



Ductile Iron News – Issue #4 - April 2015

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DIS Fall T&O Meeting – October 28-30, 2015

Back in January we sent out a notification to all the Ductile Iron Society members that we had a few events for the society in 2015. It was sent out under the signature of our President, Bob O'Rourke of Dura-Bar. Since then, the date has been changed due to a conflict with the AFS Melting Conference. Thanks to Grede Reedsburg and the Ho-Chunk Casino we have moved it to the last week of October. Please make a note of this and it is up on the DIS website at www.ductile.org.

We are also going to be adding an extra day and offering the second "Design with Ductile Iron" on Tuesday October 27th. This is open to the public and DIS Members, and is also free. It is being sponsored by the DIS - Ductile Iron Marketing Group. It is primarily organized for design engineers. So please pass this along to your customers who purchase or design ductile iron castings. Any registrants are then allowed to stay on and pay to join the Fall T&O Meeting at the Ho-Chunk Casino in Baraboo, WI or better known as the Wisconsin Dells. The tour on Friday October 30th will be at Grede Reedsburg.

DIS Signs Agreement with THORS

Back in early January the Ductile Iron Society and THORS LLC entered into an agreement to design a Ductile Iron Training Module for the producers of ductile iron. The program will be created by Al Alagarsamy (consultant) and long-time member of the DIS and Senthil Kumar, the president of THORS LLC.

We are excited about this opportunity to be involved in the creation of a training program for ductile iron.



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The DIS Research committee has offered a few members to review the final product that THORS develops. It will be so large that it will be broken down into 2 parts. The first part will be ready to launch in June and will be presented at the DIS Spring Annual Meeting at the Geneva Resort and Spa in Lake Geneva, Wisconsin. Al and Senthil will present the product as part of our technical program on Thursday, June 4th. Since this agreement was reached, THORS has made a decision to join the DIS as an Associate Member. Thanks Senthil for joining the DIS. As a result of this arrangement, DIS Members will be given a discount to purchase the Ductile Iron Training Module **ONLY**.

There will be more information coming as the training module is completed. Or, if you are attending the Spring DIS meeting, please attend this presentation.

DIS Ductile Iron Production Seminar – February 10 & 11, 2015

The 2015 DIS Ductile Iron Production Seminar was held at the Hilton Garden Inn in Rosemont, Illinois on February 10 & 11, 2015. We had 34 folks attend and 5 instructors. The instructors were Jim Wood of the DIS, Jim Csonka of Hickman, Williams & Company, Gene Muratore a consultant, Kathy Hayrynen of Applied Process Technologies and Andy Adams of Foseco. Thanks to all these individuals who do this gratis for the society, and their companies for allowing them the time to attend this seminar. Next year in 2016, we will be adding another subject matter and it will be Compacted Graphite or CG Iron. Dave Gilson of SinterCast has volunteered to instruct this class. Keep an eye on the DIS website at www.ductile.org for more information and the date. It will likely be in middle to late February 2016.



DUCTILE IRON SOCIETY

To promote the production and application of ductile iron castings

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Jim Csonka of Hickman, Williams & Company



Gene Muratore, Consultant



Kathy Hayrynen of Applied Process Technologies



Andy Adams of Foseco

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Ductile Iron Society Office and Library has Moved

On April 1, 2015 the Ductile Iron Society office moved along with the Lyle Jenkins Library. We moved just down the hall on the same floor and same building. A couple years ago we obtained the library and we had to move it into a separate suite on the 2nd floor down the hall from the office. We made a decision to move and have everything together in one suite. We were in suite 234 and suite 260. Now we are located in **Suite 238**. Here are a few pictures of our new Library location.

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Text Books & Storage



Filing Cabinets of Technical Articles

Remember the Lyle Jenkins Library is available to all DIS members on the DIS website under the “Members Only Area”. If you are interested in a book or would like a subject search just contact Jim Wood, DIS Executive Director at jwood@ductile.org or call 440-665-3686. This library is owned by the DIS members.



119th AFS Metalcasting Congress in Columbus, Ohio

As we have done in the past, the DIS Booth was again on display at the AFS Casting Congress April 21 – 23, 2015 at the Columbus Convention Center in Columbus, Ohio. Thanks to Prem Mohla (Consultant) for coming to Columbus and helping out with manning the booth. We found that the booth traffic was very heavy on Wednesday April 22nd and slow on Thursday April 23rd. We hope that all DIS Members stopped by who were attending the congress.

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119th AFS Casting Congress/ DIS Booth #125

Future Trade Shows

The DIS Ductile Iron Marketing Group has made a commitment to display our booth at this year’s 2015 Gear Exposition from October 20-22 at COBO Center in Detroit, MI. If any of you are attending, we will be in booth #2044. This will give us a chance to meet Gear Manufacturers and their design engineers. We hope to talk up Ductile Iron as an engineered material. We do this for all members of the ductile iron industry and we hope more business for the DIS members.



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The DIMG has also confirmed that we will exhibit at the next ConExpo – Con/Agg at the Las Vegas Convention Center from March 7-11, 2017. This is the Super Bowl of the construction industry and a great chance to get in front of OEM’s and design engineers.

DIS 2015 Spring Annual Meeting

The DIS Annual Meeting will be held June 3-5, 2015 at the Grand Geneva Resort & Spa in Lake Geneva, WI. We will be touring Dura-Bar in Woodstock, IL on Friday June 5th. If you have not registered for this meeting or reserved a room, please do so soon. As of Thursday April 29th the rooms were going fast. The price will substantially go higher once the block is sold out. Please see more information on the DIS website at www.ductile.org. Remember the meeting is closed to DIS Members only.

We also want to announce that this year’s “DIS LIFETIME ACHIEVEMENT AWARD” will be presented to Dick McMinn of Buck Company and Pete Guidi of Ward Manufacturing. Dick was the DIS President from 1994 to 1995 and Member of the Year in 1991. Dick is still one of the longest attending members of the DIS. Pete was President of the DIS from 2005 to 2007 and Member of the Year in 2011. Pete also serves as the current Treasurer of the Ductile Iron Society. This will be the first time in the history of the DIS that two members have received the same award in the same year. CONGRATULATIONS to Dick and Pete. Both of you are well deserving of this honor and we look forward to the banquet on Thursday June 4th to celebrate.

Jim Wood
DIS Executive Director.



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Hyundai extends Asian CGI leadership with sixth series production launch

- 12.7 litre CGI cylinder head begins series production
- Six SinterCast-CGI components in series production, ranging from 3.0 to 12.7 litres
- SinterCast-CGI production at the Hyundai Jeonju and Daedong foundries, Korea

[Stockholm, 16 December 2014] - Hyundai Motor Company, the world's fifth largest automobile manufacturer, has begun series production of a 12.7 litre Compacted Graphite Iron (CGI) cylinder head for heavy duty commercial vehicle applications. Following the launch of Hyundai's first CGI engine programme in 2006 - the 3.0 litre V6 S-engine used in Hyundai and Kia luxury SUV applications in the domestic Korean market - the 12.7 litre L-engine cylinder head becomes Hyundai's sixth CGI product in series production, extending its CGI leadership position in Asia and making it the second largest user of CGI components worldwide.

In addition to the 3.0 litre S-engine cylinder block and the 12.7 litre L-engine cylinder head, Hyundai has also used CGI for the 3.9 litre F-engine and 5.9 litre G-engine commercial vehicle cylinder blocks since 2007, and for high performance cylinder heads of the 5.9 litre G-engine and all cylinder heads of the 10.0 litre H-engine since 2011. All of Hyundai's CGI components are produced at the Hyundai



Jeonju foundry and the Daedong foundry in Korea, using the SinterCast process control technology.

"Hyundai was the first OEM in Asia to adopt CGI and has since become a world leader for CGI performance upgrades. The 5.9, 10.0 and 12.7 litre CGI cylinder heads have all been introduced as upgrades of existing grey cast iron heads, to ensure durability as the power and torque were increased. The CGI cylinder heads are produced using the existing grey iron foundry tooling and are machined on the same lines as the grey iron heads" said Dr Steve Dawson, President & CEO of SinterCast. "The direct substitution of conventional grey cast iron with CGI provides an ongoing growth opportunity, as engines are upgraded to maintain market competitiveness and to satisfy future emissions legislation."

Dr Steve Dawson, President & CEO, SinterCast



NEWS BRIEFS

Navistar Sells Its Waukesha Foundry Operation

5/4/2015

On April 30, Navistar sold its Waukesha foundry operation to Renaissance Manufacturing Group (RMG). The sale reflects Navistar's enterprise-wide focus on reducing fixed costs and returning Navistar to profitability.

"Over the past two years, we have taken numerous steps to strengthen our core North American truck business and position Navistar for long-term profitability," said Bill Osborne, senior vice president, Global Manufacturing and Quality. "After a comprehensive review, we determined that while the Waukesha foundry is important, it is not core to our business. This action will help improve Navistar's manufacturing capacity utilization, reduce our fixed costs, and position the company for a return to profitability."

A small, privately owned company, RMG has retained most of the Waukesha workforce to continue producing ductile iron components for the commercial vehicle and engine industry. The sale includes foundry operations with RMG leasing the building and land from Navistar.

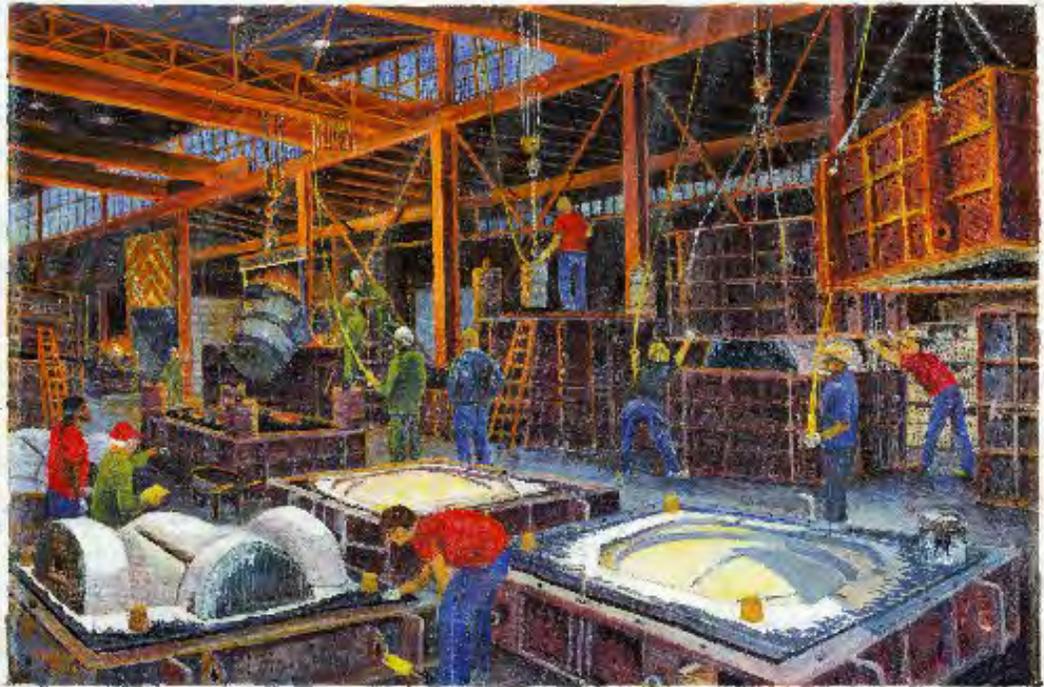
The Waukesha facility has been an operating foundry since 1896 and was operated by the U.S. government during World War II. International Harvester acquired the operation in 1946 and it produced castings for IH assembly plants. It transitioned to ductile iron in 1981 to supply castings to Navistar, and in 2009, its name was formally changed to Pure Power Technologies and expanded its customer base to include other original equipment manufacturers (OEMs).

The Waukesha team marked the last day of production with a commemorative iron pour by Controller Mike Matiya. In addition, commemorative plates for employees were poured for all employees.

"This is an outstanding workforce, and it has been an honor to be a part of this team," said Waukesha Plant Manager Mitch Cheatham. "While this is a change for the facility, I'm glad that it will be able to continue its long legacy." Looking ahead, Navistar has a five-year agreement with the facility, which will continue to produce parts for Navistar as a supplier.



NEWS BRIEFS



I am very pleased to report that my recent acrylic painting (28 X 42 in) entitled "**IRONHEART FOUNDRY - ALABAMA**" will be the 2016 wall calendar picture for the Ashland Chemical (now ASK CHEMICALS LP) publication. This global company makes resins for chemically bonded foundry sands. I had previously contributed the artwork for the 1998 Ashland Chemical calendar with my painting entitled, "PITTSBURGH FOUNDRY" which I painted in oils in 1971. (Those were my earlier steel foundry days where we made slag pots and armored tank turrets.... now faded into oblivion.) The new calendar painting will depict the vibrant everyday routine of closing no-bake molds and pouring ductile iron from the IMF FAST LOOP at Glidewell Foundry, Calera, AL. On my earlier calendar the Ashland people distributed 5000 copies worldwide. And even today, on occasion when traveling, I see my 1998 painting framed on foundry office walls.

David Knapp, Glidewell Foundry



NEWS BRIEFS

DO YOU REMEMBER YOUR FIRST STEP?

HELP TURN A STEP INTO A SPRINT

**Industry Portrait of a Recently Graduated FEF Student:
Two years in the industry (started with an internship)**

Types of Current Positions:

- Support Engineer
- Engineer I
- Core Room Supervisor

Key Responsibilities:

- Engineering Support including: solving casting defects & improving accuracy of casting simulations
- Improving laboratory analysis capabilities
- Technical sales – building customer relationships
- Supervising core room processes and scheduling pours

Help that FEF student take an important and positive FIRST STEP – hire an intern.

Contact FEF if you are looking for someone who is ready to “hit the ground running” or to make a donation!



Foundry Educational Foundation
1695 N. Penny Lane • Schaumburg, IL 60173
www.tefinc.org • 847-490-9200



START TO FINISH – FEF GRADUATES ARE PROMINENT PEOPLE IN THE INDUSTRY

From the First Time Pouring Metal at an FEF School to Now...

- Division Sales Manager
- Engineering Manager
- VP of Operations
- Technical Services Manager

Leading...

- Hundreds of employees
- Multi-Million Dollar Projects
- Company Strategies

Giving Back to the Industry...

- FEF and AFS Board Members
- Chapter Leadership
- Local Community Charitable Initiatives



Contact FEF when you are looking for someone to “hit the ground running” or to make a donation!



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Doosan Infracore orders a second SinterCast process control system

[Incheon and Stockholm, 2 March 2015] - Doosan Infracore Co., Ltd, Korea's largest manufacturer of construction equipment and diesel engines, has ordered a second process control system from the Swedish Compacted Graphite Iron (CGI) process control specialist SinterCast. Following the first SinterCast installation in 2006, and successful materials research and product development within Doosan Infracore, the new Mini-System 3000 will be used for the production of the CGI cylinder block of a new diesel engine developed for demanding off-road applications. Together, the two SinterCast installations will be used to enable independent CGI product development and series production within Doosan Infracore. The Mini-System 3000 is expected to be installed during the 2nd Qtr. of 2015, with the initial CGI production beginning upon commissioning of the system.

"We are pleased that Doosan Infracore's successful CGI product development, together with SinterCast's commitment to the important Korean market, has led to this second installation. The launch of a new engine, and Doosan Infracore's investment in a second process control system, reinforces the global trend toward CGI in the heavy-duty diesel sector for both on-road and off-road applications" said Dr. Steve Dawson, President & CEO of SinterCast. "We are motivated by Doosan Infracore's confidence in our technology - repeat business is the strongest endorsement of any technology, and one of our core objectives."

Dr Steve Dawson, President & CEO



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Filtration & Performance Additives

We are pleased to inform you that the merger of S&B's principal business activities into Imerys, as announced on November 5th, has received the necessary regulatory approvals and has been concluded on February 26th, 2015.

The S&B business is now part of the Imerys Filtration & Performance Additives (F&PA) Business Group, complementing its existing portfolio of talc, diatomite, mica, vermiculite and other minerals with bentonite, wollastonite and casting fluxes, while also extending its range of perlite ore and applications.

A new organisational unit, the Performance Additives for Metallurgy Division, has been set up within F&PA to manage S&B's bentonite operations and main markets, its Mediterranean perlite ore operation and its global casting fluxes business. The remaining activities, namely the wollastonite business, the expanded perlite operations, the Asian perlite ore operations, all sales of perlite and the sales of specialty bentonite products will be incorporated in the existing F&PA regional Divisions.

We would like to assure you that our primary focus throughout this transaction is and will remain to be on our stakeholders including our suppliers. My team and I are your primary contact point and we will inform you of any future changes as they are implemented.

Paul Laurence, Supply Chain Manager



NEWS BRIEFS



Japanese foundry adopts SinterCast process control technology

- SinterCast Mini-System 3000 to be installed at commercial vehicle foundry
- Product development of Compacted Graphite Iron cylinder blocks and heads
- Third SinterCast installation in Japan and seventeenth installation in Asia

[Stockholm, 5 March 2015] - A leading Japanese cast iron foundry, specialising in the production of engine components for commercial vehicle and industrial vehicle applications, has ordered a SinterCast process control installation to enable independent Compacted Graphite Iron (CGI) product development. At the request of the foundry and the OEM, the details of the installation and product development must remain confidential. Under the terms of the agreement, SinterCast will install a Mini-System 3000 and ancillary hardware, and provide engineering support. With planned installation during the first quarter of 2015, the Mini-System 3000 will enable the foundry and the end-user OEM to accelerate the ongoing development of CGI cylinder blocks and heads for on-road commercial vehicle and off-road industrial vehicle applications.

"This is a particularly rewarding installation for SinterCast. We have actively supported the CGI development activities of the foundry and the OEM for many years, and we have enjoyed good relationships on the operational and managerial levels. We are pleased that this support and confidence has led to a new installation and has established our partner as the SinterCast-CGI leader in Japan for commercial vehicle engine development" said Dr Steve Dawson, President & CEO of SinterCast. "This latest installation marks our third installation in Japan and our seventeenth installation in Asia, broadening our presence and brand awareness, and increasing our opportunity to support the future CGI needs of the important Asian market."

Dr. Steve Dawson, President & CEO



NEWS BRIEFS

News Release

15 April 2015



Diesel fuel hydrodesulfurization removes three quarters of a million tonnes of SO₂ each year

A new study has demonstrated that the use of hydrodesulfurization using molybdenum-based catalysts saves the emission of more than three quarters of a million tonnes of sulfur dioxide (SO₂) from diesel fuel used for road transportation in the European Union each year.

Hydrodesulfurization removes sulfur from diesel during the refining process using catalysts, typically cobalt-molybdenum (CoMo) or nickel-molybdenum (NiMo). A lifecycle analysis study compared the total environmental impacts of burning diesel fuel containing 2000 parts per million (ppm) of sulfur – the Euro 1 limit imposed by the EU in 1993 – with today's Ultra Low Sulfur Diesel (ULSD) containing 10 ppm, the Euro V standard.

The study considered a number of environmental metrics relevant to vehicle use and performance. Using ULSD delivered a 24% reduction in acidification potential compared to 2000 ppm diesel. Atmospheric acidification leads to acid rain which damages ecosystems and buildings and was the driving force behind the imposition of sulfur limits for fuel.

The impact of particulate matter and respiratory inorganics, associated with risks to health and to the environment, was 44% lower with ULSD compared to the 2000 ppm fuel. The study also demonstrated that the potential for smog creation was nearly 5% lower with ULSD.



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Tim Outteridge, IMOA Secretary-General said: "Hydrodesulfurization of diesel fuel has been extremely effective in reducing SO₂ emissions from vehicles. Sulfur dioxide emissions from this sector are now at least 100 times lower than they were in 1993, despite demand for diesel doubling in the last 20 years, and without any meaningful impact from the additional catalyst used in the process. Overall, the results demonstrate the important environmental benefits gained over the last twenty years from sulfur removal by hydrodesulfurization using molybdenum-based catalysts."

End



NEWS BRIEFS



April 17: Platts IODEX (iron ore) Fact Sheet:

The seaborne iron ore spot market registered its strongest week so far this year. Platts assessed Friday's daily 62% Fe Iron Ore Index 75 cents higher to \$51.50/dry mt CFR North China.

Demand was strengthening as mills replenished stocks after keeping them low for quite some time. While there was intent to purchase more, offers were scarce as sellers withheld cargoes in anticipation of an even firmer market next week; there were expectations the Chinese government would either cut interest rates, or lower the cash reserve ratio for banks, which sources thought might push prices higher.

"Sellers are calling the shots now; many refuse to part with their material unless you are willing to give them a price near what they want," a steelmaker in central China told Platts. Still, some iron ore buyers were craving clearer market direction, wary that the steel demand outlook would not sustain stronger iron ore prices.

At a glance:

- The price for the 62% Fe benchmark was \$47.75/dry mt a week ago, Friday April 10. It gained a total of \$3.75 this week to \$51.50/dmt – its strongest rally to date in 2015.
- A price of \$47.50/dmt is the IODEX low for the year so far, reached on April 2. The April 17 price of \$51.50 is up \$4, or +8/4%, since then.
- Year-to-date average price for the 62% Fe benchmark is \$60.20/dry mt CFR North China, which compares to \$119.70/dmt for the same period a year ago.
- Port stocks of 61% Fe Australian Pilbara Blend fines in Qingdao were again trading at Yuan 370/wet mt (\$50.35/dmt on an import-parity basis) free-on-truck, including Yuan 35/wmt in port charges and 17% VAT.



NEWS BRIEFS

- Physical steel square billet prices in Tangshan, an indicator of steel demand, increased Yuan 20/mt to Yuan 2,000/mt (\$326.44) ex stock.
- Rebar futures were largely range-bound Friday, with the most active October contract in Shanghai last trading at Yuan 2,311/mt (\$377.20), down Yuan 7/mt from Thursday, and settling at Yuan 2,319/mt, up Yuan 7/mt.
- Iron ore futures on the Dalian Commodity Exchange also remained steady, with the most liquid September contract last trading at Yuan 394/dmt (\$64.31), down Yuan 1/dmt from Thursday, and settling at Yuan 395/dmt, up Yuan \$1/dmt.
- The iron ore to scrap price ratio stood at 1:5.1, narrowing some from 1:5.2, based on Platts' 62% Fe IODEX and its assessment of Turkish premium heavy melting scrap I/II (80:20) imports. Adjusting for iron units, at a ratio of 1:2.9, scrap was just less than three times the cost of iron ore.

Platts iron ore index, known as Platts IODEX, is a daily price assessment of physical iron ore prices, reflecting prices as determined by buyers and sellers in the open markets. For more information on the [Platts IODEX price assessment methodology](#), visit www.platts.com.

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Platts Steel Markets Daily.

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