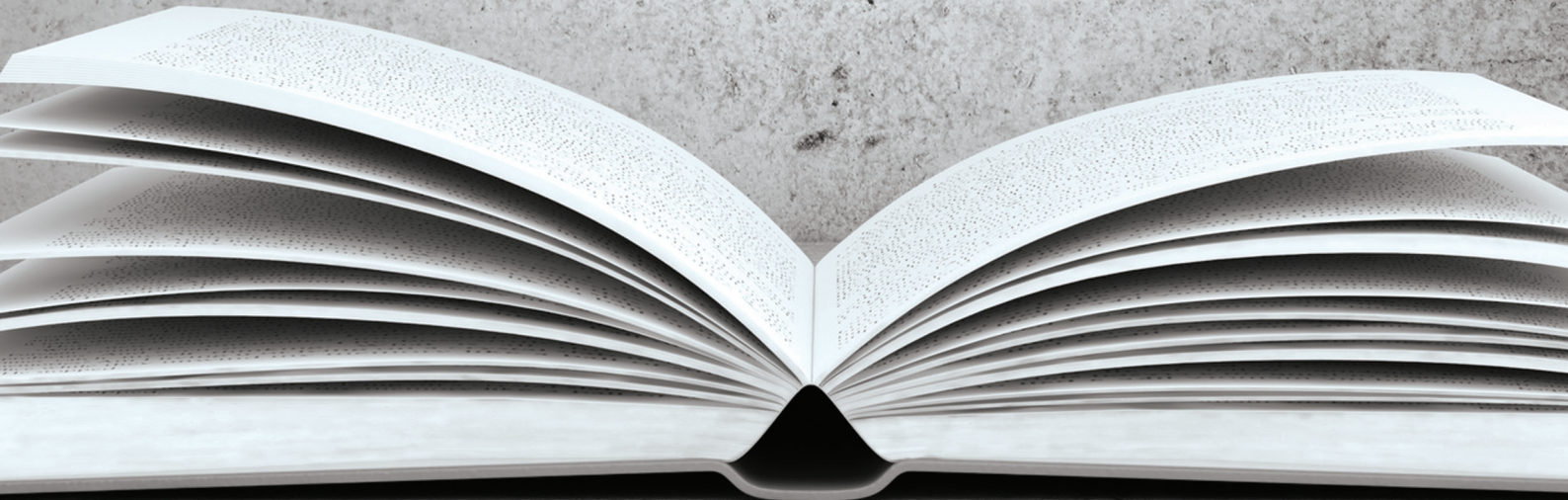


Steel Glossary



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Term Definition

Alloy Steels	A substance composed of two or more metals, or of a metal and a non-metal, fused together. Elements such as manganese, nickel and vanadium are added to steel to improve certain characteristics such as malleability, strength, ductility and elongation.
Annealing	The heat treatment process by which steel products are reheated to a suitable temperature in order to remove stresses resulting from previous processing and to soften them and/or improve their machinability and cold forming properties.
Apparent Consumption	The sum of net industry shipments within a given country or region, plus the imports and minus the exports of this country or region.
Bar	A finished steel product, commonly in flat, square, round, or hexagonal shapes. Rolled from billets, bars are produced in two major types, merchant and special.
Basic Oxygen Furnace	A device used by integrated steel mills to convert hot molten iron into liquid steel by blowing pure oxygen at a high pressure.
Billets & Blooms	A semi-finished steel product with a square cross section up to 155 mm x 155 mm. This product is either rolled or continuously cast and is then transformed by rolling to obtain finished products like wire rod, merchant bars, and other sections. The range of semi-finished products that are above 155 mm x 155 mm are called blooms.
Blank	Steel sheets of high dimensional precision, in simple or complex form, sometimes multi-thickness, constituting principally automobile body parts.
Blast Furnace	A furnace used in integrated steel making in which coke and iron ore react together under a hot air flow to form liquid metal. It is basically a large cylinder, lined with heat-resistant refractory bricks.
Carbon Steel	A type of steel generally having only a slight quantity of elements other than carbon, silicon, manganese, sulphur and phosphorus, so it has no significant quantity of any alloying element.
Caster	A device used to mold liquid steel into its first solid shapes: slabs, blooms or billets.
Coated Sheets	Steel is coated by a heat process or through electrolysis with a layer of substance that protects the metal base against corrosion. The most commonly used material is zinc, which can be applied either using the heat process (hotdip galvanizing) or using electrolysis (electro-galvanizing). An organic coating (paint, plastic) can also be deposited on the zinc layer.
Coil	A finished steel product such as sheet or strip, which has been wound or coiled after rolling.
Coke	A hard, dry carbon substance produced by baking coal in the absence of air in an oven at temperatures as high as 1,100 degrees centigrade. It is used as a fuel and reducing agent to smelt iron ore into iron in a blast furnace.
Cold Rolling	The passing of sheet or strip that has previously been hot rolled and picked through cold rolls, i.e. below the softening temperature of the metal. Cold rolling makes a product thinner, smoother, and stronger than can be made by hot rolling alone.
Continuous Casting	A process for solidifying steel in the form of a continuous strand rather than individual ingots. Molten steel is poured into open-bottomed, water-cooled moulds. As the molten steel passes through the mould, the outer shell solidifies.
Cold-Rolled Coils	See Cold Rolling.

Crude Steel	Steel in the first solid state after melting, suitable for further processing or for sale. Synonymous to raw steel.
Direct Reduction	A family of processes for making iron from ore without exceeding the melting temperature. No blast furnace is needed.
Ductility	The property of being able to draw out into the shape of a wire or thread.
Electric Arc Furnace	A furnace for scrap-based steel making. Once the furnace is charged and covered, graphite electrodes are lowered through gaps in the roof. The electric arc traveling between the electrodes and the metallic charge creates intense heat, which melts the scrap. Alloying elements can be added during the process.
Electrical Steels	Specially manufactured cold rolled sheet and strip containing silicon, processed to develop definite magnetic characteristics for use by the electrical industry.
Flat Steel	Steel that comes in flat shapes either as sheets, strips or plates: <ul style="list-style-type: none"> • Sheets are used in automobiles, appliances and other consumer durables. They can be hot-rolled, cold-rolled or galvanized. • Strips are narrower than sheets and are typically further processed through cold rolling, galvanizing or painting. • Plates are heavier gauge sheets used in capital goods, construction, energy, shipbuilding and machinery.
Galvanized Steel	Produced when hot or cold rolled sheet or strip is coated with zinc either by the hot-dipping or electrolytic deposition process. Zinc coating applied by the hot dip method is normally heavy enough to resist corrosion without additional protective coating. Materials electronically galvanized are not used for corrosion resistant applications without subsequent chemical treatment and painting, except in mild corrosive conditions, due to the thin coating of zinc.
Hot and Cold Rolling Mill	Hot-rolling mill: equipment on which solidified steel preheated to a high temperature is continuously rolled between two rotating cylinders. Cold-rolling mill: equipment that reduces the thickness of flat steel products by rolling the metal between alloy steel cylinders at room temperature.
Hot Briquette Iron (HBI)	Direct reduced iron that has been processed into compact, brick-shaped form. Instead of using blast furnace, the oxygen is removed from the ore using natural gas.
Hot-Rolled Coils	See Hot Rolling.
Integrated Steel Maker	A producer that converts iron ore into semi-finished or finished steel products. Traditionally, this process requires coke ovens, blast furnace, steel making furnaces, and rolling mills. A growing number of integrated mills use the direct reduction process to produce sponge iron without coke ovens and blast furnaces.
Iron Ore	A mineral containing enough iron to be used in steel making. It is typically found in the earth's crust in its oxidized form. Iron ore is typically delivered in three forms: lumps, fines and pellets.
Ladle Metallurgy	The process whereby conditions (temperature, pressure and chemistry) are controlled within the ladle of the steel making furnace to improve productivity in preceding and subsequent steps and the quality of the final product.
Limestone	Sedimentary rock composed of carbonate minerals, especially calcium carbonate. Limestone is added to remove impurities from iron. Magnesium – containing limestone, called dolomite, is also sometimes used in the purifying process.
Long Products	Steel that comes in long shapes such as beams, bars and rods: <ul style="list-style-type: none"> • Beams & rebars are typically used in non-residential construction. • Merchant bars are used in manufacturing, construction and ornamentation. • Wire Rods are used in nails, construction and to make different types of wires and wire-based products.

Malleability	Capable of being extended or shaped through pounding with a hammer, or with the pressure of rollers. Metric Tons A measurement of mass equal to 1000 kilograms. Also known as tonne.
Minimill	A small non-integrated or semi-integrated steel plant, generally based on electric arc furnace steel making. Minimills produce rods, bars, small structural shapes and flat rolled products.
Open-Hearth Furnace	An outdated method of steel manufacturing where a broad, shallow fireplace is used to refine pig iron and scrap into steel.
Pellets	Fine iron ores that have been processed to stick together to form hard spheres of iron ore.
Pig Iron	Cast molten iron that is allowed to go cold to solidify. Can be used as a highquality scrap substitute.
Plate	A flat rolled product from slabs or ingots of greater thickness than sheet or strip.
Rolling Mill	Equipment that reduces and transforms the shape of semi-finished or intermediate steel products by passing the material through a gap between rolls that is smaller than the entering materials.
Scrap	Waste metal obtained from recycling automobiles, machinery, etc.
Semi-Finished Products	Steel products such as billet, blooms and slabs. These products can be made by direct continuous casting of hot steel or by pouring the liquid steel into ingots, which are then hot-rolled into semi-finished products.
Sheet	A flat rolled product over 12 inches in width and of less thickness than place.
Sintering	A process of converting iron-bearing, powdered particles into small pellets by first applying pressure then heating. The sinters are then placed into the blast furnace.
Slab	Long, thick pieces of steel with rectangular cross sections that are rolled into sheets and plates (flat products). One of the first solid shapes of steel.
Slag	A by-product of melting iron ore that floats on the surface of liquid steel. Slag is usually recycled to make-road building materials.
Sponge Iron	The product of the direct reduction process. Also known as direct reduced iron (DRI).
Stainless Steel	Stainless steels are distinguished from carbon steel by their content of chromium (ferritic steel) and, in certain cases, in nickel (austenitic steel). Adding chromium to carbon steel makes it more rust and stain-resistant, and when nickel is added to chromium stainless steel it enhances its mechanical properties.
Strip	Flat steel coil products, with widths of less than 600 mm for hot rolled products and less than 500 mm for cold rolled products. The wider flat products are called wide strips.
Structural Shapes	Rolled flange sections, sections welded from plates, and special sections with at least one dimension of their cross-section three inches or greater. Included are angles, beams, channels, tees and zeds.
Tonne (T)	See metric tonne.
Wire Rods	Coiled bars of up to 18.5 millimeters in diameter, used mainly in the production of wire.
Wire: Drawn And/Or Rolled	The broad range of products produced by cold reducing hot rolled steel through a die, series of dies, or through rolls to improve surface finish, dimensional accuracy and physical properties.