

PENGARUH PENAMBAHAN LIMBAH *GYP SUM* PENGGANTI SEBAGIAN SEMEN DAN SERAT KARET BAN TERHADAP KUAT LENTUR BETON

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ABSTRAK

Bahan beton terdiri dari semen, pasir, kerikil dan air. Perkembangan teknologi beton dalam uji coba penambahan bahan campuran terus dilakukan untuk mendapatkan kekuatan dan mutu beton yang diinginkan. Dalam penelitian ini, penambahan limbah gypsum dan serat karet ban dimaksudkan sebagai campuran beton untuk melihat pengaruhnya pada nilai slump dan kuat lentur pada beton. Variasi persentase penambahan limbah gypsum ini adalah sebesar 5% dan serat karet ban 7%, 8% dan 9%. Hasil penelitian menunjukkan bahwa nilai slump tertinggi pada persentase limbah gypsum 5% dan serat karet ban 9%, sementara dengan nilai kuat lentur beton pada persentase limbah gypsum 5% dan serat karet 8% didapat nilai rata rata kuat lentur tertinggi yaitu 50,66 kg/cm³. Sementara nilai kuat lentur beton normal pada umur 28 hari adalah sebesar 39,13 kg/cm³, dan nilai kuat lentur beton setelah dicampur limbah gypsum dan serat karet ban pada umur 28 hari secara berurutan diperoleh sebesar 48,44 kg/cm³, 50,66 kg/cm³ dan 43,11 kg/cm³. Hasil penelitian menyimpulkan bahwa penambahan limbah gypsum dan serat karet ban sebagai bahan campuran beton dapat mempengaruhi nilai slump dan nilai kuat lentur beton.

Kata Kunci: kuat lentur, limbah gypsum, serat karet ban, slump

THE EFFECT OF ADDING GYPSUM WASTE TO PARTIAL REPLACEMENT OF CEMENT AND RUBBER FIBER TIRES ON THE FLEXIBLE STRENGTH OF CONCRETE

ABSTRACT

Concrete consists of cement, sand, gravel, and water. The development of concrete technology in testing the addition of mixed materials continues to be carried out to obtain the desired strength and quality of concrete. In this study, the addition of gypsum waste and tire rubber fibers was intended as a concrete mixture to see its effect on the concrete's slump value and flexural strength. The variation in the percentage addition of gypsum waste is 5% and tire rubber fiber 7%, 8%, and 9%. The results showed that the highest slump value was at the percentage of gypsum waste 5% and tire rubber fiber 9%, while with the flexural strength value of concrete at the percentage of gypsum waste 5% and rubber fiber 8%, the highest average flexural strength value was 50.66 kg/cm³. Meanwhile, the flexural strength of normal concrete at the age of 28 days is 39.13 kg/cm³, and the value of the flexural strength of concrete after mixed with gypsum waste and rubber fiber tires at the age of 28 days, respectively, is obtained at 48.44 kg/cm³, 50.66. kg/cm³ and 43.11 kg/cm³. The study results concluded that adding gypsum waste and tire rubber fibers as a concrete mixture could affect the slump value and the value of the flexural strength of the concrete.

Keywords: flexural strength, gypsum waste, tire rubber fiber, slump