

# **PEMANFAATAN ABU BATU SEBAGAI CAMPURAN AGREGAT HALUS DENGAN PERSENTASE 70%, 80%, 90% DAN SERBUK BATA MERAH 10% TERHADAP KUAT TEKAN PAVING BLOCK**

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## **ABSTRAK**

Paving block adalah campuran dari beberapa bahan pembentuk berupa semen Portland atau bahan perekat lainnya, air, dan agregat halus yang bisa ditambahkan dengan bahan tambah tanpa mengurangi mutu dari Paving block tersebut yang digunakan sebagai bahan bangunan. Paving block dimanfaatkan sebagai lapis lapisan permukaan trotoar, paving pada taman kota, perkerasan pada jalan lingkungan perumahan dan lain-lain. Bahan campur yang digunakan pada penelitian ini adalah abu batu sebagai bahan campuran agregat halus dengan persentase 70%, 80%, 90% dan penambahan serbuk bata merah dengan persentase 10% sebagai bahan tambah Paving block. Metode penelitian ini adalah studi eksperimental. Pada penggunaan abu batu sebagai bahan campuran agregat halus dengan persentase 70%, 80%, 90% 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 abu batu 70% dan serbuk bata merah 10%, 5 pcs Paving block campuran abu batu 80% dan serbuk bata merah 10%, 5 pcs Paving block campuran abu batu 90% dan serbuk bata merah 10%. Hasil pengujian menunjukkan bahwa Paving block bahan tambah abu batu 70%, 80%, 90% dan serbuk bata merah 10% secara keseluruhan mengalami peningkatan dan penurunan kuat tekan apabila dibandingkan dengan Paving block normal 22,87 MPa. Peningkatan kuat tekan tertinggi terjadi pada abu batu 80% dan serbuk bata merah 10% yaitu mencapai 26,13 MPa, atau mengalami peningkatan sebesar 14% apabila dibandingkan dengan Paving block normal. Sedangkan untuk pengujian pada persentase 70% dan 90% mengalami penurunan kuat tekan apabila dibandingkan dengan Paving block normal 22,87 Mpa, penurunan kuat tekan pada persentase 70% 22,44 Mpa dan 90% 17,14 MPa penurunan yang terjadi sebanyak 2% dan 25% dari Paving block normal.

Kata Kunci: abu batu, kuat tekan, mutu, paving block, serbuk bata merah.

# **UTILIZATION OF STONE ASH AS A MIXTURE OF FINE AGGREGATE WITH A PERCENTAGE OF 70%, 80%, 90% AND RED BRICK POWDER 10% ON THE COMPRESSIVE STRENGTH OF PAVING BLOCK**

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## **ABSTRACT**

Paving block is a mixture of several forming materials in the form of Portland cement or other adhesive materials, water, and fine aggregate which can be added with added materials without reducing the quality of the paving blocks used as building materials. Paving blocks are used as a layer of pavement surface layers, paving in city parks, pavements on residential roads and others. The mixed material used in this study was stone ash as a mixture of fine aggregate with a percentage of 70%, 80%, 90% and the addition of red brick powder with a percentage of 10% as an added material for paving blocks. This research method is an experimental study. In the use of stone ash as a mixture of fine aggregate with a percentage of 70%, 80%, 90% 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, which consisted 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 block mixed with 70% stone ash and 10% red brick powder, 5 pcs Paving block with 80% stone ash and 10% red brick powder, 5 pcs Paving block mixed with stone ash 90% and 10% red brick powder. The test results showed that Paving blocks with stone ash added 70%, 80%, 90% and 10% red brick powder overall experienced an increase and decrease in compressive strength when compared to normal Paving blocks of 22.87 MPa. The highest increase in compressive strength occurred in 80% stone ash and 10% red brick powder, reaching 26.13 MPa, or an increase of 14% when compared to normal paving blocks. Meanwhile, for testing the percentage of 70% and 90% experienced a decrease in compressive strength when compared to normal paving blocks 22.87 MPa, the decrease in compressive strength at 70% percentage was 22.44 MPa and 90% 17.14 MPa the decrease occurred was 2% and 25% of normal Paving blocks.

Keywords: stone ash, compressive strength, quality, paving block, red brick powder.