ABSTRACT

Asphalt concrete is a mixture of coarse aggregate, fine aggregate and filler with asphalt binder under high temperature (hot) conditions with a regulated composition. In the Laston mixture, filler functions as a cavity filling material in the mixture, increasing stability, and binding asphalt concrete. Using concrete fragment waste as a substitute for coarse aggregate to try to utilize unused concrete fragment waste from the Serdang Bedagai area. This research aims to determine whether the use of concrete fragment waste as coarse aggregate for asphalt concrete (AC-WC) can affect marshall characteristics. The method used in calculations uses the trial and error method, namely the trial and error method to produce the specified range. In this study, a variety of concrete waste mixtures of 25%, 50%, 75% and 100% were used. From this research, Marshall characteristic values were obtained in the form of Stability, Flow, Voids In Mix (VIM), Voids In Mineral Aggregate (VMA), Voids Filled Bitumen (VFB), Marshall Qutient (MQ), and Bulk Density. After the parameter values have been obtained using the Marshall Test tool in the highway laboratory, it can be analyzed that the mixture of waste concrete fragments as coarse aggregate in the AC-WC asphalt mixture meets the 2018 general specifications for highways which shows that the optimum value for marshall characteristics at an asphalt content of 6% is the mixture of concrete waste at a variation of 25% and for a mixture variation of the concrete waste mixture of 50%, the marshall test value has met the criteria.

Keywords: Concrete Waste, trial & error, marshall test , optimum value.

.