ABSTRACT

Potential of Reclaimed Asphalt Pavement (RAP) results in the Cold Milling Machine in East Java province is quite large, estimated to ± 50,000 m³ per year. Most of the RAP can not be fully utilized. In a previous study, an effort has been conducted to recycle RAP materials from Pandaan-Malang Road and reprocessed using asphalt pen 60-70 with fine graded specification. Results from these studies is RAP material can be used with a maximum percentage of 20% and is limited by voids in Mix (VIM) on Percentage Refusal Density (PRD). Thus, in this study attempted to increase the value of VIM PRD tried to do a new variation of an aggregate abrasion.

This research based on Spesifikasi Umum Bina Marga Tahun 2010 and begin with researching the characteristics of RAP and new material. Then continued with making hot mix asphalt using asphalt pen 60-70, new aggregate derived from quarry Banyuwangi with abrasion value of 19.73% and quarry Lumajang with abrasion value of 23.6%. Furthermore added RAP with initial composition of 25% RAP and increased to 30% RAP. This research is applies the bitumen content ranges between 5.1% - 7.4% of the value obtained from the calculation of the asphalt content of empirical. Those mixture then tested with Marshall test and refusal density test.

Result of this research shows that composition of 25% RAP Pandaan-Malang Road and 75% new material with abrasion value of 19.73% compliant Spesifikasi Umum Bina Marga Tahun 2010 with the optimum asphalt proportion/ Kadar Aspal Optimum (KAO) of 6.35%. The use of such compositions led to a surcharge of 0.6% compared to using hot mix asphalt without RAP. While for the composition of 25% RAP Pandaan-Malang Road and 75% new material with abrasion value of 23.6% can not fulfill requirements of Spesifikasi Umum Bina Marga Tahun 2010.

Keywords: AC- Wearing Course (AC-WC) Fine Gradation, Asphalt Pen 60-70, New Aggregate Abrasion Variation, Reclaimed Asphalt Pavement Pandaan-Malang National Road.