New vision and new identity for leading metallurgical company

A leading European foundry supplier has undergone a major rebranding exercise to reflect its new vision for the future.

Sheffield-based A & S Metallurgical Resources Ltd, is now known as Asmet (UK) Ltd, as part of a branding overhaul which has seen its corporate identity updated and modernised.

The rebrand - which included a new image and website - is part of the company's new strategy and vision for the future, and will help transform the way it supplies metallurgical resources to the European market.

Andrew Parker, Asmet's general operations manager, told ***Foundry Trade Journal***: "It's been an incredibly exciting time for us here at Asmet and we're absolutely thrilled with our new name and brand image.

"As always, we remain incredibly proud of our 20-year heritage and reputation but look forward to embracing our future as we move forward into a new space in the European market."

Asmet's strategically located warehouse hubs in the UK, Spain, Germany and Belgium, now enable the company to provide customers with the materials they need, fast and on demand. A strategy which Andrew believes will be the key to the company's future success in Europe. "As we are all aware, times are changing, and fast. Across the world, economies are being reset in favour of new ideas and European industry is responding at an incredible rate.

"Now, more than ever, speed and reliability are the key to success and so we're delighted to announce that we can now offer an improved level of service to our customers, as we build even stronger partnerships with leading world producers and transform the way we supply metallurgical resources across Europe.

"We offer customers a complete service from source to foundry, with an established and trusted expertise in product, logistics and technical support, that does not stop at the delivery gate."

Asmet supplies a wide range of metallurgical consumables including pig iron, ferro alloys, silicon carbide, magnesium ferro silicon, inoculants, foam / ceramic metal filters, magnesium / inoculants wires, aluminium master alloys.

Asmet's official brand launch will be unveiled at GIFA 2011. UK customers will continue to be serviced from the UK head office and all company details, including registration numbers and contact information, have remained the same.

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Maybrey Reliance of Belvedere, Kent (UK) has placed an order for four new Morgan design 300kg electric resistance furnaces with Molten Metal Products of Norton, Worcestershire.

Maybrey also takes delivery of its fourth induction furnace which is being supplied and installed by Electric Melting Services of Sheffield.

Demand is growing for the quality aluminium sand and gravity die castings and specification irons produced by the foundry.

Maybrey director Doug Hills said: "The board of Maybrey consider it is the right time to invest in new British-made plant." *www.maybrey.co.uk*

Hunter Automated Machiney has opened a sales and engineering facility near Milan (Italy) to service European customers. Hunter already has a long-standing relationship with Italian partners Space, Maus and Primafond which will also continue. Staff at the new facility will include sales, customer support and application engineering personnel. *www.hunterauto.com*

Landmark complex and compact melt shop to improve production efficiency at German foundry

A German caster of complex fully machined parts has invested in a new electric melt shop to improve melting capacity and efficiency. Key considerations at grey and nodular iron foundry Friedrichshütte GmbH in Laubach was the need to ensure economic melting and a better matched supply of molten metal to the moulding line, along with the hillside location of the foundry and the resulting associated civil works issues.

The foundry chose world expert in induction melting technology Inductotherm, to supply the equipment and manage the installation and commissioning of the new melt shop. Inductotherm is renowned for its long established expertise and equipment performance reputation and is skilled in handling both large-scale and small scale projects of this nature. The company has worked closely with fellow suppliers and foundry personnel to co-ordinate the project and train the foundry's employees.

The order is for two x 3000kg heavy steel shell MF furnaces operated alternately with a 1500kW VIP® Power-Trak® and one 500kg steel shell furnace. The furnaces incorporate the latest safety features such as side guards and push out devices.

A closed cooling circuit (air/water) is used for the heat losses with the possibility to connect a heat recovery unit.

The entire melt process is controlled by a Meltminder® 200 system.

The order was placed with Inductotherm Deutschland GmbH in the fourth quarter of 2010 and is scheduled for completion in June 2011.

The system will also include specially designed fume hoods provided by IBO Anlagenbau GmbH to save energy and purify the air quality on the melting platform. The Tornado fume hood is a double-acting system and is capable of catching fumes during all operation phases. The telescope channel of the right hand hood was modified for the project to create sufficient space for the second access to the furnace platform.

The foundry makes a variety of castings from simple to complex, core-intensive parts in a weight range of 50g to 20kg. They say the new Inductotherm melting shop is a landmark and will help them achieve economic and efficient production. The small 500kg steel shell furnace is ideal for new special alloys and will give them a considerable advantage in exploiting new markets.

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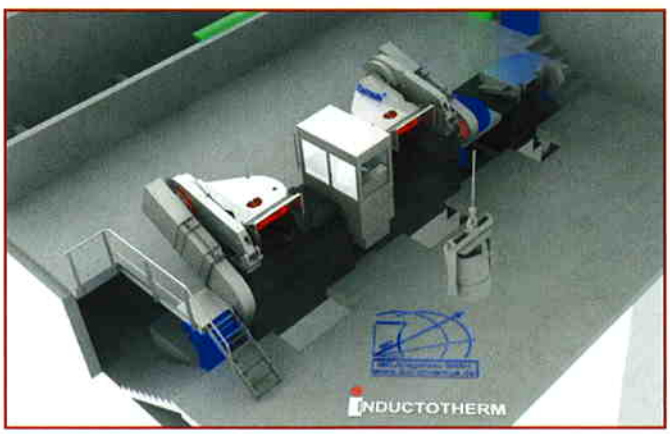

Process control requirements for the consistent production of compacted graphite irons

Consistent production of CGI requires very close control of metallurgical quality, here Don Tittensor, technical sales manager of Asmet (UK) Limited, sheds some light on the matter.

Compacted (vermicular) graphite irons have been produced since the inception of spheroidal graphite (nodular or ductile) irons in the late 1940s. Invariably the structure was produced inadvertently, and still is, due to the breakdown of process control during the production of SG. However from becoming a curiosity or failure of the casting process, applications have been found for the unique mechanical properties offered by the compacted form of graphitic irons.

CGI exhibits mechanical, thermal and damping properties lying somewhere between that of nodular irons and flake irons. High strength with good thermal conductivity and mechanical damping, have ensured its application in brake discs, diesel engine blocks, turbo housings, exhaust manifolds and ingot moulds.

Consistent production of CGI requires very close control of metallurgical quality. The main factors affecting the formation of CGI are sulphur content, oxygen content, active magnesium, nucleation status and cooling rate. A close balance between these five variables is required.

A balancing act

Too high an active magnesium content results in a high proportion of nodules, reducing thermal conductivity and decreasing mechanical damping. Too low active magnesium results in reduced mechanical strength and ductility. Active magnesium content needs to be controlled to suit the section or modulus (cooling rate) of the chosen casting to ensure that suitable CGI structures are produced.

Fast cooling promotes nodule formation, slow cooling promotes flake iron. Some nodularity is allowed, and is usually inevitable, flake graphite should not be present. Active magnesium should be controlled within very tight limits of less than +/- 0.005%.

A wide window of opportunity is available if the titanium method of CG production is utilised and complete CG structures can be produced in castings with wide cross sectional variation. The downside is the formation of titanium nitride cuboids in the structure leading to poor machineability and this method is usually limited to ingot moulds, brake discs (the cuboids enhance the brake disc wear properties) or parts requiring limited machining. However for general engineering castings, where extensive machining is required, alternative methods are required.

If the titanium method is not applicable very close control of base iron metallurgy is necessary. Active sulphur, oxygen and magnesium levels need to be measured and controlled as does nucleation status.

Spectrographic analysis will give a good indication of levels of tramp elements or alloying agents but cannot measure the interaction of these elements. Thermal Analysis allows the measurement, and ultimately, control of these interactions and allows a true picture of how the metal will react with magnesium and ultimately solidify to the required structure.

By measuring and controlling active sulphur and oxygen levels, an accurate assessment of required magnesium additions can be made, ensuring residual active magnesium levels are achieved. Final nucleation state can be assessed and levels of inoculation adjusted accordingly. Inoculation levels need to be tightly controlled to minimise the formation of carbides but limited to prohibit the formation of excessive nodules.

The aim of the casting engineer is to ensure that metal with a consistent thermal finger print is poured from furnace to treatment ladle, or in-mould methods, and from ladle to mould. Thermal analysis in conjunction with spectrographic analysis is currently the most reliable method for consistent, machineable CGI production.

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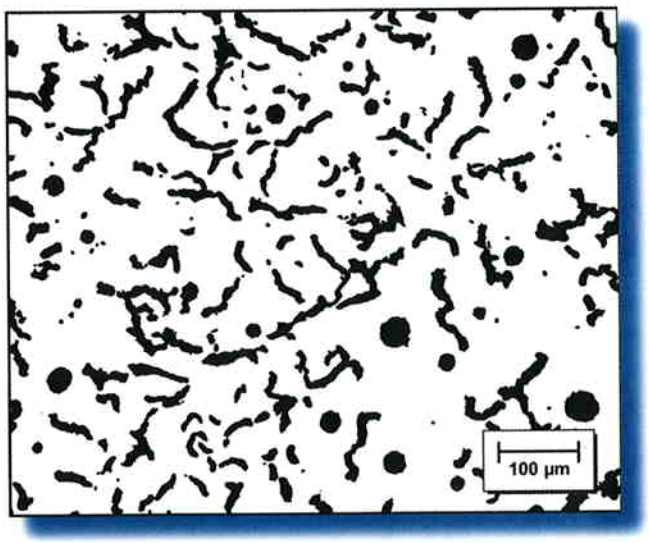
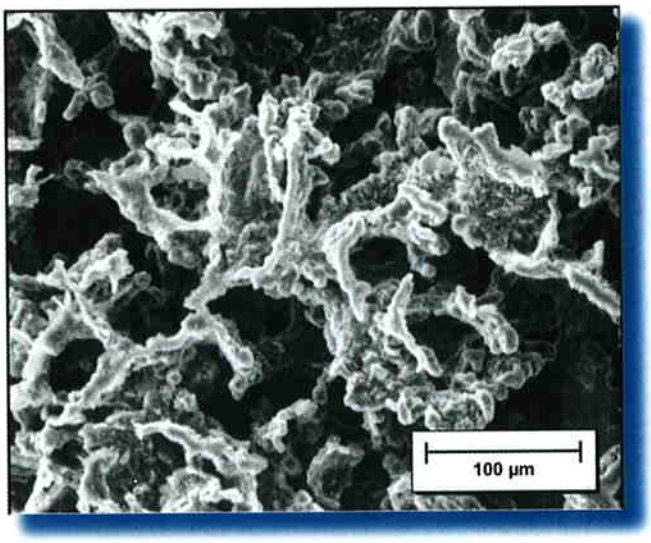


CGI microstructure containing 10% nodularity



Deep-etched SEM micrographs show the 3-D coral-like graphite morphology

Asmet
Source of Strength

A&S
Metallurgical Resources Limited

A&S has become Asmet.

European Suppliers of:

Pig Iron
Ferro Alloys
Silicon Carbide
Magnesium Ferro Silicon
Inoculants
Foam and Ceramic Metal Filters
Magnesium and Inoculant Wires
Aluminium Master Alloys

From June 2011, we will no longer be known as A&S Metallurgical Resources and will instead, simply be known as Asmet. A new name to reflect our new vision.

We remain incredibly proud of our 20-year heritage and reputation, but look forward to embracing our future as we transform the way we supply the European market.

Join us at GIFA 2011, Düsseldorf for the launch, Hall 13, Stand D50 Thurs 30 June at 14:00

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