RAYAT SHIKSHAN SANTHA'S,

KARMAVEER BHAURAO PATIL COLLEGE OF ENGINEERING SATARA.

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Place: Tamjainagar Satara

FIELD VISIT TO READY-MIX CONCRETE(RMC) PLANT TAMJAINAGAR SATARA

REPORT

1. INTRODUCTION:

Civil Engineering Department of KBP College of Engineering Satara organized a field visit to READY-MIX CONCRETE(RMC)PLANT, TAMJAINAGAR Satara as a part of concrete technology studies. Third year civil engineering students joined the visit under the guidance of faculty Professor Mr.A.R.GAWALE Coordinater staff at RMC plant explained well about the structure and working of the Ready-mix concrete plant and offered us a visit to the concerned areas.

Students got an excellent benefit by visiting the RMC plant in satara and understand about The Production process and overall functioning

❖ **Components Observed During Visit**

a) Storage of Materials

Cement Silos: Used for bulk storage of cement; airtight to prevent moisture.

Aggregate Bins: Separate bins for coarse and fine aggregates.

Water Tanks: Clean and sufficient supply for batching.

Admixture Tanks: For chemical additives like plasticizers, retarders, air-entrainers.

b) Batching System

Fully automated system.

Weigh batching for accurate proportioning of cement, aggregates, water, and admixtures.

Control room operation to set mix design values.

c) Mixing System

Twin-shaft or pan-type mixers used.

Mixing time ranges from 30–90 seconds depending on the mix design.

Homogeneous mixing ensured before loading into transit mixer.

d) Transit Mixers

Used to transport concrete to site.
Drum rotates continuously to avoid segregation.

Capacity typically 6–8 m³ per trip.

e) Quality Control Laboratory

Observed the following tests:
Slump test Compressive strength test (cube casting)
Sieve analysis of aggregate
Specific gravity test
Moisture content determination

2. OBJECTIVE :

The objectives of visiting the Ready-mix concrete plant are:-

- To study the process of Ready-mix concrete plant

3. RMC PROCESS :

1. Material storage and handling

Aggregates: Sand and gravel are stored in separate bins.

Cement: Cement and fly ash are stored in silos to protect them from moisture.

Water and Admixtures: Water and chemical admixtures are stored in tanks or containers.

2. Batching and proportioning

Measurement: Ingredients are precisely weighed using automated systems according to the specific mix design.

Transfer: Weighed cement and admixtures are transferred to the mixer via a screw conveyor, while aggregates are moved by conveyor belts. Water is also weighed and added.

3. Mixing

Central-mixed: All ingredients are mixed completely in a stationary plant mixer before being loaded into a transit mixer for delivery.

Transit-mixed: Dry ingredients are loaded at the plant, and water and admixtures are added en route to the job site for mixing in the truck's drum.

Shrink-mixed: Concrete is partially mixed at the plant, and the mixing is completed during transit.

4. Quality control and transportation

Quality checks: Throughout the process, automated systems monitor key parameters like the water-to-cement ratio and mixing time. Quality control tests are also performed on the raw materials and the finished mix.

Transportation: The fresh concrete is loaded into transit mixers, which keep it agitated to prevent segregation and maintain workability during delivery to the construction site.

On-site verification: Before pouring, the concrete's workability and strength are verified using tests like the slump test.

Cube Testing Lab:-_M-40

STRENTH- 7 Days

- Minimum 60% to 70%

656/22.5 = 29.15 N/40
= 0.72
= 72%

CONCLUSION:

The field visit to the RMC plant provided valuable insights into modern concrete manufacturing. It helped understand the importance of automation, quality control, efficient material handling, and safety practices. The visit enhanced practical knowledge and strengthened understanding of concrete technology.

Fig 4 KBPCOES Civil Students (2025-2026)

Fig.5. Testing Lab