VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI - 590018

2018 –2019

A Project Report

On

"EXPERIMENTAL STUDY ON PARTIAL REPLACEMENT OF COARSE AGGREGATES BY COCONUT SHELLS"

Submitted in the partial fulfillment of the requirement for the VIII Semester Project Work-15CVP85 for the award of degree of

Bachelor of Engineering

In

Civil Engineering

Submitted by

ALTHAF R	1GV16CV400
FARAAZUDDIN KASHIF	1GV13CV001
SWETHA R	1GV15CV029
JAHNAVI PRAKASH	1GV16CV413

Carried out at

Dr. T.THIMMAIAH INSTITUTE OF TECHNOLOGY

Under the Guidance of

Mr. ANUJ KUMAR Asst. Prof, And Ms. KAVITHA V Asst. Prof,

Dept. of CIVIL ENGINEERING, Dr. TTIT, KGF

Dr. T.THIMMAIAH INSTITUTE OF TECHNOLOGY

(Formerly Golden Valley Institute of Technology)

Department of Civil Engineering

Kolar Gold Fields – 563120.

Dr. T. THIMMAIAH INSTITUTE OF TECHNOLOGY

(Formerly Golden Valley Institute of Technology)

Oorgaum Kolar Gold Fields –563120

DEPARTMENT OF CIVIL ENGINEERING.

CERTIFICATE

Certified that the **Project work entitled** *"Experimental Study on Partial Replacement of coarse Aggregates in a concrete by coconut shells"* is a bonafied work carried out **by Althaf R -1GV16CV400, Faraazuddin Kashif -1GV13CV001, Swetha R.-1GV15CV029, and Jahnavi Prakash -1GV16CV413** in the partial fulfillment for the award of degree of Bachelor of Engineering in **Civil Engineering** of the **Visvesvaraya Technological University**, Belagavi during the year 2018-2019. It is certified that all corrections/suggestions indicated for the assessment have been incorporated in the report deposited in the departmental library. The Project report has been approved as it satisfies the academic requirement in respect of **Project work -15CVP85** prescribed for the Bachelor of Engineering Degree.

Signature of Guide	Signature of HOD	Signature of Principal
Mr. Anuj Kumar and Ms. Kavitha V	Prof. M. Maneela Head of the Department Dept. of Civil Engineering Dr. T. Thimmaiah Institute of Technology Oorgaum, K.G.F. - 563 120	Dr. Syed Ariff Dr. T. Thimmaiah Institute of Technology Oorgaum P.O., Kolar Gold Fields - 563 120

Name of Examiners	Signature with Date
1. CHALAPATHI. K	1. 17/6/19
2. M. MANEELA	2. M. Maneela 17/6/19

Abstract

The increasing cost of conventional aggregates affects the economy of our country. Due to this excessive exploitation of aggregates occurs. It creates environmental issues and results, certain restrictions were put forward by the government, in order to stop these exploitations, now, it is essential to find out a new source of aggregates. In the present work, coconut shell is selected as a partial replacement of coarse aggregate in concrete. Coconut shell is a waste material and the amount of these wastes is increasing day by day. Its disposal has become real problem. Solution for this problem is to dispose waste on landfill site or use this waste for some positive activity. Space for landfill site is becoming costly affair. In view of this the option is either we should minimize the waste at production level, or utilize it.

India is the third largest coconut producing country in the world. Huge amount of waste is generated by coconut. The waste coconut shell may be used to replace conventional coarse aggregate. It may help to produce concrete economically and at the same time also will help to reduce its disposal problem. The aim of this paper is to address issues related to shortage of conventional material, problem of disposal of waste material and review the works done on use of waste coconut shell for concrete production.

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Belagavi - 590018

2018 –2019

A Project Report

on

"COMPRESSIVE STRENGTH OF FLY ASH BRICKS WITH ADDITION BAGASSE ASH"

Submitted in the partial fulfillment of the requirement for the VIII Semester Project Work -15CVP85 for the award of degree of

Bachelor of Engineering

in

Civil Engineering

Submitted by

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Carried out at

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Under the Guidance of

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DEPARTMENT OF CIVIL ENGINEERING.

CERTIFICATE

Certified that the **Project Work** entitled **"COMPRESSIVE STRENGTH OF FLY ASH BRICKS WITH ADDITION BAGASSE ASH"** is a bonafied work carried out **MAHESH P- 1GV16CV404, RASHMI G V- 1GV15CV018, MANOHAR M- 1GV15CV011 and SRINIVASA - 1GV16CV409** in the partial fulfillment for the award of degree of Bachelor of Engineering in **Civil Engineering** of the **Visvesvaraya Technological University**, Belagavi in the year 2018-19. It is certified that all corrections/suggestions indicated for the assessment have been incorporated in the report deposited in the departmental library. The Project report has been approved as it satisfies the academic requirement in respect of **Project Work-15CVP85** prescribed for the Bachelor of Engineering Degree.

N. Maneela	M. Maneela 16/05/19	16/5/19
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1. N. NANEELA	1. M. Maneela 17-06-19
2. CHACHAPATHI. K	2. 17/06/19

ABSTRACT

The present study is to manufacture fly ash bricks with the addition of two waste materials i.e Sugarcane bagasse ash and quarry dust. In India population is increasing day by day and large quantity of waste generated through many industries and agriculture which creates health hazards, disposal of this waste has become major problem. Sugarcane bagasse is one among it which is produced due to burning of bagasse ash. In order to use waste material effectively we used bagasse ash in preparation of fly ash bricks in different proportions that is 10%,20%,30%,40%50% . Trial bricks f size (150x150x150mm) are prepared and test carried out are water absorption and compressive strength as per Indian standards.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

Belagavi - 590018

2018 –2019

A Project Report

on

"EFFECTIVE USE OF WASTE MATERIAL IN CONSTRUCTION OF FLEXIBLE PAVEMENT"

Submitted in the partial fulfillment of the requirement for the VIII Semester Project Work -15CVP85 for the award of degree of

Bachelor of Engineering

in

Civil Engineering

Submitted by

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DEPARTMENT OF CIVIL ENGINEERING
OORGAUM, K.G.F. – 563120
2018-2019
(Affiliated to Visvesvaraya Technological University, Belagavi)

CERTIFICATE

This is to certify that the Project entitled "EFFECTIVE USE OF WASTE MATERIAL IN CONSTRUCTION OF FLEXIBLE PAVEMENT" is a bonafide work carried out by **ARUN KUMAR (1GV14CV002), POOJA G (1GV15CV015), SANDHYA H R (1GV15CV022)** and **RAVIKIRANA M (1GV16CV407)** in partial fulfillment of the requirements for the award of BACHELOR OF ENGINEERING IN CIVIL ENGINEERING of the Visvesvaraya Technological University, Belagavi during the year 2018-2019. The report has been approved as it satisfies the academic requirements with respect to Project work prescribed by the V.T.U of the above mentioned degree.

14/06/2019
Guide
Mr. TEERTHANANDA SAGAR C.S.
Assistant professor

M. Maneela 14.06.19
Prof. M MANEELA
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1. M. MANEELA	M. Maneela 17.06.19
2. CHALAPATHI. K	14/06/19

ABSTRACT

As there is increase in plastic wastes in solid waste due to increase in population, urbanization which is leading to widespread littering on landscape and also disposal of plastic to environment well leads to various hazardous health issues also its unacceptable waste material in nature. The main aim of our project is to use of waste plastic as effective binder in bituminous mix. Use of waste plastic in bituminous mix help us to increases the strength, reduces deformation and resistant to high temperature. Even though plastics are cheap they are non- biodegradable material which is hazardous to environment. Hence replacement process is done to minimize the hazards. In our project we are partially replacing the bitumen content with waste plastic in the variation of 10% to 50%. For optimum values of PET and HDPE, were added 3%-15% of glass fibers as an admixture to increase the stability of pavement. Therefore, the pavement properties can be improved with low cost of construction.

Key words: Bitumen, Ecofriendly, Waste Plastic, Marshall Stability, Cost Reduction.

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

BELAGAVI - 590018

2018 –2019

A Project Report

On

"Study on strength characteristics of specified concrete mix design using Robo sand as a partial replacement of Natural sand"

Submitted in the partial fulfillment of the requirement for the VIII Semester Project Work-15CVP85 for the award of degree of

in

Civil Engineering

Submitted By

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Certified that the **Project work** entitled *"Study on strength characteristics of specified concrete mix design using Robo sand as a partial replacement of Natural sand"* is a benefited work carried out **by AMARESH -1GV16CV401, HANUMANTHA -1GV16CV402, VINAYAK HAVERI -1GV16CV411,** in the partial fulfillment for the award of degree of Bachelor of Engineering in **Civil Engineering** of the **Visvesvaraya Technological University**, **Belagavi** during the year 2018-2019. It is certified that all corrections/suggestions indicated for the assessment have been incorporated in the report deposited in the departmental library. The Project report has been approved as it satisfies the academic requirement in respect of **Project work- 15CVP85** prescribed for the Bachelor of Engineering Degree.

M. Maneela 17.06.19

.....Head of the Department....

Signature of HOD

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17/6/19

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Name of Examiners	Signature with Date
1. GPALAPATHI. K	1. 17/6/19
2. M. MANEELA	2. M. Maneela 17/6/19

ABSTRACT

Concrete is widely used material in the world now a day the construction industry in the India is facing one of the major problems that is Natural river sand. A court awarded that totally bane on excavation of river sand from river because they effect on environment and it decrease underground water table and changing the river direction.

Cement, sand and coarse aggregate are basic needs for any construction industry. In the present investigation on compressive strength of concrete evaluation replacement of Natural river sand by Robo sand in proportion of 0%, 25%, 50%,75%and 100% and 0.50 water cement ratio is studies for M25 (1:1:2) grade concrete cubes size of (150x150x150)mm . Were caste and test at the age of 7and 28days curing. In the present experimental study on concrete having grades of M25 (1:1:2) are preparation replacing of Natural sand by Robo sand (Artificial /Manufactured sand). Concrete specimens were test for evaluation of compressive strength.

Key word:

Robo sand, Natural sand, Concrete, Replacement, Compressive strength, M25 (1:1:2) grade, Artificial/Manufactured sand, Curing.

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2018 –2019

A Project Report

on

"EXPERIMENTAL STUDY ON BITUMINOUS MIX USING WASTE PLASTIC AND CRUMB RUBBER"

Submitted in the partial fulfillment of the requirement for the VIII Semester Project Work -15CVP85 for the award of degree of

Bachelor of Engineering

in

Civil Engineering

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Certified that the **Project Work** entitled **"EXPERIMENTAL STUDY ON BITUMINOUS MIX USNG WASTE PALSTIC AND CRUMB RUBBER"** is a bonafied work carried out **ARCHITA N- 1GV15CV001, NIKIL V- 1GV15CV013, RAVICHANDRA N- 1GV15CV019 and YASHASHWINI M S- 1GV15CV0128** in the partial fulfillment for the award of degree of Bachelor of Engineering in **Civil Engineering** of the **Visvesvaraya Technological University**, Belagavi in the year 2018-19. It is certified that all corrections/suggestions indicated for the assessment have been incorporated in the report deposited in the departmental library. The Project report has been approved as it satisfies the academic requirement in respect of **Project Work-15CVP85** prescribed for the Bachelor of Engineering Degree.

14/6/19	M. Maneela 17/06/19	17/6/19
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Name of Examiners

1. CHALAPATHI S. K
2. M. MANEELA

Signature with Date

1. 17/06/19
2. M. Maneela 17/06/19

ABSTRACT

Now a day, the quantity of waste plastic, municipal solid waste and un useful tyres are increased due to increase in population, urbanization, development activities and change in lifestyle. Simultaneously, the uses of vehicles are also increased in our daily life. The loads that are acting on the pavements are also increasing. The aim of our project is to study the behavior of waste plastic and tire replacement on bitumen so that we can increase the strength and life span of pavement. Due to the use of waste plastic and rubber in the construction of pavements as a binder material for replacing bitumen we can increase the stability and decrease the disposal waste and environmental impacts. By using waste plastic and crumb rubber it leads to excellent pavements and driver comfort. The physical properties of bitumen mix at variation of 10%-70% of low density plastic and 10%-70% of crumb rubber is done. It gives better stability, binding properties, durability and resistance to water. The main aim of our project is to find the optimum percentage of waste plastic and crumb rubber that can be replaced for bitumen to strengthen the surface course and reduce the cost of construction.

Key words: - Low Density Polyethylene (LDPE), Crumb rubber, Flexible pavement, Marshall Stability test, Cost reduction.