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To Compare Pervious Concrete Block of Admixture with Normal Concrete Block

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Abstract: *Pervious concrete is a concrete which has same composition as that of conventional concrete which consists of cement, sand, aggregate and water but partially or completely omitting fine aggregates. The recent concern for environmental and sustainable development, promotes the utilization of porous concrete .The use of pervious concrete can address these issues of environmental and sustainable development .The porous concrete paver blocks(PCPB), despite having low strength and high permeability ,have a very wide range of applications like permeable pavement, groundwater purifier, heat a reducer and sound absorber. Pervious concrete paver blocks can widely be used for storm water management and has been successfully used for filtering the groundwater and reducing the pollutants entering the natural water streams rivers and ponds. Use of pervious concrete paver blocks on a large scale can also help in increasing the ground water table over a period of time. Use of pervious concrete has cost advantages over the use of conventional concrete also.*

Keywords: Porous Concrete Paver Blocks

I. INTRODUCTION

Pervious concrete is a concrete which has same composition as that of conventional concrete which consists of cement, sand, aggregate and water but partially or completely omitting fine aggregates. The recent concern for environmental and sustainable development, promotes the utilization of porous concrete .The use of pervious concrete can address these issues of environmental and sustainable development .The porous concrete paver blocks(PCPB), despite having low strength and high permeability ,have a very wide range of applications like permeable pavement, groundwater purifier, heat a reducer and sound absorber. Pervious concrete paver blocks can widely be used for storm water management and has been successfully used for filtering the groundwater and reducing the pollutants entering the natural water streams rivers and ponds. Use of pervious concrete paver blocks on a large scale can also help in increasing the ground water table over a period of time. Use of pervious concrete has cost advantages over the use of conventional concrete also.

II LITERATURE REVIEW

L. Haselbach *et al.2014*

Dissolved zinc and copper retention from stormwater runoff in ordinary portland cement pervious concreteThe identification label for each of the nine pervious concrete cylinders and their measured porosities, infiltration rates are given in Table 1. The average infiltration rate was based on all the times for infiltration of one liter of water recorded, including the first prewet test as they were very similar.

M. Gesoglu *et al.*

Abrasion and freezing-thawing resistance of pervious concretes containing waste rubbers 2014

The use of rubber significantly aggravated the pervious concrete mechanical properties and its permeability but in different degrees according to the rate and type of rubber used. However, replacement of natural aggregate with rubber particles resulted in a significant increase of toughness and ductility of concrete as well as better damping capacity.

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M.S. Sumanasooriya *et al.*
Pore structure features of pervious concretes proportioned for desired porosities and their performance prediction 2011
The pervious concrete mixtures resulting from these two distinct proportioning strategies are referred to as high-paste content mixtures and low-paste content mixtures, respectively in the remainder of this paper.

M.U. Maguesvari *et al.*
Studies on characterization of pervious concrete for pavement applications 2013
This study presents the influence of fine aggregate and coarse aggregate quantities on the properties of pervious concrete. Materials used are OPC Type I, fine aggregate corresponding to grading II and four sizes of coarse aggregate namely, 4.75 mm to 9 mm, 9 mm to 12.5 mm, 12.5 mm to 16 mm, 16 mm to 19.5 mm. Mixes were prepared with the water cement ratio of 0.34, cement content of 400 kg/m3 and maintaining the aggregate cement ratio as 4.75:1. Fine aggregate was replaced with coarse aggregate in the range of 50 - 100% by weight.

III. METHODOLOGY

1. To Collect The Literature Review On Pervious Concete.
The Purpose Of we shall be making 20 no of pervious concrete block & standard concrete block.
2. Selection Of Aggregates.
Basedon AIV, Angularity, Water Absorption etc.
3. Testing of Aggregates.
AIV, Specific Gravity Cruising Value, etc.
4. Testing of Cement.
Specific gravity, Standard Consistency, Setting time etc.
5. Mix Design
Prevention of mix Design for different proportions of fine aggregates, super plasticize etc.
6. Casting of Specimens
Specimens were prepared 18 cubes.
7. Testing of specimens
Compressive strength & Permeability test Preparation & testing of design model. with drain pipe and tested for infiltration capacity. To check the compresive strength of pervious concrete block & standard concrete block

IV. TEST RESULT

7 Days Block Result

SR NO.	DESCRIPTION	SIZE IN (MM)	WT OF CUBE	LOAD (KN)	COMPRESSION STRENGTH (N/MM^2)	AVERAGE	REMARK
1	7 DAYS NORMAL PERVIOUS CONCRETE BLOCK	150 X150X150	6.600 KG	113.2	5.02	4.90	
2				101.5	4.80		
3				105.8	4.90		

SR NO.	DESCRIPTION	SIZE IN (MM)	WT OF CUBE	LOAD (KN)	COMPRESSION STRENGTH (N/MM^2)	AVERAGE	REMARK
1	7 DAYS PERVIOUS CONCRETE BLOCK WITH ADMIXTURE	150 X150X150	6.700 KG	150.1	6.67	9.245	
2				121.2	5.40		
3				144.2	6.42		

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14 Days Block Result

SR NO.	DESCRIPTION	SIZE IN (MM)	WT OF CUBE	LOAD (KN)	COMPRESSION STRENGTH (N/MM^2)	AVERAGE	REMARK
1	14 DAYS NORMAL PERVIOUS CONCRETE BLOCK	150 X150X150	6.600 KG	202.4	9.04	8.33	
2				185.5	8.05		
3				180.5	7.90		

SR NO.	DESCRIPTION	SIZE IN (MM)	WT OF CUBE	LOAD (KN)	COMPRESSION STRENGTH (N/MM^2)	AVERAGE	REMARK
1	14 DAYS PERVIOUS CONCRETE BLOCK WITH ADMIXTURE	150 X150X150	6.700 KG	220.2	9.78	8.50	
2				185.5	8.23		
3				182.2	7.50		

28 Days Block Result

SR NO.	DESCRIPTION	SIZE IN (MM)	WT OF CUBE	LOAD (KN)	COMPRESSION STRENGTH (N/MM^2)	AVERAGE	REMARK
1	24 DAYS NORMAL PERVIOUS CONCRETE BLOCK	150 X150X150	6.600 KG	225.2	10.90	11	
2				222.3	10.80		
3				230.2	11.30		

SR NO.	DESCRIPTION	SIZE IN (MM)	WT OF CUBE	LOAD (KN)	COMPRESSION STRENGTH (N/MM^2)	AVERAGE	REMARK
1	24 DAYS PERVIOUS CONCRETE BLOCK WITH ADMIXTURE	150 X150X150	6.700 KG	269.2	11.61	11.45	
2				259.3	11.51		
3				243.5	11.25		

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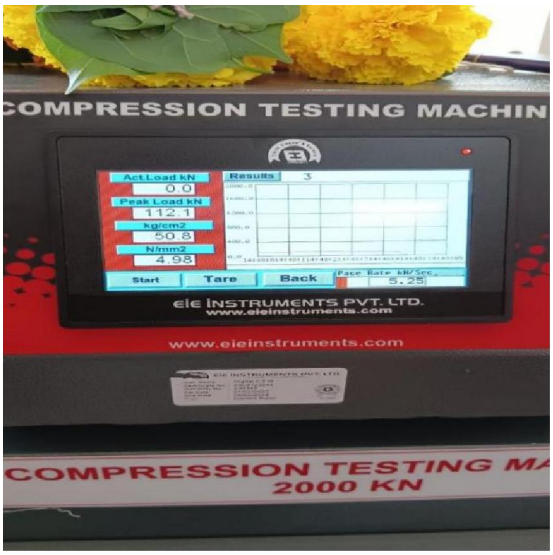
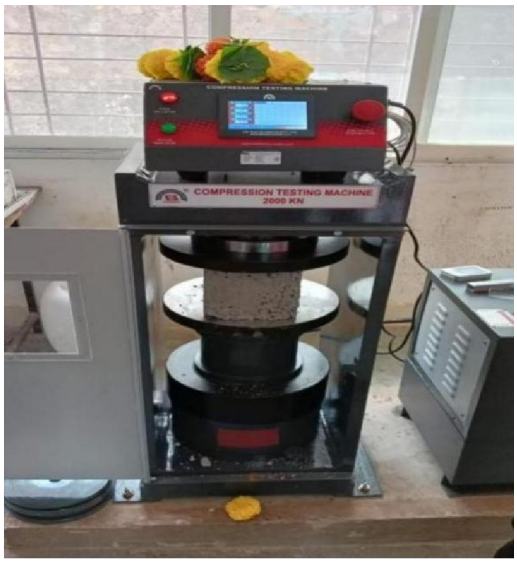
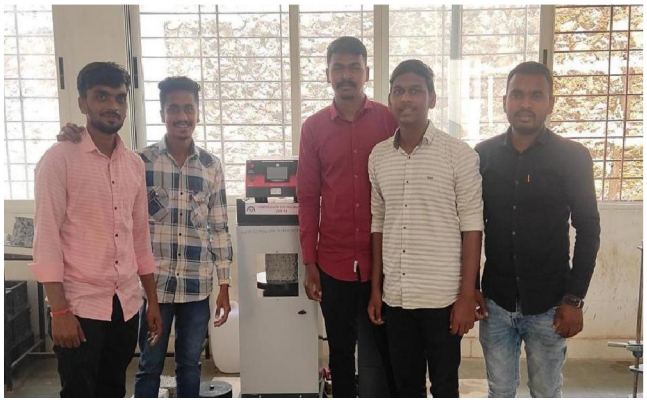
Test Result after testing the block







V CONCLUSION

This study showed us that, according to the results obtained in this studyoftheinvestigationforthispervious concrete block with chemical admixture to the normal concrete block this give the result aqurately.

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