

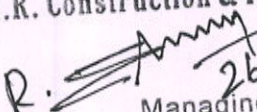
DATE:26.04.2022

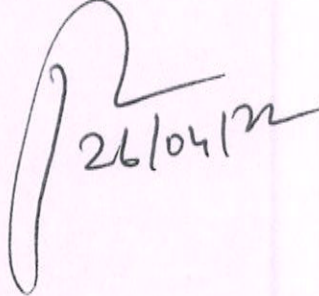
To

The Principal,
Sri Bharathi engineering college for women,
Kaikkurichi,
Pudukkottai – 622 303.

Respected Sir/Madam,

We require Concrete Mix Design M 35. To satisfy our needs, kindly give us your budget for the consulting project, i.e., to determine the optimal combination of cement, fine aggregates, coarse aggregates, water, and admixtures. Please feel free to contact us at your convenience to discuss this matter further or to schedule a meeting.

Thank you
For M.R. Construction & Promoters
R. 
Managing Partner.
26/04/2023

forwarded to
HOD/ci

26/04/22


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Pudukkottai - Aranthangi Road,
Kaikkurichi, Pudukkottai - 622 303.

Date : 27/4/2022

To

MR constructions & promoters
No. 66/3, Abraham Pandithar nagar
5th street
Thanjavur - 613001

Respected Sir,

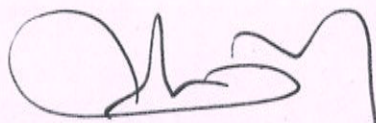
Sub : Submission of consultancy work quotation – Reg.

Greetings from Sri Bharathi Engineering college for women !!!

With reference to your letter dated 26.04.2022, we would like to inform that the estimated cost for the Concrete Mix Design M35 is approximately Rs.10, 000/-. Please note that this estimation is subject to change depending on any further project refinements or unforeseen circumstances.

If you have any questions or require additional information regarding the cost estimation or any other aspect of the project, please do not hesitate to contact us.

Thanking you


PRINCIPAL
PRINCIPAL 27/04/22
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI - 622 303.
PUDUKKOTTAI DISTRICT


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

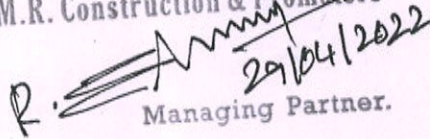
DATE:29.04.2022

To
The Principal,
Sri Bharathi engineering college for women,
Kaikkurichi,
Pudukkottai – 622 303.

Respected Sir/Madam,

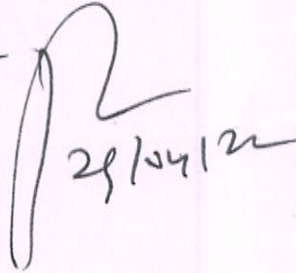
We reviewed your quotation dated 27.04.2022. Accordingly, we sanctioned the financial assistance of Rs. 10,000/- to complete the proposed consultancy work. For any queries, please notify us at any time.

Thank you
For M.R. Construction & Promoters


Managing Partner.

1000 / 1000

for necessary action
please


29/04/22


Dr. S.THILAGAVATHI M.E.,PH.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

Kaikkurichi, Pudukkottai - 622 303.

DEPARTMENT OF CIVIL ENGINEERING

CONSULTANCY PROJECT WORK

REPORT


CONCRETE MIX DESIGN M35

SUBMITTED

TO

**MR constructions & promoters
No. 66/3, Abraham Pandithar nagar,
5th street,
Thanjavur - 613001**

REPORT DATE: 07.05.2022


Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

CONSULTANCY PROJECT REPORT

Test Conducted for Cement:

S.No	Name of the Test	Test Result	Range
1.	Specific gravity of cement	3.12	3.10-3.15
2.	Fineness of cement	350 m ² / kg	300-400 m ² / kg
3.	Consistency test on cement	27%	25-30%
4.	Setting time of cement	30-60 min	30-60 min

Test Conducted for fine aggregate:

S.No	Name of the Test	Test Result	Range
1.	Specific gravity of fine aggregate	2.6	2.5-2.9
2.	Grading of fine aggregate	2.3	2.22-3.2
3.	Water absorption test on fine aggregate	1%	1-3%

Test Conducted for coarse aggregate:

S.No	Name of the Test	Test Result	Range
1.	Specific gravity of coarse aggregate	2.79	2.5 - 2.9
2.	Water absorption test on coarse aggregate	0.6%	0.5 - 2%
3.	Elongation index	9.1%	5 - 10 %
4.	Flakiness index	17.1%	15 - 20%

Admixture type:

Calcium chloride (2%)


Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kalkkurchj - 622 303, Pudukkottai Dt.

STIPULATIONS FOR PROPORTIONING

- | | |
|--------------------------------------|-----------------------------|
| a) Grade designation | : M35 |
| b) Type of cement | : OPC 43 grade |
| c) Type of mineral admixture | : Calcium chloride |
| d) Maximum nominal size of aggregate | : 20 mm |
| e) Minimum cement content | : 320 kg/m ³ |
| f) Maximum water cement ratio | : 0.45 |
| g) Workability | : 100mm |
| h) Exposure condition | : severe |
| i) Method of concrete placing | : pumping |
| j) Degree of supervision | : good |
| k) Type of aggregate | : crushed angular aggregate |
| l) Maximum cement (OPC) content | : 450 kg/m ³ |

1. Target strength for mix proportioning (M35 grade)

$$f'_{ck} = f_{ck} + 1.65 s$$

$$\text{From IS 10262: 2009, } s = 5 \text{ N/mm}^2$$

$$\text{Target strength} = 35 + 1.65 \times 5$$

$$= 43.25 \text{ N/mm}^2$$

2. Water cement ratio

From Table 5 of IS 456,

$$\text{Max. Water - cement ratio} = 0.45$$

$$\text{Adopt Water cement ratio} = 0.40$$

$$0.40 < 0.45$$

Hence O.K


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.

3. Water content

$$\begin{aligned} \text{Max. Water content for} \\ 100 \text{ slump} &= 186 + 6/100 \times 186 \\ &= 197 \text{ liters} \\ \text{Water content} &= 197 \times 0.71 \\ &= 140 \text{ liters} \end{aligned}$$

4. Cement and Calcium chloride content

$$\begin{aligned} \text{Water - cement ratio} &= 0.40 \\ \text{Cement content} &= 140 / 0.40 \\ &= 350 \text{ kg/m}^3 \\ \text{Min. cement content serve} &= 320 \text{ kg/m}^3 \\ 350 \text{ kg/m}^3 &> 320 \text{ kg/m}^3 \\ \text{Cementitious material content} &= 350 \times 1.10 \\ &= 385 \text{ kg/m}^3 \\ \text{Water content} &= 132 \text{ liters} \\ \text{Water cement ratio} &= 140 / 385 \\ &= 0.363 \\ \text{Calcium chloride @ 2\% of} \\ \text{Total cementitious content} &= 385 \times 2 / 100 \\ &= 7.77 \text{ kg/m}^3 \\ \text{Cement (OPC)} &= 385 - 7.77 \\ &= 377.3 \text{ kg/m}^3 \\ \text{Saving of cement while using} \\ \text{Calcium chloride} &= 350 - 377.3 \\ &= -27.3 \text{ kg/m}^3 \end{aligned}$$



Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kalkkurchi - 622 303, Pudukkottai Dt.

5. Volume of coarse and fine aggregate content

$$\begin{aligned}\text{The volume of coarse aggregate} &= 0.62 \times 0.9 \\ &= 0.56\end{aligned}$$

$$\begin{aligned}\text{The volume of fine aggregate} &= 1 - 0.56 \\ &= 0.44\end{aligned}$$

6. Mix calculation

i. Volume of concrete = 1 m^3

ii. Volume of cement

$$= \frac{\text{mass of cement}}{\text{specific gravity of cement}} \times \frac{1}{1000}$$

$$= \frac{377.3}{3.12} \times \frac{1}{1000}$$

$$= 0.12 \text{ m}^3$$

iii. Volume of water

$$= \frac{\text{mass of water}}{\text{specific gravity of water}} \times \frac{1}{1000}$$

$$= \frac{140}{1} \times \frac{1}{1000}$$

$$= 0.140 \text{ m}^3$$

iv. Volume of chemical admixture

$$= \frac{\text{mass of chemical ad.}}{\text{sp.gravity of chemical ad.}} \times \frac{1}{1000}$$

$$= \frac{7}{1.145} \times \frac{1}{1000}$$

$$= 0.007 \text{ m}^3$$



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SRI BHARATHI ENGINEERING
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Kaikkurchi - 622 303, Pudukkottai Dt.

v. Volume of all in aggregate

$$= [a - (b + c + a)]$$

$$= 1 - (0.12 + 0.0145 + 0.140 + 0.007)$$

$$= 0.628 \text{ m}^3$$

vi. Mass of coarse aggregate

$$= e \times \text{Volume of coarse aggregate} \times$$

Specific gravity of coarse aggregate

$\times 1000$

$$= 0.628 \times 0.56 \times 2.74 \times 1000$$

$$= 981.18 \text{ kg}$$

vii. Mass of fine aggregate

$$= e \times \text{volume of fine aggregate} \times \text{Specific}$$

gravity of fine aggregate $\times 1000$

$$= 0.628 \times 0.44 \times 2.74 \times 1000$$

$$= 757.1 \text{ kg}$$



Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.

MIX PROPORTIONS

Cement = 377.3 kg/m³

Calcium chloride = 38.5 kg/m³

Water = 140 kg/m³

Fine aggregate = 981.18 kg/m³

Coarse aggregate = 757.1 kg/m³

Water-cement ratio = 0.363

P. D. 7/15/22
TEST CONDUCTED

R. Py 7/15/22
HoD
HOD / CIVIL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303

[Signature]
PRINCIPAL
07/05/22
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI - 622 303,
PUDUKKOTTAI DISTRICT

Received
[Signature]

[Signature]
Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

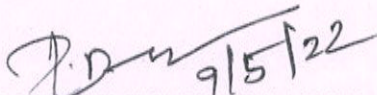
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

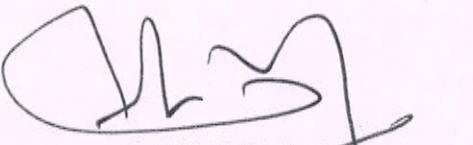
Pudukkottai - Aranthangi Road,
Kaikkurichi, Pudukkottai - 622 303.

Date : 09.05.22

UTILISATION CERTIFICATE

Certified that an amount of **Rs.10,000/- (ten thousand only)** sanctioned during the year **2022** in favor of civil engineering received from **MR Construction & Promoters** has been utilized for the project consultancy work titled "**Concrete Mix Design**". The purpose for which it was sanctioned has been duly fulfilled and delivered as per the conditions of the grant.


PROJECT INVESTIGATOR


PRINCIPAL
09/05/22

PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI - 622 303.
- PUDUKKOTTAI DISTRICT


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

DATE: 13.09.2021

To

The Principal,
Sri Bharathi Engineering College for Women,
Kaikkurichi,
Pudukkottai – 622 303.

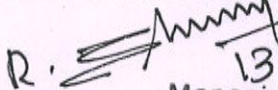
Handwritten:
Hos/cil
Kindly do the work
13/09/21

Respected Sir /Madam,

We require 'Testing of soil' for our client property. To satisfy our needs, kindly give your budget for the consulting test mentioned below,

- I. Specific gravity test
- II. Atterberg's limit (LL & PL) & plasticity index
- III. Proctor compaction test
 - a. Maximum Dry density
 - b. Optimum moisture content


Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

Thanks and regards,
For M.R. Construction & Promoters

13/09/2021
Managing Partner.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)

Pudukkottai - Aranthangi Road,
Kaikkurichi, Pudukkottai - 622 303.

Date : 14.9.2021.....

To

MR constructions & promoters
No. 66/3, Abraham Pandithar nagar
5th street
Thanjavur - 613001

Respected Sir,

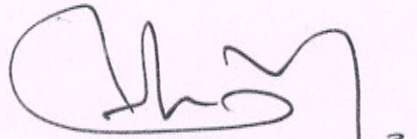
Sub : Submission of consultancy work quotation – Reg.

Greetings from Sri Bharathi Engineering college for women !!!

With reference to your letter dated 13.09.2021, we would like to inform you that, the consultancy charges for the following test is furnished here

S.No	NAME OF THE TEST	COST PER TEST (IN Rs.)
1	Specific gravity test	300
2	Atterberg's limit's (LL & PL) & plasticity index	1500
3	Proctor compaction test	1500
	I. Maximum Dry density	
	II. Optimum moisture content	
TOTAL		3300

Thanking you


PRINCIPAL
14/09/21


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.

PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI - 622 303.
PUDUKKOTTAI DISTRICT

DATE :17.09.2021

To

The Principal,
Sri Bharathi Engineering College for Women,
Kaikkurichi,
Pudukkottai – 622 303.

(HOD/Asst)

*for necessary action
Please
17/09/21*

Dear Sir/Madam,

We approved the consultancy project 'Testing of soil' with the financial assistance of Rs.3300/- sanctioned to accomplish the proposed work. Please contact us at any moment if you require assistance in completing the consulting test.

Thanks and regards,

For M.R. Construction & Promoters

R. [Signature]
17/09/2021
Managing Partner.

[Signature]

Dr. S.THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

Kaikkurichi, Pudukkottai - 622 303.

DEPARTMENT OF CIVIL ENGINEERING

CONSULTANCY TEST

REPORT

TESTING OF SOIL

SUBMITTED

TO

**MR constructions & promoters
No. 66/3, Abraham Pandithar nagar,
5th street,
Thanjavur - 613001**

REPORT DATE : 22.09.2021

**Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.**

CONSULTANCY TEST REPORT

Date of Sample given : 21.09.2021

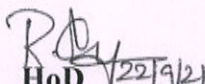
Date of testing : 22.09.2021

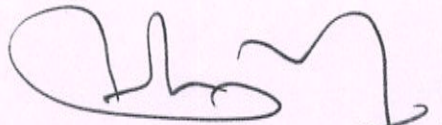
Total cost : Rs.3300/-

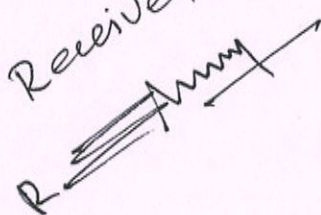
SOIL TEST REPORT

S.NO	TYPES OF TEST	VALUE	RANGE	REMARKS
1	Specific gravity test	2.47	2.4-2.6	Acceptable
2	Atterberg's limit's (LL & PL) & plasticity index	66%	60-65%	Acceptable
3	Proctor compaction test	1.72 g/cm ³	1.93 – 1.58	Acceptable
	I. Maximum Dry density		g/cm ³	
	II. Optimum moisture content	19%	12 – 20%	Acceptable


TEST CONDUCTED
22/09/21


HoD
HOD / CIVIL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI,
PUDUKKOTTAI - 622 303


PRINCIPAL
22/09/21
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI - 622 303,
PUDUKKOTTAI DISTRICT

Received



Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurchi - 622 303, Pudukkottai Dt.



SRI BHARATHI ENGINEERING COLLEGE FOR WOMEN

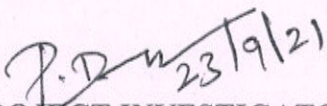
(Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai)


Pudukkottai - Aranthangi Road,
Kaikkurichi, Pudukkottai - 622 303.

Date : 23.09.2021

UTILISATION CERTIFICATE

Certified that an amount of **Rs. 3300/- (three thousand three hundred only)** sanctioned during the year **2021** in favor of civil engineering received from **MR Construction & Promoters** has been utilized for the project consultancy work titled **"Testing of Soil"**. The purpose for which it was sanctioned has been duly fulfilled and delivered as per the conditions of the grant.


PROJECT INVESTIGATOR


PRINCIPAL
23/09/21

PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
KAIKKURICHI - 622 303.
PUDUKKOTTAI DISTRICT


Dr. S. THILAGAVATHI M.E., Ph.D.,
PRINCIPAL
SRI BHARATHI ENGINEERING
COLLEGE FOR WOMEN
Kaikkurichi - 622 303, Pudukkottai Dt.