Poster Session

Load Transfer Efficiency Evaluation in Block Pavements Relative to Block Configurations

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Abstract :

The application of concrete block pavements is constructed using individual block paverson the surface layer creating surface discontinuity at a certain pattern. The block pavement is restrained at the pavement edges with boundary stones. When concentrated loads are applied, the load distribution is dependent on the load transferring ability between the blocks where gaps between 2 to 4 mm are filled with joint sand. Meanwhile, concrete blocks are fabricated in various shapes and thickness which can be installed in various patterns. This study evaluates the load transfer efficiency of 4 common block shapes arranged in 3 patterns. A light falling weight deflectometer (LFWD) is used to measure the deflections of the surface at specific distances in all shape-pattern combinations and levels of joint filling. Results have shown that the level of joint filling has significant impact on the load transfer efficiency of the block pavement. Furthermore, specific block shapes perform better compared to the rest while the block patterns have minimal variations.

Keywords : permeable block pavement, load transfer efficiency, light falling weight deflectometer, rotation, block shapes, block patterns