

**ANALISIS SIFAT FISIS DAN KETAHANAN ATAS
NATRIUM SULFAT *PAVING BLOCK* DENGAN VARIASI
SERBUK CANGKANG LANGKITANG (*Faunus ater*) DAN
PENAMBAHAN SERAT IJUK (*Arrenge pinnata*)**

SKRIPSI



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ANALISIS SIFAT FISIS DAN KETAHANAN ATAS NATRIUM SULFAT *PAVING BLOCK* DENGAN VARIASI SERBUK CANGKANG LANGKITANG (*Faunus ater*) DAN PENAMBAHAN SERAT IJUK (*Arrenge pinnata*)

ABSTRAK

Telah dilakukan analisis sifat fisis dan ketahanan terhadap natrium sulfat *paving block* dengan variasi serbuk cangkang langkitang dan penambahan serat ijuk. Persentase serbuk cangkang langkitang yang digunakan dalam agregat halus yaitu 0%, 10%, dan 20%. Persentase serat yang digunakan sebagai bahan tambahan sebesar 0%, 1%, 3%, dan 4% dengan penyusunan serat secara acak (*Randomly oriented*). Pengujian yang dilakukan yaitu uji sifat fisis yang berupa kuat tekan, kuat lentur, daya serap dan pengujian ketahanan terhadap natrium sulfat. Pengujian dilakukan setelah *paving block* berumur 28 hari. Pengujian kuat tekan dan kuat lentur menggunakan *Universal Testing Machine (UTM) PP 24-1283*, dari hasil penelitian kuat tekan tertinggi *paving block* dengan persentase serbuk cangkang langkitang 20% dan serat ijuk 10% sebesar 18,500 kN. Kuat lentur tertinggi pada persentase serbuk cangkang 10% dan ijuk 1% dan 3% dan serbuk cangkang 20% serat ijuk 4%. Daya serap air rerata terendah pada persentase serbuk cangkang langkitang 0% dan serat ijuk 3% yaitu sebesar 0,0033%. Kehilangan massa terbesar *paving block* setelah direndam menggunakan natrium sulfat terjadi pada persentase serbuk cangkang langkitang 20% dan 10%. Penggunaan serbuk cangkang langkitang sebagai agregat pengganti pasir menyebabkan penurunan kuat tekan *paving block*, namun ketika serbuk cangkang langkitang digunakan sebagai agregat tambahan mampu meningkatkan kuat tekan *paving block*. *Paving block* berdasarkan kuat tekannya rata-rata memenuhi mutu C hingga mutu B SNI 3-0691-1996.

Kata kunci: *paving block*, cangkang langkitang, serat ijuk, kuat tekan, kuat lentur, uji natrium sulfat, daya serap.

PHYSICAL PROPERTIES AND DURABILITY ANALYSIS OF SODIUM SULFATE PAVING BLOCK WITH VARIOUS OF LANGKITANG SHELL (*Faunus ater*) POWDER AND ADDITION OF PALM FIBER (*Arrenge pinnata*)

ABSTRACT

Analysis of physical properties and resistance to sodium sulfate has been carried out paving block test was conducted with variation of langkitang shell powder and addition of fiber fibers. The percentage of refracted shell powder used in fine aggregates is 0%, 10%, and 20%, the percentage of additives fibers random oriented is 0%, 1%, 3%, and 4%. The samples were tested their physical properties in the form of compressive strength, flexural strength, and absorption and testing sodium sulfate resistance with care for 28 days. Strong and compressive strength were tested using Universal Testing Machine (UTM) PP 24-1283. The highest compressive strength of paving block with the percentage of shell powder langkitang 20% and fiber fibers 10% was 18,500 kN. The Highest flexural strength in percentage of shell powder 10% and fibers 1% and 3% and shell powder 20% fiber fibers 4%. the lowest average water absorption rate in paving block on the percentage of 0% crushed luster powder and 3% fiber fibers is 0.003. Loss of the largest mass of paving block after being immersed using sodium sulfate occurs in the percentage of 20% and 10%. The use of shell powder as a sand substitute aggregate causes a decrease in the compressive strength of paving blocks, but when the shell powder is used as an additional aggregate it can increase the compressive strength of paving blocks. Paving blocks based on their compressive strength on average meet the quality of C up to the quality of B SNI 3-0691-1996.

Keywords: paving block, langkitang shells, palm fiber, compressive strength, flexural strength, sodium sulfate test, absorption.