



SRI VENKATESWARA COLLEGE OF ENGINEERING
DEPARTMENT OF CIVIL ENGINEERING



Report of Workshop on
WORKSHOP ON "MIX DESIGN AND APPLICATIONS OF SELF
COMPACTING CONCRETE"

Organised in association with
Indian Concrete Institute (ICI) - Chennai Centre



Indian Concrete Institute
Chennai Centre



06.04.2023

Coordinators

Dr.R.Sathia (ASP/CVE)
Mr.A.Vijay Vignesh (AP/CVE)

Convenor

Dr. R. Kumutha
HoD/CVE



SRI VENKATESWARA COLLEGE OF ENGINEERING

(An Autonomous Institution affiliated to Anna University, Chennai)

Pennalur, Sriperumbudur Tk – 602 117



DEPARTMENT OF CIVIL ENGINEERING

Report of the Workshop on “Mix Design and Applications of Self Compacting Concrete”

Date : 06.04.2023 (Thursday)

Venue : Library Seminar Hall, SVCE

Trainer Details

Session 1:

Er.N.G.Muralidharan

Consultant,

Radcrete Pacific Pvt Ltd.

Chairman, ICI Chennai Centre Chennai.

Session 2:

Er.Subash Kandasamy

Territory manager,

Technical Customer Solutions

UltraTech Cement Limited

Convenor & Organizing Secretary

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

Coordinators

Dr. R. Sathia, Associate Professor, Civil Engineering

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

Target Audience: Faculty members & Students

Number of Participants benefited: 46

UG Students : 40

Faculty : 5

Industry Professional : 0

Lab Technicians : 1

Total No of Internal Participants – 46

Students – 40, Faculties – 5, Lab technicians – 1

BROCHURE



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

Department of Civil Engineering

in association with

Indian Concrete Institute (ICI) - Chennai Centre

jointly invites you for a

Workshop
on

"Mix Design and Applications of Self Compacting Concrete"

06.04.2023 (Thursday) | **Venue:** Video Hall, SVCE



Er.N.G.Muralidharan
Consultant, Radcrete pacific Pvt Ltd.
Chairman, ICI Chennai Centre
Chennai

**Advanced Technique in RMC Manufacturing
& Use of Blended Cement**



Er.Subash Kandasamy
Territory manager
Technical Customer Solutions
UltraTech Cement Limited

Mix Design for Self Compacting Concrete

Registration Link: <https://forms.gle/iAU3tZcFayVgPiet5>



Faculty Coordinators
Dr.R.Sathia, ASP/Civil
Mr. A. Vijay Vignesh, AP/Civil

Convenor & Organizing Secretary
Dr.R.Kumutha
Head of the Department
Civil Engineering

Workshop on "Mix Design and Applications of Self Compacting Concrete"

Agenda

09.10 am to 09.15 am	Welcome address Dr. R. Kumutha Professor & Head Department of Civil Engineering, SVCE
09.15 am to 09.20 am	Inauguration by lighting the Kuthu vilakku
09.20 am to 09.25 am	Presenting Memento to the Chief Guest Dr.R.Kumutha Professor & Head Department of Civil Engineering, SVCE
09.25 am to 09.30 am	Introduction of the Chief Guest Dr.R.Sathia Associate Professor, CVE
9.30 am to 10.30 am	Session 1: Advanced Technique in RMC Manufacturing & Use of Blended Cement Er.N.G.Muralidharan Consultant, Radcrete pacific Pvt Ltd.Chairman, ICI Chennai Centre Chennai
10.30 am to 10.45 am	Break
10.45 am to 10.55 am	Introduction of the Chief Guest Mr.A.Vijay Vignesh Faculty Coordinator - ICI
10.55 am to 11.00 am	Presenting Memento to the Chief Guest Dr.R.Sathia Associate Professor, CVE
11.00 am to 12.00 pm	Session 2: Mix Design for Self-Compacting Concrete Er.Subash Kandasamy Territory manager, Technical Customer Solutions UltraTech Cement Limited
12.00 pm to 01.00 pm	Lunch Break
01.00 pm to 02.30 pm	Demonstration on Mix Design for Self-Compacting Concrete <i>Venue: Concrete & Highway Engineering Laboratory (14-002)</i>
02.30 pm to 02.40 pm	Vote of Thanks

SPEAKER PROFILE



Er. Muralidharan Nanda Govindarajulu has 37 years of professional experience from Junior Engineer to CEO. He graduated in Civil Engineering - from Madras University and qualified Safety Professional certified by NEBOSH, UK

He started his Career as Junior Engineer with an Architect, continued as Project Engineer with corporate companies namely Dalmia Group (7 Years), NEPC Micon (2 Years), Hindustan Motors - CK Birla Group (5 Years) managing Industrial projects, Windmill Industry, Lancer Car plant construction. Later joined Ramco group (4 Years), Chettinad group (4 Years) as Dy. General Manager responsible for Ready mix Concrete and Dry Mix Business, setting up commercial & Project based RMC plants.

While Lafarge Aggregate & Concrete Business started in 2007 joined them as 1st Employee in India, acquired L&T RMC Business managing Ready Mix plants across country managing their Operations, Safety, Projects, Performance, Maintenance, Instrumentation and Technical as Sr. Vice President & Executive Committee Member of the organization for 13 years Executed Metro Rail Project Concrete Supplies at Delhi, Jaipur, Noida & Mumbai and supplied M95 grade concrete for World One project at Mumbai. Developed Innovative products like Bag Concrete for Indian Construction Industry. Commissioned more than 50+ RMC Plants across the Country in Challenging environments.

Visited 10 countries in Auditing Safety of Cement and Ready-Mix Concrete Business Honoured by SRM University for his contributions on Safety & Construction. Later joined as Chief Executive Officer of ACE Tech group for setting up their two modern Construction & Demolition process plant and five Garden Waste Management Plants at Chennai for Greater Chennai Corporation Chennai, Project designed by IIT Madras earlier. In 2020 become an Industrial Consultant for Ready Mix Concrete Business & Promoting “Radcon Formula #7” – Structural waterproofing Chemical representing Radcrete Pacific Pty Ltd – Australia

In 2021, Indian Concrete Institute appointed him as Chairman of Chennai Centre, associated as a Project Management Consultant with a Leading Cement company for their RMC Plant Process Optimisation. In 2022, Vellore Institute of Technology (VIT) – Deemed University appointed him as Adjunct Professor. In 2023, Analytical Brains Technologies Private Limited appointed him as Principal Consultant.



Er. Subash Kandasamy has been working for the past 16 years in UltraTech Cement & RMC in various positions and currently working as Deputy Manager - Technical Customer Solutions – Pondicherry. So far, he has executed more than lakh cum ready mix concrete of grades ranging from M5 to M100.

He also designed and executed more than 1.5 lakh cum of temperature-controlled concrete and more than 1 lakh cum of self-compacting concrete. He worked in a project where the fiber reinforced SCC was used to cast Floor concrete in IIT – Madras (2007), this is probably the “First Application of Fiber Reinforced SCC in India”. He also designed and executed more than 1000 cum of light weight concrete, 300 cum of decorative concrete, M60 SCC concrete to AKSHYA “Abov”, Padur, 2500 cum white topping road concrete. He also executed 1740 cum concrete pour in 36 hours in M/s Decon Park hotel project.

He has worked on research projects like structural light weight concrete, Fire safe concrete, Anti washout concrete, high water pressure resistant concrete (UltraTech Aquaseal), low-cost filling concrete, low density & Low-cost light weight concrete with foam, High performance concrete, High early strength concrete, Low cost and high performance M25 and M30 concrete.

He played vital role in creating huge awareness in the market about good quality M-sand and converted 100 % river sand markets into 100 % M sand markets.

BRIEF REPORT OF THE WORKSHOP

INAUGURATION:

The workshop started with a welcome note by Dr. R. Kumutha, Professor & Head/ Civil Engineering, who is the Convenor of this Program. Dr.R.Sathia, Associate Professor and Mr.A.Vijay Vignesh the organizer of the program gave the brief introduction about the speakers to the Participants.



LIGHTING OF LAMP



AUDIENCE

SESSION 1: Advanced Technique in RMC Manufacturing & Use of Blended Cement



Er.N.G.Muralidharan, explained the future challenges for the Indian construction sector to meet the expanding demand for housing and infrastructure development while also reducing the burden of CO₂ emissions resulting from construction through significant advancements in the use of alternative materials in construction and supplemental cementing materials as partial replacements for OPC. He also explained the impact of using secondary cementitious materials and the blended cement for the manufacturing of the sustainable construction. He gave an insight about the new cement in the production namely LC3 cement in the market and explained the about the constituent material used for the manufacturing of the concrete

He explained how the process of manufacturing of Ready-Mix Concrete and the challenges faced during transportation and placing and the opportunities in current scenario. The effect of admixture dosage and the quality check that are performed both in factory and at the site were also explained with real time example.

He gave an outline about the effect of temperature on mass concrete and also gave a brief insight on the Hot weather and Cold weather concreting. The speaker shared the precautionary measures to be taken during mass concreting.

The session was interactive and the questions raised by the participants were answered by the speaker. The session ended with a thanks delivered by Ms. Priya dharshini, Second year student of Civil Engineering.

Session 2: Mix Design for Self Compacting Concrete



Er.Subash Kandasamy explained the mix design method for self-compacting concrete (SCC). He also explained the amount of aggregates, and the paste of binders required to ensure the concrete thus obtained has flowability, self-compacting ability and other desired SCC properties.

He also explained the major factors influencing the properties of SCC such as amount of aggregates, binders and mixing water, as well as type and dosage of superplasticizer (SP). Slump flow, V-funnel, L-flow, U-box were carried out to examine the performance of SCC. The speaker explained about the mix design procedure involved in self-compacting concrete (SCC) as per IS 10262

Demonstration on Mix Design for Self-Compacting Concrete

Venue: Concrete & Highway Engineering Laboratory (14-002)

During the afternoon session demonstration on preparation of self-Compacting concrete and also methods to determine workability of Self Compacting Concrete were explained in the ***Concrete & Highway Engineering Laboratory***.

A concrete mix can only be classified as self-compacting concrete if the requirements for all below-mentioned characteristics are fulfilled:

1. Filling ability (Flowability)
2. Passing ability,
3. Segregation resistance

So, to measure all these parameters, following tests procedure were demonstrated for the participants

1. **Slump Flow**: The slump flow test is done to assess the horizontal flow of concrete in the absence of obstructions. It is the most commonly used test and gives a good assessment of filling ability.
2. **V Funnel Test**: Funnel test is used to determine the **filling ability** (flowability) of the concrete with a maximum size of aggregate 20 mm size.
3. **L-Box Test Method**: The test assesses the flow of concrete and also, the extent to which the concrete is subjected to blocking by reinforcement it is mostly preferred while **underwater concreting** to be done
4. **U box test method**: The test is used to measure the filling ability of self-compacting concrete. It consists of a vessel that is divided by a middle wall into two compartments. This is a simple test to conduct, but the equipment may be difficult to construct. It provides a good direct assessment of filling ability.

The session was interactive and the questions raised by the participants were answered by the speaker. The session ended with a thanks delivered by Mr.Aadeshwar, Second year student of Civil Engineering.

SNAPSHOTS DURING THE DEMO SESSION







INTERACTION WITH STUDENTS

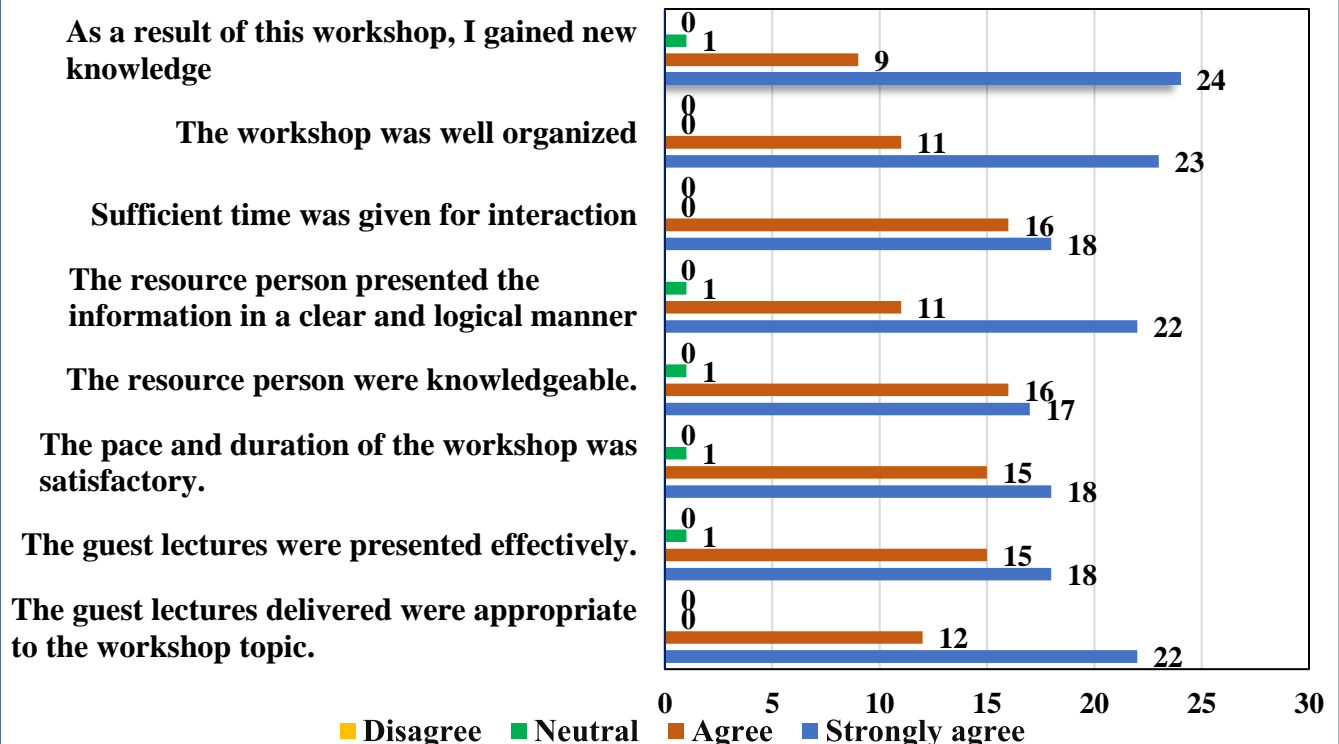
CERTIFICATE DISTRIBUTION



SUMMARY OF FEEDBACK

Total Number of respondents: 34				
Feedback	Strongly Agree	Agree	Neutral	Disagree
The guest lectures delivered were appropriate to the workshop topic.	22	12	0	0
The guest lectures were presented effectively.	18	15	1	0
The pace and duration of the workshop was satisfactory.	18	15	1	0
The resource person was knowledgeable.	17	16	1	0
The resource person presented the information in a clear and logical manner	22	11	1	0
Sufficient time was given for interaction	18	16	0	0
The workshop was well organized	23	11	0	0
As a result of this workshop, I gained new knowledge	24	9	1	0

SUMMARY OF FEEDBACK



SAMPLE CERTIFICATE



Sri Venkateswara
College of
Engineering

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

Department of Civil Engineering


CERTIFICATE OF PARTICIPATION

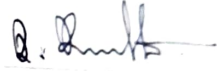
This is to certify that

AURUDRA ADISESHAIAH KRISHNA

has participated in the Workshop on "Mix Design and Applications of Self Compacting Concrete" organized by the Department of Civil Engineering, Sri Venkateswara College of Engineering in association with the Indian Concrete Institute (ICI) Chennai Centre on 06.04.2023.

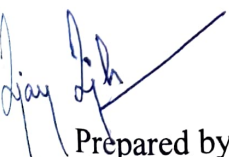

Dr. R. Sathia
ASP/Civil Engineering
Faculty Coordinator


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


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

Final comments/feedback from participants:

- Gained new knowledge
- Gained more information about SCC, with the help of test conducted
- We received great understanding in the concept of mix design
- Acquired knowledge on SCC.
- It was very useful as it gave us practical knowledge
- The workshop was very informative.


Prepared by
Dr. R. Sathia (ASP/Civil Engg.)
A. Vijay Vignesh (AP/Civil Engg.)
Coordinators


Approved by
Dr. R. Kumutha (HoD/Civil Engg.)
Convener & Organizing Secretary