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## Design of Semi-Rigid Pavement Based on Volumetric Properties of the Mixture

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### Abstract

Semi-rigid pavements are manufactured by producing a very open porous asphalt skeleton and filling the voids with selected cementitious grouts. The resultant composites, referred to as "grouted macadams", combine the flexibility of the bituminous component with the strength and rigidity of the cementitious component. Grouted macadams thus combine the best qualities of concrete and asphalt pavements, namely the flexibility and freedom from joints that characterize asphalt and the high static bearing capacity and rutting resistance of concrete. It has gradually become popular internationally for years as a surface layer of those pavements under serious conditions such as road junctions, airport aprons and heavy loading yards. However, it's very significant to penetrate the cementitious grout into the asphalt skeleton to the greatest extent possible to fill out the air voids present in it, to gain above mentioned properties. Therefore, this study is focused on the penetration ability of cementitious grout under various combinations of characteristics of the semi-rigid pavement.

Keywords: Semi-rigid pavements, Porous asphalt skeleton, Cementitious grouts, Grouted macadam, Bearing capacity, Rutting resistance

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