

## **A newly developed laboratory slab roller compactor (Turamesin): an overview**

### **ABSTRACT**

Methods of preparing test specimens in laboratories are particularly important. It also holds true in terms of compaction procedure in predicting pavement performance. The currently available laboratory compactor cannot adequately replicate field compaction conditions, especially the Stone Mastic Asphalt (SMA) mixture. The essential element of SMA mixture comprises of stones that are placed next to or on top of each other, and therefore are greatly affected by the compaction procedure. Conclusion of different studies have indicated that rolling wheel compactor, simulates properties that are closer to field compaction. Turamesin was developed as an improved method of laboratory slab roller compactor, to provide a solution for the problem of producing laboratory specimens, which would represent materials laid and compacted in the field. This paper gives an overview of Turamesin and discusses the findings of the units' first phase Pilot Study, conducted in order to provide specific information, to improve procedures for slab preparation and compaction, also determining the criteria for slab compaction and performance of Turamesin. Turamesin is able to compact, a slab area measuring; 600 mm by 500 mm, according to clients' specified thicknesses, with number of passes up to 75, within 15 minutes time period. One compacted slab could produce up to 16 cylindrical core specimens of 100 mm diameter. Turamesin has shown great potential to be adopted as standard laboratory slab compactor, for asphalt mixtures and seems to be capable of simulating field compaction in terms of operational procedures. However, improvement of the Turamesin will need significant amount of research to develop and finalize the optimum procedures.

**Keyword:** Roller compactor; Slab; Asphalt mixtures; Laboratory compaction; Field simulation