

# Kajian Skid Resistance Campuran Aspal Panas dengan Agregat Beton Semen dan Penambahan Plastik dengan Variasi Suhu = Study Of Skid Resistance Of Hot Mix Asphalt With Recycled Concrete Aggregate And Addition Of Plastic With Temperature Variations

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## Abstrak

Untuk mengurangi penggunaan material alam, limbah beton digunakan sebagai pengganti agregat batu alami. Penambahan limbah plastik LDPE dalam campuran aspal juga dilakukan sebagai upaya peningkatan kualitas aspal. Penggunaan material alternatif pada campuran aspal perlu memperhatikan aspek keselamatan yakni kemampuan agregat pada lapisan aspal untuk menahan gaya gelincir permukaan jalan pada segala kondisi cuaca. Dalam penelitian ini mengkaji pengaruh penggunaan agregat limbah beton dan penambahan plastik LDPE pada campuran aspal terhadap nilai skid resistance. Penelitian diawali dengan pembuatan benda uji campuran ACWC dengan agregat RCA pada variasi kadar aspal 7%, 7.5%, 8%, 8.5%, dan 9% yang dihasilkan KAO pada 9%. Untuk menghilangkan kadar mortar pada agregat RCA dilakukan peremajaan dengan pencucian dan penggosokan. Penelitian dilanjutkan dengan mencari kadar plastik optimum yang didapatkan pada kadar plastik sebesar 5%. Pengujian skid resistance dilakukan menggunakan alat British Pendulum Tester (BPT) pada variasi suhu 26C, 30C, 35C, 40C, 45C, dan 50C. Pengujian dilakukan dengan dua jenis uji yakni skid resistance standard dan immersion. Didapatkan hasil penggunaan agregat RCA dan penambahan plastik LDPE menaikkan nilai skid resistance. Nilai SN tertinggi didapat 58,5 pada suhu normal (26C) dan nilai terendah 51,6 pada suhu tinggi (50C).

.....To reduce the use of natural materials, waste concrete can be used as a substitute for natural aggregates (NA). The addition of LDPE plastic waste in asphalt mixtures is also carried out to improve asphalt quality. The use of alternative materials in asphalt mixtures needs to pay attention to safety aspects, to withstand the sliding force of the road surface in all weather conditions. This study examines the effect of the use of concrete waste aggregates and the addition of LDPE plastic to the asphalt mixture on the value of skid resistance. The study began with the manufacture of a mixture of ACWC specimens with RCA aggregates at variations in asphalt content of 7%, 7.5%, 8%, 8.5%, and 9% produced by KAO at 9%. RCA aggregates have previously been rejuvenated by washing and rubbing to remove the mortar content. The research was continued by finding the optimum plastic content obtained at a plastic content of 5%. Skid resistance testing was carried out using the British Pendulum Tester (BPT) at various temperatures of 26 C, 30 C, 35 C, 40 C, 45 C, and 50 C. The test is carried out with two types of tests, standard skid resistance and immersion skid resistance. It was found that the use of RCA aggregate and the addition of LDPE plastic increased the value of skid resistance. The highest SN value was 58.5 at normal temperature (26C) and the lowest value was 51.6 at high temperature (50C).