 23 MPa

Dalam teknologi beton tidak terlepas dalam kerusakan yang dapat mengurangi durabilitasnya, salah satu sebabnya diakibatkan faktor eksternal atau lingkungan dimana struktur beton di tempatkan. Bersamaan dengan meningkatnya industri konstruksi, isu penghematan sumber energi alam serta pelestarian lingkungan terus menjadi kuat disuarakan.

Penelitian yang dilakukan adalah penggunaan serbuk kaca sebagai tambahan lolos saringan No.16 ukuran 0.75 mm ayakan 200 *mesh*. Dengan substitusi kadar serbuk kaca yang digunakan 0%, 5%, 10% dan 15% dari agregat halus semen (dalam % berat), pengujian dilakukan pada umur 7, 14 dan 28 hari, beton yang dilakukan meliputi kuat tekan. Pengujian agregat halus dan kasar meliputi : analisa ayakan, penentuan kadar lumpur, kadar air, berat jenis dan penyerapan air. Beton segar diuji *workbilty* melalui nilai slump .

Hasil yang diperoleh dari penelitian ini adalah dengan penambahan serbuk kaca mempengaruhi kenaikan mutu beton, dimana hasil dari kuat tekan beton nilai kuat tekan dengan penambahan variasi campuran serbuk batu kapur 5%, mengalami kenaikan nilai kuat tekan dari beton normal, untuk campuran 10% tidak ada kenaikan dan untuk 15% mengalami kenaikan kuat tekan dari beton normal tetapi tidak signifikan.

Kata Kunci : Beton, Serbuk Kaca, Kuat Tekan Beton

ABSTRACT

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Title : Analysis of Concrete Compressive Strength Using Glass Powder as an Addition of Fine Aggregate in Concrete f'c 23 MPa

In concrete technology, it cannot be separated from damage which can reduce its durability, one of the reasons is caused by external factors or the environment where the concrete structure is placed. Along with the increase in the construction industry, the issue of saving natural energy resources and protecting the environment continues to be strongly voiced.

The research conducted was the use of glass powder as an adjunct pass sieve No.16 size 0.75 mm sieve 200 mesh. With rate substitution glass powder used 0%, 5%, 10% and 15% of cement fine aggregate (in % by weight), tests were carried out at the age of 7, 14 and 28 days, the concrete was carried out including compressive strength. Fine and coarse aggregate testing includes: sieve analysis, determination of silt content, moisture content, specific gravity and water absorption. The fresh concrete is tested for workbilty by means of a slump value.

The results obtained from this study are the addition of glass powder affects the increase in concrete quality, where the results of the compressive strength of the concrete compressive strength values with the addition of variations in the 5% limestone powder mixture, experience an increase in the compressive strength value of normal concrete, for a 10% mixture there is no increase and for 15% experienced an increase in compressive strength of normal concrete but not significant.

Keywords: Concrete, Glass Powder, Concrete Compressive Strength