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engineering materials refers to the group of materials that are used in the construction of manmade structures and components the primary function of an engineering material is to withstand applied loading without breaking and without exhibiting excessive deflection the tables below provide properties of common engineering materials the material property data provided are intended to be representative of the material described the provided values tend toward the conservative end of the spectrum and could be used as baseline design values for preliminary design however these values do not conform to any mats searchable database of material properties includes data sheets of thermoplastic and thermoset polymers such as abs nylon polycarbonate polyester polyethylene and polypropylene metals such as aluminum cobalt copper lead magnesium nickel steel superalloys titanium and zinc alloys ceramics plus semiconductors fibers a some typical properties of engineering materials like steel plastics ceramics and composites engineering toolbox resources tools and basic information for engineering and design of technical applications classification of engineering materials properties of engineering materials mechanical properties application of engineering materials tool steel material properties and specifications these tool steels which include hot or cold finished bar plate sheet strip rod wire or forgings are normally fabricated into tools dies or fixtures steel aluminum magnesium machinability index chart steel sheet mechanical tolerances engineering materials 1 an introduction to properties applications and design author michael f ashby subject engineering materials 1 an introduction to properties applications and design 2012 978 0 08 096665 6 created date 4 15 2011 3 29 40 pm engineering materials about this book series this series provides topical information on innovative structural and functional materials and composites with applications in optical electrical mechanical civil aeronautical medical bio and nano engineering search over 100 000 material data sheets based on property requirements such as flexural modulus flexural strength hardness density deflection temperature electrical resistivity conductivity heat capacity and many more parametric searches of all engineering materials from metals to plastics to ceramics are included this three part course explores the structure of a wide variety of materials with current day engineering applications taken together the three modules

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