

PENGARUH PEMANFAATAN COCOPEAT SEBAGAI SUBSTITUSI PASIR TERHADAP PAVING BLOCK DENGAN PERSENTASE 1,8%, 2%, 2,2%

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ABSTRAK

Pemakaian Bata Beton sebagai bahan material pelengkap bangunan teknik sipil sudah lama dikenal di Indonesia karena memiliki beberapa kelebihan, diantaranya efisien di dalam pemasangan, hemat dalam penggunaannya, dan ekonomis dalam harga belinya. Bata Beton merupakan salah satu bahan penyusun lapis perkerasan yang ramah lingkungan. Dikatakan ramah lingkungan karena *Paving Block* meresap air di atasnya melalui sela-sela sambungan Bata Beton. Selain dari sifatnya yang ramah lingkungan *Paving Block* dapat dibuat dengan cara yang ramah lingkungan dengan memanfaatkan limbah serat sabut kelapa (*Cocopeat*). Dilihat sifat fisiknya serat kelapa terdiri dari serat kasar dan halus, mutu serat ditentukan oleh warna, mengandung unsur kayu. Kelebihan *Cocopeat* yakni mampu menahan air yang lebih baik. Tujuan dari penelitian ini untuk mengetahui hasil uji tampak fisik, ukuran/dimensi dan kuat tekan pada penggunaan bahan tambah *Cocopeat* sebagai substitusi pasir pada Bata Beton dengan persentase 1,8%, 2%, 2,2%. Metode yang digunakan adalah metode experimental sesuai dengan peraturan yang berlaku yaitu SNI 03-0690 tahun 1996 dengan *mix design* mortal dan pembuatan Bata Beton dicetak dengan cara manual. Hasil penelitian menunjukkan bahwa penggunaan bahan tambah *Cocopeat* sebagai substitusi pasir pada *Paving Block* dengan persentase 1,8%, 2%, 2,2%, didapatkan Bata Beton memiliki hasil uji tampak yang baik dengan minimal kerusakan, memiliki tebal yang sesuai dengan ketentuan dalam SNI 03-0691 tahun 1996 yaitu 6cm dengan toleransi 8%. Kuat tekan maksimum substitusi serat sabut kelapa (*Cocopeat*) 1,8% sebesar 13,87 MPa dengan rata rata kuat tekan 12,45 Mpa (Mutu C), substitusi serat sabut kelapa (*Cocopeat*) 2% sebesar 14,74 Mpa dengan rata rata kuat tekan 13,22 Mpa (Mutu C), substitusi serat sabut kelapa (*Cocopeat*) 2,2% yaitu 11,81 Mpa dengan rata rata kuat tekan 10,33 Mpa (Mutu D) dan Bata Beton normal sebesar 16,29 Mpa dengan rata rata kuat tekan 15,47 Mpa (Mutu C).

Kata Kunci : *Cocopeat, Kuat Tekan, Bata Beton*

THE EFFECT OF COCOPEAT UTILIZATION AS SAND SUBSTITUTION ON PAVING BLOCK WITH PERCENTAGE 1.8%, 2%, 2.2%

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ABSTRACT

The use of Concrete Brick as a complementary material for civil engineering buildings has long been known in Indonesia because it has several advantages including efficient installation, economical in use, and economical in purchase price. Concrete Brick is one of the environmental friendly pavement materials. It is said to be environmentally friendly because the Paving Block absorbs water above it through the joints of the Concrete Brick. Apart from being environmentally friendly, Paving Blocks can be made in an environmentally friendly way by utilizing waste coconut fiber (Cocopeat). Judging from the physical properties of coconut coir, it consists of coarse and fine fibers, the quality of the fiber is determined by color, and contains wood elements. The advantage of Cocopeat is that it is able to hold water better. The purpose of this study was to determine the results of the physical appearance test, size/dimension and compressive strength of the use of added Cocopeat as a substitute for sand in Concrete Brick with a percentage of 1.8%, 2%, 2.2%. The method used is an experimental method in accordance with applicable regulations, namely SNI 03-0690 in 1996 with a mix design mortar and the manufacture of concrete bricks printed manually. The results showed that the use of Cocopeat as a substitute for sand in Paving Block with a percentage of 1.8 %, 2%, 2.2%, it was found that the Concrete Brick had good visible test results with minimal damage, had a thickness that was in accordance with the provisions of SNI 03-0691 1996, namely 6 cm with a tolerance of 8%. The maximum compressive strength of substitution of coconut coir fiber (Cocopeat) 1.8% is 13.87 MPa with an average compressive strength of 12.45 MPa (Quality C), substitution of coconut fiber (Cocopeat) 2% is 14.74 MPa with an average compressive strength of 13.22 Mpa (Quality C), substitution of coconut coir fiber (Cocopeat) 2.2%, namely 11.81 Mpa with an average compressive strength of 10.33 Mpa (Quality D) and normal concrete brick of 16.29 Mpa with average compressive strength 15.47 Mpa (Quality C).

Keywords: Cocopeat, Compressive Strength, Concrete Brick