INTISARI

Jalan tol Serang-Panimbang sepanjang 83,677 km merupakan salah satu Proyek Strategis Nasional yang diharapkan dapat membangun konektivitas, menciptakan pemerataan perekonomian serta mengurai kemacetan akibat adanya kawasan wisata dan Kawasan Ekonomi Khusus (KEK) di Provinsi Banten. Konstruksi jalan tol di Indonesia pada umumnya menggunakan struktur perkerasan lentur (*flexible pavement*) atau struktur perkerasan kaku (*rigid pavement*). Struktur perkerasan ini berfungsi dalam melayani beban lalu lintas tanpa mengalami kerusakan sebelum umur rencana yang telah ditetapkan. Sehingga perlu dilakukan analisis dan perencanaan yang baik dalam hal perkerasan tersebut.

Pada penelitian ini dilakukan analisis mengenai kebutuhan tebal perkerasan lentur Jalan Tol Serang–Panimbang Seksi I yaitu Ruas Jalan Walantaka–Rangkasbitung (STA 00+000 – STA 26+550) dengan menggunakan MDPJ (Manual Desain Perkerasan Jalan) 2017 dan Metode AASHTO 1993. Data untuk kebutuhan perancangan berupa data sekunder diperoleh dari PT. Wijaya Karya Proyek Pembangunan Jalan Tol Serang–Panimbang.

Berdasarkan hasil analisis dan perancangan perkerasan lentur Ruas Jalan Walantaka–Rangkasbitung menggunakan MDPJ 2017, diperoleh AC Wearing Course 40 mm, AC Binder Course 60 mm, AC Base Course 210 mm, Lapis Fondasi Agregat kelas A 300 mm dan digunakan hasil perhitungan berdasarkan Nominal Maximum Aggregate Size (NMAS) guna penyesuaian pelaksanaan di lapangan dengan tebal AC Wearing Course 40 mm, AC Binder Course 60 mm, AC Base Course 225 mm, Lapis Fondasi Agregat kelas A 300 mm. Sedangkan, dengan Metode AASHTO 1993 diperoleh tebal AC Wearing Course 40 mm, AC Binder Course 60 mm, AC Base Course 130 mm, Lapis Pondasi Agregat Kelas A 150 mm, Lapis Pondasi Agregat Kelas B 220 mm, dan digunakan hasil perhitungan berdasarkan NMAS dengan tebal AC Wearing Course 40 mm, AC Binder Course 60 mm, AC Base Course 150 mm, Lapis Pondasi Agregat Kelas A 150 mm, Lapis Pondasi Agregat Kelas B 300 mm. Hasil rancangan perkerasan dengan Manual Desain Perkerasan Jalan 2017 lebih disarankan sebab tebal perkerasan yang dihasilkan lebih minimal dengan metode analisis yang lebih sederhana dan telah disesuaikan dengan kondisi di Indonesia.

Kata kunci: jalan tol, perkerasan lentur, MDPJ 2017, AASHTO 1993

ABSTRACT

Serang-Panimbang Toll Road that spans across 83,799 km is one of National Strategic Project that is expected to build connectivity, generate economic equality, and distangle congestion caused by the presence of tourist area and Special Economic Zone (Kawasan Ekonomi Khusus) in Banten Province. Toll road construction in Indonesia usually make use of flexible pavement and rigid pavement. This pavement structure functions to serve the traffic without being damaged before planned lifespan. Excellent analysis and planning on pavement matters are needed.

In this final project discusses the analysis of thickness needs of flexible pavement of Walantaka-Rangkasbitung segment (STA 00+000 – STA 26+550), that is the section I of Serang-Panimbang toll road, using MDPJ (Manual Desain Perkerasan Jalan) 2017 and AASHTO 1993 Method. Data for design requirement in form of secondary data was obtained from PT. Wijaya Karya Proyek Pembangunan Jalan Tol Serang–Panimbang.

According to the analysis and design of the flexible pavement of Walantaka-Rangkasbitung road section using MDPJ 2017, with the obtained thickness of 40 mm AC Wearing Course, 60 mm AC Binder Course, 210 mm AC Base Course, 300 mm Aggregate class A layer 300 mm was adjusted based on Nominal Maximum Aggregate Size (NMAS) calculation for the implementation in the field resulted in the thickness of 40 mm AC Wearing Course, 60 mm AC Binder Course, 225 mm AC Base Course, 300 mm Aggregate class A layer. Meanwhile, using AASHTO 1993 Method, with the obtained thickness of 40 mm AC Wearing Course, 60 mm AC Binder Course, 130 mm AC Base Course, 150 mm Aggregate class A layer, 220 mm Aggregate class B layer, was adjusted based on NMAS calculation resulted in the thickness of 40 mm AC Wearing Course, 60 mm AC Binder Course, 150 mm AC Base Course, 150 mm Aggregate class A layer, 300 mm Aggregate class B layer. Both methods differ in terms of the planning concept and design parameters used. The results of the pavement design using MDPJ 2017 is recommended because the pavement thickness will provide a less thinner layer with the simpler analysis method that has been adapted to the conditions in Indonesia.

Keywords: *toll road, flexible pavement, MDPJ 2017, AASHTO 1993*