

# THE REVIEW PAPER ON EFFECT OF UTILIZATION OF POLYPROPYLENE FIBER IN PREVIOUS CONCRETE

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## ABSTRACT

*This paper gives review of pervious concrete. Pervious concrete it is a composite material which consist coarse aggregate, Portland cement, and water. It is not same as a conventional concrete which contains no fines in the initial mixture. This type of Concrete is started in Europe in nineteenth Century. The usage of polypropylene fiber in pervious concrete increases the closeness between the coarse aggregate and cement paste. The higher content of polypropylene fiber in pervious concrete decreases ability of work done of concrete.*

**Key words:** *Compressive strength, Permeability, Pervious concrete, tensile strength*

## INTRODUCTION

In nineteenth in the United Kingdom, few houses were built using gravel and concrete. Price efficiency looks to have been the primary reason for its earliest usage due to the limited amount of cement used. Pervious concrete persistent to achievement reputation and its use spread to Africa and Asia. [1-4]

While it is sluggish at starting, the use of pervious concrete as a standby for conventional concrete has developed into a multi-functional device in the construction business. It is mostly used in low-volume traffic pavements, Sidewalks and pathways, Parking areas, Driveways, Low water crossings, Tennis courts, Swimming pool decks. [4, 5]

The bond asset between particles is poorer than conventional concrete and therefore provides a lower compressive strength. Most important is its improved permeability compared with conventional concrete and higher thermal insulating values than conventional concrete. Pervious concrete is beneficial due to lots of causes. The Act of Clean water directives State counties and Municipalities to adopt steps and procedures to reduce the amount of polluted storm water. Since parking lots are generally impermeable surfaces, they contribute significantly to this issue. The usage of pervious concrete is well-matched for this application. It allows for the normal behavior of contaminated water by soil filtration, Decreases hazard of flooding and top soil wash away. Pervious concrete allows the water to movement easily through the surface which eases glare, particularly at dark when the street is drizzling. It needs less costly maintenances than black top longer. [5-7]

The analysis is done by stating important journals, reference books and conference proceedings. It related to the study of different paper associated to various features of pervious concrete. [1-7]

## II.COMPOSITION AND MAINTENANCE OF PERVIOUS CONCRETE

As compared to conventional concrete, pervious concrete workings as a arrangement composed of several components. Each component is critical to the complete functionality of the concluding product. The superiority of pervious concrete is calculated by air void content, water permeability rate, and unit weight. These things are vital for the proper functionality of this material.

Sub-grade layer is the unbroken soil underneath the sub-base layer. Sub-grade layer infiltration rate decides water absorption within a specified period. This straight affects the size of the layer. If the infiltration rate is low, larger sub-base should be considered. If the sub-grade is well, it is necessary to place geo-textile in between the sub-base and sub-grade to minimize the migration. A drainage system is not continuously essential but may be desirable if the rate of infiltration of the sub-grade layer is low and water confined in the sub-base is not absorbed by soil fast enough. [7-10]

In rain, the pervious concrete allows on-site penetration of storm water. It also filters sediments and pollution from storm water deposited on the pavement surface. Therefore permeable surface is a filter, like any filter it must be washed intermittently. The rate of the vacuuming is directly proportional to the amount of sediment. Pavement inspected regularly during or immediately following a rain occurrence. Puddles are signs that it is time to clean the pavement. Moss can be organized by sprinkling baking soda on the surface, and it followed by a dry vacuuming in some weeks.

If regular and intermittent maintenance is not done, deep cleaning of pervious concrete pavement is required. If it is not cleaned periodically, the configuration will become bunged with rubble. Deep cleaning is best consummate by simultaneous pressure washing and vacuuming. [7-11]

## IIIMETHODOLOGY AND ANALYSIS

There are two method used for placing concrete first is conventional hand placing and second is member casted at same time in three covers. Curing methodology of concrete is prepared by wrapping the concrete surface by plastic for six to seven days, and after engrossed in curing tank, in which all concrete cubes, beams and cylinders are placed for changed periods. The analysis and observations are shown in following Tables.

**Table No.1 Standard Consistency of the Cement Paste**

Parameter	Observation
Temperature at test	30
Gauging in time	2 to 6min
Grade of cement	51

**Table No.2 Aggregate Impact Value**

Observation	First Sample	Second Sample	Third Sample
Sample Weight	500 gms	500 gms	500 gms
Sample Weight by passing through 2.36 mm is sieve after impact	35 gms	40 gms	35.2 gms

Table No.3 Coarse Aggregate Properties

Assessment	Outcome
Impact value	9.20
Crushing value	19.30
Fineness modulus	3.50
Specific gravity	2.55

#### IV. RESULTS AND DISCUSSIONS

In this study it is observed that there is rise in compressive strength with rise in percentage of polypropylene fibers, rise in flexural strength with rise in percentage of polypropylene fibers and fall in permeability with rise in percentage of polypropylene fibers.

#### V. CONCLUSION

The study of system characterizes the effect of use of polypropylene fiber in pervious concrete on compressive, flexural, split tensile strength and permeability. As results obtained during analysis and based on literatures review, higher content of polypropylene fiber in pervious concrete decreases work efficiency of concrete.

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#### PHOTOGRAPS OF WORK

