

# AMEV07 CONSTRUCTION MATERIALS

## UNIT-1 STONES- BRICKS- CONCRETE BLOCKS

- 1.1 Stone as building material- Criteria for selection
- 1.2 Tests on stones- Deterioration and Preservation of stone work
- 1.3 Bricks- Classification- Manufacturing of clay bricks- Tests on bricks
- 1.4 Compressive Strength- Water Absorption- Efflorescence- Bricks for special use- Refractory bricks- Cement,
- 1.5 Concrete blocks- Lightweight concrete blocks.

## UNIT-2 LIME- CEMENT- AGGREGATES- MORTAR

- 2.1 Lime- Preparation of lime mortar
- 2.2 Cement- Ingredients- Manufacturing process- Types and Grades- Properties of cement and Cement mortar- Hydration
- 2.3 Compressive strength- Tensile strength- Fineness- Soundness and consistency- Setting time Industrial byproducts- Fly ash
- 2.4 Aggregates- Natural stone aggregates- Crushing strength- Impact strength- Flakiness Index Elongation Index
- 2.5 Abrasion Resistance- Grading- Sand Bulking.

## UNIT-3 CONCRETE

- 3.1 Concrete- Ingredients- Manufacturing Process- Batching plants- RMC
- 3.2 Properties of fresh concrete- Slump- Flow and compaction Factor
- 3.3 Properties of hardened concrete- Compressive,
- 3.4 Tensile and shear strength- Modulus of rupture- Tests- Mix specification- Mix proportioning
- 3.5 BIS method- High Strength Concrete and HPC- Self compacting Concrete- Other types of Concrete- Durability of Concrete.

## UNIT-4 TIMBER AND OTHER MATERIALS

- 4.1 Timber- Market forms- Industrial timber- Plywood- Veneer- Thermacole
- 4.2 Panels of laminates- Steel- Aluminum and Other Metallic Materials
- 4.3 Composition- Aluminum composite panel- Uses- Market forms
- 4.4 Mechanical treatment- Paints- Varnishes- Distempers Bitumens.

## UNIT-5 MODERN MATERIALS

- 5.1 Glass- Ceramics- Sealants for joints- Fibre glass reinforced plastic
- 5.2 Clay products- Refractories- Composite materials- Types
- 5.3 Applications of laminar composites- Fibre textiles
- 5.4 Geomembranes and Geotextiles for earth reinforcement.

## References Books

1. Jagadish.K.S, "Alternative Building Materials Technology", New Age International, 2007.