

Terms and Abbreviations

B

Basic oxygen furnace

Basic oxygen furnace is a furnace used in a method of primary steelmaking in which carbon-rich molten pig iron is made into steel. Blowing oxygen through molten pig iron lowers the carbon content of the alloy and changes it into low-carbon steel. The process is known as basic because fluxes of burnt lime or dolomite, which are chemical bases, are added to promote the removal of impurities and protect the lining of the converter.

Beam

A structural element. Beams are characterised by their profile (the shape of their cross-section). One of the most common types of steel beam is the I-beam, also known as H-beam, or W-beam (wide-flange beam), or a 'universal beam/column'. Beams are widely used in the construction industry and are available in various standard sizes, eg 40-k beam, 60Sh beam, 70Sh beam as mentioned in this report.

Billet

A usually square, semi-finished steel product obtained by continuous casting or rolling of blooms. Sections, rails, wire rod and other rolled products are made from billets.

Blast furnace

The blast furnace is the classic production unit to reduce iron ore to molten iron, known as hot metal. It operates as a counter-current shaft system, where iron ore and coke is charged at the top. While this charge descends towards the bottom, ascending carbon containing gases and coke reduces the iron ore to liquid iron. To increase efficiency and productivity, hot air (often enriched with oxygen) is blown into the bottom of the blast furnace. In order to save coke, coal or other carbon containing materials are sometimes injected with this hot air.

By-product

A secondary product which results from a manufacturing process or chemical reaction.

C

Cash cost of coking coal concentrate

Cash cost of coking coal concentrate is defined as the production cost less depreciation, incl. SG&A and Maintenance CAPEX, the result is divided by production volumes. This measure is used to monitor segment competitiveness improvement.

CAPEX

Capital expenditure.

CFR

Cost and freight, the seller must pay the costs and freight to bring the goods to the port of destination. However, risk is transferred to the buyer once the goods are loaded on the vessel. Insurance for the goods is not included.

Channel

U-shaped section for construction.

Coal washing

The process of removing mineral matter from coal usually through density separation, for coarser coal and using surface chemistry for finer particles.

Coke

A product made by baking coal without oxygen at high temperatures. Unwanted gases are driven out of the coal. The unwanted gases can be used as fuels or processed further to recover valuable chemicals. The resulting material (coke) has a strong porous structure which makes it ideal for use in a blast furnace.

Coke battery

A group of coke ovens operating as a unit and connected by common walls.

Coking coal

Highly volatile coal used to manufacture coke.

Concentrate

A product resulting from iron ore / coal enrichment, with a high grade of extracted mineral.

Construction products

Include beams, channels, angles, rebars, wire rods, wire and other goods.

Converter

A type of furnace that uses pure oxygen in the process of producing steel from cast iron or dry mix.

Conversion costs

Conversion costs is defined as production costs without raw materials and depreciation, incl. SG&A and Maintenance CAPEX. This measure is used to monitor segment competitiveness improvement.

Continuous casting machine

Process whereby molten metal is solidified into a "semi-finished" billet, bloom, or slab for subsequent rolling in the finishing mills.

Crude steel

Steel in its solidified state directly after casting. This is then further processed by rolling or other treatments, which can change its properties.

D

Debottlenecking

Increasing capacity of a supply or production chain through the modification of existing equipment or infrastructure to improve efficiency.

Deposit

An area of coal resources or reserves identified by surface mapping, drilling or development.

E

Electric arc furnace

A furnace used in the steelmaking process which heats charged material via an electric arc.

F

Feasibility study

A comprehensive engineering estimate of all costs, revenues, equipment requirements and production levels likely to be achieved if a mine is developed. The study is used to define the technical and economic viability of a project and to support the search for project financing.

Finished products

Products that have completed the manufacturing process but have not yet been sold or distributed to the end user.

Flat products or Flat-rolled steel products

Include commodity plate, specialty plate and other products in flat shape such as sheet, strip and tin plate.

G

Greenfield

The development or exploration of a new project not previously examined.

Grinding balls

Balls used to grind material by impact and pressure.

H

Head-hardened rails

High strength rails with head hardened by heat treatment.

Heat-treatment

A group of industrial and metalworking processes used to alter the physical, and sometimes chemical, properties of a material.

HiPo

High potential employee.

I

Iron ore

Chemical compounds of iron with other elements, mainly oxygen, silicon, sulphur or carbon. Only extremely pure (rich) iron-oxygen compounds are used for steelmaking.

ISO 14001

The International Standardisation Organisation's standard for environmental management systems.

ISO 9001:2008

The International Standardisation Organisation's standard for a quality management system.

J

JORC Code

The Australasian Joint Ore Reserves Committee, which is widely accepted as a standard for professional reporting of Mineral Resources and Ore Reserves.

K

Kt

Thousand tonnes.

L

Labour productivity

Labour productivity is defined as labour costs exclusive of tax divided by production volumes of steel products. The measurement of performance enables the Company to monitor labour efficiency.

Ladle furnace

The secondary metallurgy vessel used between steelmaking and casting operations to allow the composition of molten steel to be brought to the required customer specification.

Lean

Lean is philosophy of managing the business that is based on a set of principles that define the way of work.

Long products

Include bars, rods and structural products that are 'long' rather than 'flat' and are produced from blooms or billets.

Longwall

An underground mining process in which the coal face is dug out by a shearer and transported above ground by conveyors.

LTIFR

Lost time injury frequency rate, which represents the number of lost time injuries (1 day or more of absence) divided by the total number of hours worked expressed in millions of hours.

Lumpy ore

Iron ore between 6mm and 30mm in size. Lump is preferred in the blast furnace as its particle size allows oxygen to circulate around the raw materials and melt them efficiently.

M

Model line

Model line is as a value stream within a single facility or operation, provides a focused and controlled playground for implementing lean. Serve as internal benchmark for the Company. The measurement of performance enables the Company to monitor lean implementation.

Mt

Million tonnes.

Mtpa

Million tonnes per annum.

O
Open pit mine

A mine working or excavation open to the surface where material is not replaced into the mined out areas.

OCTG pipe

Oilfield Casing and Tubing Goods or Oil Country Tubular Goods – pipes used in the oil industry.

P
Pellet

An enriched form of iron ore shaped into small balls or pellets. Pellets are used as raw material in the steel making process.

Pig iron

The solidified iron produced from a blast furnace used for steel production. In liquid form, pig iron is known as hot metal.

Pipe blank

A flat sheet of metal, a semi-finished product, sold to pipemakers to manufacture pipes.

Plate

A long thin square shaped construction element made from slabs.

Pulverised coal injection (PCI)

A cost-reducing technique in iron-making, where cheaper coal is prepared to replace normal coking coal in the blast furnace. The coal is pulverised into very small particles before injection into the furnace.

R
Railway products

Include rails, rail fasteners, wheels, tyres and other goods for the railway sector.

Rebar

Reinforcing bar, a commodity grade steel used to strengthen concrete in highway and building construction. Rebar A50OSP is a type of reinforcing bar that allows for a reduction in the metallic component of reinforced concrete, thereby significantly lowering construction costs.

Rolled steel products

Products finished in a rolling mill; these include bars, rods, plate, beams etc.

Rolling mill

A machine which converts semi-finished steel into finished steel products by passing them through sets of rotating cylinders which form the steel into finished products.

S
SG&A

Selling, General and Administrative Expenses.

Saleable products

Products produced by EVRAZ mines or steel mills which are suitable for sale to third parties.

Self-coverage

The raw material requirement of EVRAZ steelmaking facilities compared with coal product sales or production of iron ore products from own raw materials.

Scrap

Iron containing recyclable materials (mainly industrial or household waste) that is generally remelted and processed into new steel.

Semi-finished products

The initial product forms in the steel making process including slabs, blooms, billets and pipe blanks that are further processed into more finished products such as beams, bars, sheets, tubing etc.

Sinter

An iron rich clinker formed by heating iron ore fines and coke in a sinter line. The materials, in pellet form, combine efficiently in the blast furnace and allow for more consistent and controllable iron manufacture.

Slab

A common type of semi-finished steel product which can be further rolled into sheet and plate products.

Slag

Slag is a byproduct generated when non-ferrous substances in iron ore, limestone and coke are separated from the hot metal

in metallurgical production. Slag is used in cement and fertiliser production as well as for base course material in road construction.

Steam coal

All other types of hard coal not classified as coking coal. Coal of this type is also commonly referred to as thermal coal.

T
Tailings

Also called mine dumps, are the materials left over after the process of separating the valuable content from the uneconomic remainder (gangue) of an ore. These materials can be reprocessed using new methods to recover additional minerals.

Tubular products

Include large diameter line pipes, ERW pipes and casings, seamless pipes and other tubular products.

U
Unrealised profit (URP)

Inter-segment unrealised profit or loss (URP) is a change in the sales margin included in balances of inventories purchased from segments other than the reportable segment between the end and the beginning of the reporting period.

V
Vanadium

A grey metal that is normally used as an alloying agent for iron and steel. It is also used to strengthen titanium based alloys.

Vanadium pentoxide

The chemical compound with the formula V₂O₅: this orange solid is the most important compound of vanadium. Upon heating, it reversibly loses oxygen.

Vanadium slag

Vanadium slag produced from pig iron in the converter shop and used as a raw material by producers of ferroalloys and vanadium products.