

# NSSC: Growth and excellence drive ahead globalization plans



**Nippon Steel & Sumikin Stainless Steel Corporation (NSSC) is the factual Stainless Steel Division of Nippon Steel & Sumitomo Metal Corporation (NSSMC), and the largest stainless steel producer in Japan. From its production plants across the country, it produces high quality products which satisfy its customers, such as stainless plates, sheets, strips, wire rods and bars in a range of grades. Furthermore, it will take another challenging step forward through the impending integration of Nissin Steel, mean NSSC is about to grow by leaps and bounds. With its local market reaching a maturity in terms of consumption, NSSC is now turning its eyes to the global arena to boost future growth and profits. The company has a well-established policy of focusing on enhancing high end and value-added products. Stainless Steel World flew to Tokyo to speak with Mr. Hitoshi Ito, Representative Director and President of NSSC who explained that this strategy will be continuously scaled in the future.**

*By Kiyo Ichikawa & Joanne McIntyre*

NSSC was formed in 2003 through the merger of stainless steel divisions of both Nippon Steel Corporation and Sumitomo Metal Industries, Ltd. Since its formation, the company has embraced a motto of “contributing to society through the stainless steel business.” As a good private company, NSSC intends to realize its growth in harmony with society. The company believes that the stainless steel industry has to undertake an obligation to balance technological developments and environmental affinity, as a part of the fundamental materials industry. Based on

this philosophy, NSSC has continuously developed its unique and cutting edge products. Furthermore, NSSC also focus on environmental measures in its production sites to ensure environmental conservation.

#### **Focusing on value-added products**

NSSC has a clear and strong vision of expansion and success for the future based on high end products. Mr. Ito: “Our strategy is to improve profitability by increasing the number of unique and high value-added products, such as NSSC® FW

(Forward) series and our original duplex stainless steel, through our dominant capability of product development.” “We are always trying to be a winner by providing our customers with excellent quality that our customers expect, punctual delivery, and high value-added items which is the most important. We offer a wide-ranged product menu that can bring solutions on customers’ needs. Ensuring high value-added products in our menu equals higher profitability and value of the firm. As a result of enhancing our capabilities of technology, quality



*The Hikari works is surrounded by greenery, a good example of the importance the company places on being environmental friendly.*

***“We offer a wide-ranged product menu that can bring solutions on customers’ needs.”***

and development, we have become an excellent company in terms of profitability as well.

### **Special & unique products**

NSSC has a range of truly unique products that have been embraced by the local market and are set to drive ahead its growing presence in the global market. NSSC® FW (Forward) series and duplex NSSC 2120® are its two symbolic products. In 2010, NSSC gave a big surprise to this industry with the launch of NSSC®FW series, the world’s first tin-added stainless steel grade. NSSC®FW series has corrosion resistance equal or superior to that of generic and conventional grades while achieving significant saving of rare metals. NSSC®FW1, which contains just 14% of chromium and a very small amount of tin, attains almost equivalent performance to type 430LX which contains 18% of chromium. Another tin-added grade, NSSC®FW2, which contains only 16% of chromium and no nickel, is substitutable with type 304 (18% Cr-8% Ni).

“As NSSC®FW series are nickel-free and contain less chromium, they are not only cost-saving products but also have considerable price stability. They allow us to keep our competitiveness in the generic product market where it is quite challenging to make a profit. Today we have expanded sales of these strategic products, by meeting a wide variety of customers’ needs and requests,” continues Mr. Ito. Recently they have launched ‘NSSC®FW0’, which is lower-price version of this series, mainly developed as a material for building construction which the company is newly interested in. In addition to this expansion in NSSC®FW series, they continue to develop duplex series including super duplex and other specialty materials.

“In the past, duplex stainless steel was mainly for thick plates to be applied in chemical tankers. Today NSSC 2120® duplex sheets and strips make market expansion effective in other application areas. NSSC 2120® sheets and strips have higher strength which allows to reduce the thickness of the sheet or strip drastically in comparison to generic stainless steel. This is an ideal material for solar panel frames, and snow guards to prevent snow falling from the roof in winter. Type 304 was traditionally used but by replacing with this duplex steel, the customers can reduce the weight of their product dramatically.” Similar trends can be seen in the stainless steel bar market: duplex stainless steel bars enabled a reduction in weight due to its high strength, compared to generic or Molybdenum added types of stainless steel. Mr. Ito: “Previously, the disadvantage of duplex was poor weldability, so we have developed NSSC 2120® which has almost equal weldability with type 304. Because of the epochal development, we received the Minister of Economy Trade and Industry prize of the



*High-value added stainless steel NSSC® 220M was applied for the trademark eaves of Ginza Six, a new shopping complex in Ginza.*

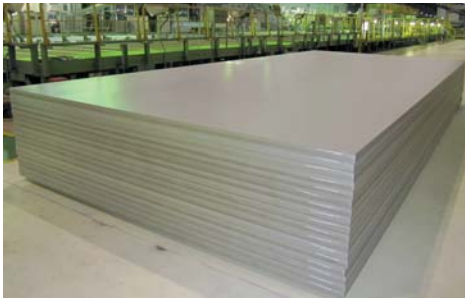
“Japan Manufacturing Grand Award”, in the aftermath of NSSC®FW series’ award of the Prime Minister’s Prize; receiving both of these prizes in just a few years is very rare.”

### **Color coated stainless steel**

The application of color coated stainless steel is another area where Mr. Ito sees great potential. Since NSSC®FW series is an economical grade, it is an efficient alternative for base steel of color coating. “We have increased our focus on this niche segment. Color coated stainless steel is a high value-added product which fits perfectly with our strategy.” The demand for color coated stainless steel is growing for applications such as architecture and roofing, Mr. Ito explains. “The longer lifespan of stainless steel means it is an economical alternative to other materials; plus, the initial cost of our NSSC®FW series



*The bars and wire-rods mill at the Hikari works.*



NSSC produce wide variety of products such as stainless plates, sheets, strips, bars and wire-rods.

is actually low compared to type 304.” NSSC is now promoting the color coated stainless steel for the public buildings for the 2020 Tokyo Olympic Games.

**Investments in environmental protection**

“This is my sixth year as the President, and thanks to the efforts of our whole team we have operated with stable profits. At the same time, we have injected substantial money for disaster-prevention measures. For example, in the years 2015 - 2017 we reserved 6 billion yen for safety, environmental preservation and disaster prevention. There are various types of disaster prevention; earthquakes are an obvious risk in Japan, but recently we also have had to deal with torrential

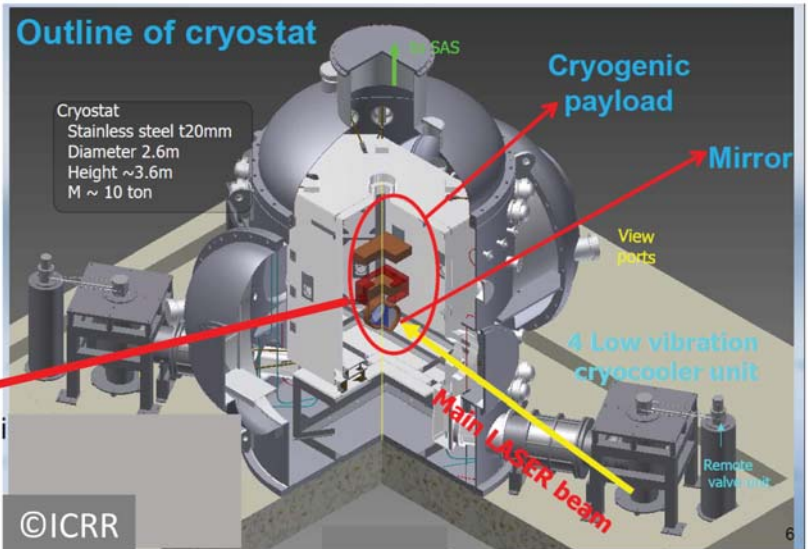
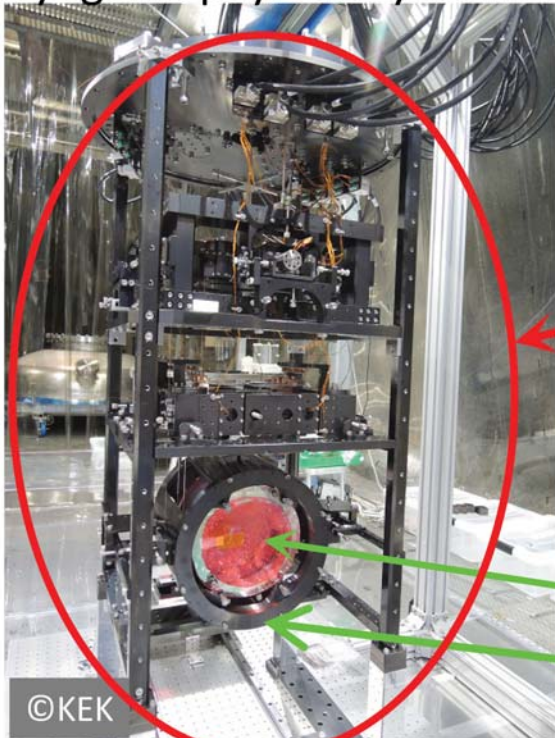
downpours caused by climate change. On that account, we have further strengthened several environmental measures to prevent overflowing drains; it is strictly prohibited to leak wastewater into the sea which contains any acid or oil. In response, we made two immense storage tanks for emergency use by using materials made by us. For our customers, this is also a good example of the usage of our products. Stainless steel doesn't crack like concrete and is seismically very durable for earthquake so it's a good alternative to conventional materials for tank. By mid-2020, we will have invested almost the same amount in environmental preservation and disaster prevention and sustainability, in respect to our responsibility of good private company in society.”

**Acquisition of Nisshin Steel: paradigm shift in business frame**

In March 2017 NSSMC became a 51% shareholder of Nisshin Steel for the purpose of providing better products, technologies and services to customers, and improving cost competitiveness to survive severe global competition. However, the two companies soon recognized that while global demand is expected to expand in the long run, the environment surrounding the steel industry is at a turning point for long-term and structural changes in the supply-demand system, due to evolvement of information technology, weight-reduction requirement on automobile and shifting to clean energy vehicle. Considering these factors, it was recently decided that Nisshin steel will become a wholly owned subsidiary of NSSMC. In line with above decision, NSSC will take over the business of both the special stainless steel business (precision stainless steel sheets) of NSSMC, and the stainless steel sheet and coil business of Nisshin Steel on April 1<sup>st</sup>, 2019. Mr. Ito commented: “The Japanese stainless steel industry has changed dramatically over the past 15 years. It has been a game of survival to the end.

**Cryostat in “KAGRA”**

**Cryogenic payload system**



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ICRR ; Institute for Cosmic Ray Research, The University of Tokyo

- Sapphire Mirror (Single crystal)
- Recoil mass of mirror (made of NSSC® 130S)

KEK ; Inter-University Research Institute Corporation High Energy Accelerator Research Organization

NSSC® 130S(18Cr-6Ni-11Mn-0.3N), an unique austenitic stainless steel product having high strength and non-magnetism in cryogenic temperature, is adopted to the recoil mass attached to single crystal sapphire mirror in “KAGRA”, that is the Large-scale Cryogenic Gravitational wave Telescope of Japan.

Now that the process of integration with Nisshin steel has started, I believe that this will be the last major change in Japanese stainless steel industry. We will be Japan's leading stainless steel manufacturer and we will keep working to be the best manufacturer in the world. From April 1<sup>st</sup> of next year, we will effectively be a new company, and may be ranked within a top 10 place based on crude steel production capacity globally. However, this is not important because there are many companies of a similar or bigger size competing with us. Even though we will increase in size following the integration of Nisshin Steel, this is not enough size to compete with others by production capacity. We will further concentrate on improving sales efficiency and offering new products to meet our customers' needs by striking a balance between product quality, volume and profitability, and continuous cost cutting to strengthen competitiveness." This dedication to providing high-end products is driving ahead NSSC strategy for the years ahead. "Both Nisshin Steel and NSSC are specialists in producing cold rolled sheet. In order to improve our productivity dramatically, we are now considering the best and new formation of production combining our existing facilities. While we are focusing on high-end products, we still have to be competitive for Japanese domestic customers who need generic products. They may expect to pay the global market price for generic items, which is tough for us in our current production scheme. However, if we can achieve this and still earn profit, we will be able to further stabilize our domestic business, and also be able to spread them worldwide alongside."



NSSC 2120® stainless steel Flap-Gate type Seawall against flood disaster won the Bronze Award in the category of New Technology and New Development during the 22nd Annual Conference of International Stainless Steel Forum (ISSF).

**Future strategy: overseas expansion**

"With decreasing domestic birth-rates and an ageing population in Japan, I believe that the demand of stainless steel in Japan will decrease following the population decline. However, it is not possible for us to simply shrink our production capacity following this trend. As overseas demand increases, we need to find ways to break through so-called tariff barriers and trade-isolated regions" emphasizes Mr. Ito. "There are several ways to achieve this. One of the tactics is to create unique products which cannot be provided by the producers in such regions. Although President Trump has approved some exemption requests for such items, these trade restrictions make import volumes incredibly low. Therefore, to expand into these market, we must become an inside player. For this reason, we are considering setting up production bases in those regions. For customers, fabricators and other industry peers, we need to aggressively pursue global demand and be evaluated as a good partner. This may be achieved by constructing our own production facilities or by entering into agreements with partners who

have existing production facilities in those regions. Taking the current over-capacity situation into consideration, we believe it is rational for us to work closely with partners in an alliance. We will evaluate and work together with parties who can share our values and goals. In short, because we had focused on the restructuring of the domestic market in the past, henceforth we are now ready to truly go to overseas markets. While we are creating a highly competitive structure in the domestic market with stable profit, we will expeditiously start pursuing business chances in overseas market. Our goal is to have an overwhelming presence in the domestic market, and a thriving overseas market at the same time. We believe that excellent technology & quality, and an extensive value-added product menu will be the keys for our success."



The duplex plates made by NSSC were applied for the ventilation tower at the Yaesu Central Entrance of Tokyo Station.

**Facts & Figures**

<b>Name:</b>	Nippon Steel & Sumikin Stainless Steel Corporation
<b>Headquarters:</b>	Tokyo
<b>Overseas Offices:</b>	Bangkok, Shanghai, Guangzhou, Chicago, Jakarta, Singapore
<b>Number of employees:</b>	1500
<b>Production sites:</b>	Hikari, Kashima and Yawata (all in Japan)
<b>Turnover:</b>	2.3 billion USD (2017 fy)
<b>Products:</b>	Sheets and strips, plates, and bars and wire rods.
<b>Key markets:</b>	Power generation, infrastructure, desalination, shipbuilding, chemical industry, oil & gas, pulp & paper, automotive, construction, electric appliances and home appliances, cookware
<b>Website:</b>	<a href="http://nssc.nssmc.com/en/">http://nssc.nssmc.com/en/</a>