

**DETERMINATION OF AN EFFECTIVE LAYING  
PATTERN AND BEST BLOCK SHAPE FOR CONCRETE  
BLOCK PAVEMENT BASED ON FIELD  
PERFORMANCE**

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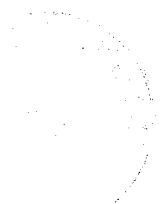
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## ABSTRACT

There has been an intensive process of urbanization which has brought about need for rapid construction of roads and related infrastructure during the end of the last century. Therefore development of economical road construction methods is a high priority for a developing country like Sri Lanka. Concrete block paving is one of the predominant road construction method used in most of the developing countries due to economic adaptability and this has emerged as a cost effective road construction method suitable for certain local conditions. But in Sri Lanka this technique is yet to be developed to a fully fledged road construction method. This can be attributed to a dearth of the technical expertise and knowledge. As a result, there is a great need to develop knowledge and establish proper methods of block paving.

Load spreading in concrete block paving roads is accomplished by interlocking actions. Because of that concrete blocks act as a major load spreading component in concrete block paved surfaces. Therefore the aim of this research is to evaluate the effective block shape and effective block laying pattern which can improve the interlocking action.

This research was covered the real ground situation and the behavior and the effects of blocks due to traffic weights. Under this study, concrete blocks were cast according to the specifications in predetermined shapes and paving was done with different block shapes and patterns in a road which contains vehicular traffic about 300v/day. Selected 100m road length was divided to 10 equal parts and blocks were paved according to selected pattern and block shapes in each different section.

Deflection was measured by using Benkelman instrument and block displacement were measured by using vernier caliper. The most effective block shape and pattern were selected comparing deflection and block displacement in each combination of block shape and patterns.