Of Mutual Interest

August 2006
Solutions for Our Service Center Marketing Partners from Outokumpu

OUTOKUMPU

Raw Material Price Increases Impact Steel Industry

The price of nickel has been hitting record highs almost on a daily basis, recently surging 56% in one month. While stabilizing somewhat, the cost of molybdenum also remains high. These fluctuating prices are a concern to Outokoumpu and our service center customers, as both elements (nickel and molybdenum) are used in the melting of most stainless steels (see inset box). Other industries are also driving up demand for and consumption of nickel and "moly." While demand (and prices) keep rising, inventories for both raw materials are below normal. "Nickel is traded on exchanges and very often has been a speculative metal, but this time the industry senses that it is a lack of supply," explained Mike Stateczny, Outokumpu's Senior Vice President Plate Products. "And there is a real lack of supply on the moly side."

Raw materials like nickel and molybdenum are used in stainless steel melt.

In the case of molybdenum, the vagaries of price fluctuation and the high costs of mining disrupted the investment and production capital needed to start new mines and re-open idled ones. Over the past five years, molybdenum has fluctuated from $2.36 to over $45 a pound before recently settling somewhat in the mid-$20s. Nickel supply is trying to revive from a mid-1990s production decline caused by economic and political issues that delayed the re-opening of Canadian mines. "There is a large body of high-grade nickel in far northern Canada and in the Arctic Sea," Stateczny reported. He also noted "the U.S. is sitting on one of the largest moly ore bodies in the world — but it is not being mined because doing so would be a major cost undertaking."

Global Demand Growing

While supply for nickel and moly has stalled, demand has surged. There has been an annual double-digit demand from China for domestic consumption of molybdenum, and from 2000 to 2005 the Chinese demand for nickel more than tripled. This increased demand was reflected around the world

Nickel and Moly Improve Stainless Quality

Molybdenum, which is a by-product of copper mining, is especially effective in improving pitting and crevice corrosion resistance in chloride-containing environments, and it also increases the elevated temperature strength and creep resistance of stainless steels. Nickel increases both strength and corrosion resistance of stainless steels.

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Outokumpu is an international stainless steel and technology company. Our vision is to be the undisputed number one in stainless, with success based on operational excellence. Customers in a wide range of industries use our metal products, technologies and services worldwide. We are dedicated to helping our customers gain competitive advantage.

Raw Materials

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as demand for moly and nickel rose in the steel, chemical and aerospace industries and in oil and gas drilling.

The increased demand for nickel and moly, along with new technologies that could reduce costs in mining, could stimulate greater production in the next few years as mines are scheduled to go on-stream or expand production in Canada, Australia, China, Chile and the U.S. But many industry analysts still doubt whether the increase in supply will be big enough to satisfy the world's continued demand for nickel and molybdenum over the next few years.

A Boon to Duplex Grades

Specifying engineers and research & development teams are working to offset these higher priced raw materials. In years past, when nickel prices increased, engineers and industrial designers using stainless steel would often switch to a grade with less nickel (substituting 200 series grades for the more corrosion resistant 300 series). As soon as prices stabilized, they would return to specifying 300 series grades. "Consumers preferred the 300 series for its corrosion resistance," Stateczny said.

But the nickel shortage has been a boon to duplex grades, such as LDX 2101®, which offer high strength and increased corrosion resistance while using only a small percentage of nickel. (LDX 2101 contains 1.5% nickel compared to almost five times that amount in other grades). "People think we developed our lean duplex because of the nickel price," Stateczny noted. "But in reality, we developed it because we wanted a duplex grade that had a corrosion resistance equivalent to the 304 grade (304 contains 8.1% nickel). When we were ready to launch it, nickel prices took off." ■

LDX 2101® In the News

Machining of LDX 2101 a Conference Topic

Outokumpu is participating in the Stainless Steel World Solutions USA Conference and Exhibition slated for November 14 -16, 2006 in Houston, Texas. During the conference, Outokumpu experts will present a paper and workshop on machining LDX 2101®.

"For example, lean duplex in bar is stronger than 304 and 303 and easy to machine. It's a marvelous combination," said Lou Kern, Executive Vice President, Long Products. "And thanks to a low nickel content, LDX 2101 has better price stability than high-nickel stainless steels."

(Outokumpu produces LDX 2101 in bar from 3/4" up to 6" in diameter.)

Conference registration information can be found via the link at www.outokumpu.com/stainless/na or at www.stainless-steel-world.net.

to market together

Find What Matters in *Market*

Nickel and moly prices are only two of the many figures and facts that "matter" which you will find in Outokumpu's newly published monthly newsletter, *Market Matters.*

This electronic newsletter publishes U.S. and global economic statistics and trends to watch in a wide range of manufacturing, consumer, and financial issues. The latest statistics are compiled from trusted sources on everything from industrial production and capacity utilization to scrap market and global exchange rates, consumer indices and housing sales.

"We used to produce a similar piece that was printed, but discontinued it several years ago in a cost-cutting move Manager, Marketi for Outokumpu. " requests from cus receiving the new tent was. So we d distribute it electr

To add your name Market Matters, s maureen.meeker@

LDX 2101 Used in Liquid Storage Tanks

LDX 2101 plate was recently used for the first time in liquid storage tanks, bridges and desalination plants. Using LDX 2101 in hot-rolled plate for a storage tank project, the engineering firm Emypro required 200 tons less material compared with 304, because the 90 percent higher mechanical strength of LDX 2101 allows for considerably thinner plates. ■

Outokumpu Compliant on Electronic Waste

On July 1, 2006 European Reduction of Hazardous Waste regulations began limiting a number of trace elements in electronic waste. Outokumpu recently announced that its three European melt shops are in compliance with these new regulations. "Stainless steel is becoming more widely used in electronics, particularly in computers," reported Elisabeth Torsner, Outokumpu Vice President Market Development/Technical Coordinator. "We've been asked by our customers to verify our compliance."

Material Decisions

Outokumpu is compliant with the amount of trace elements allowed by European standards in electronic waste like desktop computers.

In the U.S., the combination of the European regulations along with a similar initiative in Japan has triggered the creation of a systematic approach to product declaration and verification to keep trace elements under control. The U.S. federal government, which is the nation's largest purchaser of personal computers, has issued a challenge to all federal government employees to reduce electronic waste. The Environmental Protection Agency has issued a new standard for environmental performance of personal computers, consisting of 23 required and 27 optional criteria.

Computers will now receive one of three levels of compliance:

- **Gold. The product meets all 23 required and at least 21 (75%) optional criteria;**
- **Silver. The product meets all 23 required and at least 14 (50%) optional criteria;**
- **Bronze. The product meets all 23 required criteria.**

"At least 17 of the 49 criteria are applicable to stainless steel and specialty alloys, including 10 of the 23 required performance criteria," explained Ms. Torsner. She sees the environmental standards for personal computers as only the beginning of a greater push for controlling all electronic waste. "This certainly will 'trickle down' through the chain of suppliers of all materials used in computers and then on to additional electronic products," Ms. Torsner predicted. ■

Matters

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Affecting the Stainless Steel Industry

," explained Maureen Meeker, ng Communications & Advertising But we received so many tomers who remembered sletter and how valuable its con- lecided to start it up again and onically."

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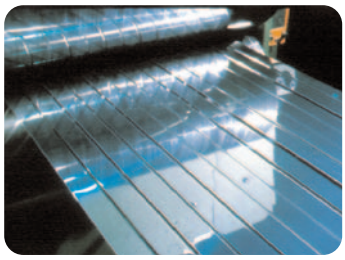
Precision Strip Capacity to be Expanded

Outokumpu continues our commitment to the stainless steel industry by investing in our global production facilities — adding new state-of-the art equipment at our Kloster precision strip complex. Located in Langshyttan, Sweden, Kloster is already the largest integrated manufacturer of thin austenitic stainless steel strip in Europe. By year's end, Kloster will almost double it's production capacity to 48,000 metric tons — specializing in very close tolerances and/or mechanical properties.



Outokumpu will soon be delivering one-meter-wide precision strip products.

After the $70M plant expansion is completed, Kloster will be the widest precision strip mill in Europe, rolling one-meter-wide band. Having the capability to go wider and thinner will provide our service center customers with greater options and expand our ability to participate in applications where our previous product range was too limited.

In addition to market segments such as flexible hose, heat exchanger, gaskets and springs; precision strip is finding use in new markets like fuel cells, particle filtration, and EGR coolers. Industries such as automotive and computer & telecommunications have created a large demand for "engineered" precision strip. Kloster's products fit this supplier niche very well — having the ability to closely control melt through production parameters, thus offering our customers a consistent, quality product that meets or exceeds specifications.

Ramping up in increasingly lighter gauges and greater widths, the Kloster facility should reach full capacity by July 2007. In conjunction with the addition of the rolling mill, a new bright annealed furnace and wide slitter will also be installed. Annealed material in all austenitic grades (including high temperature and high corrosion resistant alloys) will be available in widths from .197 inch to 39.37 inches. Temper rolled precision strip in grades 301, 304, and 316 will be available in thickness from 0.004 inches to 0.032 inches. ■

Receive This Newsletter Electronically

Of Mutual Interest **is available to our readers electronically. If you would like to receive the newsletter electronically, please send us your email address. "We would like to give readers the opportunity to receive the newsletter in the most timely manner," explained Maureen Meeker, Manager, Marketing Communications & Advertising for Outokumpu. To add your name to the electronic mailing list, send your email address to maureen.meeker@outokumpu.com. ■**

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