INTISARI

Pada tahun 2018, ACI menetapkan Bandar Udara Internasional Soekarno-Hatta (CGK) pada peringkat 18 bandar udara tersibuk di dunia berdasarkan jumlah penumpang. Pergerakan penumpang mencapai 66 juta penumpang dan mengalami kenaikan dari tahun sebelumnya sebesar 6,2%. Jumlah penumpang diproyeksikan mencapai lebih dari 100 juta penumpang pada tahun 2025. Pertumbuhan jumlah penumpang berbanding lurus dengan pertumbuhan jumlah pergerakan pesawat, sehingga perlu adanya peningkatan sarana dan prasarana di sisi darat maupun sisi udara. Melihat pertumbuhan penumpang dan pesawat tersebut, PT Angkasa Pura II (Persero) melakukan peningkatan kapasitas sisi udara dengan membangun *runway* ketiga, yang diproyeksikan dapat mendukung pergerakan pesawat hingga 120 pergerakan per jam. Untuk dapat mendukung pergerakan hingga 120 pergerakan per jam, *Runway* 3 perlu dirancang dengan baik, salah satunya terkait dengan perkerasan *runway* tersebut. Pada penelitian ini dilakukan analisis mengenai kebutuhan tebal lapis perkerasan lentur dan nilai kekuatan perkerasan pada *Runway* 3 Bandar Udara Internasional Soekarno-Hatta.

Data untuk kebutuhan perancangan berupa data sekunder yang diperoleh dari PT Angkasa Pura II (Persero). Analisis kebutuhan tebal lapis perkerasan lentur dilakukan dengan Metode FAA (*Federal Aviation Administration*) perhitungan manual dan dengan Metode FAA program komputer FAARFIELD. Analisis kekuatan perkerasan dilakukan dengan Metode ACN-PCN.

Berdasarkan hasil analisis, kebutuhan tebal perkerasan lentur *Runway* 3 dengan Metode FAA cara manual diperoleh total tebal 155 cm dengan *surface course* 17 cm, *stabilized base course* 56 cm, dan *stabilized subbase course* 82 cm, sedangkan dengan Metode FAARFIELD diperoleh total tebal 128 cm dengan *surface course* 17 cm, *stabilized base course* 15 cm, *base course* 15 cm, dan *subbase course* 81 cm. Nilai kekuatan relatif perkerasan *Runway* 3 dengan Metode ACN-PCN adalah 89/F/C/X/T.

Kata kunci: bandar udara, *runway*, perkerasan lentur, Metode FAA, Metode ACN-PCN.

ABSTRACT

Soekarno-Hatta International Airport (CGK) in 2018 was ranked as the 18th busiest airport in the world based on the number of passengers as reported by ACI. The number of passenger movements reached 66 million passengers with an increase of 6.2% from 2017. The number of passengers is projected to reach more than 100 million passengers by 2025. The growth in passenger numbers is directly proportional to the growth in the number of aircraft movements. It is, therefore, necessary to increase airport facilities and infrastructure on the land and air sides. Seeing the growth of passengers and aircraft, PT Angkasa Pura II (Persero) has been constructing a third runway, called Runway-3. By this, the CGK is projected to support aircraft movements of 120 movements per hour. To support movement of up to 120 movements per hour, Runway-3 has to be well designed; one of which is the runway pavement. In this final project discusses the analysis of flexible pavement thickness and analysis of pavement strength of Runway-3 Soekarno-Hatta International Airport.

Data for design needs is secondary data obtained from PT Angkasa Pura II (Persero). Analysis of flexible pavement thickness carried out by using FAA (Federal Aviation Administration) Method, which is carried out in two ways, namely by manual calculation and by the FAARFIELD computer program. Analysis of pavement strength carried out by the ACN-PCN Method.

The results show that based on the manual calculation, the Runway-3 flexible pavement thickness is 155 cm, consisting of 17 cm surface course, 56 cm stabilized base course, and 82 cm stabilized subbase course. The FAARFIELD method gives a total thickness of 128 cm which consists of 17 cm surface course, 15 cm stabilized base course, 15 cm base course, and 81 cm subbase course. Based on the ACN-PCN Method, the Runway-3 pavement strength is given with code 89/F/C/X/T.

Keywords: airport, runway, flexible pavement, FAA Method, ACN-PCN Method.