



Checking the AOD furnace.

As the largest producer of stainless steel in Japan, Nippon Steel & Sumikin Stainless Steel Corp. (NSSC) has built a solid reputation for the high quality of its materials and its technological know-how. The company is now turning its focus to expanding its presence in the global market and is investing heavily in production capacity of duplex stainless steel. Ongoing investment in the company's plate factory in Yawata will triple production volume of duplex plate. Company President Mr Hiroshi Kinoshita spoke to *Stainless Steel World* about these exciting developments.

By Kiyo Ichikawa & Joanne McIntyre

NSSC invests in duplex production

Nippon Steel & Sumikin Stainless Steel Corp. (NSSC) was created in October 2003 after Nippon Steel and Sumitomo Metal Industries separated and integrated their respective stainless businesses. Nippon Steel owns 80% of the company while Sumitomo Metals has a 20% stake in NSSC shares, explained company President Mr Hiroshi Kinoshita. "Nippon Steel has a very strong position in so-called flat products including coating steel, while Sumitomo Metals is strong, especially in seamless tubing. Both parent companies have very good technology

and metallurgical skills which have a tremendously positive influence on NSSC. This has ensured that our customers have a very high level of confidence in their dealings with us."

The company has melting capacities of 1.1 million tons of stainless steel and produces coils, sheets, plates, bars and wire rods per annum. With a staff of around 1,500 people NSSC has three production sites in Japan, located at Kashima, Hikari and Yawata. Mr Kinoshita outlined the company's activities. "While in terms of production capacity the activities of NSSC may not seem large on a

global scale, we are the largest stainless steel producer in Japan and account for one-third of the domestic market. We are very proud of our advanced technological capabilities which have been driven by our communication with Japanese companies, plant suppliers and machine manufacturers as they demand very high quality products." "The main challenge for us is how exactly to resolve the various problems of our customers by being constantly alert to changing market needs," explains Mr Kinoshita. "Our vision is to expand our business throughout the global market by



utilizing our advanced technology and R&D capabilities. Our first target this year has been to expand duplex production at our Yawata plate factory, and this will be completed by the end of this summer. Then we intend to expand our duplex families from plate to other products including coil products, bars and wire rods.”

Advanced production capability

Founded in 1957, today the company's plate factory in Yawata produces around 130,000 tonnes of stainless steel plates per year. The plate mill at Yawata Works is the only plate mill specialized for stainless steel in Asia equipped with a wide 4-high rolling mill. The large Quarto rolling mill is able to produce plates up to 200 mm thick, 4 metres wide, and 14 metres long. Yawata Works now ranks among the top mills in the world in production scale, turning out a wide variety of products from general-grade stainless steels to duplex,

high-alloyed stainless and clad steels. While the plant originally produced both carbon and stainless steel, Nippon Steel's restructuring programme based on decreasing demand for carbon steel led to it being transformed into a specialized stainless steel production facility in 1988. “Our Yawata Works are completely dedicated to the production of stainless steel,” explains Mr Kinoshita. “Our overseas export of heavy plate has risen from 30% to 40% and is steadily increasing. While this is partly because domestic demand has not yet fully recovered from the recession, it is also part of our overall strategy. The main applications for stainless steel plate, and especially duplex stainless steel plate, are chemical plants and desalination facilities where the materials' anti-corrosive nature is a key factor. Following the current trend in energy and environmentally friendlier production, we expect that duplex stainless steel will continue to increase in desirability from the customer's point of view.”

The Hikari Works is the company's production base for steel-making of austenitic and duplex grades and cold-rolling of coil products as well as hot-rolling of bars and wire rods. The cold-rolling mill is mainly dedicated to the concentrated production of austenitic stainless steel cold-rolled coils. The bar and wire-rod mill, specialised in stainless steel, ranks alongside the world's other largest scale producers.

The Kashima Works undertakes the concentration production of ferritic

stainless steel cold-rolled coils, as well as stainless hot-rolled coils.

Ongoing investments

Two years ago NSSC invested YEN 6 billion (EUR 52.41 million) in its Yawata plate factory. Today it is becoming one of the largest duplex suppliers in the world, producing 3,000 tons per month. “Such a large scale investment was justified because we were able to achieve significant savings in highly priced metals such as nickel, and because duplex steel has excellent mechanical properties in certain circumstances. However while duplex is an excellent product, from the producers' point of view it is not easy to produce because it is hard to pickle and difficult to rework and cut. Therefore we have concentrated our investments on the pickling and forming processes,” continues Mr Kinoshita.

“We strongly believe that duplex stainless steel will become increasingly important for us in the future. Firstly because only a relatively limited number of manufacturers can produce duplex stainless steel; and secondly because we have a significant advantage in the exceptionally wide mill at Yawata. Our wide plate mill is capable of producing products with a width of up to 4 metres, which is the widest product size in the world. This offers our customers significant cost reductions by reducing the number of welds required.”

By the end of August the company will have completed commissioning of the new pickling facilities and forming



The entrance lobby of the Head Office in Tokyo.

equipment. "With the new equipment due to be up and running shortly, the company is stepping up its marketing activities around the world to attract global customers. We have had a very positive response to the fact that we are able to produce duplex plates up to 4 metres wide. The marketing campaign has successfully provided customers with a good impression of NSSC's capabilities. It's important for our customers to be able to execute good welds and in that sense NSSC can provide a range of solutions and advice by drawing on our extensive experience and knowledge."

"While we have many projects in various countries the main fabricating areas of China and Korea are very close to our Yawata Works, so geographically we are well positioned. Furthermore, to increase our coverage of the Chinese market we are planning to establish an office in Shanghai to promote our products, including duplex plate. The new facilities will allow us to begin production of a wide range of duplex grades from lean to super with better flatness in our Quatro plates. Furthermore we are now in preparation to expand our duplex families including coil products, and also planning to extend our duplex offerings to include long products." NSSC provides a wide range of services to its customers, wherever they may be located.

"As a technology oriented company we carry out high-level R&D activities chiefly at the Research Development Centre, which is under my direct supervision, in close cooperation with Nippon Steel Corp.



AOD furnace at Hikari steel-making plant.



Finishing rolling mill at Yawata Works

Our R&D offers comprehensive and customized solutions at great speed, not only developing new materials but also devising application and fabrication technologies to suit our customer's specific needs. Based on integrated process metallurgy from steel making to the finished product and the technologies of corrosion protection, metal working and welding, we emphasize a commitment to address and propose best and precise solutions to our customers."

"One of the services we offer is to send a team of technicians to our customer's locations to provide advice and support their activities. Nippon Steel also has a welding centre which we are able to utilize to provide solutions to our customers by



New cold-plate leveller almost ready for operation

running a training programme to properly train their welders.”

Looking to the future

One of the company's missions for the coming years is to help achieve a more balanced distribution of the use of duplex stainless steels across the globe, explains Mr Kinoshita. “We were interested to read in an earlier issue of *Stainless Steel World* that one of the reasons that duplex is not as well promoted in the USA as it is in Europe is due to the relatively low availability of service relating to duplex welding and consultancy in the country. Duplex is of course widely used across the European continent and we feel that it is our responsibility to help achieve a more balanced demand in the global market.” While the Japanese economy has not fully emerged from the economic difficulties of the past two years, the Eastern Asia area has already overcome its difficulties and is now performing at pre-crisis levels. NSSC anticipates strong growth in the markets for both stainless steel and duplex in the coming years. “The energy sector is an area in which we expect to see significant growth, with many energy related projects being planned across the region. We have the advantage of being able to tap into the significant sales marketing resources of Nippon Steel to reach new customers and maintain close communication with all of our clients.”

NSSC has supplied stainless steel to the nuclear power generation industry for

many years and as the nuclear renaissance starts to take off, Mr Kinoshita expects this segment of the energy market to become increasingly important for future sales. “Our long-standing activities

in the nuclear industry are testimony to our outstanding technology and quality assurance, as evidenced by our relationships especially with Japanese heavy industry or machinery customers. We also physically have the widest product range available on the market, and will complete our investments in expanding our duplex production capabilities this year. These combined factors give us great confidence of our success in the duplex market.”

“On closing this interview, I would like to emphasize that NSSC is a company which has long-term experience and strong capabilities in a wide range of stainless steel, and is especially one of the world leading companies in ferritic stainless steel. Our next target is to launch our brand-new alloy design of ferritic grade in coil products. While I'm unable to reveal too much at this stage, I hope we will have released the details to the media by the time this magazine is published.”



Wide plates with a maximum width of 4 metres are available.

Facts & Figures

Company name:	Nippon Steel & Sumikin Stainless Steel Corporation
Established:	1 October, 2003
Head office:	Tokyo, Japan
Turnover:	2.2 billion USD (2009fy)
Products:	Austenitic, ferritic, martensitic and duplex stainless steel coils, sheets, plates, bars and wire rods
Production facilities:	Kashima, Hikari and Yawata (all in Japan)
Key markets:	Power Generation, Desalination, Shipbuilding, Chemical Industry, Oil & Gas, Pulp & Paper, Automotive, Construction, Electric appliance, Home appliance, Food machinery
Shareholders:	Nippon Steel Corporation 80%, Sumitomo Metal Industries, Ltd. 20%
No. of employees:	1,500