CIVIL ENGINEERING MATERIALS	PROPERTIES	USES
1, Timber	Strength, density, shrinkage and swelling , durability, hardness, elasticity, soundness, workability, toughness, free of abrasion.	construction and fencing commercial uses Art industry sport equipment
2, Mortar	The main quality that mortar should possess is adhesion. Good mortar should provide good adhesion to building units (bricks, Stones etc). Mortar should be water resistant. It should have the capability of resisting the penetration of water. Deformability of mortar should be low. Mortar should be cheap. Mortar should be easily workable in the site condition. The mobility of mortar should be good. It helps the mortar to be paved thinly and evenly. It should possess high durability.	Mortar is used to bind together the bricks or stones in brick or stone masonry. It is used to give a soft even bed between different layers of brick or stone masonry for equal distribution of pressure over the bed. It is used to fill up the spaces between bricks or stones for making walls tight. It is used in concrete as a matrix. It is used in plastering works to hide the joints and to improve appearance. It is used for molding and ornamental purpose.
3, Concrete	Durability, workability, permeability, strength (compressive strength, tensile strength, flexural strength, shear strength) elasticity properties.	It is budget friendly to use everywhere. It is easy to repair & energy efficient. Concrete can be shaped in various forms when freshly mixed. Concrete isn't sensitive to moisture. Concrete is a sustainable choice for residential and commercial projects. The strength of concrete increases over time.
4, Cement	Physical properties include; (fineness of cement, soundness, consistency, strength, setting time, heat	It is used in mortar for plastering, masonry work, pointing, etc. It is used for making joints for

CIVIL ENGINEERING MATERIALS	PROPERTIES	USES
	of hydration, loss of ignition) Chemical properties include; (Tricalcium aluminate, Tricalcium silicate, Dicalcium silicate, Ferrite, Magnesia, Sulphur tripwire, Iron oxide.	drains and pipes. It is used for water tightness of structure. It is used in concrete for laying floors, roofs and constructing lintels, beams, stairs, pillars etc. It is used for precast pipes manufacturing, piles, fencing posts etc.
5, Aggregates	Basic properties of aggregates include mineralogical composition, surface texture and grain shape, dustiness, porosity, frost resistance, resistance to abrasion and polishing, and asphalt absorption capacity [1,2,3,4,5].	Using aggregates materials for concrete reduces production costs and increases the resistance of concrete mixes. Crushed aggregates make up for around 60% to 75% of the volume of concrete.
6, Steel	Strength, Toughness, Ductility, Weldability. Durability.	Steel is environment-friendly & sustainable. It posses great durability. Compared to other materials, steel requires a low amount of energy to produce lightweight steel construction. Steel reduces CO_2 emissions. All types of energy sectors demand steel for infrastructure and resource extraction. Steel has a wider range of temperature which is used to make large sheets.
7, Sand	(i) It should be chemically inert. (ii) It should be clean and coarse. It should be free from any organic or vegetable matter. Usually 3 to 4% clay is permitted. (iii) It should contain	We can use sand to filter water; it works like an abrasive. We can use sand to give a grip to our painting or wall art by combining 2 cups of paint with a ¾ cup of sand. People make sandpaper by gluing sand to a paper.

CIVIL ENGINEERING MATERIALS	PROPERTIES	USES
	sharp, angular, coarse and durable grains. (iv) It should not contain salts which attract moisture from the atmosphere. (v) It should be well graded.	Sand is a strong strand which is used for plaster, mortar, concrete and asphalt.
8, Polymers	Heat capacity/conductivity Thermal expansion Crystalline Permeability Elastic modulus Tensile strength Resilience	Urea-formaldehyde resins are used for making adhesives, moulds, laminated sheets, unbreakable containers, etc. Glyptal is used for making paints, coatings, and lacquers. Bakelite is used for making electrical switches, kitchen products, toys, jewellery, firearms, insulators, computer discs, etc.
9, Bituminous material	Adhesion, Resistance to Water, Hardness, Viscosity and Flow, Softening Point, Ductility, Specific Gravity, Durability, Versatility, Economical, Strength	Protection of structures. Pavements Damp proofing For paints Roofing .
10, Composites	high strength; high modulus; low density; excellent resistance fatigue, creep, creep rupture, corrosion, and wear; and low coefficient of ther-mal expansion (CTE)	Composites are now being used in vehicle and equipment applications, including, panels, frames, interior components and other parts. Some composite infrastructure applications include buildings, roads, bridges and pilings.