

## **Analysis of Air Void Variations in Hot Mix Asphalt Wearing Course Mixtures used in Sri Lankan Roads**

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Over the past decades, the road construction with hot mix asphalt (HMA) has been increased significantly. However there were many concerns of the durability of the recently constructed asphalt concrete roads. Therefore, impotency of introduction of new quality control measures is arisen these days.

The properties of the asphalt mixture as well as the construction practices are also important for the quality and the durability of asphalt pavements. The present Sri Lankan practice is measure and control of (1) Thickness, (2) Density, (3) Bitumen Content and Aggregate gradation and (4) Roughness Index (IRI) of the laid asphalt mat.

The objective of this research is to find out the impotency of measuring the air void of the laid asphalt mat and the need of a combined index of the important parameters to improve the quality and durability of asphalt concrete roads. Core samples were tested at 12 locations with various initial compaction levels at two aging levels, 100 days and 225 days. In addition performance was evaluated of the road sections with various levels of initial compaction after 5 years to check the long term aging of asphalt concrete. It was found that initial air void content significantly decreased under traffic in a short period and long term performance of HMA roads cannot be evaluated by initial air void content alone.

**Key words:** Air Voids, Marshall Density, Degree of Compaction