

# **PEMANFAATAN ABU BATU SEBAGAI CAMPURAN AGREGAT HALUS Dengan Persentase 10%, 20%, 30% Dan Serbuk Bata Merah 10% Terhadap Kuat Tekan Paving Block**

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## **ABSTRAK**

*Paving Block* merupakan bahan bangunan yang terbuat dari campuran semen *portland*, air dan agregat dengan atau tanpa bahan tambah lainnya yang tidak mengurangi mutu beton tersebut. Dengan komposisi tertentu *paving block* mempunyai permukaan semi permeable atau permeable yang dapat meneruskan air kedalam tanah. *Paving block* dimanfaatkan sebagai lapis perkerasan baik di dalam bangunan atau di luar. Pada penelitian ini penulis memanfaatkan abu batu yang berasal dari industri pemecah batu yang jumlahnya sangat banyak dan secara kasat mata mirip dengan pasir dan keberadaannya yang mudah untuk didapatkan. Metode penelitian ini adalah studi eksperimental. Pada penggunaan abu batu sebagai bahan campuran agregat halus dengan persentase 10%, 20%, 30% dan penambahan serbuk bata merah dengan persentase 10% sebagai bahan tambah *paving block*. Pengujian yang dilakukan yakni pengujian kuat tekan *paving block* dengan jumlah sample uji sebanyak 35 pcs, yang terdiri 5 pcs sample *paving block* normal, 5 pcs *paving block* dengan campuran serbuk bata merah 10%, 5 pcs *paving block* dengan abu batu full, 5 pcs *paving block* abu batu full dan serbuk bata merah 10%, 5 pcs *paving block* campuran serbuk bata merah 10% dan abu batu 10%, 5 pcs *paving block* campuran serbuk bata merah 10% dan abu batu 20%, 5 pcs *paving block* campuran serbuk bata merah 10% dan abu batu 30%. Hasil analisis menunjukkan bahwa *paving block* bahan tambah abu batu 10%, 20%, 30% dan serbuk bata merah 10% secara keseluruhan mengalami peningkatan kuat tekan apabila dibandingkan dengan *paving block* normal 22,87 Mpa masuk dalam mutu kelas B. Peningkatan kuat tekan tertinggi terjadi pada abu batu 30% dan serbuk bata merah 10% yaitu mencapai 23,84 Mpa yang dimana masuk kedalam mutu kelas B, atau mengalami peningkatan sebesar 4% apabila dibandingkan dengan *paving block* normal. Hasil terbaik dari penelitian ini adalah persentase penggunaan abu batu *full* 100% dan serbuk bata merah 10% atau tanpa menggunakan pasir yang memiliki nilai kuat tekan tinggi.

Kata Kunci: Abu batu, Bata merah halus, Kuat tekan, *Paving block*.

# **UTILIZATION OF STONE ASH AS A MIXTURE OF FINE AGGREGATE With a percentage of 10%, 20%, 30% and 10% Red Brick Powder against the Compressive Strength of Paving Blocks**

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## **ABSTRACT**

Paving Block is a building material made from a mixture of portland cement, water and aggregate with or without other added materials that do not reduce the quality of the concrete. With a certain composition, paving blocks have a semi-permeable or permeable surface that can pass water into the soil. Paving blocks are used as pavement layers both inside and outside the building. In this study, the authors utilized stone ash from the stone crushing industry, which is very large in number and is visually similar to sand and its presence is easy to obtain. This research method is an experimental study. In the use of stone ash as a mixture of fine aggregate with a percentage of 10%, 20%, 30% and the addition of red brick powder with a percentage of 10% as an added material for paving blocks. The tests carried out were testing the compressive strength of paving blocks with a number of test samples of 35 pcs, consisting of 5 pcs of normal paving block samples, 5 pcs of paving blocks with a mixture of 10% red brick powder, 5 pcs of paving blocks with full stone ash, 5 pcs of paving full block of stone ash and 10% red brick powder, 5 pcs paving blocks mixed with 10% red brick powder and 10% stone ash, 5 pcs paving blocks mixed with 10% red brick powder and 20% stone ash, 5 pcs paving blocks mixed with brick powder 10% red and 30% stone ash. The results of the analysis showed that the paving blocks with added stone ash 10%, 20%, 30% and 10% red brick powder overall experienced an increase in compressive strength when compared to normal paving blocks 22.87 MPa included in class B quality. The highest increase in compressive strength occurred in 30% stone ash and 10% red brick powder, which reached 23.84 MPa which was included in the class B quality, or an increase of 4% when compared to normal paving blocks. The best result of this research is the percentage of using 100% full stone ash and 10% red brick powder or without using sand which has a high compressive strength value.

**Keywords:** Stone ash, Fine red brick, Compressive strength, Paving block.