

# STUDY OF BUISNESS MODEL FOR MAKING OF POROUS CONCRETE BLOCK

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## **Abstract:**

Porous Concrete is a mixture of cement, coarse aggregate, and Some amount of water, admixture. In this concrete no use of fine aggregate therefore void content is more which allows water to pass from it. Generally the strength of porous concrete is less as compare to conventional concrete so the use of porous concrete is less even though it has manyadvantages.

The main aim of our project is to do buisness study on porous concrete and we are going to make product of these Porous concrete material and then sell them in society for betterment of people in our society and environment aroundus.

**Keywords:** *Porous concrete, Conventional, Buisness Study*

## **Introduction:**

As we all know due to overuse of natural resources we are deplecting some of naturally occurring essential resources very rapidly. here in our project we are mainly focusing on one of the most essential natural resource i.e "Water".india is facing major water crises. as in Indian urban regions due to lack of proper drainage system there is clogging of water in parking areas and roadside locations which create problem of flooding so in this project we are going to use porous concrete block instead of regular interlocking block for effective management of storm water.we are making an innovative product which we are going to name it as " Porous Pav".this product will quickly drain out water into ground.Porous concrete block will maintain road surface dry during rainy season so help us to increase coefficient of friction which will provide great grip to pedestrian to walk over it.

### Objective:

1. To make a well finished, economical and ecofriendly porous concrete block
2. To make people aware about benefits of porous concrete block over regular interlocking block
3. To do study on initial investment and total finance need to start this business
4. To compare cost of unit regular interlocking block with porous concrete block

### Research Methodology:

Porous concrete block is a mixture of cement, coarse aggregate with little amount of water generally water cement ratio is kept in between 0.27 to 0.43 for this mix we can use admixture to increase workability of Porous concrete. It has very little amount of fine aggregate in it or no fine aggregate in it so it is called as no fine concrete. By using sufficient paste to bind the aggregate particles together create system of permeable, interconnected voids that drain water quickly. typically 15% to 25% voids are achieved in hardened concrete. ghafoori et al produced porous concrete with compressive strength in excess of 20 Mpa when using cement aggregate ratio of 1:4

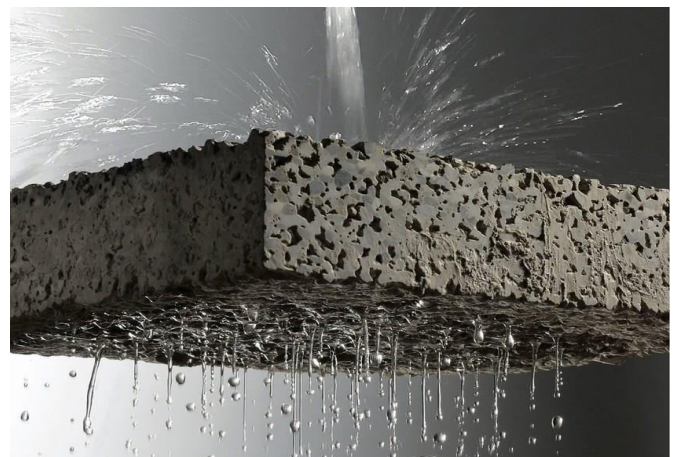
Cement	C. A	W/c	Size of CA	Void %
1 Part	4 Part	0.4	10-12 mm	15 to 25%

**Type of cement-** OPC53 Grade Aggregate

**Size -** 10-12 mm **Admixture-**

Superplasticizer

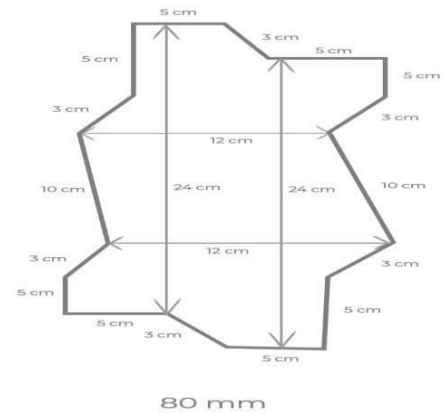
**Fine sand as a filler-** 2.5 to 4.5 mm



Mix	Cement:aggregate	Water cement ratio
Mix1	1:4	0.38
Mix2	1:20%sand:80%C.A	0.38
Mix3	1:2.5	0.38



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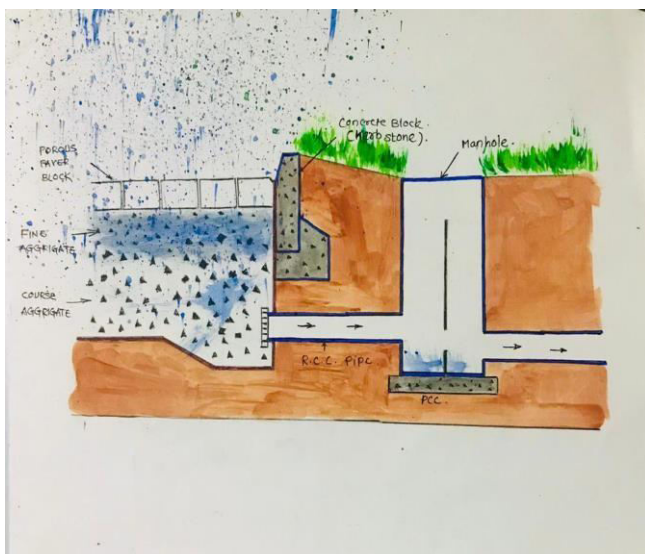
By using 1:4 Proportion of cement and coarse aggregate we get economical, optimum strength product and 400 unit of block from  $1\text{m}^3$  of mix

### Limitations:

1. The cost of porous concrete block is more than regular interlocking block as it requires different mix
2. Porous concrete block has less strength as compared to regular interlocking block
3. It has a chance of getting clogged due to impurities present in water so it requires special cleaning
4. Skilled labour is required to construct porous concrete block
5. Special attention is required when groundwater table is high

### Expected Outcome:

1. The workable life period of these blocks is going to be minimum 25 years
2. The porous concrete block which we are going to make has at least got minimum of 15 MPa strength
3. The product must be good finished having a well-shaped dimension and it should be easy to transport and install.
4. Every business person who is willing to start this business must have this product in his arsenal along with regular interlocking block as it is eco-friendly and green material.
5. Governments should promote this product and make it compulsory to use in urban society where there is a problem of water logging and water scarcity.





**Conclusion:**

1. By the market survey the regular interlocking block is 12-14 Rs but the Porous concrete block will cost more than conventional block i.e. around 15-17 Rs in mix ratio of 1:4 which turns to be most economical for making porous block.
2. The addition of fine sand replacement of cementitious material will reduce permeability of porous concrete block
3. Also by using porous concrete block we can avoid flooding conditions.
4. The porous concrete block is economical and environmental benefit Product

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