

25CE301 : BUILDING MATERIALS AND CONCRETE TECHNOLOGY

Topic: Unit I: Stones, Bricks, Tiles, Timber & Wood Products

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Building Stones

- Definition
- Natural rock used in construction.
- Classification:
 - • Geological: Igneous, Sedimentary, Metamorphic
 - • Structural: Stratified, Unstratified, Foliated
 - • Chemical: Siliceous, Calcareous, Argillaceous

Quarrying & Dressing

- Quarrying: Digging, Heating, Blasting, Wedging.
- Dressing: Hammer dressing, Chisel dressing, Polishing, Rough dressing.

Properties of Stones

- • High compressive strength
- • Durable
- • Hard & tough
- • Low water absorption
- • Weather and fire resistance

Tests on Stones

- • Crushing strength
- • Water absorption
- • Abrasion
- • Hardness
- • Impact
- • Acid test

Bricks

- Manufacturing:
 - 1. Clay preparation
 - 2. Moulding
 - 3. Drying
 - 4. Burning
 - 5. Cooling
- Classification: First, Second, Third & Fourth class.

Properties & Tests of Bricks

- Properties:
 - • Uniform size
 - • Strong
 - • Durable
- Tests:
 - • Compressive strength
 - • Water absorption
 - • Efflorescence
 - • Hardness
 - • Soundness

Clay Tiles

- Manufacturing:
- Clay → Moulding → Drying → Burning → Cooling
- Types:
- Roofing, Flooring, Ridge, Decorative.
- Uses: Roofs, Floors, Wall cladding.

Timber

- Classification: Hardwood & Softwood.
- Structure: Bark, Cambium, Sapwood, Heartwood, Pith.
- Defects: Knots, Shakes, Rot, Termites.

Seasoning & Preservation

- Seasoning:
 - • Air
 - • Water
 - • Kiln
- Preservation:
 - • Brushing
 - • Spraying
 - • Dipping
 - • Pressure treatment

Engineered Wood

- Plywood: Veneers glued at right angles.
- Particle Board: Wood particles + resin.
- Applications: Furniture, Doors, Partitions, Cabinets.

Summary

- • Stones
 - • Bricks
 - • Clay Tiles
 - • Timber
 - • Engineered Wood
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- Viva: Explain quarrying, brick tests, timber seasoning.

Thank You..