

## Artificial Sand

Prajyot Murchite<sup>1</sup> Pranav Alateker<sup>2</sup> Sammed Nigave<sup>3</sup> Raj Mane<sup>4</sup> Shreyash Shinde<sup>5</sup>

<sup>1,2,3,4,5</sup>Department of Civil Engineering

<sup>1,2,3,4,5</sup>Sharad Institute of Technology Polytechnics, Ichalkaranji, India

**Abstract**— Now a days good natural sand is not easily available, it should be transport from long distance. Hence resources are also exhausting very rapidly. So it is a need of the time to find some substitute to natural sand. The artificial sand is the best option for replace the natural sand. The artificial sand produced by proper machines. Artificial sand is a term use for aggregate materials less than 4.75 mm and which are processed from crushed rock or gravel. In this project the study of artificial sand is carry in which compressive strength of concrete, silt content, study sieve analysis are carried with comparison of natural sand.

**Keywords:** Natural Sand, Artificial Sand, Aggregates

### I. INTRODUCTION

Recent year, there shortage natural fine aggregate having good quality across the country, because deficient natural supplies and increased construction demands. There no difficulty uses the aggregate using not only the natural aggregate but also the crush. For also the fine very rare place where the good quality that can produced. Therefore more acceptable those most ready mixed concrete companies have used blended aggregate, mixed with natural and crushed sand. However the use blended aggregate still has problems, which only ordinary concrete can be applied due the lower quality of them. Although needed high quality concrete using improved crushed aggregate much recent construction has not been studied. Therefore this study was investigated that the partial use of artificial sand concrete with various ratios of both artificial and natural river sand India

Based on the experimental result evaluated the mutual correlation of mixing parameters are also studied. Extraction of alluvial material from within near streambed has direct impact on the stream's physical habitat characteristics include channel geometry, bed elevation, substrate composition and stability, stream roughness elements (large woody boulders, etc.) velocity, turbidity, sediment transport, stream discharges and Altering these habitat characteristics can have deleterious impacts both stream biota and the associated riparian bank habitat.

The detrimental effects to biota resulting from bed material mining are caused by three main Alteration of the flow patterns resulting from modification of the river bed.

The disturbance activities can also disturb ecological balance in many ways. Local channel changes can propagate impacts up streams or downstream and lateral changes. Alterations of the riparian one can result in changes in channel conditions that can impact aquatic ecosystems in similar way as some in channel activities.

Natural sand weathered and worn out particles of rocks and are of various grade or size depending on the accounting of wearing. The main natural and cheapest resource of sand is river. Dams are constructed on every river hence these resources are erasing very fast. Now a day's good sand is not readily available, it should be

transported from long distance. House resources are also exhausting very rapidly. So it is a need of the time to find some substitute to natural river sand. The artificial sand produced by proper machines can be a better substitute to river sand.

Manufactured sand is a term use for aggregate materials less than 4.75 mm and which are processed from crushed rock or gravel. Due to booming of construction activities in our country, natural sand resource is increasingly high. This study was, therefore, conducted to study the influence the manufactured sand have in compressive - strength of concrete, to compare the cost of different mix composition and to assess the prospects of using manufactured sand as replacement of natural sand in India.

### II. FUTURE SCOPE OF STUDIES

Further study is proposed in the following areas:

- The effects that have on digging for natural sand on environment shall be studied
- More study and investigations needs to be carried specification shall be prepared saving through optimization of both natural and manufactured sand
- Guide lines, mix design proposals and specification shall be prepared using manufactured sand to establish acceptable mixes for concrete producers, contractors and their clients.

### III. REQUIREMENT STUDY

From the necessity point of view, following are the areas of problems in the future:

- From the environmental, digging of the sand from river beds reduces the water head, so less percolation of rainwater in ground resulting in lower ground water level.
- In the absence of sand, more water gets evaporated due to direct sunlight. If there is no sand river beds, water will not be filtered.
- In the future aggregate prices are expected to rise due to decrease in sand deposits, quality and more environment and land use regulations, which are associated with the rapid urban expansion that contributes to this shortage.

Therefore, the importance of finding, substitute sources of fine aggregate for concrete production that can be used in place of natural river sand cannot be overemphasized

### IV. MANUFACTURING PROCESS

First the stones which are obtained from quarries are inserted into Jaw crusher for the primary crushing. From Jaw crusher the aggregates of size 32mm are obtained. These 32mm size aggregates are lifted up for secondary crushing by the bucket elevator.

Then these aggregates are again crushed in secondary crusher and there secondary crushing takes place. From the secondary crushing, the aggregates of size 20mm

and less are obtained. These aggregates are poured on Vibrator screens and by screening; the aggregates of various sizes are separated such as 16mm, 20mm etc. After secondary crushing, the aggregates are further goes for tertiary crushing the product obtained from tertiary crushing is termed as "Artificial Sand".

#### V. ADVANTAGES OF ARTIFICIAL SAND

Artificial sand is available from any nearby source of stone crusher. It is completely free from mud or any other impurities hence no need to washing with water.

Frequent use of natural sand obtained from river bed may disturb the part of river and if further require the river training work which is costly affairs and indirectly it effects on the eco-system. But artificial sand do not disturb the eco-system. Uniform grading of the sand particles can be obtained in case of artificial sand, hence no need to sieve again but sieving of natural sand is done so as to get require grade of sand.

Artificial sand is a good fine aggregate material for concrete and mortar. There is less bulking of sand as it is occurred more in case aural sand.

Since the stone crushers are located nearly to the city, it becomes economical to transport, but the natural sand is brought to the city from long distance.

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