



# Plate & Shapes

Steel products must be strong and tough, have good weldability, and be capable of enduring severe service conditions from cryogenic to extremely high temperatures. Steel Products Research Department is developing the steel products, which will support tomorrow's social infrastructure through microstructure control using alloy design and advanced processes.

## Microstructure Control Technology for HAZ in Large Heat Input Welding

An extensive heat affected zone (HAZ) is formed during high-efficiency welding with large heat input, such as for thick plates in shipbuilding and building construction. Steel Products Research Department is developing steel plates with high strength/toughness and weldability using advanced microstructure refining technology of HAZ, which includes inclusion control.

## Improvement of Deformability & Fracture-Resistant Properties

Steel products with deformation and fracture resistant properties are required for linepipe steels. JFE Steel meets these requirements by controlling microscopic deformation and fracture behavior and optimizing the multi-phase microstructure.

## Strengthening & Toughening Technology for High Performance Steel

Strengthening and toughening are required for high performance steel products. They have been developed through microstructure refinement with advanced microalloying and leading process technologies. TOKYO SKYTREE™ is one of major applications of JFE steel's high performance steel plates.

## Durable Steel in Severe Service Conditions

Steel Products Research Department is developing durable steels even in severe service conditions. A typical example is the premium pearlite rail (SP3) for heavy-haul railways, with excellent resistance to wear and surface damage by fatigue, which is achieved by ultimate refinement of pearlite lamellae.