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integrated manufacture process from rolling to dedicated automated finishing line for round bars. As the name suggest, the Kurashiki Wire Rod & Bar Mill is a “one-strand combined mill” that can roll both wire rods and steel bars with high quality. It is also possible to produce products with excellent product quality, free of scratches and decarburization, by removing the billet surface layer with the billet peeling machine. As a feature of the Wire Rod & Bar Mill, rolling is performed by a flat roll rolling technology which is capable of using both square billets and round billets as material, high dimensional accuracy size-free rolling technology by the 4-roll mill, etc. Using the 4-roll mill, this plant also manufactures square wire rod materials with excellent squareness and opposite-side dimensional accuracy, 4-rib steel reinforcing bars with outstanding bending workability and ultra-fine wire rod material with a minimum diameter of 4.2 mm, among other products.

2.2 Sendai Works

In a modernization project in 2008, Sendai Works introduced equipment that gives full consideration to CO₂ reduction, including a 130 t eco-friendly high efficiency electric arc furnace (ECOARC™ Furnace), and adopted LNG for all fuel in the works, such as fuel for reheating electric products.

enables Pb addition and had manufactured Pb-added free-cutting steel. However, in response to the global environmental problems of recent years, Sendai developed several substitute steels in order to realize Pb-free free cutting steels. As low carbon materials, Sendai produces AISI12L14 substitute CCC (Clean Cut Chrome) steel⁶⁻⁸⁾ with improved machinability and an AISI1215 based Pb-free free cutting steel with excellent cost performance; these steels are widely used in printer shafts and other OA equipment parts. Fig. 2 shows examples of observation of the sulfide inclusions in Pb-free CCC steel and Pb-added free cutting steel. In