



Vocabulary Definitions

alloy: a mixture of two or more metals, or a mixture of a metal and a nonmetal

babbitt: a soft alloy used to make bearings

bank: in coal mining, the top of the pit

barge: flat-bottomed boat for carrying freight on rivers, canals, and other inland waters

bars: long steel products rolled from billets

beehive coke oven: oven with a domed top used for heating coal to make coke; controlled amounts of air are admitted into the chamber that burn off the impurities; often built into a hillside

Bessemer process: method of quickly making steel; a blast of air is forced through the molten pig iron to rapidly burn out carbon and other impurities

billets: a semi-finished steel form that is used for long products, such as bars

blast furnace: a furnace used to smelt iron ore

bloom: semi-finished steel form with an 8-inch rectangular cross section

breakout: an accident caused by the failure of the hearth walls in a blast furnace, resulting in the uncontrolled flowing of liquid iron and/or slag out of the blast furnace

by-product coke oven: process of making coke by excluding air from the chamber and generating heat by burning the recovered coke gas

cage: iron framework in a coal mine that holds the containers of coal and the men in their passage through the shaft

capacity: normal ability to produce steel in a given time period

carbon: an element found in all living things; a common nonmetallic element

carbon steel: steel with properties made up mostly of carbon; most of the steel produced in the world is carbon steel

cast iron: hard, brittle form of iron that contains a large amount of carbon and is shaped by casting

charcoal: soft black substance made by the partial burning of wood or other plant or animal matter

charge/charging: loading the furnace with the materials needed to make the steel

charging machine: machine that dumps the materials for making steel out of a large box and into the furnace

chromium: hard gray metal used to make stainless steel and used to plate other metals in order to give them protection and a shiny finish

coal: black solid mineral used as a fuel

coal tar: black sticky substance left after heating bituminous coal without air

coils: sheet steel that has been wound into a coiled shape; the most efficient way to store and transport sheet metal

coke: a processed form of coal; the basic fuel used in blast furnaces for smelting iron

coke oven battery: a set of ovens that process coal into coke



continuous caster: machine that allows molten steel to be shaped, rather than poured, into ingots, then reheated and shaped later for increased efficiency

continuous casting: method of pouring steel in its molten form directly from the furnace into a billet, bloom, or slab

converter/processor: process steel into more finished state before selling it to end users

corrosion: gradual degradation or alteration of steel caused by atmosphere, moisture, or another process

curving: cutting into the coal and the preparation for blasting

donkey: machine that pushes the railroad cars that transport the raw materials

doors: various kinds of doors used to direct the ventilation in a mine

downcast/downcast shaft: shaft or division through which fresh air descends into a mine

drill: tool used in blasting to prepare a place in the coal for the powder charge

ductility: ability of steel to undergo permanent changes in shape without fracturing at room temperatures

electrogalvanizing: process that uses electroplating to produce a zinc coating on a steel sheet

electroplating: method of covering an object with a thin layer of metal using electrolysis

feeder: a flow of water in a coal mine

ferrous: metals that consist primarily of iron; of or containing iron

ferrous alloy: an alloy consisting of iron and another material

finishing mill: part of the mill where steel is finished, or prepared for use

flat-rolled steel: category of steel including sheet, strip, and tin plate

galvanized steel: steel coated with a thin layer of zinc

gauge: the thickness of sheet steel

gob piles: slate dumped from coal seams

hack: heavy kind of pick for breaking stone

hardening: process that increases the hardness of steel

heat: quantity or amount of steel manufactured at one time

hematite: hard mineral that is the principal ore of iron

hot metal: molten iron produced in a blast furnace



ingots: form of semi-finished steel

integrated mill: a mill where all aspects of the production are located with the same facility or site

iron: malleable, silvery-white magnetic metal found mainly in hematite and extracted by smelting in a blast furnace

iron carbide: natural gas is used to reduce iron ore to iron carbide for use in electric furnace steelmaking

iron ore: mineral containing iron

ladle: large tub used to transport molten iron or steel

larry cars: small cars that run on a limited track in the plant that are used to transport ore

limestone: rock consisting chiefly of calcium carbonate

magnetism: an invisible force that attracts certain metals, including iron

magnetite: black magnetic iron ore often found in igneous and metamorphic rocks

malleable: term meaning metals that can be shaped by hammering

manganese: brittle, silver-gray, metallic element used in the production of steel

molten steel: steel in liquid form

molybdenum: alloy element used as a raw material in some stainless steel making; heavy, very hard metallic element used to make high-strength alloys for hardening steel

newton: unit in which force is measured

nickel: hard metallic element used in alloys because of its strength and resistance to corrosion

open-hearth furnace: broad, shallow hearth used to refine pig iron and scrap into steel

ore yard: yard close to a blast furnace where iron ore is stored

oxides: compounds made up of elements bonded with oxygen

pascal: the unit in which pressure is measured; written as *Pa*

pattern: wooden mold used to shape the molten metal

petroleum: oily, flammable liquid found beneath the Earth's surface, used as a fuel

phosphorus: nonmetallic element

pig iron: melted iron produced in a blast furnace containing a large quantity of carbon

pinkertons: guards hired for protection during labor difficulties

plate: sheet steel with a width over 8 inches and a thickness of ¼ inch to over 1 foot

plate mill: rolling mill that rolls steel slab to the required thickness, or plate



raw materials: materials changed little from the original form

recycle: to process used or waste material so that it can be used again

red dog: gob pile that has caught on fire

riding: ascending the shaft of a coal mine

rod: round, thin, semi-finished steel

scabs: workers who refuse to join a labor union, especially one who works when the union workers are on strike

scrap (ferrous): iron-containing material that is remelted and recast into new steel

seamless tube: steel tube that is made by drawing molten metal through a roll with a bit in the center which produces a hollow tube

sheet steel: thin, flat-rolled steel

shift: one set of workers, or the usual number of consecutive hours from which one set of workers will work

shifter: an underground laborer in a coal mine

silicon: nonmetallic element; the second most abundant element in the Earth's crust

slabs: the most common type of finished steel; it is 10 inches thick, 30-85 inches wide, and averages 20 feet long

slab mill: part of the mill production where steel pieces of various sizes are produced; the pieces are sent to finishing mills to be made into pipe or plate

slag: impurities in iron ore, left over as waste after smelting

slag cars: rail cars that are lined with refractory brick to transport slag

slag heaps/slag dump: area where slag has been dumped

specialty steel: category of steel that includes electrical, alloy, stainless, and tool steels

specialty tube: wide variety of high-quality custom-made tubular products

stainless steel: steel with more than 10% chromium, with or without other alloy elements; resists corrosion, maintains strength at high temperatures, and is easily maintained

steel: alloy of iron and carbon that is one of the most important metals in industry; main ingredients are coke, limestone, and iron ore

strip mill: part of the mill where slabs are processed and rolled into coils

sulfur: yellow nonmetallic element

switches/sidings: passing places in the subterranean railways of a coal mine, attended by switch keepers

teeming: pouring molten steel into ingot molds

thill: the floor or sole of a coal mine

tin/chrome plating: plating process that plates tin or chrome to a steel plate

titanium: strong, white, malleable metal that is resistant to corrosion and is used in alloys

ton: unit of measure for steel scrap and iron ore

gross ton: 2,240 lbs.

long ton: 2,240 lbs.

short ton: 2,000 lbs.

metric ton: 1,000 kg = 2,204.6 lb. = 1.102 short tons



torpedo cars: rail cars that are lined with refractory brick to transport molten iron to the steel-making part of the mill (an open hearth)

tungsten: hard, gray-white metal used in steel alloys to make sharp-edged cutting tools

turbine: a rotary engine that is used to generate power

upcast shaft: the shaft of a coal mine through which the return air escapes after ventilating the mine; works like a chimney

vanadium: hard, white, poisonous metal used to increase the strength and hardness of steel alloys

vertical integration: an economic concept in which one corporation controls all of the aspects of production; Carnegie owned the coal fields, coke production, railroads for transport, iron ore resources and production, steel-making production, and all other parts necessary for the steel-making process

Wobblies: members of the Industrial Workers of the World

wrought iron: extremely pure form of iron that is tough, easily worked and welded, and resistant to corrosion

yield: ratio of the quantity of finished shipments to the total raw steel produced



Vocabulary

alloy	donkey
babbitt	doors
bank	downcast shaft
barge	drill
bars	ductility
beehive coke ovens	electrogalvanizing
Bessemer process	electroplating
billets	
blast furnace	feeder
bloom	ferrous
breakout	ferrous alloy
by-product coke oven	finishing mill
	flat-rolled steel
cage	
capacity	galvanized steel
carbon	gauge
carbon steel	gob piles
cast iron	
charcoal	hack
charge/charging	hardening
charging machine	heat
chromium	hematite
coal	hot metal
coal tar	
coils	ingots
coke	integrated mill
coke oven battery	iron
continuous caster	iron carbide
continuous casting	iron ore
converter/processor	
corrosion	ladle
curving	larry cars
	limestone



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raw materials
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rod

scabs
scrap (ferrous)
seamless tube
sheet steel
shift
shifter
silicon
slabs
slab mill
slag
slag cars
slag heaps/slag dumps
specialty steel
specialty tube
stainless steel
steel
strip mill
sulfur
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