

PENGARUH VARIASI TEMPERATUR PEMADATAN DENGAN SUHU 100°C, 105°C, 110°C, 115°C DAN DAMPAKNYA TERHADAP KINERJA PERKERASAN *HOT MIX ASPHALT*

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ABSTRAK

Pada dasarnya penelitian ini dilakukan untuk mengetahui pengaruh variasi temperatur pada proses pemadatan terhadap lapis aspal beton (Laston) AC-WC (*Asphalt Concrete-Wearing Course*). Temperatur merupakan salah satu faktor penyebab kerusakan yang dapat mengurangi kualitas perkerasan aspal. Analisis variasi temperatur pemadatan merupakan upaya mengetahui pengaruh yang dikibatkan rendahnya temperatur pemadatan yang diukur berdasarkan nilai karakteristik *marshall* serta dengan acuan Spesifikasi Bina Marga 2018.

Penelitian dimulai dengan melakukan pengujian material di laboratorium, setelah itu melakukan pembuatan benda uji dengan variasi suhu pemadatannya dari 100°C, 105°C, 110°C dan 115°C nilai kadar aspal yang digunakan adalah 6,5% . selanjutnya dilakukan analisis berdasarkan perbedaan variasi temperatur pemadatan.

Berdasarkan hasil analisis, pengaruh variasi temperatur 100°C, 105°C, 110°C dan 115°C nilai stabilitas berturut-turut adalah 461,01 Kg, 485,52 Kg, 484,78 Kg, dan 494,45 Kg. flow berturut-turut adalah 3,80 mm, 3,50 mm, 3,50 mm, dan 3,40 mm. VMA berturut-turut adalah 22,230%, 22,241%, 21,438%, dan 24,008%. VFA berturut-turut adalah 58,996 %, 58,959 %, 61,797 %, dan 53,377 %. VIM berturut-turut adalah 9,115 %, 9,128 %, 8,190 %, dan 11,193 %. Adapun perbandingan benda uji normal dengan benda uji yang suhunya telah divariasikan adalah nilai stabilitas benda uji yang suhunya variatif cenderung meningkat, flow benda uji yang suhunya telah divariasikan mengalami penurunan, VIM benda uji yang suhunya telah divariasikan cenderung mengalami penurunan, VMA benda uji yang suhunya telah divariasikan cenderung mengalami penurunan, VFA benda uji yang temperaturnya telah divariasikan cenderung menurun.

Kata Kunci: Agregat, Variasi Temperatur, Karakteristik *Marshall*, *Asphalt Concrete-Wearing Course* (AC-WC).

THE EFFECT OF VARIATION OF COMPACTION TEMPERATURE OF 100°C, 105°C, 110°C, 115°C , ON THE PERFORMANCE OF HOT MIX ASPHALT PAVEMENT

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ABSTRACT

This research was conducted to determine the effect of temperature variations on the compaction process on the AC-WC (Asphalt Concrete-Wearing Course) asphalt concrete layer. Temperature is one of the factors causing damage that can reduce the quality of asphalt pavement. The analysis of variations in compaction temperature is an attempt to determine the effect caused by the low compaction temperature which is measured based on the value of the marshall characteristics and with reference to the 2018 Highways Specifications. The study began by testing the material in the laboratory, after that making specimens with variations in compaction temperature from 100°C, 105°C, 110°C and 115°C the asphalt content value used was 6.5%. further analysis is carried out based on differences in temperature variations of compaction. Based on the results of the analysis, the effect of temperature variations 100°C, 105°C, 110°C and 115°C stability values are 461.01 Kg, 485.52 Kg, 484.78 Kg, and 494.45 Kg. flow is 3.80 mm, 3.50 mm, 3.50 mm, and 3.40 mm. The VMAs are 22.230%, 22.241%, 21.438%, and 24.008%, respectively. VFA were 58,996 %, 58,959 %, 61,797 %, and 53,377%, respectively. VIM is 9.115%, 9.128%, 8.190%, and 11.193%, respectively. The comparison of normal specimens with test specimens whose temperature has been varied is the stability value of the specimens whose temperatures are varied tends to increase, the flow of test objects whose temperatures have been varied has decreased, VIM of test objects whose temperatures have been varied tends to decrease, VMA of test objects whose temperatures have been varied. varied tends to decrease, the VFA of the test object whose temperature has been varied tends to decrease.

Keywords: Aggregate, Temperature Variation, Marshall Characteristics, Asphalt Concrete-Wearing Course (AC-WC).