

INTISARI

Bandara Baru Samarinda (BBS) adalah bandara baru di kota Samarinda yang diproyeksikan sebagai pengganti bandara Temindung yang dinilai sudah tidak layak beroperasi. Kekuatan dan stabilitas perkerasan harus dievaluasi agar dapat menjamin pelayanan pesawat sesuai standar keamanan. Penelitian ini bertujuan untuk menyelidiki kemampuan teknis perkerasan *runway* dan *taxiway* yang hasilnya ditampilkan dalam nilai PCN (*Pavement Classification Number*).

Dalam penelitian ini digunakan metode analitik yang memperhitungkan kondisi nyata perkerasan di lapangan berupa nilai defleksi landasan, nilai CBR (*California Bearing Ratio*) *subgrade*, beban pesawat kritis rencana Boeing 737-900ER, dan ketebalan lapisan perkerasan. Data defleksi didapat melalui pengujian HWD (*Heavy Weight Deflectometer*). Pengolahan data dibantu *software Elmod 6* untuk mendapatkan nilai modulus elastisitas tiap lapisan tanah (*E*). Nilai tersebut dianalisis menjadi tebal perkerasan ekuivalen dan nilai PCN.

Diketahui bahwa nilai CBR *subgrade* adalah sebesar 6% yang termasuk kategori C (*low*). Nilai ACN (*Aircraft Classification Number*) Boeing 737-900ER untuk kategori *subgrade low* dan jenis perkerasan lentur adalah 56 dengan MTOW (*Maximum Take Off Weight*) 85.528,55 kg. Berdasarkan variasi nilai modulus elastisitas lapisan perkerasan, didapat tebal ekuivalen perkerasan adalah 85,5 cm dengan beban ijin sebesar 71.385 kg, yang jika dikonversikan ke nilai PCN adalah 45. Kode PCN bandara Baru Samarinda (BBS) menjadi 45/F/C/W/T. Hal ini menunjukkan bahwa perkerasan *runway* dan *taxiway* belum memiliki kemampuan untuk melayani operasi Boeing 737-900ER dengan beban maksimal secara optimal karena nilai PCN lebih kecil dari nilai ACN.

Kata kunci : PCN, HWD, defleksi, tebal ekuivalen, modulus elastisitas

ABSTRACT

Baru Samarinda (BBS) Airport is a new airport in Samarinda which projected as a substitution of the old Temindung Airport that had already considered to be inadequately fit to operate. Strength and stability of pavement should be evaluated thus can assure aircraft's operations up to safety standard regulation. This research aims to observe the technical ability of runway's and taxiway's pavement which result will be declared as a PCN (*Pavement Classification Number*) value.

Analytical method consists of deflection measurement, CBR (California Bearing Ratio) value, load of critical aircraft Boeing 737-900ER, and existing pavement's thickness were used to predict the real condition of pavement in field. Deflection measurement data was obtained by Heavy Weight Deflectometer Test. All the data were subjected into Elmod 6 software to obtain the elasticity moduli value of each layer (E). Further, the value was analyzed to obtain equivalent thickness of pavement as well as PCN value.

It was found that the CBR subgrade value was 6% which categorized as low. ACN (Aircraft Classification Number) value for Boeing 737-900ER for low subgrade category and flexible pavement is 56 with MTOW (Maximum Take Off Weight) 85.528,55 kg. Calculation based on variation of elasticity moduli generated that pavement equivalent thickness is 85,5 cm with allowable load is 71.385 kg which can be converted into PCN as 45. Therefore, PCN code of Baru Samarinda (BBS) airport was found as 45/F/C/W/T. This result showed that pavement of runway and taxiway haven't been able to serve the operation of Boeing 737-900ER with maximum load since the PCN value was lesser than the ACN value.

Keywords: PCN, HWD, deflection, equivalent thickness, elasticity moduli