

## Article no. 2: METEC 2015 (business)

### **Promising outlook for metals:**

**More than 3,500 different types of steel around the world**

**Strong demand for copper in car manufacturing and medical engineering: conductive and antimicrobial**

**Aluminium: lightweight and resistant**

**Excellent implant quality with nickel, zinc and lead alloys**

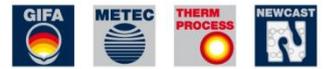
**Worldsteel President Dr Wolfgang Eder recommends concentration on advanced technology and innovative skills**

METEC 2015 – the leading international trade fair for metallurgy and smelting technology will be presenting innovative solutions for smelting, rolling and steel mills

Steel, copper, aluminium ... metals are required in practically all areas of day-to-day life and are therefore a vital feature of everything we do nowadays. The metallurgical industry has tremendous economic significance as a result. Companies in the metallurgical industry face high cost, price and performance pressure. METEC 2015, the leading trade fair for metallurgy and smelting technology, will be providing an insight into innovative technologies with which companies can reduce operating costs, increase individual strengths and, consequently, remain competitive in Düsseldorf from 16. to 20. June 2015.

### **More than 3,500 different types of steel around the world**

The Worldsteel Association, which is the central association of the steel industry, has calculated that there are in the meantime more than 3,500 different types of steel. By volume, steel is in fact the metal that is used most. Worldsteel announced in January 2015 that global production of raw steel in 2014 increased by 1.2% over the previous year to just under 1.7 billion tonnes. Experts expect that global steel consumption will be growing by about 2 per cent in 2015. The study "Challenging Conventional Wisdom in Steel", which was published by the market research company Roland Berger Strategy Consultants in August



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2014, comes to the conclusion that the “gap between capacity and demand” is getting bigger and bigger, however. The problems steel manufacturers face include demand that is in some cases stagnating or even declining in major customer segments (such as the automotive industry, mechanical engineering and the construction industry), structural weaknesses at individual steel mills and poor capacity utilisation in some cases. Dr Wolfgang Eder, Worldsteel President and CEO of the steel manufacturer Voestalpine, estimates that there is about 40 million tonnes of excess capacity in the European steel industry. Another challenge for the companies in this industry is the fact that demand for steel in Europe is decreasing, because car manufacturers are relocating some of their production from Europe to Asia and America, as a result of which the problem of excess capacity in Europe is increasing even more, while energy regulations introduced to enforce political decisions taken by the EU are making it even more difficult for European steel mills to compete.

### **Strong demand for copper in car manufacturing and medical engineering: conductive and antimicrobial**

There is strong demand for non-ferrous metals too – primarily (by volume) metals like copper and copper alloys as well as lightweight metals such as aluminium and alloys based on it. Copper is used for numerous electrical systems because of its high electrical and thermal conductivity. This is a major reason why demand for copper has soared in recent years. Since it has only been possible to increase the volume produced slowly, the copper price has risen to more than USD 10,000 per tonne. One of the consequences of this – apart from pressure to reduce weight – is, for example, that manufacturers of automotive cables are replacing cables made of pure copper by aluminium (which also conducts well but is lighter) or by high-strength copper alloys. There is no need for the copper and copper wire industry to worry about this all that much, however. With respect to permanently installed electricity lines, where weight plays a less important role, the European Copper Institute (ECI), Brussels, recently presented the interesting “ECI Ecodesign Study for Power Cables in Indoor Electrical Installations”:



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according to this study, an estimated 2 per cent of total electricity consumption in the European Union is accounted for by losses that occur in the cables during power transmission. This could be halved if the cross-section of the cables was increased to the economic optimum. This would in turn have a positive impact on the total cost of ownership (TCO), while greenhouse gas emissions would in addition be reduced by up to 10 million tonnes per year thanks to the drop in power losses. Copper materials are also required in large quantities for such products as pipes, fittings and sanitary equipment due to their high resistance to corrosion and chemically aggressive substances. In view of its antimicrobial properties, copper is used in hospitals and other public buildings for grab and door handles, in order to prevent the transmission of germs.

#### **Aluminium: lightweight and resistant**

Aluminium conducts electricity well, has a relatively low weight and resists corrosion, while it is also a very popular packaging material for food and beverage applications. According to a study published in June 2014, IKB Deutsche Industriebank, Düsseldorf, expects global aluminium production to increase slightly to 50 million tonnes in 2015. Demand for primary and secondary aluminium is continuing to grow, with vehicle manufacturing playing an important role here for the weight reasons already outlined above. When new models are launched in the next few years, parts made of aluminium are to be used to a larger extent instead of steel. A study compiled in 2012, in which the European Aluminium Association (EAA) was involved, revealed that the amount of aluminium used per car almost tripled between 1990 and 2012 – from 50 kg to 140 kg – and could increase to as much as 180 kg by 2020, if more use is made of the material in smaller vehicles too.

#### **Excellent implant quality with nickel, zinc and lead alloys**

The other non-ferrous metals, such as nickel, zinc and lead, are also in demand – either alone or as an alloy component – thanks to their specific properties and they are proving to be increasingly popular the more progress is made in technical development. In August 2014, the



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German Ministry of Education and Research in Berlin presented a “collection of the research and technology prospects for 2030, broken down into 11 technological areas” to the public. Technological area 11 (“material science and technology”) focusses, among other things, on steel and non-ferrous metals as well as on the implementation of more and more sophisticated property combinations. Examples of future application areas for non-ferrous metals are metallic glass for medical engineering instruments and components, aerospace and micromechanical components, cellular metallic materials for lightweight components and various alloys for medical engineering, such as new titanium alloys for permanent implants and cardiac pacemakers, nickel/titanium alloys for stents and magnesium-, calcium or iron-based alloys for biologically degradable implants.

**Worldsteel President Dr Wolfgang Eder recommends concentration on advanced technology and innovative skills**

Whether steel, other iron materials or non-ferrous metals are involved: in many application areas they continue to be competitive against newer, alternative materials. All industries face constant and growing cost and price pressure, however. Worldsteel President Dr Eder recommends that European steel producers concentrate on advanced technology and innovation leadership, in order to be able to compete internationally. New equipment, which can cope with constantly changing capacity utilisation levels and with which raw materials can be processed more efficiently, is one solution here. Such new production technologies as customised manufacturing, the characteristics of which are designed to satisfy the specific requirements of the processor, are being used in this context too. What all metals have in common is that their production and processing are very energy-intensive and lead to high CO<sub>2</sub> emissions. Energy consumption and the costs associated with this could be reduced by further optimisation of production operations. Since metals can be recycled very effectively, resource and energy requirements can be reduced by using secondary raw materials as well. As a result of the development in the copper price, the recycling of scrap copper is becoming an increasingly attractive



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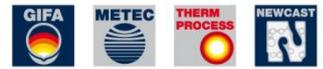
proposition, for example. The thinking that is being done about implementing the “industry 4.0” concept – which has been the subject of extensive debate in the meantime – more intensively in the metallurgical industry, in order to optimise production operations and supply chains, is likely to create potential cost savings too. And last but not least, companies in the metallurgical industry can also become more flexible and provide added value to customers – for example via production on demand – by adapting their storage systems, by offering individual terms of payment and by providing additional services.

### **The METEC 2015 trade fair**

Companies in the metallurgical industry need innovative machines, equipment, software systems and much more besides in order to be able to operate successfully in a competitive global market. The International Metallurgical Trade Fair METEC, which is taking place at the same time as the trade fairs GIFA, THERMPROCESS and NEWCAST that focus on associated fields and all share the same motto (“The Bright World of Metals”), will be providing information about this and the innovative developments that are being made. In Halls 3 to 5 at the venue in Düsseldorf, the exhibitors will be presenting plant and equipment for iron and steel making, for non-ferrous metal production, for casting and pouring molten steel and for the forming of steel, in addition to the latest technologies for environmental protection, disposal and gas purification, electrical engineering, process control, measurement, testing and information processing as well as equipment and components for metallurgical plants, rolling mills and steel mills. METEC 2015 is being held in Düsseldorf from 16. to 20. June 2015.

### **The Bright World of Metals:**

The four international technology trade fairs GIFA (International Foundry Trade Fair), METEC (International Metallurgical Trade Fair), THERMPROCESS (International Trade Fair for Thermo Process Technology) and NEWCAST (International Trade Fair for Precision Castings) are being held in Düsseldorf from 16. to 20. June 2015. Visitors from all over the world will be coming to the city on the River Rhine for five days at this time to focus on castings, foundry technology, metallurgy and thermo process technology. A programme of high-quality additional events will again be taking place alongside the trade fairs, involving seminars, international congresses and lecture



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series. All four trade fairs and the programmes co-ordinated with them will be concentrating on the issue of resource optimisation and energy efficiency. A total of 79,000 experts from 83 different countries visited the stands of the 1,958 exhibitors at the previous events in 2011. Further information is available in the Internet at [www.gifa.de](http://www.gifa.de), [www.metec.de](http://www.metec.de), [www.thermprocess.de](http://www.thermprocess.de) and [www.newcast.de](http://www.newcast.de).

Messe Düsseldorf organises not only GIFA, METEC, THERMPROCESS and NEWCAST with the joint motto "The Bright World of Metals" but also other high-quality trade fairs for the metallurgical and foundry industries all over the world. They include FOND-EX (International Foundry Fair) and Stainless in the Czech Republic, Metallurgy India, Metallurgy-Litmash (International Trade Fair for Metallurgy Machinery, Plant Technology & Products) and Aluminium Non-Ferrous in Russia, indometal in Indonesia, metals middle east in Dubai, ITPS (International Thermprocess Summit) Americas and Asia and the Aluminium trade fairs in China, India, the United Arab Emirates and Brazil. The range of events held for the metal industries at the Düsseldorf location is rounded off by: Valve World Expo (International Trade Fair and Congress for Industrial Valves and Fittings) and ITPS Düsseldorf as well as the international trade fair ALUMINIUM organised by Reed Exhibitions and Composites Europe.

**Further information and photos are available at [www.metec.de](http://www.metec.de)**

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