

FOREWORD

NIMURA Yoichi

Vice President,
Director, Stainless Steel,
JFE Steel



Due to its excellent corrosion resistance and heat resistance, stainless steel is enjoying increasing demand in a wide range of fields, from kitchen equipment, home electrical appliances, automotive exhaust system parts, industrial machinery, construction, civil structures, nuclear power, and so on. In 2001, world stainless steel production was less than 20 million tons per year, but this had risen to exceed 28 million tons in 2007. Stainless steel has grown to a level where it truly plays a key role in supporting the foundations of society. In recent years, many examples of applications aiming at maintenance-free structures and life cycle cost reduction have seen in the construction field. Thus, stainless steel is also positioned as a global green material.

On the other hand, due to expansion of production facilities, particularly in China, world stainless steel capacity is now 35 million tons, exceeding the demand mentioned above by a considerable margin. This led to the oversupply situation called the “year 2006 problem.” Because these conditions can be expected to continue in the future, increasingly fierce competition in the stainless steel market is a concern.

Against this background, JFE Steel has started up a variety of new steelmaking equipment which offers distinctive advantages, such as the smelting reduction process for chrome ore, the large capacity strongly-stirred vacuum oxygen decarburization (SS-VOD) decarburizing furnace, smelting furnace for dust and slag, and the hot metal holding furnace, among others. The company also strengthened its competitiveness in the Cr-based stainless steels (ferritic and martensitic stainless steels) by establishing a production system for high productivity cold-rolled products called “functional products,” employing the tandem cold mill (TCM) and continuous annealing line (CAL), which are conventional facilities for ordinary carbon steel. As a result, in April 2005, JFE Steel began specializing in the production of Cr-based stainless steels. As the world’s only exclusive Cr-based stainless steel maker, JFE Steel is developing, producing, and marketing a large number of distinctive Cr-based stainless steels, including high heat resistance stainless steel for automotive

applications, resource saving-type stainless steels, and high formability stainless steels.

As one new product since the JFE Steel specialized in the Cr-based stainless steels, the high corrosion resistance ferritic stainless steel “JFE443CT,” which is a substitute for SUS304 without nickel and molybdenum, has enjoyed rapidly growing demand against the background of sharp rises in raw material prices. In particular, this product is making an important contribution to the world stainless steel market, as seen in the birth of similar types of stainless steel in Korea and China and the expansion of demand for the existing Cr-based stainless steels. JFE443CT has received a high evaluation from this viewpoint and won newspaper prizes for two consecutive years. In 2007, this outstanding product was also awarded the Ichimura Industrial Prize – Contribution Prize. In the future, we will continue our efforts to “contribute to society with most innovative technology in the world.”

As the first Special Issue on Stainless Steel since the establishment of JFE Steel in 2003, this issue introduces the history of stainless steel production at this company, recent technologies, and distinctive products. We hope that all our readers will find this information useful.