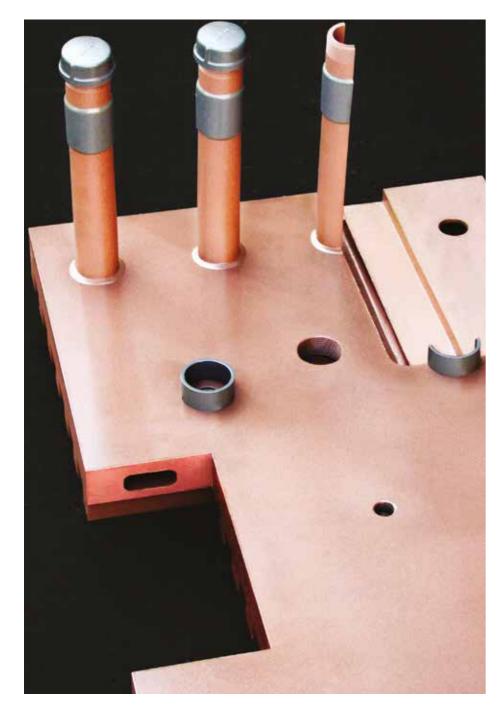


Quality and reliability when the heat is on Luvata is a world leader in metal fabrication, engineering and design. With operations on three continents, you will find our components and our expertise in some of the world's most successful technologies, including photovoltaic energy, MRI scanners, and even the Large Hadron Collider. In fact, anything that contains copper is likely to have felt Luvata's influence. We have been working in Metallurgical We work closely with our customers Applications for nearly four decades. to determine the right approach. From We use our expertise and know-how to end-to-end solutions where we design, provide tailor-made solutions for foundries, manufacture, deliver and install everything; smelters, furnace mills and for the to simply supplying an off-the-shelf product; electrolysis industry. Every customer is we are happy to help. Nobody understands copper like Luvata, and when you buy into different and we pride ourselves on our innovative approach and versatility our expertise you can rest assured that our first class project management, after in coming up with the right solution, time after time. sales service and attention to detail come as standard. 2 WWW.LUVATA.COM

Copper staves for blast furnaces

Nowhere are conditions more demanding than in foundries and blast furnaces, so our specialist knowledge and experience are invaluable. We work closely with some of the world's leading engineering companies and we are constantly seeking out new solutions to improve efficiency for our customers, increasing productivity and optimising material usage.





Copper staves for blast furnaces

Staves are essential for protecting the steel shells of blast furnaces, and copper, with its superb conductivity, is an ideal material for them. At Luvata we have created a unique manufacturing process for copper staves. We use a continuous casting process to produce the cooling channels in the copper slabs. These are then hot-rolled to recrystallise the grain structure.

There are two key benefits to this innovative process. Firstly, the stave design is smaller, reducing weight and therefore the material cost. Secondly, the oval shape of the staves gives them a greater surface area, making them more efficient and creating more furnace volume.

We produce many other specialist products for metallurgical applications, including copper slag runners for blast furnaces and special elements for blast furnace hearths and tap hole areas.

Cooling elements and slag launders



Cooling elements and slag launders

Luvata's manufacturing process is fully integrated, from the delivery of the pure cathodes to the production of the final product, so we can be sure that our quality is second-to-none.

We have a flexible approach and are happy to design a complete solution, or to create a product from a customer's own drawings. Our runners can be produced from separate sections for the bottom and wall cooling, with cast-in water channels, or alternatively from one rolled, bent plate with drilled water channels. We can also offer a choice of hot-rolling and drilling, or even mould casting, depending on the customer's precise need.

We also produce components for electric arc furnaces, where high thermal and electrical conductivity are essential. These include cooling elements, electrode holders and bus tubes.



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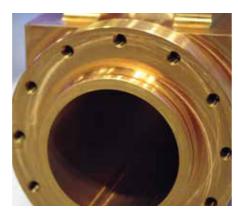
Metallurgical applications at work













About Luvata

What does Luvata see for the future?

We will use our unique technology know-how to influence the development of a sustainable modern world. We have always aimed to improve our customers' products and processes, and to help them increase the efficiency of their businesses. But our vision is bigger than that. If human society is going to maintain the lifestyle that we all enjoy today AND offer it to emerging societies, we will all need to become much more efficient and to take much less from the planet. We are helping companies to make their products, processes and production more sustainable: do more, waste less, and pollute less.

What's Luvata's plan for getting there?

Luvata looks to build on its distinct strengths, bringing expertise and dedication to high growth regions and adjacent markets around the world. We are stepping into niche and specialist markets with our

high-value, engineered solutions, and we are developing new solutions in partnership with our customers to conquer challenges at the front end of market demand.

How does Luvata behave?

In doing all this, we resolve to be the partner of choice for our customers, the employer of choice for our staff, and to be a positive and responsible friend to everyone else. We strive to be open-minded and focused on getting results; and when we promise, we deliver.

Where in the world are we?

Our global footprint stretches across the Americas, Europe and Asia. Our diversity of locations, cultures and markets gives us access to a wealth of knowledge and expertise that simply keeps growing. It means that we are local to our customers, wherever in the world they are and can be responsive to their needs, including fast local delivery straight to the door.



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