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Construction of Canal Lining Using Nylon Net

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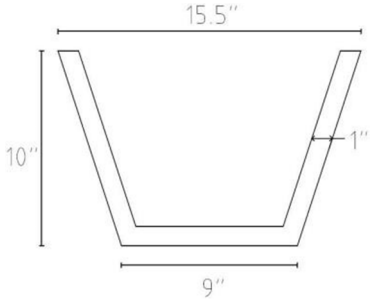
***Abstract:** The nylon fibers are used in manufacture of various products like carpet, rope, clothes, tires and other durable materials. The reason for using nylon fiber is that it has good hardness, resilience and durability; is readily available in different colors, can be dyed, resistant to soil and dirt, good abrasion and wearing characteristic, availability in different cross-section. The Nylon fiberproduction, though, affects the environment and the disposal of these fibers poses more severe threat. In this regard, use of nylon fiber as ingredient in cement concrete is promising as it provided an alternative method of disposal and fibers, owing to their also improve strength and durability of concrete. The addition of nylon fiber has also been reported to improved durability of concrete, the fibers protect concrete cover from spilling due to bonding character. In present study, nylon fibers are added to normal strength cement concrete in various proportions and its effects on workability, compressive strength, and tensile strength is reported.*

The nylon fiber is used in variety of applications owing to its high strength, resilience and durability but its disposal poses a serious threat in environment. The use of nylon fiber in concrete hence gives good alternative to the disposal and fibers in turn impart useful characteristics to concrete. In present study, various proportions of nylon fiber are added in concrete and its effect on workability, compressive strength and tensile strength is reported.

I. INTRODUCTION

The canal lining sections, gutter sections in the trapezoidal sections are being extensively used for carrying the water though canals, gutters. These concrete sections fail under impact load. The concrete material used for the casting of sections is of very much thickness. That causes loss of money due to more thickness of the sections and also the strength of those sections is less due to this reason we have made some changes in that sections. We thought use of alternative material to use in the section for the better results and high flow of discharge. The currently used sections are costly and also require more material.In further discussion we will see how the sheets were manufactured, the results of the tests conducted on the nylon sheets and the economic feasibility of the same. The thought applied duringthe use of Nylon nets as a substitute for the iron or chicken mesh and is that it completely eliminates the basic problem of iron mesh that is of rusting and which prevents the concrete from any corrosion and any further deterioration. Nylon nets are generally used for fishing purpose. In fishing, the load of fishes is taken by these nets alone. These nets are also been used for soil stabilization in “Konkan Railway”. It is also been used for prevention of rock falls in mountainous area

II. SIZE OF MOULD



III. METHODOLOGY

Collection of information on canal lining and nylon nets. Finding data of canal lining & nylon nets in different projects Develop a model to assess the use of nylon fiber in construction project. By comparing data collected

1) Proportioning of material
2) Preparation of formwork
3) Mixing of material

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4) Placing of mortar
5) Vibration of mold
6) Finishing
7) Curing
8) Performing the tests on proposed model to find the strength

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IV. RESULTS AND COMPARISON

Sr. No.	Test	Cement ConcreteCanal Section	Nylon ReinforcedCanal Section
1	Load Bearing Capacity. (Internal Pressure)	12.70KN	16.9KN
2	Load Bearing Capacity. (ExternalPressure)	3.72KN	4.95KN
3	Impermeability	NIL	NIL
4	Water Absorption	4.37%	2.58%
5	Price	259 Rs.	216 Rs.

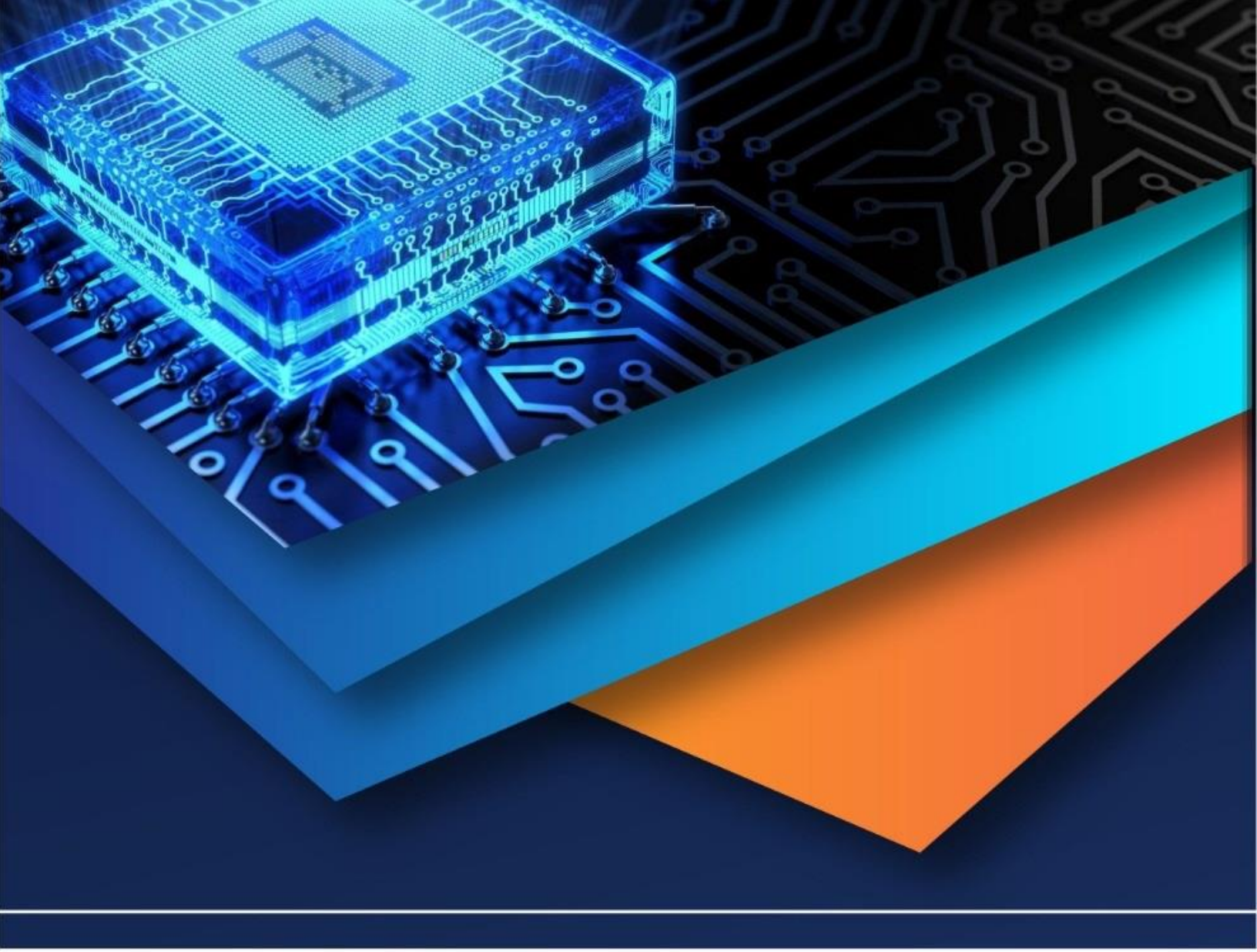
V. CONCLUSION

Nylon nets being used for various applications thus, by our we have implemented and experiment using nylon nets in castingcanal project sections so as to explore the use of nylon nets. We have use nylon nets in combination with cement concrete. It was our attempt to replace the conventional canal sections, we concluded following: -

1) Nylon Cement concrete section can replace conventional canal sections.
2) Nylon Cement canal sections can be locally manufactured on sites and can use for low-cost canal lining system.
3) Cost of Nylon canal section is Rs.186/- for 1 canal section of thickness 1" and that of the 1.5" thickness conventional canal section is Rs.229/- for 1 canal section.

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