

Influence of Aggregates Shape on Porous Asphalt Mixture

N.S.I. Liew, C.M. Ng, N.S.N. Mohd Sori, R.P. Jaya, and K.A. Masri*

College of Engineering, Universiti Malaysia Pahang, 26300 Gambang, Pahang, Malaysia.

**Corresponding author: ramadhansyah@ump.edu.my*

Abstract

Porous asphalt (PA) is a porous pavement layer made of an open graded aggregate that has a lot of linked air voids. The technical qualities and performance of PA are heavily influenced by the aggregate shape and surface roughness. Granite aggregate was use in this research to study the effect of aggregate shape on volumetric and mechanical properties of porous asphalt mixture and to evaluate the quality of aggregate shape of porous asphalt mixture (PAM) in relation to aggregate shape. To classify the aggregate size, Sieve Analysis Test was carried out and followed by Flakiness and Elongation Index Test. Marshall Stability Test and Resilient Modulus Test were conducted to study the behavior of PAM by replacing different shape of aggregate. Based on the result cubical shaped aggregates are more recommended to be use in PAM, due to the strength is higher than the conventional PA.

Keywords: Porous asphahlt; Aggregate shape; Flakiness index; Elongation index; Flaky aggregate; Cubical aggregate.