

Foundry Minerals Forum Casts Weather Eye Over Mineral Supply & Demand

Precursor to GIFA/METEC Sets Scene for Metal Casting Market Week

by Mike O'Driscoll, Director, IMFORMED, UK (imformed.com)

The metal casting world headed to Germany in mid-June for the the giant quartet of GIFA-METEC-THERMPROCESS-NEWCAST.

Heralding the start of the foundry market's biggest week in four years was IMFORMED's inaugural Foundry Minerals & Markets Forum 2015 taking place in neighbouring Essen which focused on supply and demand trends for industrial minerals used in metal casting.

Foundry Minerals: the Big Picture

Jessica Roberts, Senior Analyst, Roskill Information Services Ltd, set the scene perfectly with "Foundry Minerals: An Overview of Supply & Demand": a broad-picture review of the casting market followed by a focus on the key foundry minerals of zircon, chromite, bentonite, and graphite.

Of particular note was Roberts' attention to the advent of 3D printing and its impact on the foundry industry and its consumption of minerals, perhaps initiating, in her words "a structural change."

"The 3D printing industry grew 35% between 2013-2014, now worth US\$4.1bn., and is forecast to grow 15% per year to 2020, reaching around US\$9.5bn." said Roberts.

In summing up, Roberts considered that perhaps it would be a case of foundry minerals working in partnership with 3D printing: as evidenced by the demonstrated example of materials used in Voxeljet printers including PMMA (polymethyl methacrylate) for investment casting, and silica sand used in core printing.

With castings forecast to grow 3.0% p.a. to 2020 (reaching 128m tonnes), Roberts projected a boost for zircon in higher growth in investment casting, and annual growth rates for zircon at 3.5%, chromite, 2%, bentonite, 4%, and graphite, 2.5%.

Danilo Frulli, Innovation & Marketing Director, Imerys Refractory Minerals, presented "Supplying the foundry market: trends & challenges." Frulli explained Imerys's structure of its extensive mineral businesses in the context of the foundry market (particularly useful following the recent acquisition S&B Industrial Minerals), before examining the investment casting process, its benefits, and consumption of minerals.

Frulli concluded that the foundry market expected the following from a foundry mineral supplier: quality, reliability, expertise and know-how, and innovation.

Zircon – Investment Casting Future

Chris Barrington, Executive Director, Zircon Industry Association, presented "The supply and application of zircon in the foundry industry" and reviewed the properties of zircon, its applications and benefits in the metal casting industry.

Barrington noted: "The relatively high cost of zircon has led to significant substitution by chromite and ceramic beads: chromite has a higher chilling effect than zircon, but higher acid demand, while chromite is less easy to reclaim than zircon."

He quoted some Roskill data stating the use of chromite in foundry sands had increased by an estimated 7% p.a. between 2003 and 2013, compared to 1.4% p.a. for zircon sand over the same period.

However, zircon appears to be holding its own in the investment casting process, and Barrington rounded off with a look at the status of potential new supply sources coming on stream to supply zircon in the future.

For a full review of this report, go to the Members Only area of the ICI website: www.investmentcasting.org.

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