

Glossary

Fitting: A connector or closure for fluid power lines and passages.

Flare Test: A test applied to tubing, involving a tapered expansion over a cone, in order to verify tube ductility and resistance to cracking during flaring operation.

Flaring: Forming an outward acute-angle flange on a tubular part.

Flash Point: The temperature to which a liquid must be heated to form a mixture with air that can be ignited *momentarily* by a flame.

Flow: Movement of fluid generated by pressure differences.

Flow, Laminar: A flow situation in which fluid moves in parallel lamina or streamlined layers.

Flow Lines: A fiber pattern, frequently observed in wrought metal, which indicates the manner in which the metal flowed during forming.

Flow Rate: The volume, mass or weight of a fluid passing through any conductor per unit of time.

Flow, Turbulent: A flow situation in which the fluid particles move in a random fluctuation manner. This is generally caused by too high fluid velocity.

Fluid Friction: Friction due to the viscosity of the fluid.

Fluid Power System: A system that transmits and controls power through the use of a pressurized fluid within an enclosed circuit.

Fluorocarbon Rubber: An elastomeric material which is extensively used for O-ring. Fluorocarbon (Viton) is recommended for higher temperatures than nitrile (Buna N) material.

Flux: In brazing, cutting, soldering or welding, material used to dissolve or facilitate the removal of oxides and other undesirable substances.

Folds: Defects in metals, usually on or near the surface caused by continued fabrication of overlapping surfaces.

Forgeability: Term used to describe the relative ability of materials to deform without rupture.

Forging: Plastically deforming metal, usually hot, into desired shapes with compressive force, with or without dies.

Forging Die: A forging whose shape is determined by impressions in specially prepared dies.

Free Machining: Denotes the machining characteristics of an alloy to which one or more ingredients have been introduced to produce small broken chips, lower power consumption, better surface finish and longer tool life.

Galling: Localized welding on mating surfaces of metal parts caused from excessive friction developed during the rubbing action that occurs during assembly.

Galvanic Corrosion: Corrosion resulting from the placing of two dissimilar metals in direct contact with each other then exposing them to an incompatible fluid or atmosphere.

Hammer, Liquid: Pressure and depression waves created by relatively rapid flow changes and transmitted through the system.

Handy Flux: Handy Flux is a trademark of the Handy & Harman Company.

Hardening: Increasing the hardness of a material by suitable treatment, usually involving heating and rapid cooling.

Hardness: Resistance of a material to scratching, abrasion, cutting or deformation.

Head, Pressure: The pressure due to the height of a column or body of fluid.

Heading: See [COLD HEADING](#).

Hot Finishing/Hot Forming: A deformation operation performed at elevated temperature, usually above the recrystallization temperature of the metal.

Hydraulic Power: Power derived from flow rate and pressure differential of the fluid.

Hydraulics: Engineering science pertaining to liquid pressure and flow.

Hydrogen Embrittlement: A condition of low ductility in metals resulting from the absorption of hydrogen.

Hydropneumatics: Engineering science pertaining to the combination of hydraulic and pneumatic fluid power.

Impact Test: A single blow to determine the behavior of materials when subjected to high rates of loading, usually sudden and in the bending, tension or torsion mode. Charpy or Izod tests are typically used to measure materials' impact energy characteristics.

Inclusions: Nonmetallic materials in solid metallic matrix.

Intergranular Corrosion: A preferential corrosive attack at the grain boundaries of a metal.

LB2000: Registered Trademark of ITW.

Lubricant: Any substance used to reduce friction between two surfaces which are in contact.

MPG 2: Registered Trademark of Dubois Chemical Inc.

Machinability: The relative ease of machining a metal.

Machining: Removing material, in the form of chips, from work, usually through the use of a machine.

Malleability: The characteristic of metals that permits plastic deformation in compression without rupture.

Mandrel: (1) A metal bar around which other metal may be cast bent, formed, or shaped. (2) A rod used to retain the cavity in hollow metal products during working.

Mechanical Properties: The properties of a material that reveal its elastic and inelastic behavior under the application of force, thus indicating the material's suitability for mechanical applications. Examples of such properties are: tensile strength, elongation, modulus of elasticity, yield strength, reduction in area and fatigue limit.

Microhardness: The hardness of microscopic areas or of the individual microconstituents in a metal.

Microstructure: The structure of polished and etched metals as revealed by a microscope at a magnification greater than ten diameters.