As the latest steel production requires exquisite rolling and processing technologies, JFE Steel implements the state-of-the-art process technologies in its full-scale production facilities, improving its steel manufacturing process.

**Rolling & Processing Technology**

Technology of plasticity, like rolling and forging, is indispensable to manufacture steel products. The Rolling and Processing Research Department carries out fundamental research on working load/deformation characteristics by state-of-the-art CAE and experimental techniques. We develop innovative new processes, process technologies for high quality products and energy savings etc.

**Heating Technology**

Energy saving in heating process of steel industry is a key technology for global warming. HOP™ is an example of developed heating systems by JFE. HOP™ applies induction heating for heat treatment of steel plate combined with Super-OLAC™ after plate rolling. Our challenge for heating process technology is not limited in conventional furnace technology.

**Cooling Technology**

Thermal engineering using brand-new heating and cooling technique is crucial for manufacturing high-quality products. Based on the results of numerical analysis and laboratory test, JFE Steel has developed innovative equipment, such as the Super-OLAC™ series of online accelerated cooling devices, which has the world’s highest cooling performance (700K/s cooling rate for plate thickness of 3mm).

**Surface Treatment Technology**

Surface treatment technology is important to make steel sheets with excellent corrosion resistance and formability. We are developing epoch-making surface treatment technologies by using computational fluid dynamics and various process simulators.