STEEL PLANTS

The steel industry plays an essential industrial role, forming the basis for many other industries. Given its economic importance, POSCO E&C has enhanced the competitiveness of the Korean steel industry through its excellent technological capabilities. POSCO E&C has shown outstanding results in business projects not only in Korea, but also all over the world, thanks to its advanced technologies, including the plant engineering expertise accumulated by the construction of POSCO’s Pohang and Gwangyang integrated steelworks, as well as the FINEX process, an innovative technology of the steel industry. As the only total solution provider in the world to have the competence to perform steel plant EPC (engineering, procurement & construction), POSCO E&C is enhancing its global status by performing mega projects overseas, such as Brazil CSP steelworks, the biggest overseas steel plant order ever won by a Korean construction company and, integrated steelworks in Indonesia.

ORDERS & SALES

Basic exchange rate: average exchange rate in 2012: 1 US$ = 1,071.10 won (Unit: US dollars in millions)

<table>
<thead>
<tr>
<th>Year</th>
<th>Orders</th>
<th>Sales</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>2,503.2</td>
<td>2,336.6</td>
</tr>
<tr>
<td>2011</td>
<td>2,626.8</td>
<td>1,358.3</td>
</tr>
<tr>
<td>2012</td>
<td>1,568.2</td>
<td>6,978.9</td>
</tr>
</tbody>
</table>

Pohang Works, Korea
**BUSINESS AREAS**

**FINEX**
Continuous Casting  | Iron Making  | Steel Making
Hot Rolling       | Cold Rolling |

**LIST OF PROJECTS**

**PROJECT NAME** | **PROJECT PERIOD** | **PRODUCTION CAPACITY**
--- | --- | ---
Brazil CSP Steel plant | Jan 2012–Feb 2016 | 3,000,000 tons/year
Indonesia Integrated Steel Mill Project | July 2011–Dec 2013 | 3,000,000 tons/year
No.3 FINEX, Pohang Works | June 2011–Nov 2013 | 2,000,000 tons/year
No.2 FINEX, Pohang Works | Jun 2014–Apr 2017 | 1,500,000 tons/year
Gwangyang coke plant No. 5 | Dec 2009–Dec 2011 | 2,000,000 tons/year
No.5 Sintering Plant Establishment, Gwangyang Works: | Nov 2008–Jan 2011 | 3,800,000 tons/year
2nd Revamping of No.1 Blast Furnace, Gwangyang Works: | May 2011–June 2013 | 3,500,000 tons/year
India IISCO Blast Furnace: | Oct 2007–Dec 2010 | 1,400,000 tons/year
New Steel-making Plant, Pohang Works, Korea: | July 2014–Sept 2015 | 6,650,000 tons/year
New steel making plant at Changwon works of POSCO Special steel: | Nov 2011–Mar 2012 | 450,000 tons/year
Asia Special Steel, Japan: | Dec 2007–May 2010 | 130,000 tons/year
New Steel-making Continuous Casting Plant: | Sept 2007–Feb 2010 | 3,700,000 tons/year
No.4 Hot Rolling Mill Establishment, Gwangyang Works: | Dec 2010–Jan 2014 | 3,600,000 tons/year
POSCO Mexico No.2 CGL: | July 2011–June 2013 | 550,000 tons/year
POSCO Maharaashtra CGL: | Jan 2015–May 2019 | 450,050 tons/year
POSCO Vietnam CGL: | Aug 2007–Sept 2016 | 700,000 tons/year
POSCO Mexico CGL: | Oct 2007–June 2009 | 400,000 tons/year
Prosperity PGL, Taiwan: | Jan 2007–June 2015 | 500,000 tons/year
ZPSS STS, China: | Dec 2004–July 2008 | 600,000 tons/year
Plate mill project of Gwangyang works: | Apr 2008–July 2010 | 2,000,000 tons/year

**TECHNOLOGY**

FINEX

The FINEX process is an environmentally friendly iron-making technology that ensures efficiency, cost reductions, and prevention of emissions of pollutants. POSCO E&C developed this landmark technological process with POSCO to supplement the problems of old processes, such as high costs and the emission of pollutants like sulfur oxides and nitrogen oxides. Through the development of innovative technologies, POSCO E&C has contributed to the future of the steel industry.

1. Fluidizing Bed Reactor
2. Fine Ore
3. Non-coking Coal
4. Melting Furnace
5. Molten Iron
6. Coal Briquette
7. HCl

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**PROCESS**

Steel-making plant master engineering technological process

- **Project planning**: Check validity of project and location
- **Facility planning**: Basic plan, detailed plan
- **Engineering**: Basic plan, detailed plan
- **Construction work**: Order placement & construction management, inspection of construction, examination of equipment and materials, trial operation
- **Operation**: Training and guidance of operation staff, maintenance technologies

**TECHNOLOGY**

Zinc Pot, a surface treatment technology

Zinc pot is a core method for melting zinc and maintaining the temperatures of melted zinc consistently to manufacture galvanized sheet iron at the continuous galvanizing line (CGL). Advanced engineering companies have often relied on foreign specialized companies for this technology. However, POSCO E&C developed the specialized Zinc Pot through performance tests by establishing independent design standards and overcoming problems of the old method.

- **POSCO Vietnam CGL**
- **POSCO Mexico CGL**
- **Prosperity PGL, Taiwan**
- **ZPSS STS, China**
- **Iran TAVAZON (top) / No.3 FINEX, Pohang Works (bottom)**

**Zinc Pot, a surface treatment technology**

- **Outside Zinc Pot**
- **Inside Zinc Pot**

Revamping of No. 3 machine for No. 3 Continuous Casting Plant, Gwangyang Works, Korea