SHADAN COLLEGE OF ENGINEERING & TECHNOLOGY

Established by SHADAN EDUCATIONAL SOCIETY.
Approved by A.I.C.T.E and Affiliated to JNTUH, Hyderabad.
Website: www.scet.in E-Mail: scet_shadan@yahoo.co.uk

Date: 8/9/2021

DEPARTMENT OF CIVIL ENGINEERING

3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years (10)

HEI INPUT

2019-2020	2018-2019	2017-2018	2016-2017	2015-2016
13	7	7	1	Nil

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3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years (10)

S.No.	Title of paper	Name of the authoris	Depart ment of the teache	Name of journal	Year of publication	ISSN number	Link to the recognition in UGC enlistment of the Journal /Digital Object Identifier (doi) number		
							Link to website of the Journal	Link to article/paper/abstract of the article	Is it listed in UGC Care list/Scopus/ Web of Science/other, mention
				2019-20					
1	DESIGN OF RETAINING WALL FOR BRIDGE	Arsalan Kaif	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2019-2020	ISSN :2348-3105	http://jrrset.com/Volume7issue9.html	http://jrrset.com/2019/September/paper3.pdf	UGC
2	PROPERTIES OF NANOSIZED CEMENT MATERIAL ON THE IMPROVEMENT OF SOIL	Dr.S.Moses aranganathan	CIVIL	International Research Journal in Global Engineering and Sciences.(IRJGES)	2019-2020	ISSN: 2456-172X	http://irjges.com/Volume4Issue1.aspx	http://irjges.com/Volume4Issue1/paper14.pdf	UGC
3	EXPERIMENTAL STUDY ON HEMPFIBER REINFORCED POLYMER MODIFIED M-SAND CONCRETE	DR.S.CHARLES RUSKIN KUMAR	CIVIL	International Journal of Research in Mechanical, Mechatronics and Automobile Engineering(IJRMMAE)	2019-2020	ISSN: 2454-1443	http://ijrmmae.in/Volume4Issue4.html	http://ijrmmae.in/Volume4-Issue-4/paper2.pdf	UGC
4	EVALUATING THE STRENGTH CHARACTERISTICS OF SEA SAND REPLACED CONCRETE	Dr.S.Moses aranganathan	CIVIL	International Journal of Research in Mechanical, Mechatronics and Automobile Engineering(IJRMMAE)	2019-2020	ISSN: 2454-1443	http://ijrmmae.in/Volume5Issue3.html	http://ijrmmae.in/Volume5Issue3/paper1.pdf	UGC
5	DESIGN OF RETAINING WALL FOR BRIDGE	Mohd Fakruh Uddin	CIVIL	International Journal of Research in Mechanical, Mechatronics and Automobile	2019-2020	ISSN :2348-3105	http://jrrset.com/Volume7issue9.html	http://jrrset.com/2019/September/paper3.pdf	UGC
6	PROPERTIES OF NANOSIZED CEMENT MATERIAL ON THE IMPROVEMENT OF SOIL	Dr.V.Sekaran	CIVIL	International Research Journal in Global Engineering and Sciences.(IRJGES)	2019-2020	ISSN: 2456-172X	http://irjges.com/Volume4Issue1.aspx	http://irjges.com/Volume4Issue1/paper14.pdf	UGC
7	Feasibility Study on Utilization of Marine Sand in making Concrete	Dr.S.Moses aranganathan	CIVIL	International Journal on Recent Researches In Science, Engineering &	2019-2020	ISSN :2348-3105	http://jrrset.com/Volume7issue9.html	http://irjges.com/Volume4Issue2/paper7.pdf	UGC
8	DESIGN OF RETAINING WALL FOR BRIDGE	Dr.S.Moses aranganathan,	CIVIL	International Journal on Recent Researches In Science, Engineering &	2019-2020	ISSN :2348-3105	http://jrrset.com/Volume7issue9.html	http://jrrset.com/2019/September/paper3.pdf	UGC
9	COSTING AND QUANTITY ESTIMATION OF RESIDENTIAL BUILDING	Dr.V.Sekaran	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2019-2020	ISSN :2348-3105	http://jrrset.com/Volume7issue9.html	http://jrrset.com/2019/September/paper4.pdf	UGC

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10	DESIGN OF RETAINING WALL FOR BRIDGE	Mohd Riyaz Uddin	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2019-2020	ISSN :2348-3105	http://jrrset.com/Volume7issue9.html	http://jrrset.com/2019/September/paper3.pdf	UGC
11	COSTING AND QUANTITY ESTIMATION OF RESIDENTIAL BUILDING	Mohd Ishtiyaq Ahmed	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2019-2020	ISSN :2348-3105	http://jrrset.com/Volume7issue9.html	http://jrrset.com/2019/September/paper4.pdf	UGC
12	COSTING AND QUANTITY ESTIMATION OF RESIDENTIAL BUILDING	Dr M.A Qadeer	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2019-2020	ISSN :2348-3105	http://jrrset.com/Volume7issue9.html	http://jrrset.com/2019/September/paper4.pdf	UGC
13	COSTING AND QUANTITY ESTIMATION OF RESIDENTIAL BUILDING	Masrtah Fatima	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2019-2020	ISSN :2348-3105	http://jrrset.com/Volume7issue9.html	http://jrrset.com/2019/September/paper4.pdf	UGC
2018-19									
1	CASE STUDY OF RUBBER DAM	Sameeranasreen	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2018-2019	ISSN: 2348-3105	http://jrrset.com/Volume6_Issue10.html	http://jrrset.com/2018/volume6issue10/paper4.pdf	UGC
2	CASE STUDY OF RUBBER DAM	Mohdsamad pasha	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2018-2019	ISSN: 2348-3105	http://jrrset.com/Volume6_Issue10.html	http://jrrset.com/2018/volume6issue10/paper4.pdf	UGC
3	EXPERIMENTAL STUDIES ON PAPERCRETE	DR.S.CHARLES RUSKIN KUMAR	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2018-2019	ISSN: 2348-3105	http://jrrset.com/Volume6issue8.html	http://www.jrrset.com/2018/volume6issue8/paper6.pdf	UGC
4	CASE STUDY OF RUBBER DAM	Baseer khan	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2018-2019	ISSN: 2348-3105	http://jrrset.com/Volume6_Issue10.html	http://jrrset.com/2018/volume6issue10/paper4.pdf	UGC
5	PERFORMANCE OF CONCRETE PRODUCED WITH SEA SAND AND MICRO SILICA	Dr.S.Moses aranganathan	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2018-2019	ISSN: 2348-3105	http://jrrset.com/volume6issue6.html	http://www.jrrset.com/2018/volume6issue6/paper5.pdf	UGC
6	EXPERIMENTAL STUDY ON GLASS FIBER REINFORCED CONCRETE	Dr.V.Sekaran	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2018-2019	ISSN: 2348-3105	http://jrrset.com/Volume7issue2.html	http://www.jrrset.com/2019/Feb/paper12.pdf	UGC
7	CASE STUDY OF RUBBER DAM	DR.S.CHARLES RUSKIN KUMAR,	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2018-2019	ISSN: 2348-3105	http://jrrset.com/Volume6_Issue10.html	http://jrrset.com/2018/volume6issue10/paper4.pdf	UGC
2017-18									
1	ESTIMATION OF RESIDENTIAL BUILDING USING LOW COST MATERIALS	DR. K.L.SHUNMUGANATHAN	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2017-2018	ISSN :2348-3105	http://jrrset.com/volume5_issue9.html	http://www.jrrset.com/2017/volume5issue9/paper8.pdf	UGC
2	ESTIMATION OF RESIDENTIAL BUILDING USING LOW COST MATERIALS	Tanveer Ali Khan	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2017-2018	ISSN :2348-3105	http://jrrset.com/volume5_issue9.html	http://www.jrrset.com/2017/volume5issue9/paper8.pdf	UGC

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3	ESTIMATION OF RESIDENTIAL BUILDING USING LOW COST MATERIALS	Md akram khan	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2017-2018	ISSN :2348-3105	http://jrrset.com/volume5_issue9.html	http://www.jrrset.com/2017/volume5issue9/paper8.pdf	UGC
4	ESTIMATION OF RESIDENTIAL BUILDING USING LOW COST MATERIALS	Mohd abdul malik	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2017-2018	ISSN :2348-3105	http://jrrset.com/volume5_issue9.html	http://www.jrrset.com/2017/volume5issue9/paper8.pdf	UGC
5	A NOVEL APPROACH FOR DISTILLATION OF HARD WATER USING PHOTOVOLTAIC EFFECT	Dr.S.Moses aranganathan	CIVIL	International Journal on Recent Researches In Science, Engineering & Technology(IJRRSET)	2017-2018	ISSN :2348-3105	http://jrrset.com/Volume6_issue1.html	http://jrrset.com/2018/volume6issue1/paper10.pdf	UGC
6	"FABRICATION AND CHARACTERIZATION OF FLY-ASH REINFORCED NATURAL RUBBER COMPOSITE"	Dr.V.Sekaran	CIVIL	International Journal of Research in Mechanical, Mechatronics and Automobile Engineering(IJRMMAE)	2017-2018	ISSN: 2454-1443	http://ijrmmae.in/Volume3-Issue-1.html	http://ijrmmae.in/Volume3-Issue-1/paper3.pdf	UGC
7	EXPERIMENTAL STUDY ON REINFORCED CONCRETE WITH PLASTIC FINE AGGREGATES	Dr.R.Balamurugan	CIVIL	International Journal of Research in Mechanical, Mechatronics and Automobile Engineering(IJRMMAE)	2017-2018	ISSN: 2454-1443	http://ijrmmae.in/Volume3-Issue-1.html	http://ijrmmae.in/Volume3-Issue-1/paper2.pdf	UGC
2016-17									
1	THEORITICAL ASPECTS OF SCC PROPERTIES OF STRENGTH IN SELF COMPACTING CONCERTE	Dr.M.A.Qadeer	Civil Engineering	Airo International Research Journal	2016-2017	ISSN : 2320-3714	www.airj.com	www.airj.com	UGC Care

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International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 4, No. 3, September - November, 2019
Pages 89-97 | Cosmos Impact Factor (Germany): 5.195
Received: 09.03.2019 Published : 29.03.2019

PROPERTIES OF NANOSIZED CEMENT MATERIAL ON THE IMPROVEMENT OF SOIL

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Abstract:

Nanotechnology plays a vital role in various fields and Nowadays it started to develop in the soil stabilization too. Nanotechnology is the science that deals with the particles which are less than 100 nm. Because of the nanosize, it is ready to react with the additives very effectively. Due to its nano size the behavior of soil also exhibits different properties. Nano sized particles has high specific surface area when compared to non nano sized particles. By using this Nano sized particles in soil stabilization the shear strength and the dry density of the soil improves and the reaction is more effective. In this experimental investigation, an attempt is made to see the effectiveness of Nano sized silica and lime particles in the stabilization of soil. Finally Results show that the nano admixed soil gives UCC strength of 629 kN/m^2 which is 1.4 times greater than non- nano admixed soil.

INTRODUCTION

Presence of weak soil in the construction sites is a major issue for any type of construction. To enhance the properties of the weak soil, many methods like soil stabilization, soil reinforcement, grouting, addition of admixtures etc. are adopted. Addition of admixtures like Lime, fly ash, Cement, bitumen based on type of soil improves the properties of soil to some extent. Use of industrial waste as additives is recently under study, but it arises a question of toxicity. So there is a need for finding a new innovative material.One of the new innovative fields recently introduced to soil is Nanotechnology. Nanotechnology is recently been introduced to Geotechnical Engineering. Nanotechnology is the science that deals with the particles which are less than 100 nm. The size of the Nano particles plays a crucial role in behaviour of soil exhibiting different properties.Laboratory experiments conducted by Taha [1] to study the fundamental geotechnical properties of mixtures of natural soils and its product after ball milling mixture. Lab results showed that the value of Atterberg limits were higher after Nano-soil addition. However, its plasticity index reduces which is advantageous in many geotechnical constructions.Compressive strength of original soil Cement and 1% Nano soil mixture showed double its value without Nano soil. Thus Nano particles are potentially suitable for improving the properties of soil/clay for various applications.The addition of different Nano materials, including Nano Cu, Nano MgO and Nano clay on the geotechnical properties of soft soil

INTERNATIONAL JOURNAL OF RESEARCH IN MECHANICAL, MECHATRONICS AND AUTOMOBILE ENGINEERING (IJRMMAE)
ISSN: 2454-1435 (Print) | 2454-1443 (online)
Volume 4 Issue 4 – www.ijrmmae.in – Pages 17-25

EXPERIMENTAL STUDY ON HEMPFIBER REINFORCED POLYMER MODIFIED M-SAND CONCRETE

DR.S.CHARLES RUSKIN KUMAR
Department of Civil Engineering,Shadan College of Engineering and Technology HYD,T.S,INDIA

Abstract:

This paper discusses the development of hemp fiber reinforced polymer modified m-sand concrete to improve the resistant of reinforced concrete. In this hemp fiber is not only very absorbent but are also uncommonly rich in silica which is added as 1 to 5% in concrete mix Manufactured fine aggregates are products created from rocks are crushed using mechanical crusher(fully replaced). Polymer improves mechanical properties of binders which is added (maximum 15 to 20 %) based on cement When these combinations of these three products will perform in the well manner.

INTRODUCTION

The use of hemp fibre, reinforced polymers, M-sand as a confinement for structures is gaining life time of the concrete. This is due to many advantages these material afford when compared to conventional steel reinforcement. The main aim of the research on sustainable materials is to investigate the use of natural fibers with cement/concrete mixes to improve the performance of construction components and reduce the depletion in natural resources.

The demand for the agricultural fibers for concrete production would to be a major incentive to Lebanese farmers to benefits from the social impact on the habitat level of living. In the preliminary program reported in this paper, cubes and standard flexural beams were tested to evaluate the structural and physical performance of concrete mixes prepared with different volumetric ratio of added fibers and different proportions of aggregate. Test result indicates that the use of industrial hemp fibers resulted in reducing the coarse aggregate quantity without affecting the flexural performance of concrete. when we use the hemp fiber which increases the tensile strength in concrete at the same time durability also increased. Polymer will resist the corrosion when compared to conventional concrete. Replacing the M sand instead of river sand , natural resources will be saved. These combinations in concrete will be also well suited for seismic zones. And it will arrest the cracking. We use the M20 concrete for our project. In this paper the results of the behavior of 42cubes, 42 cylinders, 42 beams specimens confined by hemp fibre reinforced polymer modified concrete are presented. The specimens are confined with relatively volumetric ratios of 1%,2%,3% of hemp fibre & epoxy resin is 0.2%,0.3% so as to

INTERNATIONAL JOURNAL OF RESEARCH IN MECHANICAL, MECHATRONICS AND AUTOMOBILE ENGINEERING (IJRMMAE)
ISSN: 2454-1435 (Print) | 2454-1443 (online)
Volume 5 Issue 3 – www.ijrmmae.in – Pages 1-8

EVALUATING THE STRENGTH CHARACTERISTICS OF SEA SAND REPLACED CONCRETE

Dr.S.Moses Aranganathan
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Abstract-Sand and gravel are mined world-wide and account for the largest volume of solid material extracted globally. Formed by erosive processes over thousands of years, they are now being extracted at a rate far greater than their renewal. Furthermore, the volume being extracted is having a major impact on rivers and deltas, results in loss of land through river, lowering of the water table and decreases in the amount of sediment supply. This emerging problem obliges contemporary material usage to balance the ecology. In this essence the abundant availability of sea sand can be utilized as an effective replacement for natural aggregate which will be beneficial for both circumstances. Hence this research project investigates the use of sea sand in concrete construction. This study proposed with hot water washed sea sand with various replacement in concrete from 10% to 100% with the increment of 10% resulted in higher mechanical properties in all the replacement.

Keywords—Sea sand, Properties, Strength, Test, Chloride.

I. INTRODUCTION

Concrete is the most common material in the construction industry which consumes more than 40 billion tonnes of aggregates in a year. This is twice the time of yearly amount of sedimentation carried by all of the rivers in the world (Milliman and Syvitski, 1992). This large quantity of material cannot be extracted and used without a significant impact on the environment (Sonak et al., 2006, Kondolf, 1994). Extraction has an impact on biodiversity, water turbidity, water table levels, and landscape and on climate through carbon dioxide emissions from transportation. Large scale of exploitation of limited river sand resources as well as imposition of environmental restraints on river sand mining means that river sand supply need to be augmented with alternative resource. In many other countries situation is similar and several have turned to marine aggregate and now concrete specifications allow use of marine aggregate subject to certain controls being imposed on their properties. In the interim, if it is possible to divert sea sand for concrete production, it will be beneficial measure. Hence a study on suitability of sea sand for concrete production has considered as an opportunity for the researcher. Experimental studies about offshore sand extracted from European and American coasts have shown that these materials are suitable as construction materials for the base and sub base pavements (Limeira et al 2011). Also material from marine deposits around the coasts of Great Britain has been used in concrete production for several decades (Newman 1968). Chapman and Roeder (1968) found out in their research that the cylinder-splitting test results for all the mixtures made with sea aggregates fell within the range expected for any given compressive strength. There are indeed no real differenees

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International Research Journal in Global Engineering and Sciences. (IRJGES)

ISSN : 2456-172X | Vol. 4, No. 3, September - November, 2019
Pages 57-69 | Cosmos Impact Factor (Germany): 5.195
Received: 24.06.2019 Published : 18.07.2019

Feasibility Study on Utilization of Marine Sand in making Concrete

.M. Karthikeyan[1],.Edara Krishna Reddy[2]

[1]Professor, [2]Professor,

Department of Civil Engineering, Dhanalakshmi Srinivasan College of Engineering, Coimbatore.

Abstract— **This paper describes the reinforced concrete development using dredged marine sand as an aggregate. The use of sea sand to manufacture cement concrete is not permitted by standards. Even more people are wondered and concerned about the quality and strength of cement concrete using sea sand. Sea sand is not actually used in the technology of cement concrete materials. A sea-sand containing concrete was used for the trials. After analyzing the effect of water/cement ratio, water consumption per cubic meter, curing time, and type of sand on the response "resistance to chloride ion penetration", the dredged marine sand is used for concrete development. An analysis of chloride ion diffusion coefficients at different factor levels was performed. A predictive model of chloride ion diffusion in concrete is developed through regression analysis. The experimental results show that when the water/cement ratio varies from 0.42 to 0.54, and the water consumption per cubic meter varies from 180 to 200 kg, and the curing time varies from 28 to 124 days then the size of the effects fall in the order (most significant first): curing time, type of sand, water consumption per cubic meter, and water/cement ratio. Chloride ion penetration is reduced, and better durability of the concrete is observed, with longer curing times, less water consumption per cubic meter, and a smaller water/cement ratio.**

INTRODUCTION

Concrete can be considered as the most cost-effective, versatile building material, and when used with steel reinforcement, virtually all structural elements, even complex shapes can be formed. As conventional concrete is placed in its fluid state, there are often significant costs associated with the necessary shutters and formwork to hold the concrete in position whilst it sets and hardens. Aggregates, i.e. sand and gravel, are among the most basic materials fulfilling human needs. They are used for constructions of almost all types of housing. They are used This work was supported in part by the U.S. Department of Commerce under Grant BS123456 (sponsor and financial support acknowledgment goes here). Paper titles should be written in uppercase and lowercase letters, not all uppercase. Avoid writing long formulas with subscripts in the title; short formulas that identify the elements are fine (e.g., "Nd–Fe–B"). Do not write "(Invited)" in the title. Full names of authors are preferred in the author field, but are not required. Put a space between authors' initials.

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International Research Journal in Global Engineering and Sciences. (IRJGES)
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International Journal on Recent Researches in Science, Engineering & Technology (IJRRSET)
A Journal Established in early 2000 as National journal and upgraded to International journal in 2013 and is in existence for the last 10 years. It is run by Retired Professors from NIT, Trichy. Journal Indexed in JIR, DIIF and SJIF.
ISSN (Print) : 2347-6729
ISSN (Online) : 2348-3105
JIR IF : 2.54
SJIF IF : 4.334
Cosmos: 5.395
Research Paper
Available online at: www.ijrset.com
UGC Approved Journal No: 45483
Volume 7, Issue9 Pages 22-28

COSTING AND QUANTITY ESTIMATION OF RESIDENTIAL BUILDING

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Abstract: An estimate is the anticipated or probable cost of a work and is determined theoretically by mathematical calculations based on the drawing (plans, section.etc.), specifications and current rates. The entire Cost of construction and the infrastructure used for the purpose of construction is estimated and the final costing is done.The primary object of the estimate is to enable one to know beforehand, the cost of the work and hence its feasibility can be determined i.e., whether the project could be taken up within funds available or not. It also gives an idea of time required for the completion of the work. It is also required for inviting tenders and to arrange contract and to control the expenditure during the execution.
The main objective of the project is to estimate the total cost required to construct a given residential building. Estimating involves preparing detailed estimate, calculating the rate of each unit of work and preparing abstract of estimate.

1. INTRODUCTION

For all engineering works it is required to know beforehand its probable cost of construction known as estimated cost. If the estimated cost is greater than the money available, then attempts are made to reduce the cost by reducing the work or by changing the specifications. From this the importance of estimate for engineers may be understood. In preparing an estimate, the quantities of different items of work are calculated by simple mensuration method and from these quantities the cost is calculated. The subject of estimating is simple, but knowledge of drawing is essential. One who understands and can read drawing may find out the ddimensions.
An estimate is computation or calculation of the quantities required and expenditure likely to be incurred in the construction know beforehand. The primary object of the estimate is to enable one to know beforehand, the cost of the work (buildings, structures, etc). The estimate is the probable cost of a work and is determined theoretically by mathematical calculations based on the drawing (plans, section.etc.), specifications and current rates. The entire Cost of construction and the infrastructure used for the purpose of construction is estimated and the final costing is done. Approximate estimate may be prepared by various methods but accurate estimate is prepared by detailed estimate method.
Estimating involves preparing detailed estimate, calculating the rate of each unit of work and preparing abstract of estimate

2. LITERATURE REVIEW

Preliminary Estimate or Approximate or Abstract Estimate: Preliminary or Approximate or Abstract Estimate is required for preliminary studies of various aspects of a work project, to decide the financial position and policy for administrative sanction by the component administrative authority. The approximate estimate is prepared from the practical knowledge and cost of the similar works. This estimate is prepared showing separately the approximate cost of all important items of work as cost of land, cost of each building, cost of roads, water supply sanitary works, electrification, etc. The estimate is accompanied by a briefreport explaining the necessity and utility of the project showing how the costs of separate items have been arrived at. This is also accompanied with a site plan or layout plain. A percentage of about 5% to 10% is added as contingencies.

3. METHODOLOGY

Description Of Residential Building

The plot area of the residential building is 20.20mX25.20m. Out of this the built up area is 9.80mX15.70m. The ground floor area is divided into number of rooms such as sitting, living room, kitchen, 2 bedrooms, bathroom, toilet, etc. The dimension of each room is as follows

Sitting 5.00mX4.00m
Living room 5.00mX4.30m
Kitchen3.00mX2.90m

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A Journal Established in early 2000 as National journal and upgraded to International journal in 2013 and is in existence for the last 10 years. It is run by Retired Professors from NIT, Trichy. Journal Indexed in JIR, DIIF and SJIF.
ISSN (Print) : 2347-6729
ISSN (Online) : 2348-3105
JIR IF : 2.54
SJIF IF : 4.334
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Research Paper
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1. INTRODUCTION

For all engineering works it is required to know beforehand its probable cost of construction known as estimated cost. If the estimated cost is greater than the money available, then attempts are made to reduce the cost by reducing the work or by changing the specifications. From this the importance of estimate for engineers may be understood. In preparing an estimate, the quantities of different items of work are calculated by simple mensuration method and from these quantities the cost is calculated. The subject of estimating is simple, but knowledge of drawing is essential. One who understands and can read drawing may find out the ddimensions.
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2. LITERATURE REVIEW

Preliminary Estimate or Approximate or Abstract Estimate: Preliminary or Approximate or Abstract Estimate is required for preliminary studies of various aspects of a work project, to decide the financial position and policy for administrative sanction by the component administrative authority. The approximate estimate is prepared from the practical knowledge and cost of the similar works. This estimate is prepared showing separately the approximate cost of all important items of work as cost of land, cost of each building, cost of roads, water supply sanitary works, electrification, etc. The estimate is accompanied by a briefreport explaining the necessity and utility of the project showing how the costs of separate items have been arrived at. This is also accompanied with a site plan or layout plain. A percentage of about 5% to 10% is added as contingencies.

3. METHODOLOGY

Description Of Residential Building

The plot area of the residential building is 20.20mX25.20m. Out of this the built up area is 9.80mX15.70m. The ground floor area is divided into number of rooms such as sitting, living room, kitchen, 2 bedrooms, bathroom, toilet, etc. The dimension of each room is as follows

Sitting 5.00mX4.00m
Living room 5.00mX4.30m
Kitchen 3.00mX2.90m

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ISSN (Print) : 2347-6729
ISSN (Online) : 2348-3105
JIR IF : 2.54
SJIF IF : 4.334
Cosmos: 5.395
Research Paper
Available online at: www.ijrset.com
UGC Approved Journal No: 45483
Volume 7, Issue9 Pages 22-28

COSTING AND QUANTITY ESTIMATION OF RESIDENTIAL BUILDING

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ISSN (Print) : 2347-6729
ISSN (Online) : 2348-3105
JIR IF : 2.54
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Research Paper
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Research Paper
Available online at: www.jrrset.com
UGC Approved Journal No: 45483
Volume 6, Issue10 Pages 29-33

CASE STUDY OF RUBBER DAM

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ABSTRACT—The purpose of the study was to estimate the patients' attitude towards the use of rubber dam and determine wether any clinical factors influence it. Inflatable rubber dams are cylindrical rubber fabrics placed across channels, streams and weir or dam crests to raise the upstream water level when inflated with air or water. The membrane is a multi-layer fabric made of synthetic fibre (usually nylon) and rubberized on one or both sides. The tube material is highly elastic. Resistant to abrasion, corrosion free and robustly withstands rigorous aging. Also an asymmetric arrangement of the weir is feasible, as are horizontally and vertically curved configurations.A layer of stainless steel mesh or ceramic chips can be embedded in the surface layer to reduce or prevent vandal damage

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The inflatable flexible membrane dams (IFMD) or rubber dams were developed in the early 1950s - Flexidam - Imbertson. They are installed in stream and river beds, generally being bolted into a concrete foundation. They are used to divert water for irrigation, temporarily raising existing dams, flood control, water retention for aquifer recharge, reducing or preventing salt water intrusion into fresh water areas, protect low-lying coastal areas from tidal flooding, enabling fish passage past diversion works, by deflation, for sewage retention/separation during flood events and for beautification purpose .

3. LOCATION OF PROJECT:

The first rubber dam of India is constructed on river Jhanjavati at Vijayanagaram district A.P. (A.P. –Orissa border). The second rubber dam of India located in Hyderabad, A.P. Constructed on river Musi which is located at a chainage of 21.1 km. Opposite to High court of A.P. and at a chainage of 22.1 km. Opposite to Salarjung museum. This project is being implemented by Greater Hyderabad Municipal Corporation (GHMC) as per the instructions of the former chief minister Dr.Y.S.RajaSekhara Reddy and was executed by Hydro-Construct, Austria. The cost of the project is 16.125 crores.

4. COMPONENTS OF RUBBER DAM:

- WEIR
- WEIR PLATES
- NOTCH
- DAM PORTION
- STILLING BASIN

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Research Paper
Available online at: www.jrrset.com

ISSN (Print) : 2347-6729
ISSN (Online) : 2348-3105
Volume 6, Issue 8
May 2018.
JIR IF : 2.54
SJIF IF : 4.334
Cosmos: 5.395

Received on: 03.05.2018 Published on: 27.05.2018 Pages : 41-50

EXPERIMENTAL STUDIES ON PAPERCRETE

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ABSTRACT

The main objective of this study is to utilize the waste materials like paper, fly ash, rice husk ash into an effective building material. In this work an attempt has been made to introduce an alternative, cost effective, ecofriendly innovative building material in the form of brick. Here sand, cement, earth and other waste material like paper, fly ash and rice husk were mixed in various proportions and an optimum composition has been arrived. Papercrete brick have been made with sizes 230x110x80mm with the various proportions. Among the various combinations the padobe brick gave more compressive strength 6.47N/mm2 and recommended for even load bearing walls. Among the fibrous bricks some of the combinations got a compressive strength more than 3.5N/mm2 but failed to satisfy the water absorption requirements and hence recommended for inner partition walls. The water absorbed by padobe was found to be 14.95% and shows its suitability. The weight of the padobe brick is found to be between to 1/3rd of the conventional clay bricks. Since these bricks are relatively less in weight and more flexible and hence it is an ideal material for earthquake prone area. So, it can have a check on environmental pollution by utilizing the waste material to develop an effective and economical construction material.

Key Words: Paper, Concrete, Papercrete, Padobe bricks and Strength

1. INTRODUCTION

India's present housing shortage is estimated to be high as 3.1 million as per 2001 census and out of these shortage 24 million units are in rural area and 7.1 million units in urban areas. The government of India has targeted the year 2010 for providing housing for all. Such a large housing construction activities require huge amount of money. Out of this total cost of housing construction, building materials contribute to about 70% cost in developing countries like India. While taking the building materials, brick remains one of the most important building materials in India. Notably the Indian brick industry, which is the second largest producer in the world, next only to china, has more than 1,00,000 operating units, producing about 140 billion bricks annually. The industry has an annual turnover more than Rs.140 billion. This is one of the largest employment-generating industries employing millions of workers. The conventional brick making is an energy intensive process. The conventional brick making practice consumes huge quantities of fuel (almost 30 -40% of the production cost in India) in terms of coal, firewood, and other biomass fuel. It is estimated that the Indian brick industry consumes more than 24 million tons of coal annually, in addition to several million tons of biomass fuels. Kilns are also notorious as highly polluting establishments, affecting not just flora, fauna, but also posing threats to human health. The above stated problems were solved by introducing an alternative, cost effective, eco-friendly innovative building bricks. These alternative bricks were made with papercrete. Papercrete is a tricky term. The name seems to imply a mix of Paper and concrete, hence Papercrete. Different types of Papercrete contain 50 – 80 % of waste paper. Papercrete additives can be Portland cement, sand, fine earth, clay, fly ash, rice husk ash, powdered glass, Styrofoam and other additives. In this study sand, cement, earth and waste materials like paper, fly ash, rice husk ash were mixed in proportions and a suitable

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Research Paper
Available online at: www.jrrset.com

ISSN (Print) : 2348-3105
Volume 6, Issue 6
June 2018.
JIR IF : 2.54
SJIF IF : 4.334
Cosmos: 5.395

Received on: 02.06.2018 Published on: 22.06.2018 Pages : 34-41

PERFORMANCE OF CONCRETE PRODUCED WITH SEA SAND AND MICRO SILICA

PERFORMANCE OF CONCRETE PRODUCED WITH SEA SAND AND MICRO SILICA

Dr.S.Moses Aranganathan
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ABSTRACT

Sand is a unique raw material for the construction industry, at present, but contractors say that they have to spend more allocations for obtaining bulk loads of sand for their construction work. According to the experts in the global construction trade Sea sand is being used in the construction industry. In this paper an attempt has been made to use the sea sand as partial replacement for fine aggregate. M30 grade of concrete was made with mix proportion of 1:1.22:2.54 and with water cement ratio as 0.42. In this proportion 1.22 parts of fine aggregate is partially replaced with sea sand. Concrete specimens were mould with, 10%, 20%, and 30% of sea sand replacing the fine aggregate. The tests for hardened concrete such as axial compressive strength, split tensile and flexural strength were conducted after 7, 14 and 28 days curing and comparisons were made. The optimum percentage for partial replacement of fine aggregate with sea sand was determined with the usage of micro silica as an admixture to increase the strength.

Keywords— Sea sand-Fine aggregate- Micro silica -strength-Durability.

I. INTRODUCTION

GENERAL

In recent years, it has been taken a growing interest in the shortage of natural fine aggregate having good quality across the world, because of deficient natural sand supplies and increased construction demands. According to the industry sources, the price level of the river sand has skyrocketed. According to the industry figures, the price of the river sand has increased by over 40 per cent after the banning of removing river sand. Due to the government barriers on the removal of river sand, the construction industry faces lots of difficulties to obtain river sand in time.

IMPORTANCE

The main objective of this paper is to study various properties of the materials of concrete, fresh concrete and hardened concrete to design a concrete mix for an increased strength and durability.

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Research Paper
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ISSN (Print) : 2347-6729
ISSN (Online) : 2348-3105
Volume 7, Issue 2
February 2019.
JIR IF : 2.54
SJIF IF : 4.334
Cosmos: 5.395

Received on: 04.02.2019 Published on: 27.02.2019 Pages : 66 - 70

EXPERIMENTAL STUDY ON GLASS FIBER REINFORCED CONCRETE

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ABSTRACT: Plain concrete possess very low tensile strength, limited ductility and little resistance to cracking. Internal micro cracks are inherently present in concrete and its poor tensile strength is due to propagation of such micro cracks. Fibers when added in certain percentage in the concrete improve the strain properties well as crack resistance, ductility, as flexure strength and toughness. Mainly the studies and research in fiber reinforced concrete has been devoted to steel fibers. in In recent times, glass fibers have also become available, which are free from corrosion problem associated with steel fibers. The present paper outlines the experimental investigation conducts on the use of glass fibers with structural concrete. Cem-fill anti crack, high dispersion, alkali resistance glass fiber of diameter 14 micron, having an aspect ratio 857 was employed in percentages , varying from 0.33 to1 percentage by weight in concrete and the properties of this Fiber Reinforced Concrete (FRC) like compressive strength, flexure strength, toughness, modulus of elasticity were studied.

Keywords: Cement-fill anti crack glass fibers, Reinforcement, Super plasticizer (B233 nepthalene based).

INTRODUCTION

Aims and Scope

Concrete is the most widely used construction material has several desirable properties like high compressive strength, stiffness and durability under usual environmental factors. At the same time concrete is brittle and weak in tension. Plain concrete has two deficiencies, low tensile strength and a low strain at fracture. These shortcomings are generally overcome

by reinforcing concrete. Normally reinforcement consists of continuous deformed steel bars or pre-stressing tendons. The advantage of reinforcing and pre-stressing technology utilizing steel reinforcement as high tensile steel wires have helped in overcoming the incapacity of concrete in tension but the ductility magnitude of compressive strength. Fibre Reinforced Concrete (FRC) is a concrete made primarily of hydraulic cements, aggregates and discrete reinforcing fibres.

FRC is a relatively new material. This is a composite material consisting of a matrix containing a random distribution or dispersion of small fibres, either natural or artificial, having a high tensile strength. Due to the presence of these uniformly dispersed fibres, the cracking strength of concrete is increased and the fibres acting as crack arresters.

International Journal on Recent Researches in Science, Engineering & Technology (IJRRSET)
A Journal Established in early 2000 as National journal and upgraded to International journal in 2013 and is in existence for the last 10 years. It is run by Retired Professors from NIT, Trichy. Journal Indexed in JIR, DIIF and SJIF.
ISSN (Print) : 2347-6729
ISSN (Online) : 2348-3105
JIR IF : 2.54
SJIF IF : 4.334
Cosmos: 5.395
Research Paper
Available online at: www.jrrset.com
UGC Approved Journal No: 45483
Volume 5, Issue9 Pages 20-203

ESTIMATION OF RESIDENTIAL BUILDING USING LOW COST MATERIALS

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ABSTRACT Affordable housing mainly deals with effective costing and following of sustainable building techniques which helps in reducing the cost of construction without sacrificing the strength, durability and performance. The plan of 2BHK have been considered for Residential building. The total residential building is divided into two parts i.e., Structural and non Structural. As the cost of cement takes major part of total building cost, so we adopted fly ash by replacing cement with percentages of 30%, 40%, 50% for structural elements. The strength tests such as compressive, split test, flexural test have been calculated. From the test results, 40% replacement of fly ash gave required strength for single storey building. For Non- structural elements, the low cost materials such as concrete frames, hollow concrete blocks etc were adopted .This project recommends plan and sustainable materials adopted for a single storied building. After assigning low cost materials for structural and Non- structural elements of building, the quantity and cost is estimated. The overall cost is reduced up to 30% compared to conventional building cost.

Keywords : Sustainable building techniques, Building materials , Estimation

1. INTRODUCTION

Housing is a basic need of human being. But this is out of the means of low income house holder who constitute majority of population in our country. In India maximum affordability of household was defined to be 5.1 times the household's total gross income as compared to the developed countries. Low cost housing is a different concept which deals with effective costing and following of sustainable building techniques. There is a huge misconception that low cost housing is suitable for only sub normal works and they are built by using cheap building materials of low quality. The fact is that Low cost housing is done by proper management of resources.

The production of Portland cement is not only costly and energy intensive, but it also produces large amounts of carbon emissions. The production of one ton of Portland cement produces approximately one ton of co2 in the atmosphere. Fly ash is a byproduct of the combustion of pulverized

coal and is collected by mechanical and electrostatic separators from the fuel gases of thermal power plants where coal is used as a fuel. Fly ash is commonly used in concrete in replacement ranging from 0%-30% by weight of the total cementitious material. Large quantities of fly ash are available around the world at low cost and the use of HVFA seems to offer the best solution to rising cement demands. The use of HVFA in concrete has recently gained popularity as a resource efficient, durable, cost effective, sustainable option for OPC concrete application.

The low cost materials such as Hollow concrete blocks, spiral stair case, concrete flooring , pre cast doors and window frames are recommended for cost reduction of Residential building.

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Research Paper
Available online at: www.jrrset.com
UGC Approved Journal No: 45483
Received on: 08.01.2018 Published on: 29.01.2018 Pages : 61-67

ISSN (Print) : 2347-6729
ISSN (Online) : 2348-3105
Volume 6, Issue 1
January 2018.
JIR IF : 2.54
DIIF IF : 1.46
SJIF IF : 1.329

A NOVEL APPROACH FOR DISTILLATION OF HARD WATER USING PHOTOVOLTAIC EFFECT

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Abstract - The scope of this machine is to use Photovoltaic energy for distillation of water. A solar smokestack distillation device includes the Photovoltaic smokestack, photovoltaic collector, passive condenser, and evaporation system, used to be designed and constructed. The air in the collector after heating gets released at the base of the smokestack, now this dry air goes upward. By showering saline water into the warm air movement at the center of smokestack the air is humidified. Now, the remaining vapors contained significant all around are dense to supply desalinated water. The machine is minimal in nature as it is convenient to gather and dismantle. It can be utilized for purifying rain water in summer time underneath rain water harvesting. The fee of this gadget is low as we use usa wood and recycled Aluminum jars.

Keywords: Photovoltaic energy, smokestack, condenser, evaporation system

I. Introduction

Desalination is a chemical process of converting seawater into sparkling water. The two approaches for desalination of water are thermal distillation and membrane processes. The essential thermal desalination method are multi-effect distillation, multistage flash distillation, vapour compression distillation and photovoltic distillation. In the remaining years, an thrilling innovation has been introduced by way of researchers referred to as — Photovoltaic smokestack. This task is of top notch value for the improvement of new strength resources.

II. Literature Review

The use of superior water therapy technology to application from lookup is confined by using to put in force research principles prior to full scale design. Twelve key desalination-related papers from seven states outlined some type of nation desalination research and implementation priority. Websites additionally are catalogued the place appropriate. On a huge level, Reclamation's desalination investments are guided by institutional knowledge, and via key publications such as the Desalination and Water Purification Technology Roadmap (2003) and Desalination: A National Perspective (2008).

A. Photovoltaic Desalination Methods

Direct and indirect strategies are the two basic methods used for reaching desalination of salt water. Photovoltaic desalination is a approach which utilizes photo voltaic radiation to produce desalinated water. Based on this approach extraordinary Photovoltaic desalination plant life are developed. The principal classifications are direct approach and indirect method. A easy cycle that couples a Photovoltaic collector along with a distilling manner is the primary mechanism used in direct method. Photovoltaic desalination is a small-scale operation. Apart from equal designs of Photovoltaic distillation (figure 1), the basic principle behind it is similar as such that the warmth strength from sun evaporates freshwater from salt water. The water vapour after evaporation system in Photovoltaic distillation condenses on a glass protecting and is collected in a condensate trough as freshwater. The protecting transmits radiant electricity and allows water vapour to condense completely on its inner

Jupiter Publications Consortium

Vol. 3 Iss.1, pp. 22-30, 28th May, 2017
ISSN Print : 2454-1435 © 2017, IJRMMAE
ISSN Online : 2454-1443 © 2017, IJRMMAE
http://www.ijrmmae.in

International Journal of Research in Mechanical, Mechatronics and Automobile Engineering (IJRMMAE)

FABRICATION AND CHARACTERIZATION OF FLY-ASH REINFORCED NATURAL RUBBER COMPOSITE

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Abstract— Rubber is a material which is used in many applications in automobiles, industrial and domestic. In general rubber is soft and high elastic material which can be derived from natural source. In this connection strengthening of rubber is very much essential when they are serving in high level of engineering applications for that unique types of filler materials are added with rubber matrix to improve some noble properties like wear resistance and thermal stability, Surface hardness and damping ability etc. To improve these properties we have chosen the humpty amount of available solid waste material in the world called fly ash from thermal power plants which consist of all poor heat conductive materials and high wear resistive abrasives like Al2o3, Sio2, Cao, Mgo. The fillers are added with the rubber matrix by diffusion bonding method which could get completed by two roll mill process. By choosing this surplus material as filler in rubber we can modify the properties and also reduce the consumption of other metallic fillers by which we can convert the industrial waste (fly ash) as an industrial wealth hence it is a kind of solid waste disposing technique. To compare the real significant we have prepared the samples by carbon and graphite also with same volume percentage what we have selected for Fly-ash. To check the effectiveness of addition Thermal stability, Wear, Hardness, Density, Scanning electron microscopy studies and spectroscopy analysis have done and evaluated the significant changes for each and every volume addition of filler. The forecasted areas of application of this material are auto mobile tyre manufacturing industries, Road construction, and hot fluid flow setups.

Keywords—Two Roll Mill, Pin on Disc, Scanning Electron Microscopy.

I. INTRODUCTION

A. COMPOSITE MATERIALS

It was found that when a lignite flyash is added to natural rubber composite the tensile strength, elongation at break, tear resistance and abrasion resistance decreases but hardness increases. Thus our main aim is to find out the effect of fly ash, when it is added to the natural rubber composite in different compositions to develop the hard material.

Jupiter Publications Consortium

Vol. 3 Iss.1, pp. 17-21, 28th May, 2017
ISSN Print : 2454-1435 © 2017, IJRMMAE
ISSN Online : 2454-1443 © 2017, IJRMMAE
http://www.ijrmmae.in

International Journal of Research in Mechanical, Mechatronics and Automobile Engineering (IJRMMAE)

EXPERIMENTAL STUDY ON REINFORCED CONCRETE WITH PLASTIC FINE AGGREGATES

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ABSTRACT

Plastic fiber reinforced concrete using plastic fine aggregates is to improving the concrete strength by waste product of plastic mixing without affection of strength by plastic fine aggregates. The addition of plastic aggregates indicates that at varying percentages of proportion gives different compressive results. At 5% and 10% replacement of fine aggregate in M25 concrete cubes the increase in strength up to 19.24% than the conventional mix. The addition of plastic aggregates indicates that at varying percentages of proportion gives different split tensile results.

Key Words –Plastic Reinforced Concrete, Split Tensile Strength, Flexural Strength, Plastic Aggregate.

1.1 Introduction

Plastics are normally stable and not biodegradable. So, their disposal is a problem. Research were on to use plastic waste effectively as additives in plain and reinforced concrete mixes for variety of purposes. This study attempts to give a contribution to the effective use of plastic wastes in concrete in order to prevent the environmental strains caused by them. Different sizes of plastic wastes were collected and used in replacement of aggregates in concrete. These type of usages normally generates more amount of wastes which are to be disposed off properly. Environmentally sensitive aware people condemn the use of plastics for amount of pollution caused by them in disposal. However, this is not a serious problem in comparison to the waste and pollution generated by a host of other industries. There has been a steep rise in the production of plastics from a mere 30 million kN in 1955, it has touched 1000 million kN at present. It is estimated that on an average 25% of the total plastic production in the world is used by the construction industry

1.2 Types of plastic

- Low Density Polyethylene (LDPE)
- High Density Polyethylene (HDPE)
- Poly propylene (PP)
- Poly methyl pentene (PMP)

2 PLASTIC AGGREGATE

The plastic wastes were collected from the available plastic waste mart. These plastic wastes were collected in granular shapes. These collected materials were sieved in 4.75mm and the materials passing the sieve were taken for the replacement of FA at different proportions.

UGC Approved Multi disciplinary, Journal No: 63017

International Journal of Advances in Arts, Sciences and Engineering(ijoaase.com)

Volume 5 Issue 11, MAY 2017, ISSN. 2320-6144 (Online)

THEORITICAL ASPECTS OF SCC PROPERTIES OF STRENGTH IN SELF COMPACTING CONCERTE

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ABSTRACT

The micro structural properties of concrete with fine aggregate, steel slag and M-Sand were determined by Scanning Electron Microscopy (SEM). The results are confirmed with the shape of the particles and the elements present in it. Mix design has been prepared based on EFNARC-2002 specifications by incorporating the specific gravity, fineness modulus, water absorption of various proportioning of SCC of M20, M30 and M40 grades of concrete with steel slag and M-SandFor various replacement levels of fine aggregate with M-sand and steel slag, the basic criteria required to achieve SCC are high deformability, high passing ability and high resistance to segregation. The self compactability is determined by Slump Flow Test, L-Box Test, V-Funnel Test, U-Box Test, Resistance to Segregation and J-Ring Test. Further, the hardened properties of concrete such as compressive strength, splitting tensile strength, flexural strength and modulus of elasticity are investigated and the optimum replacement level of steel slag and M-Sand as fine aggregate in SCC is determined. Based on these, the relationship between the mechanical properties of the concrete is found.

INTRODUCTION

The invention of self compacting concrete (SCC) is considered one of the most important developments in the construction industry. It is able to flow under its own weight due to its highly fluid nature and achieving a full compaction even in a formwork with complicated shapes and dense reinforcement. The elimination of vibration improves the productivity, shortens construction time, increases the safety of working environment and reduces the labor and equipment cost. SCC consist of similar components as conventionally vibrated concrete: cement, aggregates, water, mineral and chemical admixtures. The passing ability and segregation resistance of SCC is achieved by the decrease of

IRJGES

International Research Journal in Global Engineering and Sciences. (IRJGES)
ISSN : 2456-172X | Vol. 4, No. 3, September - November, 2019
Pages 89-97 | Cosmos Impact Factor (Germany): 5.195
Received: 09.03.2019 Published : 29.03.2019

PROPERTIES OF NANOSIZED CEMENT MATERIAL ON THE IMPROVEMENT OF SOIL

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Abstract:

Nanotechnology plays a vital role in various fields and Nowadays it started to develop in the soil stabilization too. Nanotechnology is the science that deals with the particles which are less than 100 nm. Because of the nanosize, it is ready to react with the additives very effectively. Due to its nano size the behavior of soil also exhibits different properties. Nano sized particles has high specific surface area when compared to non nano sized particles. By using this Nano sized particles in soil stabilization the shear strength and the dry density of the soil improves and the reaction is more effective. In this experimental investigation, an attempt is made to see the effectiveness of Nano sized silica and lime particles in the stabilization of soil. Finally Results show that the nano admixed soil gives UCC strength of 629 kN/m^2 which is 1.4 times greater than non- nano admixed soil.

INTRODUCTION

Presence of weak soil in the construction sites is a major issue for any type of construction. To enhance the properties of the weak soil, many methods like soil stabilization, soil reinforcement, grouting, addition of admixtures etc. are adopted. Addition of admixtures like Lime, fly ash, Cement, bitumen based on type of soil improves the properties of soil to some extent. Use of industrial waste as additives is recently under study, but it arises a question of toxicity. So there is a need for finding a new innovative material.One of the new innovative fields recently introduced to soil is Nanotechnology. Nanotechnology is recently been introduced to Geotechnical Engineering. Nanotechnology is the science that deals with the particles which are less than 100 nm. The size of the Nano particles plays a crucial role in behaviour of soil exhibiting different properties.Laboratory experiments conducted by Taha [1] to study the fundamental geotechnical properties of mixtures of natural soils and its product after ball milling mixture. Lab results showed that the value of Atterberg limits were higher after Nano-soil addition. However, its plasticity index reduces which is advantageous in many geotechnical constructions.Compressive strength of original soil Cement and 1% Nano soil mixture showed double its value without Nano soil. Thus Nano particles are potentially suitable for improving the properties of soil/clay for various applications.The addition of different Nano materials, including Nano Cu, Nano MgO and Nano clay on the geotechnical properties of soft soil

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Cosmos: 5.395
Research Paper
Available online at: www.ijrset.com
UGC Approved Journal No: 45483
Volume 7, Issue9 Pages 15-21

DESIGN OF RETAINING WALL FOR BRIDGE

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Abstract— Structures which are used to hold back a soil mass are called retaining structures. Our project is to design retaining wall for a minor bridge. As the metro rail project is running through Miyapur, there is a need for the extension of 4 lane carriage way to 6 lane carriage way. But the carriage way includes a minor bridge, which too has to be extended for facilitating the traffic flow. Thus, this project focuses on the design of retaining wall for the modified section of the minor bridge.
Retaining walls are the structures designed to restrain soil to unnatural slopes. They are used to bound soils between two different elevations in areas of terrain possessing undesirable slopes. They are also used in areas where the landscape needs to be shaped severely and engineered for more specific purposes like hillside farming or roadway overpasses. They are also used in bridge abutments and wing walls. The design of structures like retaining wall requires the knowledge of the earth pressure acting on the back of the wall because of the soil backfill in contact with it. Hence relation between the earth pressure on the retaining wall and strains within a backfill is a prerequisite. The project also includes the estimation of safe bearing capacity of soil and its properties, earth pressure calculations and design criteria of a modified section of a retaining wall. The design criteria includes: check for stability against sliding, overturning and bearing capacity.

1.INTRODUCTION

A soil mass is stable when the slope of the surface of the soil mass is flatter than the safe slope. At some locations where the space is limited, it is not possible to provide flat slope and the soil is to be retained at a slope steeper than the surface one. In such cases, a retaining structure is required to provide lateral support to the soil mass. Retaining walls are relatively rigid walls used for supporting the soil mass laterally so that the soil can be retained at different levels on the two sides. Generally, the soil masses are vertical or nearly vertical behind the retaining structure. Thus, a retaining wall maintains the soil at different elevations on its either side. In the absence of a retaining wall, the soil on the higher side would have a tendency to slide and may not remain stable. However for a minor bridge of span 15 m a retaining wall is constructed without considering the slope factor but only the soil properties. The project concentrates on the designing of a retaining wall located on National Highway-9; Pune- Hyderabad via Miyapur. The road in this region is extended for two lanes, from four lane road way to six lane road way to accommodate free traffic flow because of metro railway construction process. The minor bridge located in this region is also to be extended. Thus, our project is been cleared with the design of a retaining wall to this bridge on one side and hence replicating it to remaining. Structures which are used to hold back a soil mass are called retaining structures. Retaining walls, sheet pile walls, crib walls, sheeting in excavations, basement walls, etc., are examples of retaining structures. A retaining wall helps in maintaining the ground surface at different elevations on either side of it. Without such a structure, the soil at higher elevation would tend to move down till it acquires its natural, stable configuration. Consequently, the soil that is retained at a slope steeper than it can sustain by virtue of its shearing strength, exerts a force on the retaining wall. This force is called the earth pressure and the material that is retained by the wall is referred to as backfill. The gravity retaining wall is the simplest type of retaining wall along with other common types of retaining walls such as the cantilever, and the counterfort walls. The design of structures like a retaining wall requires the knowledge of the earth pressure acting on the back of the wall because of the soil backfill in contact with it. 14 The magnitude of earth pressure itself, on the other hand, is a function of the magnitude and nature of the absolute and relative movements of the soil and the structure. Problems such as these, where structure is in contact with the soil mass and the behavior of each one is influenced by that of the other, are classed as soil-structure interaction problems. Often, the earth pressures are statistically indeterminate and hence pose problems in evaluation. In some cases, the desired accuracy in determination cannot be achieved. But knowledge of the relationship between the earth pressure on the retaining wall and strains within a backfill is a prerequisite for the solution of earth pressure problems. The design of the retaining structure requires determination of the magnitude and line of action of the lateral earth

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ISSN (Print) : 2347-6729
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JIR IF : 2.54
SJIF IF : 4.334
Cosmos: 5.395
Research Paper
Available online at: www.jrrset.com
UGC Approved Journal No: 45483
Volume 7, Issue9 Pages 15-21

DESIGN OF RETAINING WALL FOR BRIDGE

Dr.S.Moses aranganathan, Mohd Riyaz Uddin,Mohd Fakruh Uddin,Arsalan Kaif
Department of Civil Engineering,Shadan College of Engineering and Technology HYD,T.S,INDIA

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