

Of Mutual Interest

February 2007

Solutions for Our Service Center Marketing Partners from Outokumpu

OUTOKUMPU

Outokumpu's Technical Support Unique in Industry



Outokumpu offers technical support to customers and service centers around the globe.

Over the past twenty years, metallurgists at Outokumpu and Avesta (now a part of Outokumpu) developed a series of new stainless steels — in particular the highly corrosion-resistant austenitic 254 SMO[®], along with duplex grade 2205 Code Plus Two[®] and, most recently, lean duplex LDX 2101[®]. And over the same twenty years, Outokumpu metallurgists have been instrumental in bringing these new products to the marketplace. “We’re technical people who know how to ask for the sale,” explained Dr. Ralph Davison, President and Principle of TMR Stainless, Inc.

“We are unique in the industry in that one of the great strengths of Outokumpu is the technical support we can provide to service centers, fabricator, engineering firms and end-users in virtually every application of stainless steel,” said Mike Stateczny, Sr. VP Plate Products. “We are able to advise customers in areas such as flue gas desulphurization, ethanol production, hydrometallurgy, water processing, pharmaceuticals, oil & gas and architecture, among others,” he noted.

Support for Service Centers

Outokumpu provides service center personnel and their customers with training, sales presentations and hands-on assistance to help maximize the use of stainless steels. “When introducing a new grade it is important that the grade is available, which means it has to be in service centers,” Dr. Davison explained. “Our approach is to take away the mystery of new materials. We work with service centers to train their sales people and accompany them on customer meetings to show how the new grade can help do certain jobs at less cost and greater efficiency.”

Securing Professional Standards

Metallurgists are also leading the effort to gain acceptance for stainless steels

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Outokumpu is an international stainless steel 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 stainless steel and services worldwide. We are dedicated to helping our customers gain competitive advantage.

Through internal experts and consultants such as TMR

Stainless, Outokumpu now covers the globe offering technical support to service centers and their customers. In addition to TMR Stainless, which works internationally, Outokumpu can also call upon our Avesta Research Centre in Sweden to support customers in Europe and the Middle East. Outokumpu also has a technical representative in Beijing, China to oversee the growing Asian market.

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www.outokumpu.com/stainless/na

TMR Celebrates 20 Years

TMR Stainless was founded in 1987 as Technical Marketing Resources Inc. by two veterans of market development for Climax Molybdenum, Dr. Ralph Davison and Dr. James Redmond. "Climax Molybdenum provided us a wonderful education working with many stainless steel companies and user industries all over the world," Dr. Davison noted. Avesta Stainless (now a part of Outokumpu) was TMR's first client. Twenty years later, TMR continues to provide consulting services to Outokumpu. "We've had a shared goal and a shared vision all this time — to sell stainless steel," said Dr. Redmond.

The two metallurgists helped develop and launch 254 SMO® and 2205 Code Plus Two®. "On Code Plus Two we created a different specification that imposed the higher minimums for nitrogen and moly to enhance corrosion resistance," recalled Dr. Redmond, who says he is now "80 percent retired." "It is very rewarding to see that the grade has now become the standard for grade 2205."

The development of a family of duplex stainless steels followed, leading to the most recent introduction of LDX 2101® (which is marketed against 304). "We very seldom get to attack a general purpose market, and to attack 304 was always a dream," said Dr. Davison. "To have a new grade that is twice as strong with better corrosion resistance and lower alloy cost is a great opportunity."

One of the metallurgists' projects twenty years ago was the introduction of machinable plate,

marketed as PRODEC (for PRODUCTION Economy). "To sell machinability you have to demonstrate it," Dr. Davison recalled. "You have to go out with a piece of metal and get a machinist to work on it right there and it has to be dazzling enough that they go 'wow!'" Dr. Davison estimates he and his partner participated in more than 500 machining demonstrations over five years supporting the PRODEC introduction. "I knew a presentation was going well when the machinist would start showing *me* what he could do with the product."

TMR has a staff of seven, four of whom hold Ph.D.s. They pride themselves on always having a technically competent person answering the telephone. "There are safety and technical issues that customers need help with. We try to be absolutely reliable and correct and safe so when there is a question customers can call us and hear all the options available to them," Dr. Davison contended. "We help service centers to have confidence in knowing that they can sell technical products." ■



The TMR Stainless staff (pictured) has provided consulting services to Outokumpu and its customers for the past 20 years.

Leaders in Technical Support

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into professional standards. "Standards are a book of rules on allowable grades, thicknesses and compositions for various applications," Mike Stateczny said. "But through standards listings, we can identify and develop new markets for stainless steel," he noted. "For example, there are standards that our technical people can design to now that incorporate

the efficiency and strength of duplex stainless steels."

One such standard that will be announced early in 2007 is the inclusion of duplex stainless steels in the American Petroleum Institute (API) 650 standards, which cover construction primarily of refinery and storage terminals and tanks in the oil and gas and petrochemical

industries (see accompanying story on page 4). Metallurgists at TMR Stainless and the International Molybdenum Association prepared the data packages and presented the technical papers showing how duplex steels meet the mechanical property requirements of the standard. "Our role is to remove the barriers for growth and sales of stainless steels," Dr. Davison said. ■

Power Plants Heats up Stainless Market

Outokumpu is providing 289 metric tons of 254 SMO® stainless steel plate to a new “supercritical” coal-fired power plant operated by Louisville Gas & Electric in Trimble County, Kentucky. The stainless plate,



Demand for stainless steel is strong among power plants needing to upgrade their facilities to meet new EPA regulations.

ization (FGD), part of the new plant’s multi-pollutant gas cleaning and control system.

“We need power in this country,” noted Elisabeth

produced at our New Castle, Indiana facility, will be used in the construction of electrostatic precipitators for flue gas desulphur-

Torsner, Outokumpu VP Market Development/Technical Coordinator. “Because of new Environmental Protection Agency (EPA) regulations, there is a real boom in stainless steel for flue gas desulphurization,” she said. New regulations require coal-fired and oil-fired power plants to remove nitrogen oxide, sulfur dioxide, and mercury from their emissions, which requires upgrading scrubbers.

The new 750-megawatt, \$1.1 billion Trimble County generating unit includes the latest technological advances in efficiency and environmental controls. Supercritical units work at higher temperatures and pressures and thus increase the efficiency of the operation and reduce emissions. The Trimble County plant, expected to go on-line during the first quarter of 2010, will produce lower levels of sulfur dioxide and nitrogen oxide emissions than any other coal-fired power plant

in the state. The plant will also boast some of the lowest air pollution emissions for a coal-fired unit of its size anywhere in the U.S.



The Trimble County Plant is one of 16 new power facilities initiated in the U.S. since 1995, all of which must meet the new EPA regulations immediately upon going on-line. Existing power plants have until 2020 to install new equipment (with tax credits if installed by 2009). The total amount of stainless steel that could be needed for compliance with the new regulations has been estimated to reach as much as 40-50,000 tons over the next few years. “We are working hard on the FGD market,” Ms. Torsner added. ■

Correction

In the last issue of *Of Mutual Interest* we inadvertently listed 254 SMO® as a heat-resistant duplex grade. Of course, it is an austenitic stainless steel designed for maximum resistance to pitting and crevice corrosion. What was heartening about our unfortunate error was the number of customers who called or emailed us pointing out the mistake. We are happy to have such a committed readership for *Of Mutual Interest* and we thank all of our customers for closely reading our newsletter!

Duplex Grades Supported by API 650 Standards

The use of duplex stainless steels is now supported by the American Petroleum Institute (API) 650 standards, which cover construction primarily of refinery and storage terminals and tanks in the oil and gas and petrochemical industries. The inclusion of duplex grades LDX 2101®, 2205 Code Plus Two®, 2304 and SAF 2507® in the API 650 standard was the result of more than five years of work by Dr. Ralph Davison, President and Principle of TMR Stainless, Inc., and John Grocki of the International Molybdenum Association.



“This inclusion will allow a number of industries that use API 650 for their

design guide to take full advantage of the combination of high strength and corrosion resistance of the duplex grades in construction,” Dr. Davison noted. The updated standard will be published on the Internet in early 2007 and a printed edition will follow in 2008.



Duplex stainless steel is now supported by the American Petroleum Institute 650 standards. The following duplex grades are included:

- LDX 2101®
- 2205 Code Plus Two®
- 2304
- SAF 2507®

“Since duplex grades are, in most cases, more than twice as strong as other stainless steels, designers can now down-gauge tank thicknesses for material and fabrication savings,” Dr.

Davison said. “Another cost advantage is that the duplex stainless steels are virtually maintenance-free. End-users don’t have to continually re-paint the tanks, as they would have to do with carbon steels, and they’re also not releasing the paints into the surrounding environment.”

“API 650 is the ‘bible’ for the oil and gas and petrochemical industries because the tank market is very specific on design and safety factors,” said Elisabeth Torsner, Outokumpu VP Market Development/Technical Coordinator. “And other industries such as pulp and paper look to this standard, as well, so I expect a lot more interest in duplex grades once the standard is published.” ■

Commercial Excellence a Focus among Outokumpu Employees

It may be as small a detail as stenciling purchase order numbers on the line stencil of stainless sheet for a Canadian service center. Or it may be as large as 345 tons of hot rolled annealed and pickled plate with low sulfur content produced to 1/2 commercial flatness tolerance delivered in a 10-week time frame for the U.S. Air Force Memorial with plate surface and flatness as good — according to the fabricator’s polishing manager — as any he had seen in his 30 years of experience.

“Excellence comes down to strict management of all details; clear agreements on specs, standards and requirements; and prompt and expert follow-through and technical service,” said Mike Stateczny, Sr. VP Plate Products. “We’ve proven we can work in a very coordinated manner.”

And research concurs. In an annual survey of readers, industry publication *Metal Center News* concluded that Outokumpu ranked number one in five key criteria for selecting a stainless steel supplier: quality, customer service, problem solving, technical support and partnership. In the category “helps solve customer problems,” Outokumpu has scored number one against all other competing mills for four consecutive years (and five out of the last six).

“It’s nice to see that service centers (the primary readers of *Metal Center News*) associate Outokumpu with providing solutions to customer problems,” noted Maureen Meeker, Manager of Marketing Communications & Advertising at Outokumpu. “This recognition keeps driving our team to continue to live up to the expectations of Commercial Excellence that customers have set for us,” she added. ■

Outokumpu Ranking in Survey Category “Helps Solve Problems”

2006	#1
2005	#1
2004	#1
2003	#1
2002	#2
2000	#1

316L for Corrosion Resistance

A stainless steel mainstay since the 1930s, grade ASTM 316L (the low carbon version of 316) now finds itself under scrutiny. "It is becoming a bit expensive, so people are looking at ways to replace it," noted Elisabeth Torsner, Outokumpu VP Market Development/Technical Coordinator. "But 316L is still a major grade, with applications particularly in the oil and gas, hydrometallurgy and pharmaceutical industries, and in architecture," she added.

getting to
know our
products

Outokumpu sells 316L in plate, coil, bar and pipe.

The stainless steel provided by Outokumpu for the U.S. Air Force Memorial in Arlington, Virginia, for example, was 345 tons of 0.770" thick stainless steel plate in 316L, selected for its higher resistance to pitting and crevice corrosion from deicing road salts and coastal water chlorides. "Our emphasis at Outokumpu is in the duplex grades such as 2205 Code Plus Two as an alternative to 316L and 317L and their higher nickel contents," Ms. Torsner said. ■



Grade ASTM 316L was used in the construction of the Air Force Memorial.
Photo by Catherine Houska, TMR Stainless

2007 Conference Appearances Set

As a partner with service centers in developing new end-user applications and new markets for stainless steel, Outokumpu representatives are active participants at major industry tradeshows. Over the next few months our calendar of conference appearances includes:

to market
together

■ **Materials Technology Institute; Galveston, Texas; February 26-27.** Concentration will be on duplex stainless steels inclusion in API 650 standard (see page 4 for accompanying story).

■ **Society for Mining, Metallurgy, and Exploration (SME) Annual Conference; Denver, Colorado; February 25-28.** "Mining is coming back strong," reported Elisabeth Torsner, Outokumpu VP Market Development/Technical Coordinator. A potential growth area for stainless steel is in the process of "leaching," which causes major corrosion problems. Jan Olsson of Avesta Research Centre will be

presenting a paper on this topic. Representatives will also be in attendance from our sister company, Outokumpu Technology, which is well known in the industry for manufacturing mining equipment.

■ **NACE International Corrosion 2007 Conference; Nashville, Tennessee; March 11-15.**

About 6,000 industry professionals are expected to attend this conference for corrosion engineers. Outokumpu representatives have prepared and will present three technical papers (and have co-authored a fourth) at this conference. A special breakfast function, hosted by Outokumpu, will discuss the API 650 standard and Outokumpu will have a major booth at the exhibit area for customer interaction. ■

