INTISARI

Genangan air banjir disebabkan oleh curah hujan yang sangat tinggi dan juga belum baiknya drainase yang ada. Kondisi jalan yang sering di genangi oleh air banjir dapat menurunkan sifat durabilitas lapis perkerasan aspal, hal tersebut menjadi lebih buruk lagi jika terjadi pada saat proses pembuatan campuran aspal, selama pengangkutan, penghamparan dilapangan dan selama masa pelayanan terjadi proses penuaan pada campuran aspal. Melihat dampak dari banjir yang terjadi dan proses penuaan maka penelitian ini dilakukan untuk mengetahui durabilitas penuaan campuran beton aspal berdasarkan uji *Cantabro*.

Penelitian dilakukan menggunakan gradasi batas atas (UL), nilai tengah (MR), dan batas bawah (LL) pada proses penuaan (*ageing*) dan lama perendaman 0, 1, 2, 4 dan 7 hari. Parameter yang digunakan untuk melihat tingkat durabilitas campuran AC-WC adalah Indeks Kekuatan Sisa (IKS), Indeks Durabilitas Pertama (IDP), dan Indeks Durabilitas Kedua (IDK).

Hasil penelitian menunjukkan pengaruh yang sama terhadap gradasi UL, MR dan LL setelah dilakukan uji *Cantabro* 300 putaran, bahwa semakin lama waktu perendaman maka nilai massa yang hilang akan semakin bertambah. Untuk nilai hasil uji cantabro 300 putaran campuran gradasi LL lebih tahan terhadap gaya impact sampai hari ke-7 dengan nilai massa yang hilang pada kondisi Kontrol sebesar 3,53%, kondisi Short Term Oven Ageing (STOA) sebesar 8,29%, dan pada kondisi Long Term Oven Ageing (LTOA) sebesar 5,72%. Campuran bergradasi LL memiliki nilai durabilitas paling baik jika dibandingkan dengan gradasi MR dan UL. Nilai IDP pada kondisi Kontrol pada variasi UL, MR, dan LL sebesar 20,12%, 26,38%, 14,28%, kondisi Short Term Oven Ageing (STOA) sebesar 30,85%, 24,84%, 20,14%, dan pada kondisi Long Term Oven Ageing (LTOA) sebesar 26,78%, 24,38%, 16,15%. Nilai IDK pada kondisi Kontrol pada variasi UL, MR dan LL sebesar 18,42%, 23,45%, 12,80%, kondisi Short Term Oven Ageing (STOA) sebesar 28,69%, 21,83%, 17,41% dan pada kondisi Long Term Oven Ageing (LTOA) sebesar 76,12%, 80,44%, 84,58%.

Kata Kunci : Durabilitas, Ageing, AC-WC, AME, Cantabro test, Marshall test

ABSTRACT

Flood puddles are caused by very high rainfall and poor drainage. Road pavement which are often immersed by floodwater can decrease the durability of asphalt pavement layers, it becomes even worse when it occurs during the asphalt mixing process, during transport, on-site deployment and during the service period aging on the asphalt mixture. Considering the impact of the flood and the aging process, this study was conducted to determine the effect of ageing process and flood water immersion on the durability of AC-WC mixture with Elastomer Modified Asphalt (AME) binder based on cantabro test.

The study was conducted using upper limit (UL), middle range (MR), and lower limit (LL) on ageing process and duration of immersion 0, 1, 2, 4 and 7 days. The parameters used to see the durability level of the AC-WC mix are the Retained Strength Index (IKS), the First Durability Index (IDP), and the Second Durability Index (IDK).

The results showed the same effect on the gradations of UL, MR and LL after a cantabro 300 revolution, that the longer the immersion time, the value of the mass loss will increase. For the value of cantabro test result 300 revolution of LL gradation mixture is more resistant to impact force until day 7 with missing mass value at control condition 3,53%, Short Term Oven Ageing (STOA) condition equal to 8.29%, and at condition of Long Term Oven Ageing (LTOA) 5.72% . The LL graded mixture has the best durability value when compared to the MR and UL gradations. The value of IDP under control conditions in the variations of UL, MR, and LL is 20.12%, 26.38%, 14.28%, STOA conditions 30.85%, 24.84%, 20.14%, and under conditions LTOA of 26.78%, 24.38%, 16.15%. IDK value at Control condition on variation of UL, MR and LL equal to 18.42%, 23.45%, 12.80%, Short Term Oven Ageing (STOA) condition 28.69%, 21.83%, 17.41% and at condition of Long Term Oven Ageing (LTOA) equal to 76.12%, 80.44%, 84.58%.

Key Word : Durability, Ageing, AC-WC, AME, Cantabro test, Marshall test