

PENGARUH PENAMBAHAN *CRUMB RUBBER* DAN *SIKA VISCOCRETE 1003* PADA CAMPURAN BETON

Dian Fajar A¹), Dian Sefrudin¹), M Faqiu Ni'am²), Rachmat Mudiyo²)

ABSTRAK

Saat ini penggunaan beton untuk struktur perkerasan jalan sangat banyak dipergunakan. Karakter beton yang keras membuat ketidaknyamanan saat berkendara apabila melewati jalan beton. Untuk mengurangi karakter beton yang keras sehingga nyaman untuk dilewati, banyak penelitian dan inovasi-inovasi yang telah dilakukan.

Pada penelitian ini akan dilakukan inovasi beton dengan campuran potongan *Crumb Rubber* karena melihat limbah karet ban bekas sangat banyak dan ditambahkan *Sika Viscocrete 1003* untuk mempercepat pengikatan pada beton. Penelitian ini bertujuan untuk mengetahui sifat mekanik pada beton (kuat tekan) dengan benda uji berbentuk silinder berukuran 15x30 cm. Variasi sempel yang dibuat beton dengan *Crumb Rubber* sebanyak 0%, 10%, 20%, 30% dari berat agregat halus dan beton dengan *Crumb Rubber* sebanyak 0%, 10%, 20%, 30% yang ditambahkan *Sika Viscocrete 1003* sebanyak 2% dari berat semen. Pengujian dilakukan pada usia beton 3, 7, 14, dan 28 hari.

Dari hasil penelitian kuat tekan karakteristik beton pada usia 28 hari untuk beton dengan campuran *Crumb Rubber* sebanyak 0% 10%, 20%, 30% mengalami penurunan kuat tekan setiap presentase penambahan *Crumb Rubber*. Sedangkan untuk beton dengan campuran *Crumb Rubber* yang di tambahkan *Sika Viscocrete 1003* mengalami penurunan pada presentase 0% sampai 20% dan mengalami kenaikan kembali pada presentase 30%.

Kata Kunci : *Crumb Rubber*, *Sika Viscocrete 1003*, Kuat Tekan, Beton

- 1) Mahasiswa fakultas teknik program studi teknik sipil universitas islam sultan agung semarang .
- 2) Dosen fakultas teknik program studi teknik sipil universitas islam sultan agung semarang.

THE EFFECT OF ADDITION OF CRUMB RUBBER AND SIKA VISCOCRETE 1003 ON CONCRETE MIXING

Dian Fajar A¹⁾, Dian Sefrudin¹⁾, M Faqiu Ni'am²⁾, Rachmat Mudiyo²⁾

ABSTRACT

At present the use of concrete for road pavement structures is very widely used. The hard concrete character creates discomfort when driving when passing a concrete road. To reduce the hard concrete character so it is comfortable to pass, a lot of research and innovations have been done.

In this research, concrete innovation will be carried out with a mixture of pieces of Crumb Rubber because it sees a lot of used tire rubber waste and added Sika Viscocrete 1003 to accelerate the binding of concrete. This study aims to determine the mechanical properties of concrete (compressive strength) with cylindrical specimens measuring 15x30 cm. Variations of sample made of concrete with Crumb Rubber as much as 0%, 10%, 20%, 30% of the weight of fine aggregate and concrete with Crumb Rubber as much as 0%, 10%, 20%, 30% added by Sika Viscocrete 1003 as much as 2% of cement weight. The test was carried out at 3, 7, 14, and 28 days of concrete.

From the research results the compressive strength of concrete characteristics at the age of 28 days for concrete with a mixture of Crumb Rubber as much as 0% 10%, 20%, 30% decreased in compressive strength every percentage of Crumb Rubber addition. Whereas for concrete with Crumb Rubber mixture added Sika Viscocrete 1003 decreased at a percentage of 0% to 20% and increased again at a percentage of 30%.

Keywords: Crumb Rubber, Sika Viscocrete 1003, Compressive Strength, Concrete

- 1) Students of the faculty of engineering civil engineering study program at the Agung Sultan of Semarang Islamic University.
- 2) Lecturer in the Faculty of Engineering, Civil Engineering Study Program, Sultan Agung Semarang University.