

1. **amorphous** materials characterised by certain areas of short-range order; a long-range order does not exist in amorphous substances
2. **anisotropy** engineering property that refers to having a different value when measured in different directions
3. **asbestos** hydrated magnesium silicate; the most common type is fibrous chrysotile (white asbestos); asbestos fibres are variable in length and may be straight or curled
4. **austenite** a face-centred cubic phase in the iron-carbon phase diagram designated as gamma phase, austenite consists of non-magnetic solid solution of carbon in iron
5. **band brake** early version of brake involving an external contracting band wrapped around a hub
6. **castability** the relative ease with which a material may be cast
7. **cast iron** an alloy of iron and carbon in which the carbon is in excess of the amount that can be retained in solid solution in austenite at the eutectic temperature; carbon is usually present in the range of approximately 2% to 4.5%
8. **ceramic** a multi-phase material containing phases composed of compounds of metals and non-metals, ceramics are typically hard and good insulators
9. **coefficient of friction** a ratio of the forces between two surfaces in contact
10. **composites** multi-phase materials formed from a combination of materials which differ in composition or form; remaining bonded together these individual components of composites combine to improve upon the original properties of the component materials
11. **compression** applying pressure to an object to reduce its size or make smaller, a pushing or squeezing force
12. **corrosion** a chemical reaction that results in the conversion of metallic materials into oxides, salts or other compounds; metals undergoing corrosion lose their strength, ductility and other important mechanical properties
13. **ductility** the ease with which a material deforms plastically while undergoing tensile forces such as drawing
14. **elastic limit** the portion of the stress-strain relationship within which a material when loaded and then unloaded will return to its original un-deformed shape; this also equates to the end of the straight line portion of the stress-strain curve
15. **energy** the ability to do work and is measured in joules (J)
16. **engineering stress** calculated using the ratio of the applied load (L) to the undeformed (original) cross-sectional area (A)
17. **friction** a force generated between surfaces opposite to the direction of motion
18. **friction dust** a granular, free-flowing polymerised resin derived from cashew nut shell liquid (CNSL); the main component in processed CNSL is cardanol; cardanol is a naturally occurring material, hydrophobic in nature, and remains flexible and liquid at very low temperatures
19. **Hooke's law** stress is directly proportional to strain within a material's proportional limit
20. **hydraulics** the branch of science that deals with the study and use of liquids, as related to the mechanical aspects of physics; it studies the flow of fluids for which there is virtually no density change