

PENGARUH PEMANFAATAN LIMBAH CANGKANG KERANG OYSTER SEBAGAI BAHAN PENGGANTI AGREGAT HALUS TERHADAP KUAT TEKAN PAVING BLOCK

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ABSTRAK

Dewasa kini, penggunaan bahan material sangat tinggi, diiringi dengan perkembangan pembangunan yang sangat pesat di Indonesia. Salah satu contohnya yakni penggunaan *paving block* yang bisa kita lihat di berbagai tempat. Sehingga pada penelitian ini penulis memanfaatkan limbah cangkang kerang Oyster sebagai bahan pengganti agregat halus pada *paving block*. Tugas akhir ini bertujuan untuk mengetahui hasil daya serap air dan kuat tekan yang dapat diperoleh *paving block* normal dan *paving block* yang agregat halusnya diganti dengan cangkang kerang oyster. Serta mengetahui perbandingan hasil daya serap air dan kuat tekan antara *paving block* normal dan *paving block* yang agregat halusnya diganti dengan kerang oyster.

Metode penelitian yang dilakukan ialah studi eksperimental, dengan pelaksanaan pengujian yang mengacu pada SNI 03-0691-1996 tentang Bata Beton. Adapun pengujian yang dilakukan yakni pengujian kuat tekan dan penyerapan air. Tugas akhir ini melakukan perbandingan antara *paving block* normal dengan *paving block* dengan bahan pengganti agregat halus cangkang kerang oyster. Dengan jumlah sample uji sebanyak 40 pcs, yang terdiri dari 20 pcs sample uji *paving block* normal dan 20 pcs *paving block* limbah.

Hasil analisis yang dilakukan dari 10 sample uji kuat tekan didapatkan nilai rerata 9,846 Mpa untuk *paving block* limbah dan penyerapan air sebesar 9,69% sehingga masuk dalam tingkat mutu D pada SNI 03-0691-1996. Sedangkan, untuk *paving block* dengan agregat halus pasir menghasilkan nilai kuat tekan 13,47 Mpa dan penyerapan air sebesar 5,48% sehingga masuk dalam tingkat mutu C. Maka dapat disimpulkan bahwa penggunaan limbah cangkang kerang oyster sebagai bahan pengganti pasir dapat dilakukan. Sehingga, *paving block* limbah direkomendasikan untuk digunakan.

Kata kunci : *Cangkang, kuat tekan, limbah, Paving block, SNI*

THE EFFECT OF THE UTILIZATION OF OYSTER SHELL WASTE AS A REPLACEMENT OF FINE AGGREGATE ON THE COMPRESSIVE STRENGTH OF PAVING BLOCK

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ABSTRACT

Nowadays, the use of materials is very high, accompanied by very rapid development developments in Indonesia. One example is the use of paving blocks that we can see in various places. So in this study the authors used Oyster shells as a substitute for fine aggregate for paving blocks. This final project aims to determine the results of water absorption and compressive strength that can be obtained from normal paving blocks and paving blocks whose fine aggregate is replaced with oyster shells. As well as knowing the comparison of the results of water absorption and compressive strength between normal paving blocks and paving blocks whose fine aggregate is replaced with oyster shells.

The research method used is an experimental study, with testing that refers to SNI 03-0691-1996 regarding Concrete Brick. The tests carried out are compressive strength and water absorption tests. This final project compares normal paving blocks with paving blocks with a substitute for fine aggregate of oyster shells. With the number of test samples as many as 40 pieces, consisting of 20 pieces of normal paving block test samples and 20 pieces of waste paving blocks.

The results of the analysis carried out from 10 samples of the compressive strength test obtained an average value of 9.846 MPa for waste paving blocks and 9.69% water absorption so that it was included in the D quality level in SNI 03-0691-1996. Meanwhile, for paving blocks with fine aggregate sand, the compressive strength value is 13.47 MPa and water absorption is 5.48% so that it is included in the C quality level. It can be concluded that the use of oyster shell waste as a substitute for sand can be done. Thus, waste paving blocks are recommended to be used.

Keywords : *Shell, compressive strength, waste, Paving block, SNI*