THE INFLUENCE OF HIGH DENSITY POLYETHYLENE TO CHARACTERISTIC OF HOT ROLLED SHEET

FINAL PROJECT REPORT

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ABSTRACT

THE INFLUENCE OF HIGH DENSITY POLYETHYLENE TO CHARACTERISTIC OF HOT ROLLED SHEET

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Hot Rolled Sheet (HRS) is a kind ofpavement mix design that consist of aggregate, asphalt, and filler. The materials were hotmixed and compacted in specific temperature. The use of additive material was expected to improve the characteristic of asphalt mix design that is shown by Marshall Test. High density polyethylene (HDPE) was polymer that has thermoplastic characteristic which is similar with the characteristic of asphalt. The purpose of this research is to know whenever HDPE can be added into, also it is expected that HDPE may improve the mixture.

In this research the use of HDPE waste in the mixtures was 0%, 3%, 5%, 7% and 9%. Asphalt content was 5%, 5.5%, 6%, 6.5%, and 7%. Analysis is based on the references, especially regulation that published by BinaMarga (2010). The result of research, show HDPE content 3% and 5 two samples for each proportion of HDPE, therefore, there are 50 samples in total.

The result of this research is that HDPE can be use as additive in HRS WC with content 3% and 5%. The optimum asphalt content is 6.8%. The additions of HDPE also increase several Marshall Parameters such as stability value, VITM value and MQ value. However, HDPE decrease flow, VFWA, and density value of the mixture.

Keywords: HRS, HDPE, Marshall Parameters, optimum asphalt content, additive