

ANALISIS TEBAL PERKERASAN *RUNWAY*3 PADA BANDARA SOEKARNO-HATTA MENGGUNAKAN METODE FAA

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ABSTRAK

Bandar Udara Soekarno-Hatta merupakan bandara terpadat yang terletak di Tangerang, Banten. Untuk mengurangi kepadatan, Bandar Udara membangun runway 3 tepat di sisi runway 2. Runway merupakan infrastruktur penting sehingga perlu dilakukan perencanaan yang matang untuk mempertahankan fungsi dari fasilitas bandara tersebut selama umur rencana. Studi analisis struktur perkerasan runway 3 bertujuan untuk mengetahui efisiensi tebal perkerasan terhadap biaya dan mengetahui kekuatan perkerasan pada tahun 2039. Jenis perkerasan yang digunakan merupakan struktur perkerasan lentur. Terdapat beberapa metode perencanaan perkerasan structural, salah satu yang paling banyak digunakan adalah FAA (Federal Aviation Administration), perhitungan metode FAA menggunakan cara manual dan program komputer melalui software FAARFIELD (FAA Rigid and Flexible Iterative Elastic Layered Design). Adapun metode penelitian yang digunakan adalah deskripsi analisis. Dari hasil analisis, dipakai pesawat B737-800 sebagai pesawat rencana. Estimasi biaya perkerasan menggunakan harga satuan proyek, pada perkerasan eksisting dengan tebal 87 cm diperoleh Rp. 74.296.800.000; Hasil analisis metode FAA grafis diperoleh tebal perkerasan sebesar 84,9 cm dengan biaya Rp. 68.583.571.226, kemudian metode software FAARFIELD diperoleh sebesar 80,54 cm dengan biaya Rp. 66.539.668.800, Perbedaan biaya dipengaruhi harga satuan masing-masing lapisan perkerasan yang berbeda. Kemudian struktur perkerasan untuk perencanaan tahun 2039 metode FAA grafis dan FAARFIELD dibutuhkan total tebal perkerasan 94,28 cm dan 83,79 cm dengan 12,7 cm lapis permukaan, 34,93 cm dan 29,21 cm lapis pondasi atas, 46,65 cm dan 41,88 cm lapis pondasi bawah. Perbedaan tebal perkerasan disebabkan karena pada FAA cara manual pengaruh semua jenis model lalu lintas dikonversikan ke dalam pesawat rencana dengan equivalent annual departure dari pesawat campuran sedangkan program FAARFIELD memperhitungkan semua jenis pesawat.

Kata kunci: FAA, FAARFIELD, Perkerasan, Biaya, Pesawat

ANALYSIS OF THE PAVEMENT THICKNESS OF RUNWAY 3 AT SOEKARNO-HATTA AIRPORT USING FAA METHOD

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Abstract

Soekarno-Hatta Airport is the most populous airport located in Tangerang, Banten. To reduce congestion, the airport builds runway 3 right on the side of runway 2. Runway is an important infrastructure so that it is necessary to plan carefully to maintain the function of the airport facilities during the planned life. The study of runway 3 pavement structure analysis aimed to determine the efficiency of pavement thickness against costs and to determine pavement strength in 2039. The type of pavement used was a flexible pavement structure. There are several structural pavement planning methods, one of the most widely used is the FAA (Federal Aviation Administration). The calculation of the FAA method used manual methods and computer programs through FAARFIELD (FAA Rigid and Flexible Iterative Elastic Layered Design) software. The research method used was descriptive analysis. From the analysis, the B737-800 aircraft was used as the plan plane. The pavement cost estimation used the project unit price, on the existing pavement with a thickness of 87 cm and it was obtained Rp. 74,296,800,000; The results of the graphical FAA analysis method showed that the pavement thickness was 84.9 cm at a cost of Rp. 68,583,571,226, then the FAARFIELD software method obtained 80.54 cm at a cost of Rp. 66,539,668,800. The difference in cost was influenced by the unit price of each different pavement layer. Then the pavement structure for planning in 2039 using the FAA graphic and FAARFIELD methods required a total pavement thickness of 94.28 cm and 83.79 cm with 12.7 cm of surface layer, 34.93 cm and 29.21 cm of top foundation layer, 46.65 cm and 41.88 cm sub-base layer. The difference in pavement thickness was due to the manual method since the FAA influences to all types of traffic models were converted into planned planes with the equivalent annual departure of mixed aircraft, while the FAARFIELD program took into account all types of aircraft.

Keywords: *FAA, FAARFIELD, Pavement, Cost, Aircraft*

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