

ABSTRAK

HENGKY DEPRIYANTO. 2018. *Pengaruh Pemanfaatan Economic Plastic Fiber (Eco Plafie) Paving Block Terhadap Kuat Tekan, Ketahanan Kejut, dan Serapan Air Sebagai Produk Ramah Lingkungan.* **SKRIPSI, PRODI TEKNIK SIPIL, FAKULTAS TEKNIK, UNIVERSITAS WIRARAJA SUMENEP.** (Pembimbing : **Anita Intan Nura Diana, MT. dan Ir. H. Imam Suhadi, MT**)

Sumenep memiliki jumlah limbah plastik yang cukup banyak. Pemanfaatan limbah plastik yang ada belum dimanfaatkan secara maksimal. Tidak jarang pekerjaan konstruksi jalan menggunakan material dari luar daerah. Perkembangan penggunaan jalan semakin banyak, khususnya perkerasan jalan menggunakan *paving block*, namun kebanyakan para pemilik proyek konstruksi menggunakan *paving block* dari luar daerah karena pertimbangan kualitas yang lebih baik. Penelitian ini bertujuan agar mengetahui pengaruh penambahan serat plastik pada *paving block* ditinjau dari kuat tekan, ketahanan kejut, dan penyerapan air.

Metode penelitian ini menggunakan metode experimental dengan rancangan penelitian 5 perlakuan. Komposisi agregat yang digunakan 1Pc : 4 Ps dengan penambahan *fly ash* 30% dari volume semen dan penambahan serat plastik dari 0%, 0,25%, 0,50%, 0,75%, dan 1%. Jumlah sampel disetiap perlakuan sebanyak 3 buah untuk uji tekan, 3 buah untuk uji kejut, dan 3 buah untuk uji penyerapan air. Data hasil penelitian dianalisis untuk mengetahui kuat tekan maksimum, ketahanan kejut maksimum, dan penyerapan air minimum berada pada penambahan serat fiber yang seberapa persen. Teknik analisa menggunakan regresi linier yang dianalisis dengan bantuan software SPSS.

Hasil penelitian menunjukkan bahwa variasi serat botol plastik tidak mempunyai pengaruh yang simultan terhadap kuat tekan dan penyerapan air tetapi mempunyai pengaruh yang signifikan terhadap kuat kejut. Hasil penelitian menunjukkan kuat tekan rata-rata maksimal sebesar 17,23 Mpa diperoleh oleh variasi serat botol plastik 1%, berdasarkan SNI-03-0691-1996 tergolong mutu C. Penyerapan air rata-rata minimum sebesar 6,03% yang diperoleh oleh variasi serat botol plastik 0,50%, berdasarkan SNI-03-0691-1996 tergolong mutu C. Kuat kejut rata-rata sebesar 473,82 joule pada saat benda uji hancur yang diperoleh variasi serat botol plastik 1%.

Kata Kunci : Variasi penambahan serat plastik, kuat tekan, ketahanan kejut, daya serap air.

ABSTRAK

HENGKY DEPRIYANTO. 2018. *Effect of Economic Plastic Fiber Utilization (Eco Plafie) Paving Block Against Strong Press, Shock Resistance, and Water Absorption As an Environmentally Friendly Product.* **SKRIPSI, PRODI CIVIL ENGINEERING, FACULTY OF ENGINEERING, UNIVERSITY WIRARAJA SUMENEP.** (Supervisors : **Anita Intan Nura Diana, MT** and **Ir H. Imam Suhadi, MT**)

Sumenep has a considerable amount of plastic waste. Utilization of existing plastic waste has not been maximally utilized. Not infrequently road construction work using materials from outside the area. The development of road use is increasing, especially pavement using paving block, but most construction project owners use paving block from outside the area due to better quality considerations. This research is aimed to know the effect of plastic fiber addition on paving block in terms of compressive strength, shock absorption, and water absorption.

This research method using experimental method with research design 5 treatment. The aggregate composition used is 1Pc: 4 Ps with the addition of 30% fly ash of cement volume and the addition of plastic fibers from 0%, 0,25%, 0,50%, 0,75%, and 1%. The number of samples in each treatment as much as 3 pieces for the test press, 3 pieces for shock test, and 3 pieces for water absorption test. The data of the research were analyzed to determine the maximum compressive strength, maximum shock resistance, and minimum water absorption in the addition of fiber fibers that percentage. Analysis techniques using linier regression were analyzed with the help of doft were SPSS.

The results showed that variation of plastic bottle fiber had no simultaneous effect on compressive strength and water absorption but had significant effect on shock strength. The results showed that the maximum compressive strength of 17,23 MPa was obtained by variation of 1% plastic bottle fiber, based on SNI-03-0691-1996 belonging to quality C. Minimum water absorption of 6,03% obtained by variation of 0,50% plastic fiber bottle, based on SNI-03-0691-1996 belonging to quality C. Strong average shock of 473,82 joules at the time of the test object was destroyed by variation of 1% plastic bottle fiber.

Keywords: Variation of plastic fiber addition, compressive strength, shock resistance, water absorption.