



Wire Facts / Glossary of Terms for Copper Wire

Barrel Failure: The collapse of the spool barrel owing to the cumulative compressive stress of the wound wire. Often the cause of deformation in the wire is referred to as “dog legs.”

Block Marks: Shallow, smooth marks, usually transverse or slightly angular in direction, which are caused by the slippage of the wire on a rotating capstan during drawing.

Bright Anneal: A process of annealing carried out in a controlled atmosphere furnace so that surface oxidation is reduced to a minimum and the surface remains relatively bright and uniform in appearance.

Burnish: A surface condition resulting from frictional rubbing of the surface of the wire with another hard surface.

Chatter Marks: A series of transverse and periodically repeating ripples encircling a drawn product producing the effect of a wavy surface and caused by vibration of the wire on the working surface.

Die Lines: Lines or markings along a drawn wire product caused by imperfections in the surface of the working wire die.

Dog Legs: Kinks in the curvature of the wire that cannot be easily straightened.

Die Shaved: The removal of the outer surface of the wire rod by the use of a sharp edged die to scalp the metal to produce a better surface.

Dropouts: Metal defects from previously damaged base metal that are compressed and imbedded into the wire surface by the wire drawing or rolling process. These flaws often fall out of the wire and leave a depression or crater.

Fin: A thin flashing of material caused by the spreading of the wire into the clearance of the rolls.

Flakes: Internal fissures causing small slivers that are either missing from the wire surface or easily dislodged.

Flange Gap: A separation between the side flange of the spool and the wire wound on the spool. Usually caused by a load shock to the spool causing a distortion of the flange or telescoping of the level wound wire.

Fretting: A type of wear that occurs between tight fitting surfaces such as wire on spools which is subjected to a small cyclical motion as often found in surface transportation. Fretting usually manifests itself as a corrosion product known as fretting corrosion in the area of the metal to metal contact.

Guide Marks: Superficial markings on the surface of the wire resulting from wire transfer pulleys, guides, or capstans used in the processing of the wire.

Inclusions: A casting defect consisting of particles of a foreign material found in the base metal.

Lamination: A type of discontinuity with the separation of weakness in the metal generally aligned parallel to the rolled or drawn surface of the wire. May be the result of blisters, seams, or inclusions elongated and made directional by the working of the metal.

Lap: A surface defect appearing as a seam caused by a fold of the material being rolled or drawn into the surface.

Custom constructions are available, please contact the sales department

The information provided on this page is for reference purposes only.

Fisk Alloy Wire, Inc. • P.O. Box 26 • 10 Thomas Road • Hawthorne, NJ 07507 U.S.A.
Phone: 855-4-PERCON (855-473-7266) • Fax (973) 427-4585 • E-mail: sales@fiskalloy.com

Layer Wind: The precision winding of the wire on the spool so that the edge of each wire rests parallel to the edge of the adjacent strand of wire. The result is a smooth, level layer of wire on the spool, for all layers wound on the spool.

Necking Down: The narrowing to a smaller cross sectional area, occurring at a localized place on a tensile test specimen while it is being pulled.

Plating Lumps: Build-ups of the plated element on electroplated wire creating excess plating thickness. Usually caused by pickups from the contact and transfer guide pulleys.

Oxide Discoloration: Discoloration of the metal surface caused by oxidation during annealing or from exposure to oxidizing environments.

Orange Peel: A surface roughening encountered in forming products from material which has a coarse grain size.

Pickling: The process of removing surface oxide and scale from copper alloys by immersion into an acid solution.

Roll Marks: Surface imperfections caused by corresponding imperfections in the rolls used in rolling the finish product. They may be a raised or depressed localized defect and generally repeat themselves at a distance corresponding to the circumference of the rolls.

Seam: An un-welded fold or lap that appears as a crack, usually resulting from a discontinuity in the casting process.

Sliver: Slender fragments or splinters which are an integral part of the material but which are incompletely attached to the metal.

Size Wave: The variation in the size of the rolled wire repeated in a length specific to the working roll circumference and owing to slight out-of-round conditions of the working rolls.

Spalling: The cracking and flaking of metal or oxide particles from a surface.

Straightener Marks: Slight changes in the surface texture of the wire, longitudinal in direction and equally spaced, which are caused by rolls used to impart uniform cast and camber to the spooled wire.

Stress Corrosion: Failure of metals by cracking under combined action of corrosion and stress, both residual and applied. Also known in brass as "season cracking."

Stress Relieving: Heating a metal to a temperature and holding it long enough to reduce residual stresses.

Custom constructions are available, please contact the sales department

The information provided on this page is for reference purposes only.

Fisk Alloy Wire, Inc. • P.O. Box 26 • 10 Thomas Road • Hawthorne, NJ 07507 U.S.A.

Phone: 855-4-PERCON (855-473-7266) • Fax (973) 427-4585 • E-mail: sales@fiskalloy.com