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JFE Steel Corporation

### Startup of Super-RQ Quenching Equipment at Keihin District

JFE Steel recently modernized the quenching equipment at the plate mill at its East Japan Works (Keihin District) and newly started operation of “Super-RQ” quenching equipment, which features advanced cooling control functions. In the future, the new functions of the “Super-RQ” are expected to play a key role in new product development.

Quenching equipment is equipment that rapidly cools (“quenches”) steel plates by applying a large volume of water after finishing the rolling processes are reheated in the heating furnace. Quenching is utilized to manufacture high-performance steel plates with a combination of high strength and toughness. The quenching equipment used at the Keihin plate mill before the recent modernization was started up in 1982, and boasted the world’s largest class plate treatment size (max. thickness: 220 mm, max. width: 5 400 mm).

In the recent equipment modernization, JFE succeeded in reducing the occurrence rate of steel plate shape defects, while maintaining the treatment capacity and plate treatment size of the former equipment, by broadly reducing temperature variations during plate cooling utilizing the cooling technology developed in the company’s proprietary On-Line Accelerated Cooling device “*Super-OLAC™*.”

In addition, the “Super-RQ” was given new functions that enable advanced cooling control, including (1) stopping during cooling and (2) changing the cooling rate during quenching cooling, which were not possible with the conventional quenching equipment (see figure). This has made it possible to manufacture heat-treated steel plates with properties that were difficult to build into the material by conventional quenching treatment. At present, JFE is developing new products such as high strength steels for bridges and construction use, and has received Japanese Industrial Standard (JIS) certification for production of steel plates by heat treatment using these new cooling control functions.

In the future, JFE Steel will continue to contribute to realizing a sustainable society by stably supplying high performance steel products through improvement of the manufacturing process of high-grade steels and product development that responds to customers' needs.

(\*1) Super-RQ

Abbreviation of Super-Reheated Quenching and Super-Roller Quench. Quenching after reheating rolled steel plates in the heat treatment furnace is called "reheated quenching," and "roller quench" refers to the type of quenching equipment.

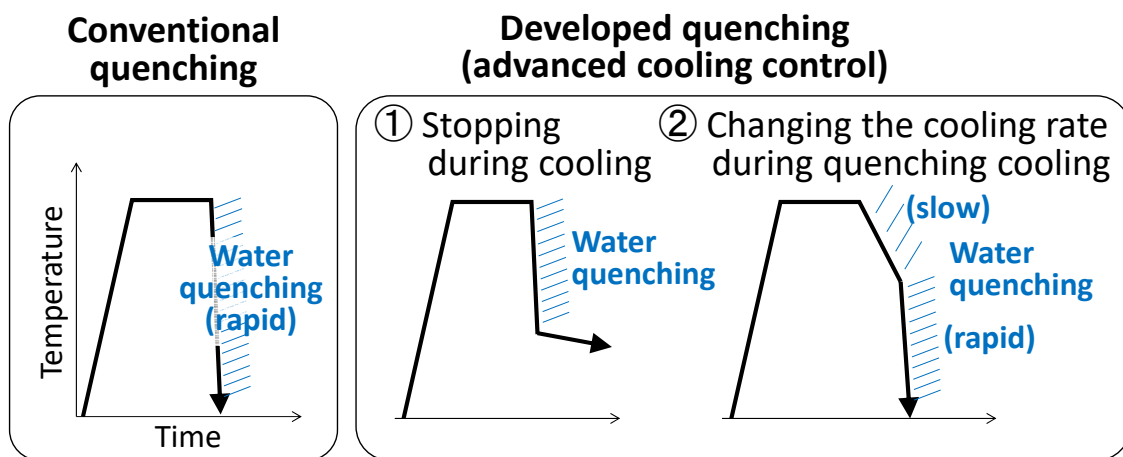


Figure Cooling control functions of new quenching equipment

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