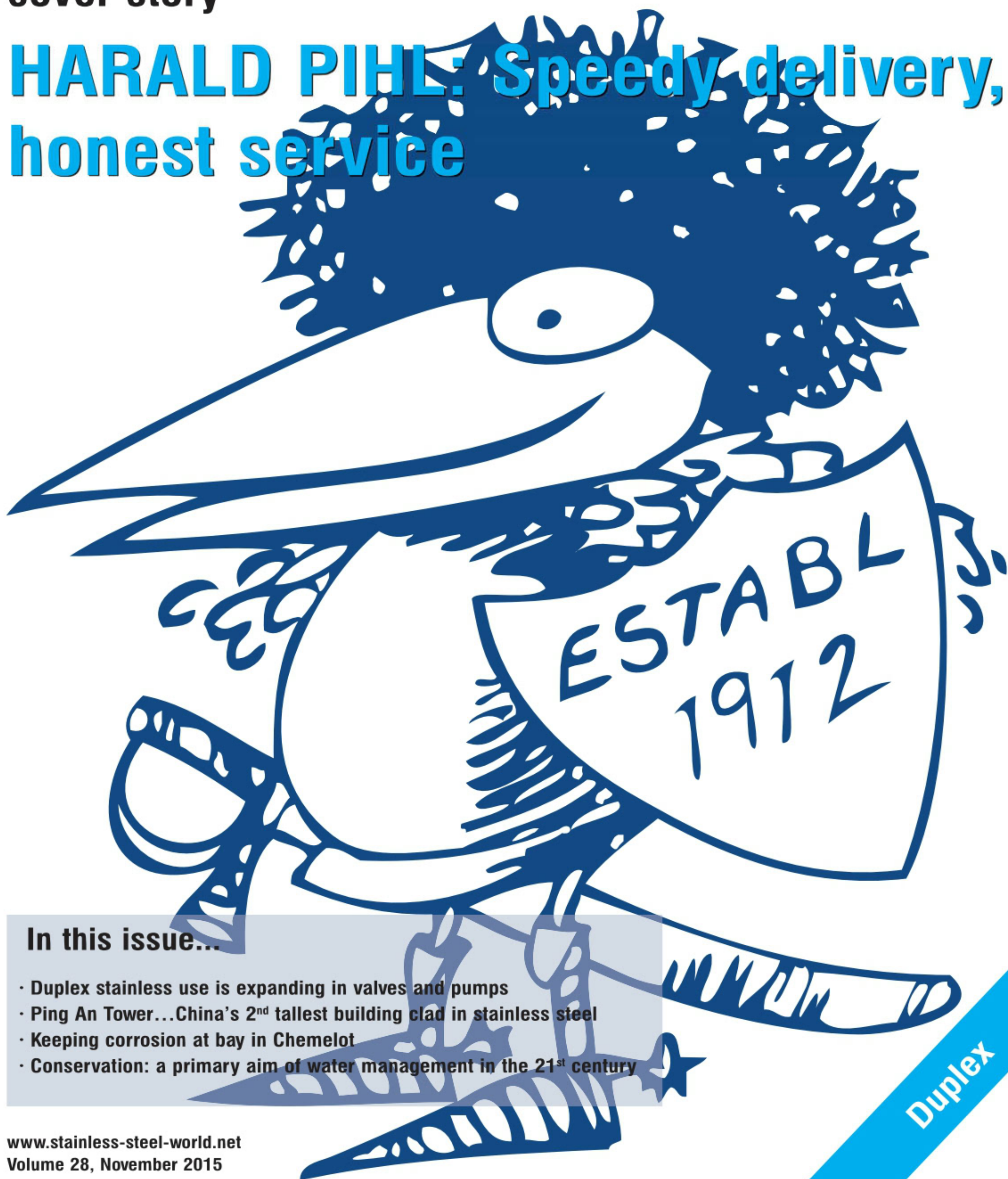


WORLD STAINLESS STEEL

cover story

HARALD PIHL: Speedy delivery, honest service



In this issue...

- Duplex stainless use is expanding in valves and pumps
- Ping An Tower...China's 2nd tallest building clad in stainless steel
- Keeping corrosion at bay in Chemelot
- Conservation: a primary aim of water management in the 21st century

Transforming the way... Stainless Steel is used

Viraj is one of the leading manufacturers of Stainless Steel Long Products. With a wide range of more than 50,000 SKUs, we provide quality products to our customers across 6 continents and 90 countries. With integrated manufacturing facilities and continuous technological up-gradation, we have been able to play an important role in the growth story of several industries. Today Viraj products are an integral part of several industries across the globe.



Manufacturer of Stainless Steel:

Wires | Wire Rods | Fasteners | Flanges | Profiles | Bright Bars



Bright future dawning for India's stainless industry



The Indian stainless steel industry is a rapidly maturing sector that is facing encouraging times as the government introduces initiatives that will stimulate the domestic market. However challenges abound ranging from dumping by other low-cost countries and a lack of scrap and raw materials. Nevertheless the market is set to grow and the potential is enormous, considering per capita consumption at 1.9 kg is still much lower than the world average of 6 kg. This article looks at some of the interesting facts and new developments shaping the industry, and the production facilities of its two largest producers.

By N C Mathur, President, Indian Stainless Steel Development Association

The current estimated melt capacity for stainless steel in India is about 6.43 million tons (mt). Out of this, about 3.56 mt is contributed by electric arc furnaces with the balance being made up by induction furnace.

A recent survey estimated that Jindal Stainless, which is the largest producer of stainless steel flat products in the country, accounts for about 47% share of the total stainless steel flats production. Viraj, the largest long product manufacturer in the country,

accounts for almost 38% share of total stainless steel long production in financial year 2014.

Indian stainless steel market

World crude stainless steel production in 2014 was over 41.5 million tons. The world production has grown at a compound annual growth rate (CAGR) of 5 percent per annum over the last 10 years. Asia has strongly emerged as both the world's largest stainless steel producer and user. Although

China dominates the production of stainless steel accounting for more than 50 percent share of world production, India has been a part of this impressive growth with its production of nearly three million tons in 2014 making it the 3rd largest producer and 2nd largest user of stainless steel in the world. The average growth in India recorded a CAGR of over 8-9 percent over the last 10 years, double the world average growth during the period. Over last

Overall Production of SS Mill products by grades-%

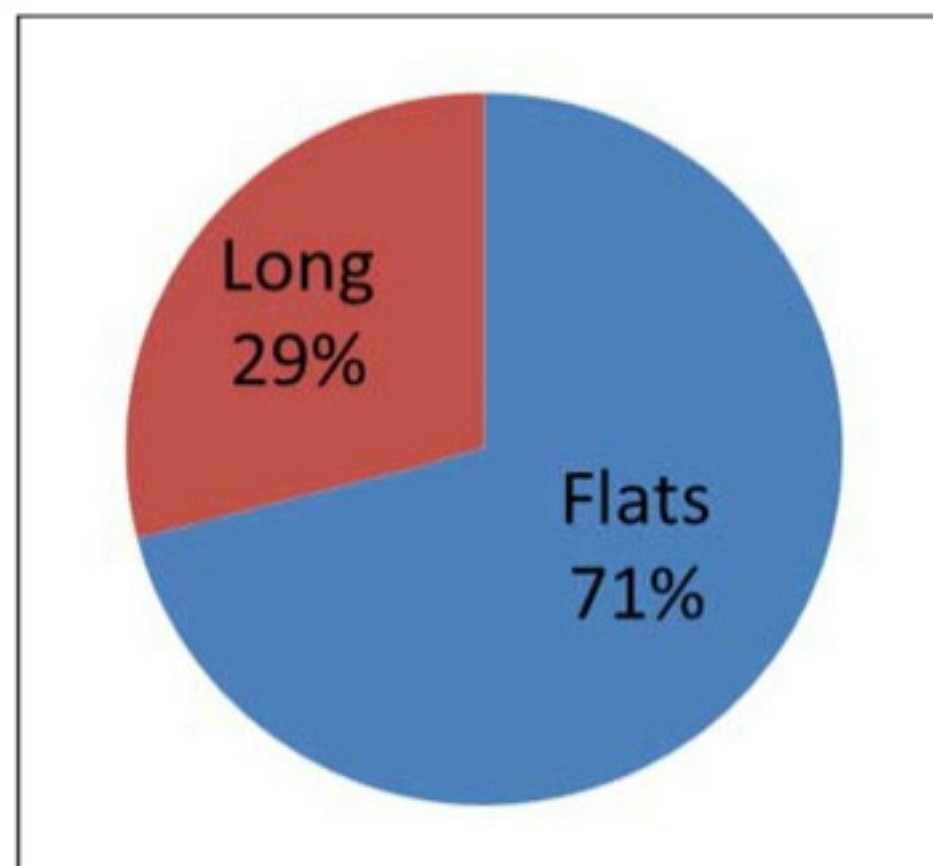
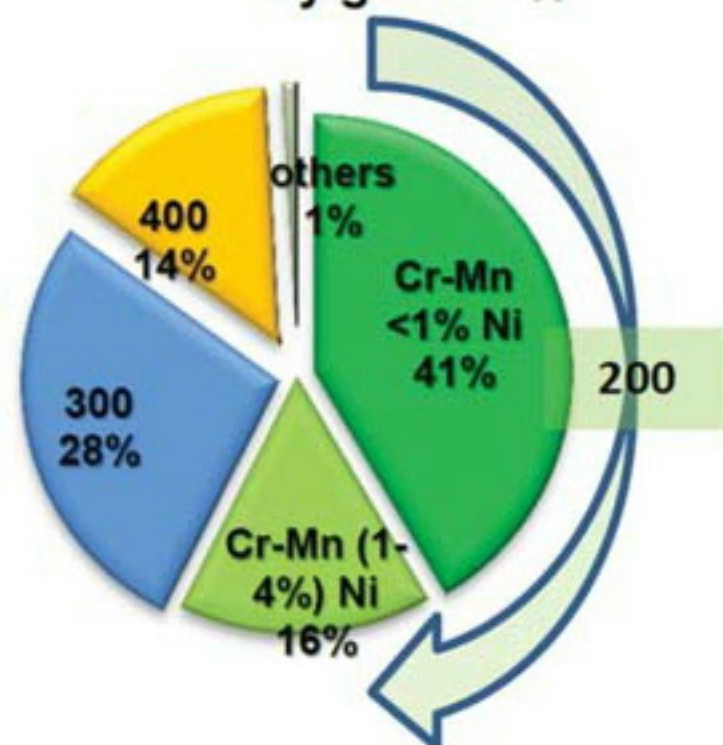
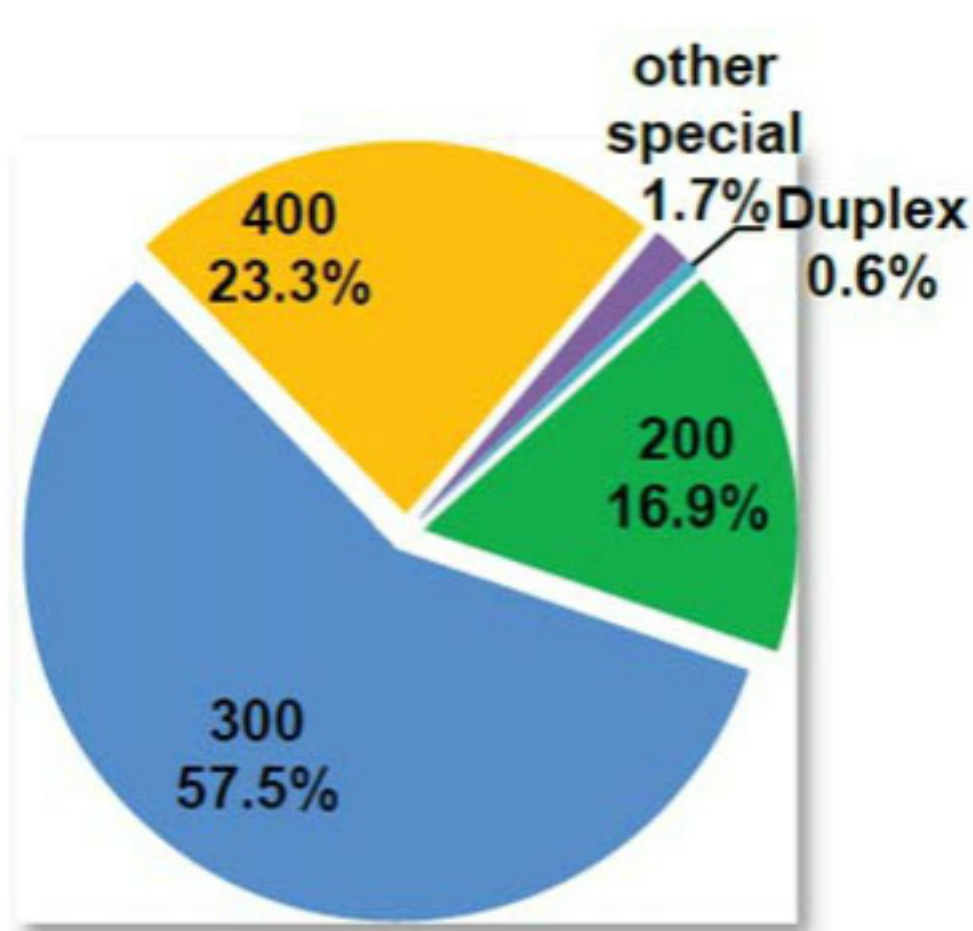
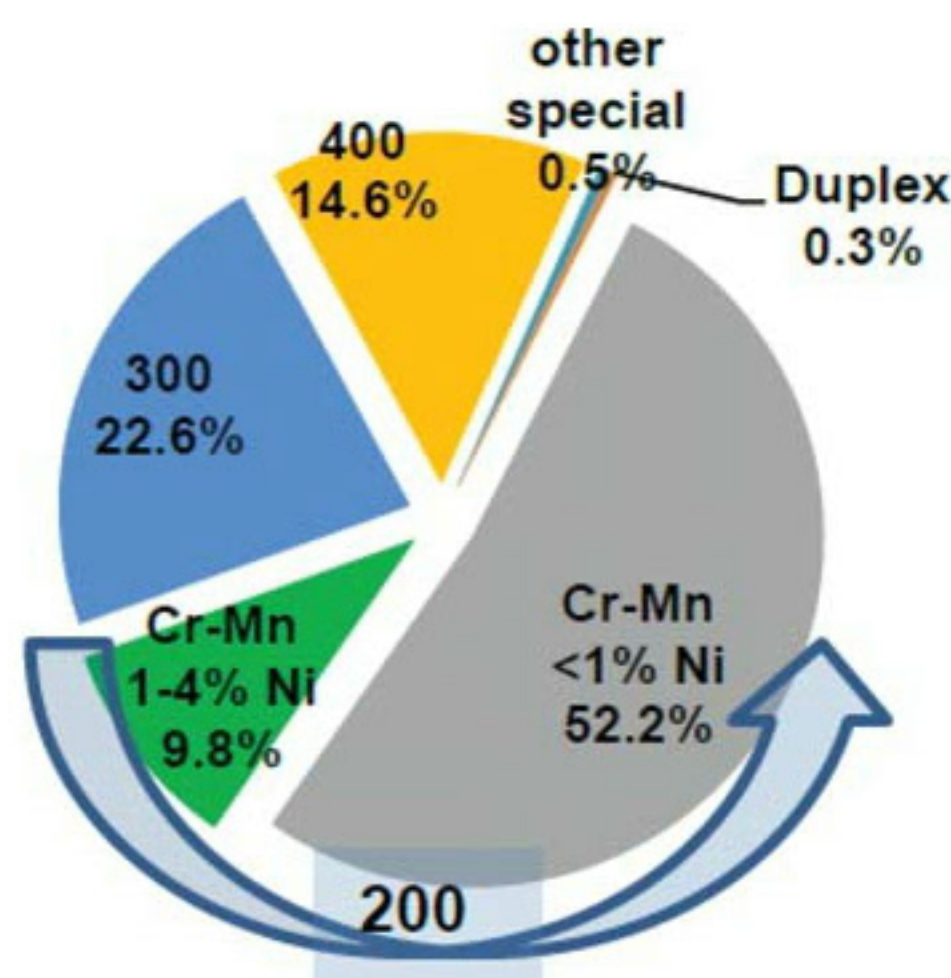


Figure 1. Overall production of stainless steel mill product by grade (%)



Flat Products, use by grade

Long Products, end use by grade

Figure 2. Current Consumption of stainless steel in the country

two years, although there has been substantial increase in consumption, indigenous production has still not seen much growth since the country has been facing challenges from cheap imports from neighboring countries.

Figure 1 shows the grade distribution of the stainless steel mill products in India. Figure 2 shows current Consumption of stainless steel in the country.

Trends in end-user consumption

In the last three decades India has seen a complete transformation in the end user application of stainless steel. In the beginning it was primarily used for pots and pans in kitchens with some exception for engineering use. Over the next two decades this trend continued, whereas western and other developing countries started using stainless steels in an increasing number of applications such as rail coaches, tanks and tankers, pipelines for carrying oil, gas, liquids including potable water, various products for architecture, building and construction. But with the unremitting efforts of ISSDA and the stainless

industry, a change in end user patterns was made possible which is quite visible today. Figure 3 shows a dramatic change in end user profiles of stainless steel consumption in the country within a short period of time.

Today we see that stainless steel usage has increased exponentially in the architecture, building and construction (ABC) sector and automotive railways & transport (ART). Stainless Steels have become the preferred choice for coaches, wagons and other utilities in

the Indian Railways and we are likely to see good growth considering the expansion plans of Indian Railways in the coming years. Applications such as stainless steel roofs, facades and plumbing are likely to emerge in addition to other products for ABC sector.

The process industry, which has historically been a consistent consumer of stainless steel in a wide range of processes including refineries, petrochemical, chemicals, dairy, power, textile, sugar, food processing, distilleries, fertilizer, cement, drugs, paper & pulp and others, has adopted stainless steel for many of its applications where maintenance on account of failure of material has been their big concern. Here also many new grades of stainless steels with improved mechanical and corrosion properties have replaced conventional materials. The tremendous changes in perception of stainless steel within the country have also opened many new areas of applications in sectors where earlier the country was dependent on imports. A lot of credit also goes to the technological upgrading of stainless steel mills which enabled us to produce some innovative new grades as well as high quality grades for niche applications. Today Indian producers have upgraded their technology in the field of melting with intelligent refining systems, high quality continuous casting and rolling machines. They are capable of producing almost every grade of stainless steel, matching world quality standards.

Growth factors and potential markets

1. New government initiatives

In 2014 a new government was formed in India with a popular mandate. The government is fully aware of the high expectations placed on them by the

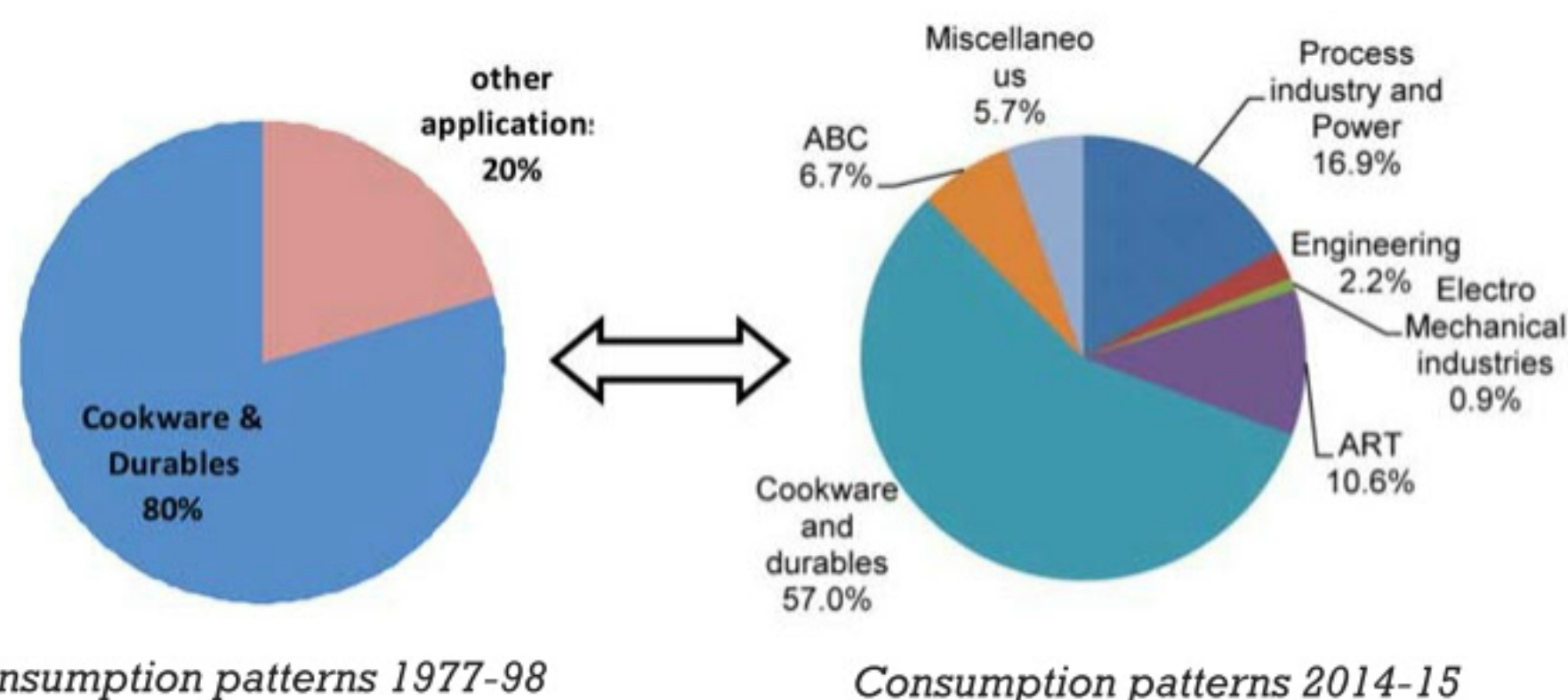


Figure 3. Consumption patterns in stainless steels in India.



Viraj's new Section Rolling Mill (SRM) with an annual capacity of 180,000 tons p/a enables them to manufacture over 700 different shapes and designs of angle, flats and other profiles. Photo ©Viraj

Indian electorate. The national and international communities are keenly looking at the reforms and various economic decisions being taken by this government to place the country back on a trajectory of high economic growth. In the short duration of 16 months, India has been able to improve upon its GDP figures. The per capita consumption of stainless steel has a strong co-relation with GDP growth. Using India's new GDP series, the IMF expects Indian economic growth to pick up to 7.5 % this fiscal and accelerate further to 7.5 to 8% next year - making India the fastest growing large economy in the world. The new initiative of the Indian Government to build 100 smart cities, focusing on improving sanitation & waste management facilities is likely to give a strong push to the stainless steel industry which is struggling with low capacity utilization. The potential growth of stainless steel in India is enormous considering the fact that the per capita consumption at 1.9 kg is still much lower than world average of 6 kg.

2. Innovations and quality production

Today we see stainless steel being used in space research and Indian companies are supplying different grades of stainless steel in many prestigious projects demanding the highest quality. Recently Steel Authority of India (SSI) which is the only public sector company in the country, contributed towards the historical achievement of the Mars Orbiter Mission by providing stainless steel for fabricating the fuel and oxidizer

tanks of the PSLV-XL which carried 'Mangalyan' to the red planet. In another development Jindal Stainless Limited, India's largest stainless steel producer, supplied high quality stainless steel to International Thermonuclear Experimental Reactor's cryostat project in France which is a large-scale scientific experiment that strives to produce commercial energy from fusion. In a time when nuclear energy demand

is continuously growing, the Indian nuclear industry has become an important end user sector for stainless steel. As demand increases, we will see stainless steel usage increasing in this sector such as corrosion resistant pressure and storage vessels, tube sheets, pump castings etc.

There are many areas where new innovations have created a unique demand in the country for stainless steel usage. For example the innovative bio-digester toilets researched & developed by Defense Research and Development Establishment (DRDE) for Indian Railways, where stainless steel was the chosen material of construction. Other innovations linked with the new initiatives of the Government to improve sanitation & waste management facilities and building smart cities are likely to create markets for stainless steels. Today we can see some innovative use of stainless steels for designing portable, stand-alone public toilet facilities. Indian Stainless Steel Development Association (ISSDA), an apex body to spread awareness and provide authentic technical information on stainless steel in the country, optimistically pointed out that when Indian infrastructure tries to move towards the use of sustainable and environmentally friendly materials, stainless steel will find increased

Jindal Stainless Limited

Jindal Stainless (JSL), part of the USD 18 billion OP Jindal Group, is the largest integrated manufacturer of stainless steel in India and is ranked amongst the top 10 stainless steel manufacturers in the world, with a capacity of 1.8 million tons. Chairman and Managing Director Mr. Rattan Jindal, has been instrumental in promoting and shaping the end usage of stainless steel in the country.

In an effort to improve debt serviceability while increasing capacity utilization and enabling backward integration of the value chain of the company's new Odisha plant, the company recently underwent a major restructuring. JSL will demerge its business undertakings comprising of the ferro alloys division and mining division to Jindal Stainless Hisar Ltd. (JSHL) while JSHL will issue its shares to the JSL shareholders on a proportionate basis. Jindal Stainless Limited will transfer by way of slump sale, the stainless steel manufacturing facilities located at Hisar, Haryana to JSHL for Rs 28.09 billion and Jindal United Steel Limited (JUSL) will acquire the hot strip mill (HSM) plant by the way of slump sale in Odisha for Rs 24.13 billion. Also, Jindal Coke Limited (JCL) will acquire the coke oven plant located in Odisha by way of slump sale Rs 4.93 billion.

Commenting on the development, Rattan Jindal said: "The scheme will not only help unlock value for all the stakeholders of the company to increase its profitability, but will also help reduce debt and strengthen the balance sheet. This will also help improve debt serviceability, while increasing capacity utilization and enabling backward integration of the value chain of the company's Odisha plant".



Mr. Rattan Jindal, Chairman and Managing Director of Jindal Stainless Ltd.



Wire rod mill in operation. Photo ©Viraj

demand as a 'green' material. ISSDA firmly believes that awareness among designers, specification writers and end users about the benefits of stainless steel is increasing and we will definitely see diversification in the end use of stainless steels in the country.

Challenges faced by Indian producers

While the country's future growth prospects appear bright, certain key issues are hindering the realization of its true potential. Issues include the non-availability of nickel in the country, its volatility in price, lack of indigenous melting scrap, increasing competition and shrinking margins in India, cheap imports from China etc. Also the current capacity utilization of both flat and long product producers is quite low at present, primarily due to large domestic capacity creation leading to a surplus situation. India has had operational free trade agreements within the ASEAN region and Korea since 2010 and with Japan since 2011. Now India is a partner country for the Regional Comprehensive Economic Partnership (RCEP = ASEAN 10 countries + China, Korea, Japan, Australia, New Zealand & India). The lowering of duties on finished goods

coming from these regions has led to a huge surge in imports and a massive trade deficit. The position of trade imbalance with neighboring countries in stainless steel flat products is increasing and putting tremendous pressure on the domestic stainless steel industry.

To protect the local industry from import surges, in June 2015 the Indian Finance Ministry imposed anti-dumping duties between USD 180 and USD 316 per ton on 304 hot rolled stainless steel imports from China, South Korea and Malaysia. This accounts for just 10% of imports as the majority consist of cold rolled flat products. Today Indian stainless steel producers are demanding an increase in basic import duties and lowering of custom tariffs on raw materials like nickel and scrap to remain cost competitive.

Viraj Profiles Limited

Viraj Profiles is India's largest producer of stainless steel long products. The Viraj Group have become a major player in the world stainless steel long products market with a capacity of 528,000 tonnes per annum, more than 9,000 employees and with an annual turnover of over USD 1.5 billion. The company has integrated production facilities and is set to increase its total melting capacity in the coming years. Ranking as the second largest producer of long product in the world, Viraj hopes to achieve a market share of no less than 10 percent of the world's total long products consumption.

The company's new state-of-the-art Section Rolling Mill (SRM) with an annual capacity of 180,000 tons p/a enables them to manufacture over 700 different shapes and designs of angle, flats and other profiles. Mrs. Renu Kochhar, Managing Director, Viraj Profiles, says: "We are constantly working towards achieving operational excellence by upgrading our manufacturing processes and equipment to match global standards. The recent commissioning of a fully automatic section rolling mill, the only one of its kind in India, corroborates our ethos about the same."

Commenting about the future of Stainless Steel, Mrs. Kochhar adds, "Taking into consideration the current production and consumption graph of stainless steel in India, we can say that the Indian stainless steel industry is yet to achieve its full capacity utilization. However, recent announcements by the government about developing tier 2 cities and creating more and more smart cities will further fuel the growth of the wonder metal. Compared to global standards, the current per capita consumption in India seems to be low but there is vast scope to increase this."



Mrs. Renu Kochhar, Managing Director, Viraj Profiles Ltd, sees vast potential for increasing stainless steel consumption within India.



Continuous billet casting machine in use. Photo ©Viraj