



National Cube Test Competition

Organised by

Indian Concrete Institute

And

RDC Concrete Private Limited

About the Competition

1. OBJECTIVES: The objective of the competition is to create awareness and promote right Application of concrete mix design principles among the young students, practicing engineers & Builders having Laboratory testing facilities.

Concrete is widely used in construction. However, there is a need to create further awareness about the quality of concrete and growing need to affect economy in the face of ever-rising cost of materials. Therefore, mix proportioning of concrete assumes a great importance. The mix proportioning for developing improved properties of concrete always fascinates a civil engineer. A properly designed concrete for a particular application keeping in mind the specific requirements in terms of workability, strength, durability and economy can affect substantial savings and long life of the structure.

This competition provides an opportunity for the students of engineering institutes and the Young engineers working in the construction field to understand the characteristic behaviour of Different proportions of concrete by having hands on experience and ultimately arrive at the desired final mix. Practical hands on experience gained by the participants during competition would help them in their future endeavours in developing quality concrete.

2. STRENGTH CRITERIA: The participants should achieve cube strength of 33-35 MPa on the date of testing. Total three cubes are to be submitted by each team at the designated place.

3. ELIGIBILITY: The competition is open to all. Annexure I is the enrolment form, needs to be filled in by the participants. There is no fee for participation. A team can consist of up to 3 members and can have up to 2 teams from one institution/organization. Institution/organization submissions are limited to two per region. The participants need to submit cubes along with data sheet, wherein the details of the concrete Mix design such as proportions, ingredients, slump, etc. should be duly certified by the professor, Project manager or head of the institute/department. The certifying authority would be professionally responsible for the compliance of all the guidelines.

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 20mm. Fly ash and ground granulated blast Furnace slag may be used, and ultrafine from Ultrafine mineral and admixtures private ltd must be used, which are proved to improve the durability of the concrete. Blended Cement or OPC can be used for making concrete. Ultrafine material will be provided free of cost to all participants who are to be used as Mineral Additive, between 3 to 10% of cementations content.

5. DETAILS OF CUBES: Cubes shall be cast by the teams at their places on the specified date and shall be cured at standard curing temperature for fourteen days. After 7 days, the cubes shall be covered in polythene sheets to prevent loss of moisture and suitably packed to avoid any damage during transit and shall be delivered at the designated place for the region. At the testing place, the cubes shall be opened and again cured in water tank till the date of testing. Each team is to submit a total of 3 cubes for testing on 28 Days. The cubes are to be of Standard size of 150 X150 X 150 mm. The cubes should not have any type of reinforcement or fibre.

The top face of the cube to receive the compression load is to be marked with 'X' with marker pen from corner to corner. No other identification marking to be given on the cube by the participants. The code number shall be marked by the designated person at the place of testing or at the place of submission of cubes.

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. SUBMISSION OF ENTRY: Three cubes along with mix sheet and workability video should be submitted at the designated place for each region. The packing box/ container should have the name of the team and the address.

7. TESTING OF CUBES: The testing of cubes shall be carried out at the designated institute/laboratory of the region and the participants are welcome to witness the testing. The testing shall be done as per IS 516 in direct compression.

8. EVALUATION: Three judges shall be appointed by the RDC-ICI and the decision of the judges regarding acceptability of cubes for the entry and evaluation shall be final. The judges are free to ask the participants for any clarifications before taking decisions. Cubes with strength above 40 MPa and below 30 MPa would be considered disqualified.

Apart from the cube strength, the cubes shall be adjudged for following criteria also.

- a. Average strength of three cubes and deviation from specified strength.
- b. Deviation of individual test results among cubes.
- c. Ratio of strength to cement.
- d. Visual observation of cubes with respect to shape, finishing, fracture, distribution of Constituents for homogeneity observed after fracture.
- e. Marks on the basis of the evaluation of the Mix sheet.
- f. In case of Tie, the cost of mix and workability of concrete shall be considered.
- g. Negative marking of 1 for each MPa higher than 35 or lower than 33.

9. ANNOUNCEMENT OF RESULTS: All winners and the concerned institutes/organizations will be informed. The certificates and awards shall be distributed in the function to be held for each region separately.

10. CONTACT PERSONS: In case of any clarification and query, the participants are suggested to contact the concerned persons of their region as mentioned in the Annexure II.

Annexure I

Enrolment Form

ICI-RDC National Cube Test Competition

(A) Category: Student/Professional Engineers/Concrete Experts

(B) Team Code (to be given by ICI/RDC):

(C) Name of the team members:

1.....

2.....

3.....

(D) Institute/ Organization:

(E) Name of the Guide/Faculty:

(F) Address for correspondence:

(G) Queries, if any:

Invitation

ICI- RDC National Cube Test Competition - 2023

Dear Sir,

You are invited to participate in the ICI- RDC National Cube Test Competition - 2023 as per the following programme. The participants have to cast concrete cubes to achieve average cube strength of 33-35MPa for a sample of cubes on the date of testing.

The competition is held in three categories

1. Student Category: Civil engineering students of engineering colleges
2. Professional Category: Civil engineers practicing in the field of construction, Contractors / clients / consultants / test labs of government or private institutes.
3. Concrete Experts: Professional Ready Mix Manufacturers & Labs.

Programme of the competition is as follows:

| | |
|-------------------------------|---|
| Registration | 20 th -30 th November 2022 |
| Interaction with participants | 1 st Dec.-15 th Dec. 2022 |
| Trial Period | December 2022 – February 2023 |
| Casting of Cubes | 1 st Week of March 23 |
| Submission of Cubes | 3 rd Week of March 23 |
| Testing of Cubes | 4 th Week of March 23 & 1 st Week of April 2023 |
| Result Declaration | 2 nd Week of April. |
| Award Function | Concrete Day (7 th September 2023) |

All participants would be given certificates and the winners will be awarded with Prizes. The event would be adequately covered in the institution's magazine. We look forward for your participation.

Thanking you.

Yours faithfully,

Er. R. Radhakrishnan
Secretary General
Indian Concrete Institute

Annexure II

List of Regional Contact Persons

ICI-RDC National Cube Test Competition

| Region | Name & Address | Tel. No/Mobile No. |
|--------|----------------|--------------------|
| North | Ajay Mishra | 8700804350 |
| South | Pavan | 8121040511 |
| East | Vinod Mondal` | 8118098858 |
| West | Rajat Tyagi | 8657049246 |

For any Queries kindly Email on "cubetest@rdcconcrete.com" or connect to,