Our Products At A Glance

HOT-ROLLED STEEL

MANUFACTURING

Slabs from continuous casting mill are heated in the reheating furnace at a temperature of 1,250˚C. After the slab is heated and before it can be rolled, the scale that has accumulated on the slab's surface is removed by the scale breaker. At the roughing mill and finishing mill, the slab is rolled to its target specifications before being cooled at the cooling table, where it is then made into hot-rolled coils.

APPLICATIONS

- Hot-rolled steel for general structures
- Atmospheric corrosion resistant steel
- Hot-rolled steel for automobile structural uses
- Hot-rolled carbon steel for pipes and tubes
- Hot-rolled steel for gas cylinders
- Steel for casting and tubing of oil well pipes
- Steel for line pipes
- Steel for special uses (tools and various machine parts)
- Steel for cold-rolled steel
- Hot-rolled steel for hull structures
- Hot-rolled steel for machine structures and special applications

PERFORMANCE

Sales of hot-rolled steel comprised 9.2 million tons, 32.1 % of our total steel sales of 28 million tons. Of those, 79.3% was sold domestically and 20.7% was exported. A higher proportion of home consumption compared to other products is partly because POSCO is the only integrated steelmaker in Korea.

STEEL PLATE

MANUFACTURING

PILAC (POSCO In-Line Accelerate Controlled) is an advanced process which effectively combines both the control rolling and accelerated cooling technologies that control grain refinement through low temperature rolling and the form of transformed texture through water cooling just after rolling.

The four step reversing mill has a maximum rolling force of 7,000 tons, making possible low speed rolling over the form ratio of 0.7mm. In addition, the Automatic Gauge Control (AGC) system applied to the finishing mill automatically controls the rolling force according to the rolling condition, thereby reducing any thickness deviations in both the length and width directions of the steel.

APPLICATIONS

- Steel for ships
- Steel for automobile structural uses
- Steel for general structures
- Atmospheric corrosion-resistant steel
- Steel for machine structural uses
- Medium to high and intermediate temperature steel
- Steel for low temperature pressure vessels
- Steel for transporting petroleum
- Steel for marine structural uses

PERFORMANCE

The sales of steel plate make up 11.9% of total sales, 3.4 million tons. POSCO sold 93% of its production to the domestic market. Last year's total demand for steel plate from Korean shipbuilders was 5.1 million tons. Our share reached 40% of the entire market.

WIRE ROD

MANUFACTURING

The Stelmor cooling facility controls cooling conditions (rapid cooling, slow cooling, and air cooling) after the rolling of the wire rods, thereby relieving customers of the heat treatment and pickling processes.

The bar gaugemeter is a continuous automatic hot dimension measuring facility used for ensuring precision rolling. It uses size tolerance controls throughout the full length of the high-temperature rolled wire rod coils. This helps to guarantee tolerance, shape, and product quality.

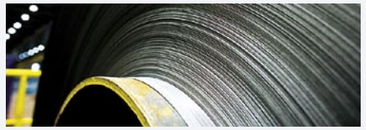
APPLICATIONS

- Wire rod for core wire of covered electrodes
- High-carbon steel wire rod
- Piano wire rod
- Carbon steel wire rod for cold heading quality and cold forging
- Wire rod for high-strength steel
- Alloy steel wire rod for machine structures
- Carbon steel wire rod for machine structures
- Spring steel
- Wire rod for bearing steel
- Free cutting carbon steel
- Wire rod for steel cord
- Low-carbon steel wire rod

PERFORMANCE

In 2005, POSCO sold 1.945 million tons of wire rod, 6.8% of the total sales. 86.5% went into the domestic market and 13.5% into overseas markets.

COLD-ROLLED STEEL



MANUFACTURING

Cold-rolled steel manufacturing processes include the cold rolling mill, annealing line, and plating process. All POSCO cold rolling mills have adopted the PCM (Pickling & Tandem Cold Rolling Mill) type which makes a continuous pickling and cold rolling process possible.

The continuous annealing line aims at ensuring material uniformity through a short-time annealing period. Plating processes are composed of continuous galvanizing and electro-galvanizing. POSCO's electro-galvanized steel sheet is produced in state-of-the-art facilities and includes pure-Zn galvanizing or Zn-Fe and Zn-Ni alloy galvanizing.

APPLICATIONS

- Commercial steel: used in general applications such as in refrigerator doors, drums, and furniture, as well as in automobile parts such as roofs, fenders, hoods, quarter panels, oil pans, and spring houses
- Cold-rolled steel for porcelain enameling
- Structural steel
- Galvanized steel for metal furniture, inner and outer panels of home appliances, substrates for painting, inner panels of automobiles, construction materials, pipe
- Galvannealed steel for inner and outer panels of automobiles and fuel tanks

PERFORMANCE

Sales of cold-rolled steel comprised 36.4% of total sales, with 62.9% going for home consumption and 37.1% for export. Cold-rolled steel is used in various fields. As our domestic industries become more sophisticated, cold-rolled steel is increasingly more important in today's society.

ELECTRICAL STEEL

MANUFACTURING

Cold rolling mill provides the internal energy needed for efficient grain growth by rolling steel plates up to the target gauge. This minimizes eddy current loss while in use after the manufacturing of iron core. Decarburization and annealing furnaces reduce the carbon content in the steel plate, accelerating the degradation of magnetic properties while using the iron core for an extended period of time. An insulation coating facility applies insulation coating solution on the upper and lower sides of the steel plate with a continuous coater. This improves workability and minimizes eddy current loss proportional to the thickness of the steel plate.

APPLICATIONS

Grain-oriented electrical steel
The easy magnetization direction of grains is parallel to the rolling direction. This type of steel has superior magnetic characteristics in the rolling direction, and is used in the manufacturing of large, medium and small sized transformers, distribution transformers, and reactors.
Non grain-oriented electrical steel
This steel with uniform magnetic characteristics in rolling and in other directions is widely used in the iron core materials rotary machines form large transformer to small electric precision motors. It also has good characteristics for use in small transformers.

PERFORMANCE

The 2005 sales ratio of electrical steel was 2.5% of the total sales of the company. However, its demand is expected to be strong for a while. This is because few steelmakers produce grain-oriented electrical steel globally and China and India's demand is increasing sharply. POSCO plans to expand its production capacity of electrical steel to 1.05 million tons by 2007.

STAINLESS STEEL

MANUFACTURING

The main raw materials, Ferro Alloy (Fe-Cr, Fe-Ni) and stainless scrap, are melted in the electrical furnace. The material is adjusted for the steel properties of the application through a gas vacuum or decarbonization, deoxidization, and desulfurization.

APPLICATIONS

- **Austenite System** Chemical engineering, paper manufacture, fuel, aircraft, food, textiles, water heaters, power generators, LPG plants, architecture, cars, appliances.
- **Ferrite system** Architectural finishes, car mufflers, kitchen counters and sinks, tableware, appliances.
- **Martensite system** Low-carbon steel: corrosion resistant mechanical structures. Mid-carbon steel: chisels and knives for rescue and medical use. High-carbon steel: wear-resistant and corrosion-resistant blades, bearings, measuring instruments.
- **Dual system** Water reservoirs and food storage tanks which require long life and environmental protection.

PERFORMANCE

In 2005, POSCO sold 1.9 million tons of stainless steel. Unlike the other products, stainless steel's export ratio was higher at 56.6%. Hence, stainless steel is greatly impacted by global market price changes and currency exchange rates. Last year, the profit for stainless steel decreased due to a price decline triggered by overproduction by Chinese steelmakers.