EGBUNU HIKMAT IGANYA
18/ENG03/025
CIVIL ENGINEERING.

Highlight ten Civil Engineering materials, their Uses and Properties (In a tabular form)

	CIVIL ENGINEERING MATERIALS	USES.	PROPERTIES
1.	STONES	i) Stone masonry is used for the Construction of foundations, walls, columns and arches. ii) Stones are used as damp proof courses, lintels and even as roofing materials. iii) Stones are used for flooring. iv) Stones are used for paving roads, footpaths and open spaces round the building v) Stones with good appearance are used for the face works of buildings, polished marbles and granite are commonly used.	i) Structure: It must be stratified (layered) or unstratified. ii) Texture: Fine grained stones with homogenous distribution look attractive and hence they are used for carving. iii) Density: Denser stones are stronger. Light weight stones are weak. iv) Weathering: Rain and wind cause loss of good appearance of stones. Hence stones with good weather resistance should be used for work. v) Resistance to fire: Sand stones resist fire better. Argillaceous materials, though poor in strength, are good in resisting fire.
2.	BRICKS	i) They are used as building blocks ii) For lining of ovens, furnaces and chimneys iii) For protecting steel columns from fire. iv) For lining sewer lines v) For pavers for footpaths and cycle tracks	i) Colour: Colour should be uniform and bright. ii) Shape: Bricks should have plane faces. They should have sharp and true right angled corners. iii) Size: Bricks should be of standard sizes as prescribed by codes. iv) Texture: They should possess fine, dense and uniform texture.
3.	CEMENT	i) Cement slurry is used for filling cracks in concrete structures. ii) Cement mortar is used for masonry work, plastering and pointing. iii) It is useful for the construction of roads, footpaths, courts for various sports, etc.	PHYSICAL PROPERTIES: i) Fineness of cement (ii) Soundness (iii) Consistency (iv) Strength (v) Heat of hydration. CHEMICAL PROPERTIES: i) Tricalcium aluminate (ii) Ferrite (iii) Magnesia (iv) Sulphur trioxide (v) Free lime.
4.	CONCRETE	i) As sill concrete ii) It is used over the parapet walls as coping concrete. iii) For flagging area around buildings iv) For pavements v) For making building blocks	PROPERTIES OF GREEN CONCRETE: (i) Workability (ii) Segregation (iii) Bleeding (iv) Harshness PROPERTIES OF HARDENED CONCRETE: (i) Strength (ii) Dimensional change (iii) Durability (iv) Impermeability
5.	GLASS	i) For windows and doors ii) For facades iii) For Reinforcement structures. iv) It is used for insulation v) Used for interior design and furniture element.	i) It can take excellent polish. ii) It is an excellent electrical insulator iii) It is strong and brittle. iv) It can be blown, drown or pressed. v) It is not affected by atmosphere. vi) It is available in various beautiful colours.
6.	ALUMINIUM	1) It is used to make door and window frame. 2) Aluminium structural members are becoming popular. 3) Aluminium wires are used as conductors of electricity 4) It is used as foil. 5) Aluminium powder serves as pigments in paints	i) It is having silver colour and bright lustre. ii) It is very light in weight. iii) It is good conductor of electricity iv) It has a very good resistance to corrosion. v) It melts at 66°C vi) It is highly ductile and malleable.

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7. COPPER	i) It is used as electric wire and Cable. ii) It is used as lighting Conductor iii) For water proofing the Construction joints Copper Plates are used. iv) It forms a major Constituent of brass and bronze.	i) It has a reddish brown Colour. ii) Its Structure is Crystalline. iii) It resists Corrossion. iv) Its melting Point is at 1083°C v) It has high electric and thermal Conductivity.
8. PLASTICS	i) For making jointless flooring ii) For Overhead Water tanks iii) For Electrical Conduits, Electrical Insulators iv) Bath and Sink Units. v) Cistern ball floats	i) Colour: Some plastics are Completely transparent. ii) It is dimensionally Stable to a great extent. iii) Plastic offers great resistance to moisture and Chemicals and hence more durable. iv) Plastics possess excellent electrical Insulating Property. v) The Specific gravity of plastics is Very low and hence Convenient to handle
9. ASBESTOS	i) Asbestos Cement Sheets are the Cheapest roofing materials. ii) With bitumen, it forms good damp proof layer. iii) It is Used for Preparing fire proof ropes and Clothes. iv) It is Used as Covering material for fuse and electric Switch boxes. v) It is Useful for insulating boilers, furnaces, etc.	i) It is flexible, Soft and non-porous. ii) It is fire Proof and acid Proof material iii) It is a good Insulator of heat and electricity. iv) Its Colour is brown or grey v) Its Specific gravity is 3.10
10. SAND	i) It Sub-divides the Paste of binding material into thin films and allows it to adhere and Spread ii) It fills up the gap between the building blocks and Spreads the binding material. iii) It adds to the density of the mortar iv) It Prevents Shrinkage of the Cementing Material.	i) It Should be Chemically inert. ii) It should be free from organic or Vegetable matter. iii) It Should be free from Salt iv) It Should be hard v) It Should be well-graded