Volume 1 : Issue 2

The LETH IRON Update

A quarterly publication of Lethbridge Iron Works LTD – Lethbridge, AB

April 10, 2014

Leth Iron To Host Annual Ductile Iron Society meeting

Lethbridge Iron Works has for years been a proud member of the Ductile Iron Society, and this June will be the host of the annual DIS meeting in Lethbridge. The society is made up of leading foundries from around the world that produce ductile iron, and will be holding the annual meeting at Leth Iron for the first time. DIS members will spend June 4th to 6th attending valuable meetings and education sessions revolving around the ever-evolving ductile iron industry. Topics for the sessions range from industry analysis, ductile alloy advancements, packaging options, and much more.

The members will also be treated to a tour of Leth Iron to see how the foundry operates and the exciting progress on the current capital reinvestment projects. Leth Iron installed the SPO line in 2009, and is currently in the process of installing a dedicated sand and melt system to ultimately give the SPO complete autonomy. This will allow the SPO to be run as a completely separate foundry, freeing up the existing sand and melt systems and giving way to a significant increase in future capacity.

It's an exciting time for Lethbridge Iron Works and the entire team is looking forward to hosting the Ductile Iron Society and proudly displaying one of the worlds premiere foundries.

To learn more about this event or to inquire about membership into the Ductile Iron Society, please visit: www.ductile.org

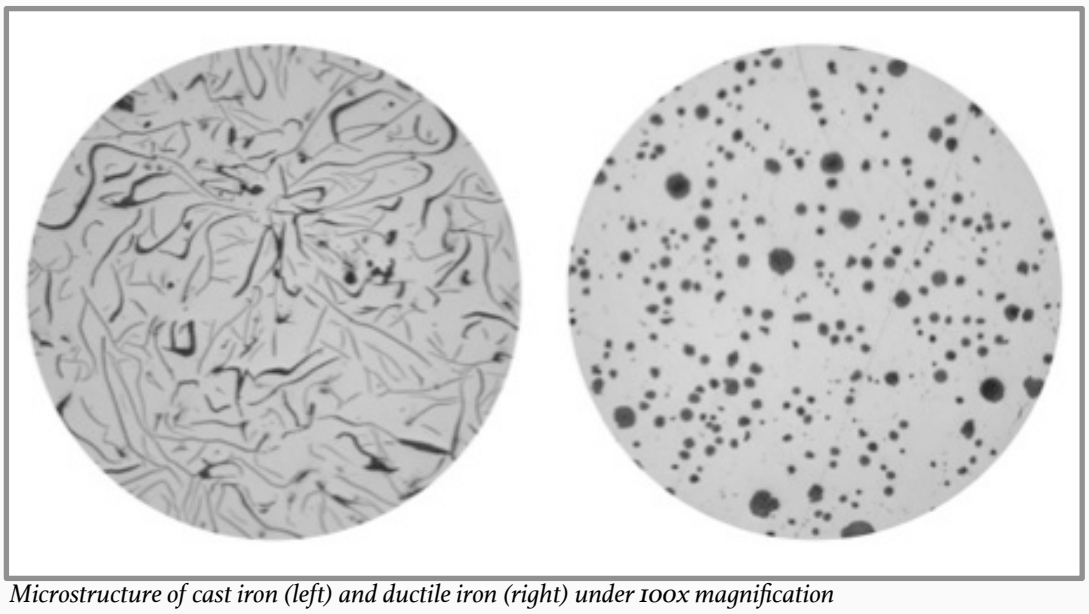
Victory over lead times

Lethbridge Iron Works is proud to announce that in Q1 of 2014 the average casting lead times were:

On the Hunter lines: 4 weeks

On the SPO line: 6 weeks

These lead times have been achieved by refining the production system, reducing the general scrap rate, and an all around team effort by Leth Iron staff. Shorter lead times give way to easier forecasting and purchasing by Leth Iron customers, furthering the strong business relationships that have been cast over the past 116 years.



Microstructure of cast iron (left) and ductile iron (right) under 100x magnification

Ductile Cast Iron: The Iron of Today

In the early 1960s after over half a century of grey iron production, Leth Iron became one of the first foundries in North America to pour ductile iron. Ductile had been invented in 1943 and was quickly becoming the go-to standard for high-strength cast parts. The mechanical properties of ductile surpassed grey in every way, and in 2009 Leth Iron phased out grey iron and proudly focused on it's ductile iron capacity.

Today Leth Iron pours over 30 million pounds of ductile iron every year and ships castings to various industries throughout North America. With the mechanical properties of ductile being as they are, it has become the obvious choice for the majority of iron casting projects. The reason for ductile's popularity - in short – is something known as nodularity. A cross section of a grey iron casting under 100x magnification will show a microstructure commonly known as graphite rods or flakes (as shown above). Upon a stretch-type (elongation) load these flakes act as microscopic shear points, rendering the elongation ability of grey iron to roughly zero. The addition of magnesium to iron under close metallurgical control causes the graphite to form into small spheres or nodules, which have a uniformity that allows ductile iron castings to elongate by 20% or more depending on the grade.

Not only do the mechanical properties of ductile iron give way to castings that are able to elongate, but they also provide much greater yield and tensile strengths. Ductile iron is the fastest growing ferrous casting material on earth and is being utilized throughout the industrial world.

Along with ductile iron, Leth Iron also works with Applied Process of Oshkosh, Wisconsin to provide our customers further-advanced options in ductile iron. Austempered ductile iron and carbidic austempered ductile iron are heat treated in a salt bath to give them improved mechanical and wear properties. More on this process and the unique properties of austempered ductile iron will be provided in a future Leth Iron update.

To see Leth Iron's material specifications, please visit: www.lethiron.com/specs.php

Are You Subscribed to the Casting Industry?

Lethbridge Iron Works is a proud member of the American Foundry Society, and would like to suggest a very exciting publication to the readers of this update. *Casting Design and Purchasing* is a publication of the American Foundry Society that's directed towards engineering and purchasing staff. It contains articles that are tailored toward non-foundry personnel that deal with castings. The articles contain valuable information regarding the foundry industry, tips on designing castings, and what can be expected from castings in the future.

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