

PEMANFAATAN LIMBAH MARMER SEBAGAI BAHAN CAMPURAN UNTUK PEMBUATAN PAVING BLOCK

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ABSTRAK

Tulungagung terdapat industri yang menghasilkan limbah marmer \pm 1 sampai 10 ton per minggu dan perlu pemanfaatan limbah. Hal ini mendorong peneliti melakukan penelitian pemanfaatan limbah marmer untuk campuran pembuatan *Paving block*. Tujuan penelitian ini mengetahui adanya pengaruh perbedaan kuat tekan dan serap air dengan komposisi berbeda dan pengujian hari dengan mengacu standart (SNI 03-0691-1996).

Penelitian ini dilakukan dengan 4 variasi campuran 1 Pc : 5 Ps, 1 Pc : 5 Lm, 1 Pc : 3 Lm : 2 Ps, 1 Pc : 2 Lm : 3 Ps dengan uji kuat tekan dan serap air hari ke-7, 14, 21 dan 28 hari. Penelitian ini merupakan penelitian eksperimen dengan menggunakan rancangan *Pottest Only Control Group Design* dan data di analisis dengan uji One Way Anova.

Hasil penelitian menunjukkan uji kuat tekan pada kontrol dan 4 variasi paling tinggi hari ke-28 sebesar 2,10 MPa dan variasi kode B 0,86, kode C 1,47 dan kode D 2,09 (MPa). Hasil uji serap air memenuhi standart maksimal penyerapan 10%. Hasil uji One Way Anova $0,001 < 0,05$, yang berarti H_0 ditolak ada perbedaan kuat tekan dan serap air *Paving block* dengan ketiga variasi kelompok.

Kesimpulan kuat tekan *Paving block* kontrol dan 4 variasi paling tinggi hari ke-28 2,10 MPa dan komposisi D 2,09 MPa tetapi masih di bawah standart. Uji serap air *Paving block* memenuhi standart. Disarankan peneliti selanjutnya menambah campuran 2 Pc : 3 Lm : 5 Ps dan penambahan umur 35 hari.

Kata Kunci : Limbah Marmer, Kuat Tekan, Serap Air, *Paving Block*

UTILIZATION OF MARBLE WASTE AS A MIXED MATERIAL FOR MAKING PAVING BLOCK

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ABSTRACT

Tulungagung has an industry that produces marble waste of ± 1 to 10 tons per week and needs to use waste. This prompted researchers to research the use of marble waste for a mixture of Paving block manufacturing. The purpose of this study was to determine the effect of differences in compressive strength and water absorption with different compositions and testing the day with reference to standards (SNI 03-0691-1996).

This research was carried out with 4 variations of a mixture of 1 pc: 5 ps, 1 pc: 5 lm, 1 pc: 3 lm: 2 ps, 1 pc: 2 lm: 3 ps with a compressive strength test and water absorption 7, 14 days, 21 and 28 days. This research is an experimental study using the Pottest Only Control Group Design design and the data were analyzed by One Way Anova test.

The results showed that the compressive strength test on the control and 4 variations at the highest 28th day was 2.10 MPa and the variation of B code was 0.86, C code 1.47 and D code 2.09 (MPa). Water absorption test results meet a maximum standard of 10% absorption. The results of One Way Anova test are $0.001 < 0.05$, which means that H_0 is rejected, there is a difference in compressive strength and Paving block water absorption with the three group variations.

Conclusion The compressive strength of Paving block control and 4 variations were highest at 28 days 2.10 MPa and composition D 2.09 MPa but still below standard. Paving block water absorption test meets the standard. It is recommended that the researcher then add a mixture of 2 Pc: 3 Lm: 5 Ps and the addition of 35 days.

Keywords: Marble Waste, Press Strength, Water Absorption, Paving Block