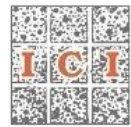




SRI VENKATESWARA COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING



Report of the “Mix & Mould (Cube Competition) Event”



Indian Concrete Institute
Chennai Centre

25.04.2024

Coordinator

Mr. A. Vijay Vignesh
(AP/Civil Engg.)

Convenor

Dr. R. Kumutha
HoD/Civil Engg.



SRI VENKATESWARA COLLEGE OF ENGINEERING

(An Autonomous Institution affiliated to Anna University, Chennai)

Pennalur, Sriperumbudur Tk – 602 117



Indian Concrete Institute
Chennai Centre

DEPARTMENT OF CIVIL ENGINEERING

Report of the “Mix & Mould (Cube Competition) Event”

Date : 25.04.2024

Time : 10.30 A.M – 12.30 P.M.

Mode : Offline

Venue: Concrete & Highway Lab, SVCE

Judge:

Ms. Ruby Freya

Assistant Professor

Department of Civil Engineering

Sri Venkateswara College of Engineering, Sriperumbudur

Convenor & Organizing Secretary

Dr. R. Kumutha, Professor & Head/Civil Engineering

Coordinator

Mr. A. Vijay Vignesh, Assistant Professor/Civil Engineering

Target Audience: UG Students

Number of Participants benefited: 19

UG Students : 19

Total No of Internal Participants – 19

Students – 19

Total No of External Participants – 0

BROCHURE



SVCE | Sri Venkateswara
College of
Engineering



Department of Civil Engineering



in association with

Indian Concrete Institute (ICI) - Student Chapter

jointly organizes



MIX & MOULD

(CUBE COMPETITION)



<https://forms.gle/BuszQRjuD4SmnEwD6>

**REGISTER
NOW**



April 25th, 2024

10:30 am - 12.30 pm





MIX & MOULD



ABOUT THE COMPETITION

- 1. OBJECTIVES:** The objective of the competition is to create awareness and promote the right application of concrete mix design principles as per Indian Standards. This competition provides an opportunity for the students of engineering institutes to understand the characteristic behaviour of different proportions of concrete by having hands-on experience and ultimately arrive at the desired final mix.
- 2. STRENGTH CRITERIA:** The participants should achieve a cube strength of 35 - 40 MPa on the date of competition. A total of three cubes are to be submitted by each team.
- 3. ELIGIBILITY:** The competition is open to all the students of engineering institutes. A team can consist of up to 2 members. The participants need to submit cubes along with a mixed-design report.
- 4. MATERIALS:** Cubes shall be made with locally available coarse and fine aggregates and shall comply with IS: 383. The maximum size of aggregates shall be limited to 20 mm. Blended Cement or OPC can be used for making concrete. Admixtures may be added based on the requirements.
- 5. DETAILS OF CUBES:** The cubes are to be of standard size of 150 X 150 X 150 mm. The cubes should not have any type of reinforcement or fibre. Use of any reinforcement, fibre, epoxy or polymer is not permitted and the team would be disqualified, if it were found to be doing so.
- 6. EVALUATION:**
Cubes with strength above 45 MPa and below 30 MPa would be considered disqualified. Apart from the cube strength, the cubes shall be adjudged for the following criteria also.
 - a. Average strength of three cubes and deviation from specified strength.
 - b. Deviation of individual test results among cubes.
 - c. Visual observation of cubes concerning shape, finishing, fracture, and distribution of Constituents for homogeneity observed after fracture.
 - d. Marks based on the evaluation of the Mix sheet.
 - e. Negative marking of 1 for each MPa higher than 40 or lower than 35.

Student Coordinator

R. Ramana
(IV Year/CVE)

Faculty Coordinator

Mr. A. Vijay Vignesh
(AP/CVE)

Convenor & Organizing Secretary

Dr. R. Kumutha
(Professor & HOD/CVE)

Registration Form - *MIX & MOULD (Cube Competition)* - ICI Student Chapter

Department of Civil Engineering
ICI Student Chapter

MIX & MOULD
Cube Competition

Contact Details:

Mr. A. Vijay Vignesh, AP/CVE
8754192418
avijayvignesh@svce.ac.in

Ramana R
Student Coordinator - ICI
8220489753
2020ce0245@svce.ac.in

Venue:

Concrete and Highway Lab
Department of Civil Engineering, SVCE

avijayvignesh@svce.ac.in [Switch account](#)



* Indicates required question

Email *

Record avijayvignesh@svce.ac.in as the email to be included with my response

Team Name *

Your answer



Name of the Participant (Member 1) *

Your answer

E-Mail ID *

Your answer

Name of the College/Institution *

Your answer

Department *

Your answer

Year *

Your answer

Mobile Number (WhatsApp Number) *

Your answer

Name of the Participant (Member 2) *

Your answer



E-Mail ID *

Your answer

Name of the College/Institution *

Your answer

Department *

Your answer

Year *

Your answer

Mobile Number (WhatsApp Number) *

Your answer

Submit

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Google Forms



Mix & Mould - Cube Competition - Guidelines - SVCE - ICI Student Chapter - reg

Vijay Vignesh CVE <avijayvignesh@svce.ac.in>

Sun, Apr 7, 2024 at 10:16 AM

To: PAVITHRAN E CVE <2022CE0953@svce.ac.in>, 309 SYED AFRIDEEN M <2020ce0909@svce.ac.in>, KUMARAN S CE <2021ce0935@svce.ac.in>, ABINAYA S CIVIL <2021ce0350@svce.ac.in>, 08 MOHAMMAD SALMAAN SHARIFF K N CE <2020CE0359@svce.ac.in>, 13 PREM KUMAR S CE <2020CE0568@svce.ac.in>, GURURAJE M CE <2022ce0566@svce.ac.in>, KAVIYA R CIVIL <2021ce0364@svce.ac.in>, ARAVINTAKSHAN N G CE <2022ce0264@svce.ac.in>, LAKSHMAN ANAND S CE <2022ce0758@svce.ac.in>, YUGHESWARAN R B CE <2022ce0283@svce.ac.in>, sathyav.civil2022@citchennai.net, Hemalatha <ahemalatha2114@gmail.com>, 311 ZAAHIR SHA S CE <2020ce0907@svce.ac.in>, 01 AADESHWAR S CE <2021ce0420@svce.ac.in>, LOMINA R CE09 <2021ce0157@svce.ac.in>, Salmaan Shariff <salmaanameer24@gmail.com>, 16 RAMANA R CE <2020ce0245@svce.ac.in>, MATHIMITHA CVE <2022ce0896@svce.ac.in>, JAI SIDDARTH A CE <2022ce0620@svce.ac.in>, saravanaharim.civil2022@citchennai.net, VIKRANTH J CE <2022ce0633@svce.ac.in>
Cc: 16 RAMANA R CE <2020ce0245@svce.ac.in>

Dear Participants,

We extend our gratitude for enrolling in the **MIX & MOULD event (Cube test competition)** organised by the Department of Civil Engineering in association with ICI Student Chapter. Your participation is crucial in fostering awareness and promoting the correct application of concrete mix design principles.

Here are some important instructions:

1. **Submission Deadline:** Kindly note that all cubes (3 nos) must be submitted on or before **24.04.2024 (Wednesday)**. Ensure timely submission to avoid any inconvenience.

Submitted to

Department of Civil Engineering

Sri Venkateswara College of Engineering, Sriperumbudur

Address: Post Bag No.1, Pennalur Village Chennai - Bangaluru High Road Sriperumbudur Tk, Tamil Nadu 602117

Contact Details: Mr.A.Vijay Vignesh, AP/Civil - 8754192418

2. **Cover Page for Cube Design Document:** Please remember to include a **cover page** for your Mix Design Report. This cover page serves as a crucial component of your submission.

3. **Mix Design Report:** Your cube design document should include the following details:

- **Mix design procedure**
- **7th & 14th Day Compressive Strength**
- Details of each materials used (including brands and quantities)
- Any admixtures used (if applicable)
- **Slump value**
- **Photographs of the slump test and photographs while casting the cube**

We urge you to adhere to these guidelines meticulously to ensure a smooth and fair evaluation process. If you have any queries or require further clarification, do not hesitate to reach out to us.

Thank you for your attention to these details, and we look forward to receiving your submissions.

Pl find the attached cover page (format) for your reference.

--- Thanks and Regards ---

A. Vijay Vignesh

Assistant Professor - Civil Department,

Sri Venkateswara College of Engineering,

Sriperumbudur

3 attachments

 **Cover Page.pdf**
101K

 **Cover Page.docx**
53K

 **ICI MIX & MOULD.pdf**
1979K

MIX & MOULD (Cube Competition) - Results - reg

2 messages

Vijay Vignesh CVE <avijayvignesh@svce.ac.in>
To: HOD Civil SVCE <hodce@svce.ac.in>

Fri, May 3, 2024 at 1:06 PM

Madam,

Department of Civil Engineering in association with Indian Concrete Institute (ICI), Chennai Centre have organised "**MIX & MOULD (Cube Competition)**" on 25th April 2024.

I am happy to announce the winners and congratulate all the students for their active participation in this Cube Competition event.

Total number of participants: **19** (2nd, 3rd, 4th Year students)
Mode: Offline

Winners:**First Place: Lomina R & Abinaya S (III Year)****Second Place: Rekha R & Mohana Priya S (II Year)**

Certificates will be given during the upcoming events.

PI forward this mail to our students group mam.

--- Thanks and Regards ---

A. Vijay Vignesh

*Assistant Professor - Civil Department,
Sri Venkateswara College of Engineering,
Sriperumbudur*



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3231K

HOD Civil SVCE <hodce@svce.ac.in>

Fri, May 3, 2024 at 1:10 PM

To: 2020 CE Students Group <2020cestudents@svce.ac.in>, 2021 CE Students Group <2021cestudents@svce.ac.in>, 2022 CE Students Group <2022cestudents@svce.ac.in>, 2023 CE Students Group <2023cestudents@svce.ac.in>
Cc: Civil Engineering-Teaching Staff <ce@svce.ac.in>

Dear students

This is for your kind information.

Congrats to the winners and the participants.

[Quoted text hidden]

--

Thanks and Regards

Dr.R.Kumutha**Professor and Head**

Department of Civil Engineering

Sri Venkateswara College of Engineering

Sriperumbudur - 602117
TN, India
Ph: 9894125626
[Web of Science Profile](#)
[Scopus Author Profile](#)
[Google Scholar Profile](#)



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SNAPSHOTS OF THE EVENT





**DEPARTMENT OF CIVIL ENGINEERING
&
ICI STUDENT CHAPTER**

**MIX & MOULD
(Cube Competition)**

MIX DESIGN REPORT

Participants Details:

	PARTICIPANT 1	PARTICIPANT 2
Name of the Student	Lomina R	Abinaya S
Email ID	2021ce0157@svce.ac.in	2021ce0350@svce.ac.in
Name of the College	Sri Venkateswara College of Engineering	Sri Venkateswara College of Engineering
Department	Civil Engineering	Civil Engineering
Year	III rd	III rd
Mobile Number	8883332381	9363293273

Date of Submission: 18.04.2024

LABORATORY TEST
FRESH CONCRETE TEST

SLUMP CONE TEST:

Type of mix: Cohesive

Type of slump: True slump

Slump value: 134mm

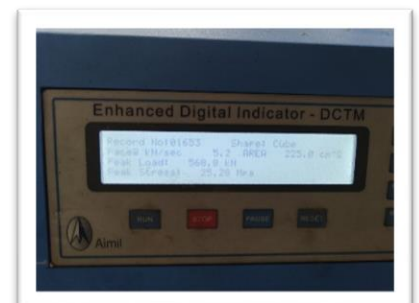
COMPRESSION TEST

7 DAYS COMPRESSION TEST

Specimen NO	Length	Breadth	Load at Failure	Compressive Strength
1	150mm	150mm	548.80KN	24.39Mpa

14 DAYS COMPRESSIVE TEST

Specimen NO	Length	Breadth	Load at Failure	Compressive Strength
1	150mm	150mm	750.6KN	33.36Mpa



MIX DESIGN FOR M35 CONCRETE

A-1 DESIGN STIPULATION

- a) Grade Designation : M35
- b) Type of Cement : PPC conforming to IS1489(part 1) 53
Grade
- c) Maximum nominal size of aggregate : 20mm
- d) Minimum Cementitious Content : 340Kg/m³
- e) Maximum water cement ratio : 0.45
- f) Workability : 50-100mm
- g) Exposure Condition : very Severe
- h) Degree of Quality Control : Good
- i) Type of Aggregate : Angular crushed
- j) **Chemical Admixture Type : Super Plasticiser**

A-2 TEST DATA FOR MATERIALS

- a) Specific Gravity of cement :3.12
- b) Specific Gravity of Admixture :1.12
- c) Specific Gravity of
 - Coarse Aggregate (20mm) :2.50 Coarse
 - Aggregate (12.5mm) :2.74 Fine
 - Aggregates :2.56
- d) Sieve analysis
 - Coarse Aggregates : Conforming to IS 383
 - Fine Aggregates : conforming to zone II as per IS 383

A-3 TARGET STRENGTH FOR MIX PROPORTION

$$F_{ck} = f_{ck} + 1.65s$$

where F_{ck} = Target average Compressive strength at 28 Days

f_{ck} = Characteristic Compressive strength at 28 Days

s = Standard Deviation

From Table 1 , Standard Deviation , $s = 5.0 \text{ N/mm}^2$

Therefore, Target Mean Strength = $35 + 1.65 \times 5.00 = 43.25 \text{ N/mm}^2$

A-4 SELECTION OF WATER-CEMENT RATIO

From IS 456, Table 5, Maximum Water -Cement Ratio = 0.45 As we are using Super plasticizer we can reduce ratio to 0.4

A-5 SELECTION OF WATER CONTENT

Specified Water - Cement ratio = 0.45

Water Content = 186 Kg

As admixture is used we are considering only 77% of water content

Hence Final Water Content = 147 kg

A-6 SELECTION OF CEMENT CONTENT

Water cement ratio = 0.45

Cement content = $147/0.45 = 340 \text{ Kg/m}^3$

A-7 PROPORTIONING OF COARSE AGGREGATE AND FINE AGGREGATE CONTENT

As per Gradation results the ratio of CA : FA is 64 : 36

∴ The Volume of Coarse Aggregate is 0.567

∴ The Volume of Fine Aggregate is 0.433

A-8 MIX CALCULATION

1. Volume of concrete = 1 m^3

2. Volume of Cement = $\frac{\text{Mass of Cement}}{\text{Specific Gravity of Cement}} \times 1/1000$

$$= 350/3.12 \times 1/1000 = 0.112 \text{ m}^3$$

3. Volume of water = $\frac{\text{Mass of water}}{\text{Specific Gravity of Water}} \times 1/1000$

$$= 147/1 \times 1/1000 = 0.147 \text{ m}^3$$

4. Volume of Admixture = $\frac{\text{Mass of Admixture}}{\text{Specific Gravity of Admixture}} \times 1/1000$

$$\text{Volume of Admixture} = 0.006 \text{ m}^3$$

5. Volume of Air = 1% = 0.01 m^3

6. Volume of All in Aggregates = $[1 - (0.112 + 0.147 + 0.006)]$

$$= 0.735 \text{ m}^3$$

7. Mass of Coarse Aggregate(20mm) = Volume of Coarse aggregate X Specific Gravity of Coarse aggregate X 1000
 $= 0.735 \times 0.567 \times 2.50 \times 1000 = 1041.86 \text{ Kg}$

8. Mass of Coarse Aggregate(12.5mm) = Volume of Coarse aggregate X Specific Gravity of Coarse aggregate X 1000
 $= 0.735 \times 0.567 \times 2.74 \times 1000 = 1141.88 \text{ Kg}$

$$\begin{aligned}
 \text{9. Mass of Fine Aggregates} &= \text{Volume of fine aggregate} \times \text{Specific Gravity of} \\
 &\quad \text{fine aggregate} \times 1000 \\
 &= 0.735 \times 0.433 \times 2.56 \times 1000 = 814.73 \text{Kg}
 \end{aligned}$$

A-9 FINAL MIX DETAILS per Cum.(Kg/m³)

Cement	: 350 Kg/m ³
Water	:147 Kg/m ³
Coarse Aggregate	:1141.88 Kg/m ³
Fine Aggregate	:814.7 Kg/m ³
Admixture	:7 Kg/m ³

MIX DETAILS FOR 9 CUBES OF 150mm

$$\begin{aligned}
 \text{Volume of 1 cube} &= 0.15 \times 0.15 \times 0.15 = 3.375 \times 10^{-3} \\
 \text{For 6 cubes} &= 3.375 \times 10^{-3} \times 6 = 0.02025
 \end{aligned}$$

MIX DETAILS FOR 9 CUBES OF 150mm Including wastage

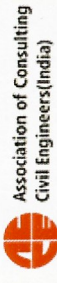
Cement	= 7.0875 Kg
Water	= 2.9768 Kg
Fine Aggregate	= 16.4977 Kg
Coarse Aggregate(20mm)	= 23.1231 Kg
Admixture	= 0.1418 Kg



Indian Concrete Institute
Chennai Centre

SACE

Sri Venkateswara
College of
Engineering



CREDAI
Chennai

(Autonomous - Affiliated to Anna University)
Pennalur, Sriperumbudur - 602117, Tamil Nadu

Department of Civil Engineering

CERTIFICATE OF ACHIEVEMENT

This Certificate is proudly awarded to:

R. LOMINA

of SRI VENKATESWARA COLLEGE OF ENGINEERING
has participated and secured I Place in the "Mix &
Mould (Cube Competition)" organized by the Department of
Civil Engineering in association with the Indian Concrete
Institute (ICI), Chennai Centre on 25.04.2024.

Mr. A. Vijay Vignesh
AP/Civil Engineering
Faculty Coordinator, ICI

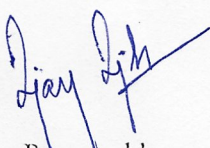
Dr. R. Kumutha
Professor & Head/Civil Engineering
Convener & Organizing Secretary

WINNERS OF THE EVENT


The winners of the Mix & Mould Event event is given below,

S.No	Register Number	Name of the Student	Year	Category
1.	2127210401009	Lomina R	III	First Place
2	2127210401002	Abinaya S	III	
3	2127220401018	Rekha R	II	Second Place
4	2127220401014	Mohana Priya S	II	

Registration Link: <https://forms.gle/525KoKs5akbGym1r7>



Prepared by
Mr.A.Vijay Vignesh (AP/CVE)
Coordinator



Approved by
Dr.R.Kumutha (HoD/CVE)
Convenor & Organizing secretary