

ABSTRAK

ANALISIS PENGGUNAAN TULANGAN WIREMESH TERHADAP DEFORMASI PERKERASAN KAKU USIA DINI

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Perkerasan kaku adalah suatu perkerasan jalan yang menggunakan beton sebagai bahan utamanya. Namun, karena material utamanya adalah beton maka pengaruh kembang-susut menjadi salah satu faktor kinerja. Apabila beton tidak mampu menahannya, ikatan menjadi putus sehingga mengurangi kekuatan dan stabilitas jalan serta mempengaruhi kualitas kenyamanan lalu lintas. Karenanya diperlukan perlakuan yang sesuai untuk meningkatkan kemampuan beton dalam berdeformasi. Penelitian ini bertujuan mengetahui pengaruh pemasangan *wiremesh* terhadap deformasi beton pada perkerasan kaku saat usia dini. Variabel yang diteliti meliputi perkerasan kaku menggunakan *wiremesh* yang dipasang di sudut karena banyak kerusakan terjadi di bagian sudut. Uji yang dilakukan meliputi uji kuat tekan dan uji susut. Sampel uji kuat tekan berupa beton kubus dengan dimensi 15 cm × 15 cm × 15 cm sebanyak 3 buah. Diuji pada umur 24 jam kemudian dianalisis menggunakan metode *dixon*. Sampel uji susut berupa perkerasan kaku berukuran 5 m × 4,5 m × 0,3 m. Pengamatan pada uji susut dilakukan selama 24 jam dengan pembacaan setiap 15 menit. Hasil penelitian menunjukkan rata-rata kuat tekan beton pada umur 1 hari sebesar 14,64 MPa atau 28,25% dari kekuatan rencana mutu beton. Pemasangan tulangan *wiremesh* pada perkerasan kaku tidak menunjukkan pengaruh yang signifikan pada 5 jam pertama. Namun, sejak 6 jam mulai terlihat perbedaan deformasi antara perkerasan kaku dengan dan perkerasan kaku tanpa *wiremesh*. *Wiremesh* mampu mengurangi susut rata-rata 10,91%. Deformasi usia dini terutama disebabkan oleh reaksi kimia, dan menentukan deformasi selanjutnya.

Kata kunci: Beton, Deformasi, Usia Awal, Perkerasan Kaku, *Wiremesh*

ABSTRACT

ANALYSIS OF THE USE OF WIREMESH REINFORCEMENT ON EARLY AGE RIGID PAVEMENT DEFORMATION

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Rigid pavement is a pavement that uses concrete as main material. However, since the main material is concrete, the influence of shrinkage is one of the performance factors. If the concrete is unable to withstand it, the bond is broken, which reduces the strength and stability of the road and affects the quality of traffic comfort. Therefore, appropriate treatment is needed to improve the deformability of concrete. This study aims to determine the effect of wiremesh installation on concrete deformation in early age rigid pavement. The variables studied include rigid pavement using wiremesh installed at corners because a lot of damage occurs at the corners. The tests carried out include compressive strength test and shrinkage test. The compressive strength test sample is a concrete cube with dimensions of 15 cm × 15 cm × 15 cm as many as 3 pieces. Tested at the age of 24 hours and then analyzed using the Dixon method. The shrinkage test sample was a rigid pavement measuring 5 m × 4.5 m × 0.3 m. Observations on the shrinkage test were made for 24 hours with readings every 15 minutes. The results showed that the average compressive strength of concrete at the age of 1 day was 14.64 MPa or 28.25% of the strength of the concrete quality plan. The installation of wiremesh in rigid pavement did't show a significant effect in the first 5 hours. However, since 6 hours, the difference in deformation between rigid pavement with and rigid pavement without wiremesh began to be seen. Wiremesh was able to reduce shrinkage by an average of 10.91%. Early age deformation is mainly caused by chemical reactions, and determines subsequent deformation.

Key words: Concrete, Deformation, Early Age, Rigid Pavement, Wiremesh