

INNOVATIVE ADDITION OF POLYPROPYLENE FIBRE IN INTERLOCKING PAVER BLOCK TO IMPROVE COMPRESSIVE STRENGTH

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ABSTRACT

The presently paver block is used in outdoor versatility application and also it is used in street road and other construction places. Paver block has low cost maintenance and easily replace with a newer one at the time of breakage. For improving compressive strength and other parameter of paver block this study is necessary. In this study, innovative addition of polypropylene fiber only in the top layer (15 mm) of paver block for determining the change in the compressive strength of paver blocks and reduces the maintenance cost of paver block. Also it's helpful to improve the life span of paver block. In this paper represent the results of the concrete paver block with the mix proportion of 1:3 (Cement: dolomite powder) and polypropylene fiber with the different percentage rate in the top layer of paver block and 1:1:2:3.75 (Cement: Fine aggregate: Semi Grit: Quarry dust) in the bottom layer of paver block. In only top layer (i.e. Top 15mm) contain the addition of polypropylene fiber (PPF) by 0.1%, 0.2%, 0.3%, 0.4%, 0.5% in each mixes proportion by weight. The compressive strength has been determined at the end of 7, 14 and 28 days and water absorption has been determined at 28 days. Test results indicate that by the addition of PPF in the top layer by 0.4% it gives maximum strength at 7, 14, 28 days and minimum water absorption. The paper also shows the cost comparison per block for the each mix proportion.

KEYWORDS: Compressive Strength, Water Absorption, Polypropylene Fiber, Paver Block, Cost