

Lecture 1.7: Testing of aggregate as per BIS.

Concrete Technology (DI04006011)

Civil Engineering Department

Lecture Agenda

- 1. Testing of aggregate as per BIS.
- 2. Quality of water, impurities in mixing water and permissible limits as per BIS.
- 3. Summary and Q&A

1.8 Testing of aggregate as per BIS.

- Sieve Analysis: Conducted to determine the particle size distribution (grading) and fineness modulus.
- Specific Gravity & Water Absorption: Measured using pycnometer or wire basket method.
- Aggregate Impact Value (AIV): Measures toughness or resistance to sudden impact.
- Aggregate Crushing Value (ACV): Measures resistance to gradual compressive loads.
- Los Angeles Abrasion Test: Determines the wear/abrasion resistance of coarse aggregates.

1.9 Quality of water, impurities in mixing w...

- Water acts as a reactant in hydration and a lubricant for workability.
- General rule: Water fit for drinking is generally fit for making concrete.
- pH of mixing water should not be less than 6.0.
- Permissible limits (IS 456): Organic (200 mg/l), Inorganic (3000 mg/l), Sulphates (400 mg/l).
- Chlorides: Max 2000 mg/l for plain concrete, 500 mg/l for reinforced concrete.

Summary

- Recap of the specific material properties and methods discussed.
- Always refer back to the standard IS codes for parameter limits.