PENGARUH PENAMBAHAN SERAT POLIMER *POLYETHYLENE TEREPHTHALATE* PERSENTASE 0,7%, 0,9% DAN 1,1% TERHADAP KUAT LENTUR BALOK

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ABSTRAK

Indonesia berada pada peringkat kedua didunia penghasil sampah plastik ke laut. Hal tersebut menjadikan perhatian dapat mengurangi sampah plastik menjadi bahan yang bermanfaat karena sampah plastik menjadi bahan yang bermanfaat karena sampah plastik merupakan sampah anorganik yang sulit terurai secara cepat. Tugas akhir ini bertujuan untuk mengetahui nilai kuat lentur dan nilai slump balok beton dengan campuran serat polimer polyethylene terephthalate dengan persentase 0,7%, 0,9% dan 1,1%. Metode yang digunakan yaitu metode eksperimental, pelaksanaan penelitian ini mengacu pada SNI 02-2834-2002 tentang Tata Cara Pembuatan Rencana Campuran Beton Normal. Pengujian kuat lentur pada balok persentase 0% diperoleh nilai kuat lentur rata-rata sebesar 5,82 MPa. Pengujian kuat lentur balok dengan tambahan serat plastik PET persentase 0,7% diperoleh nilai rata-rata adalah 5,20 MPa, tambahan serat PET persentase 0,9% sebesar 4,89 MPa dan tambahan serat PET persentase 1,1% sebesar 5,16 MPa. Nilai kuat lentur rata-rata beton persentase 0% adalah 5,82 MPa, jika dibandingkan dengan beton yang ditambahkan dengan serat plastik PET (*Polyethylene Terephthalate*) sebesar 0,7%, 0,9% dan 1,1% hasilnya mengalami penurunan. Hasil nilai kuat lentur secara berturut-turut adalah 5,20 MPa, 4,89 MPa dan 5,16 MPa. Penambahan serat plastik PET (*Polyethylene Terephthalate*) mempengaruhi nilai kelecakan (*slump*) yang dimana setiap penambahan serat plastik *Polyethylene Terephthalate* akan menurunkan nilai slump dibandingkan dengan nilai uji *slump* beton normal.

Kata Kunci: PET, *Polyethylene Terephthalate*, Balok, Kuat Lentur, *Slump*.

EFFECT OF ADDITION OF POLYETHYLENE TEREPHTHALATE POLYMER FIBER PERCENTAGES OF 0.7%, 0.9% AND 1.1% ON THE FLEXIBLE STRENGTH OF BEAM

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ABSTRACT

Indonesia is ranked second in the world as a producer of plastic waste into the sea. This makes attention to being able to reduce plastic waste into useful materials because plastic waste is a useful material because plastic waste is inorganic waste that is difficult to decompose quickly. This final project aims to determine the value of flexural strength and slump value of concrete blocks with a mixture of polyethylene terephthalate polymer fibers with a percentage of 0.7%, 0.9% and 1.1%. The method used is the experimental method. The implementation of this research refers to SNI 02-2834-2002 concerning Procedures for Making Normal Concrete Mixture Plans. Testing the flexural strength of the beam with a percentage of 0% obtained an average flexural strength value of 5.82 MPa. Testing the flexural strength of beams with an additional percentage of 0.7% PET plastic fiber obtained an average value of 5.20 MPa, an additional percentage of 0.9% PET fiber was 4.89 MPa and an additional percentage of 1.1% PET fiber was 5. 16 MPa. The average flexural strength value of 0% concrete is 5.82 MPa, when compared to concrete added with PET (Polyethylene Terephthalate) plastic fibers of 0.7%, 0.9% and 1.1% the results decrease. The results of the flexural strength values are 5.20 MPa, 4.89 MPa and 5.16 MPa respectively. The addition of PET (Polyethylene Terephthalate) plastic fibers affects the slump value where each addition of Polyethylene Terephthalate plastic fibers will reduce the slump value compared to the normal concrete slump test value.

***Keywords**: PET, Polyethylene Terephthalate, Beams, Flexural Strength, Slump.*