

Metal Properties

metal properties

Hardness

The term of **hardness** is also referred to stiffness or temper, or to resistance to bending, scratching, abrasion, or cutting.

... In metallurgy **hardness** is defined as the ability of a **material** to resist plastic deformation.

Ductility

Ductility is the physical property of a material associated with the ability to be hammered thin or stretched into wire without breaking.

A **ductile** substance can be drawn into a wire.

Elasticity

Elasticity, ability of a deformed **material** body to return to its original shape and size when the forces causing the deformation are removed.

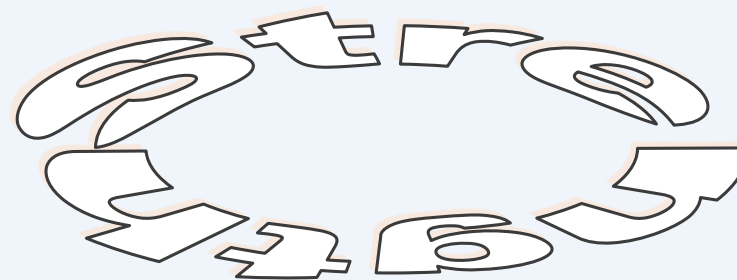
A body with this ability is said to behave (or respond) elastically.

Toughness

Toughness: How well the material can resist fracturing

when force is applied. **Toughness** requires strength

as well as ductility, which allows a material to deform before fracturing.



In the mechanics of **materials**, the **strength** of a **material** is it's powering ability to withstand an applied load without failure or plastic deformation.

Density

Material density, more often referred to simply as **density**, is a quantitative expression of the amount of mass contained per unit volume .

The standard unit is the kilogram per meter cubed (kg/m^3 or $\text{kg} \cdot \text{m}^{-3}$).

Density=mass/volume

Malleability

Malleability is a physical property of metals that defines their ability to be hammered, pressed, or rolled into thin sheets without breaking.

Thermal Conductivity

Thermal conductivity (often denoted by k , λ , or κ)

Refers to the intrinsic ability of a **material** to transfer or conduct **heat**.