ABSTRAK

Pembangunan infrastruktur jalan pada kawasan industri memerlukan pemilihan jenis perkerasan yang tepat agar mampu memberikan pelayanan optimal dari aspek teknis, ekonomi, dan lingkungan. Kawasan Industri Kuala Tanjung (KIKT) sebagai kawasan industri strategis di Sumatera Utara membutuhkan infrastruktur jalan dengan daya dukung tinggi guna menunjang aktivitas industri dan logistik. Penelitian ini bertujuan menganalisis dan membandingkan biaya konstruksi perkerasan lentur, perkerasan rigid, dan paving blok pada ruas Jalan Infrastruktur Dasar Tahap I KIKT. Metode penelitian menggunakan Analisa Komponen Bina Marga 1987 untuk perkerasan lentur serta metode Direktorat Jenderal Bina Marga 1988 untuk perkerasan rigid dan paving blok. Data yang digunakan meliputi CBR tanah dasar, lalu lintas harian rata-rata (LHR), geometrik jalan, dan harga satuan pekerjaan. Analisis dilakukan terhadap ketebalan struktur perkerasan dan Rencana Anggaran Biaya (RAB) masing-masing jenis perkerasan, kemudian dibandingkan berdasarkan aspek teknis, ekonomi, dan lingkungan. Hasil penelitian menunjukkan biaya konstruksi perkerasan lentur sebesar Rp35.776.781.561, perkerasan rigid sebesar Rp38.683.281.811, dan paving blok sebesar Rp34.139.500.340,9. Paving blok menjadi alternatif paling ekonomis, sedangkan perkerasan rigid memiliki biaya tertinggi namun menawarkan umur layanan lebih panjang dan ketahanan lebih baik terhadap beban berat. Perkerasan lentur memiliki biaya awal lebih rendah dan pelaksanaan lebih cepat, tetapi membutuhkan pemeliharaan berkala. Pemilihan jenis perkerasan perlu disesuaikan dengan fungsi jalan, volume lalu lintas, dan kebutuhan operasional kawasan industri agar diperoleh konstruksi jalan yang efisien, ekonomis, dan berkelanjutan.

Kata Kunci: Perkerasan Lentur, Perkerasan Rigid, Paving Blok, RAB, Kawasan Industri Kuala Tanjung

ABSTRACT

The construction of road infrastructure in industrial areas requires the selection of appropriate pavement types to provide optimal performance in terms of technical, economic, and environmental aspects. The Kuala Tanjung Industrial Estate (KIKT), as one of the strategic industrial areas in North Sumatra, requires road infrastructure with high bearing capacity to support industrial and logistics activities. This study aims to analyze and compare the construction costs of flexible pavement, rigid pavement, and paving block pavement on the Basic Infrastructure Road Phase I of KIKT. The research method used the 1987 Bina Marga Component Analysis for flexible pavement and the 1988 Directorate General of Highways method for rigid pavement and paving blocks. The data used include subgrade CBR, average daily traffic (ADT), road geometric data, and unit price analysis. The analysis was conducted on pavement structure thickness and the cost estimate (RAB) of each pavement type, which were then compared based on technical, economic, and environmental aspects. The results show that the construction cost of flexible pavement is Rp35,776,781,561, rigid pavement is Rp38,683,281,811, and paving block pavement is Rp34,139,500,340.9. Paving blocks are the most economical alternative, while rigid pavement has the highest cost but offers a longer service life and better resistance to heavy vehicle loads. Flexible pavement has lower initial costs and faster construction time but requires periodic maintenance. Therefore, the selection of pavement type should be adjusted to road function, traffic volume, and industrial operational needs to achieve efficient, economical, and sustainable road construction.

Keywords: Flexible Pavement, Rigid Pavement, Paving Block, Cost Budget Plan (RAB), Kuala Tanjung Industrial Estate.