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 CVE307 (Civil Engineering - Materials)

Q. Highlight 10 Civil Engineering materials, their uses and properties.

S/N	MATERIALS	USES	PROPERTIES
1	Concrete	Commonly used for constructing building and other engineering works where strength and durability are required.	Workability, strength, Durability, Segregation, Bleeding, Impermeability
2	STEEL	Used to build bridges, Residential buildings, Industrial sheds, High rise buildings, Also mild steel is commonly used because of its immense strength.	Strength, Toughness, Ductility, Weldability, Durability.
3	WOOD	In construction wood is used in flooring, frames of doors and windows for its strength and quality. Wood from mango and burflower tree are used for casting and piling.	Color, texture, odor, density, thermal conductivity, cracking, shrinkage.
4	Masonry	To indicate the art of building a structure in either stones or bricks. It is used for construction with mortar as a binding material.	flexibility, structural strength, durability, mold resistance, texture.

Sl. No.	Materials	Uses	Properties
5	Plastic	Plastic materials are used in water proofing, wall covering, electric wiring, decoration, flooring, etc.	Fire resistance, Durability, Thermal resistance, Ductility, strength.
6	Stone	mainly used as aggregates for concrete, can be also used in flooring, roofing, paving roads.	structure, texture, density, strength, hardness, porosity and absorption.
7	Glass	used as internal partition, & used as transparent glazing material in building envelope, including windows in external wall.	Hardness, Brittleness, Insulation, transparency, Fire resistant, weather resistance.
8	Brick	for constructing walls, arches, fire place and even chimneys. Basically it forms part of building.	Hardness, Absorption, Efflorescence, hard
9	Bamboo	for constructing scaffolding, bridges and structures also used in propping. Also for reinforcement.	Tensile strength, Shear strength, flexibility, toughness, Modulus elasticity.
10	Kevlar	formed into sheet for roofing cladding and reinforcing. Can be used to protect bank counters and reinforce seismic shear walls.	tensile strength, toughness, chemical stability at high temperature, heat resistant.