

Properties and material degradation and protection

Complete this concept review handout and keep it as a record of what you have learned.

Definitions

- The mechanical properties of a material describe how it reacts when subjected to one or more constraints.
- The degradation of a material is the decline in some of its properties due to the effects of the surrounding environment.
- The protection of a material is the application of procedures that prevent or delay its degradation.

Mechanical properties of materials

Mechanical property	Definition
<i>Hardness</i>	Ability to resist indentation or abrasion
<i>Elasticity</i>	<u>Ability to return to their original shapes after undergoing a constraint</u>
<i>Resilience</i>	<u>Ability to resist shocks without breaking</u>
<i>Ductility</i>	<u>Ability to be stretched without breaking</u>
<i>Malleability</i>	<u>Ability to be flattened or bent without breaking</u>
<i>Stiffness</i>	<u>Ability to retain their shapes when subjected to various constraints</u>

Other properties of material

Property	Definition
<i>Resistance to corrosion</i>	<u>Ability to resist the effects of corrosive substances (such as water, various salts and some components of smoke), which cause the formation of rust, for example.</u>
<i>Electrical conductivity</i>	<u>Ability to carry an electric current</u> _____ _____
<i>Thermal conductivity</i>	<u>Ability to transmit heat</u> _____ _____