

With domestic production, **Concast** is forging a future in wrought products

# A growing

BY NICK WRIGHT

**D**uring the past 10 years, the levels of copper alloy wrought production in North America gradually receded to a point where demand for the material re-emerged loud and clear, according to Al Barbour, president of Concast Metal Products Co., Mars, Pa. Feedback from Concast's existing customers indicated a healthy need for not only wrought products but also reduced lead times and smaller quantity commitments—issues that a dearth of domestic production couldn't adequately address.

"There was more and more of the market that was imported," Barbour says, noting lead times for imported material can take months.

Now, more than a year after it made capital investments to produce its wrought product line, Concast is forecasting significant growth for wrought products. Currently, wrought products account for less than 5 percent of the company's business, says Martin Little, executive vice president of sales and marketing. However, as Concast pumps more investment into the wrought alloys, the long-term potential could be as much as 20 percent to 25 percent. The capital commitments suggest the company has strong faith in the line down the road.

"We look out three to five years. I think that's a very reasonable goal," Barbour says. "We're really excited about it. There aren't too many times in our company's history that we feel have come along like this that really have that potential."

As a single-source supplier of specialty copper-based alloys, the company is in the position, like many mills, to hear the details of demand from the distributors, fabricators and OEMs sourcing its material. That information, together with its technical expertise, existing capabilities and success in the cast alloy market, lets Concast tailor its business to fit.

Little says he's received calls from customers, CEOs and purchasing departments asking when Concast will have certain alloys. "There's a definite need and excitement in the market," he says.

## Draw it out

The focal point of Concast's wrought production is a new horizontal draw bench at its Birmingham, Ohio, facility, for which the company added approximately 15,000 square feet in 2009 along with finishing equipment, straighteners and tooling.

Concast cold draws its wrought rods and bars in-house, rather than extruding them, through the draw bench. It's a process by which wrought bar is pulled through a die to



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Wrought bar ready to be cold drawn by Concast's draw bench.

lengthen it and change the grain structure to develop strong mechanical properties, Barbour says. "We're working basically right now slightly under a 1/2 inch up to about 2 1/2 inches," he says.

As the draw bench elongates and compacts the alloys, it enhances the mechanical properties and finish for a target consistency. Currently, its standard wrought alloys are C314 (leaded bronze), C510 and C544 (phosphor bronze) and C63000 (aluminum bronze). The non-standard alloys include C26000, C31600, C52100, C53400 and C65100.

After casting, Concast's first step in creating a wrought alloy is getting it pulled through the draw bench. Varying from alloy to alloy, annealing and another draw before finishing may be required.

Depending on a distributor's desired alloy, Concast delivers its wrought products within a couple thousandths as outlined by ASTM specifications for stringent tolerances and mechanical properties, Barbour adds. Drawing the material ensures dimensional consistency from bar to bar, a key benefit for customers.

"The cost of material has risen so dramatically that any ability to get it close to tolerance so there is less machining is a large benefit for a customer," he says. "So these are, in general, very tight tolerances."

## Strong parts

Concast can trace its in-depth knowledge of the wrought alloy applications to the company's bond with distributors, which work with tiers of fabricators and OEMs, as well as its in-house expertise. Barbour says everyone from quality control, plant personnel to sales and metallurgists are critical



The casting process is the first step in creating wrought products.

to developing in-house technical expertise.

On the material end, the alloys provide different mechanical strengths for certain industries and end uses, says Dominic Lemaire, product engineer.

"Our distributors might sell to a machine shop and then to an OEM manufacturer before it even gets to market," he says. "Sometimes we're three or four tiers down the line or we may be dealing directly with an OEM. It depends on how it fits into our business model."

Applications and markets requiring alloys with strength and hardness, including aerospace, fire protection, plumbing and oil and gas, often source wrought alloys.

For example, the refined grain structure and thermal conductive properties of C314 and C316 alloys lend themselves to parts of fire suppression units and sprinkler system mechanics, Lemaire says. The unseen but crucial components of airplane landing gear bushings use alloy C630.

"The chemical composition guides the

mechanical properties and the processes the wrought products go through enhance that even further," he says.

Oil and gas industries specify wrought alloys for several applications, such as seal components for pumps, according to Lemaire. Other commercial applications integrate wrought components ranging from industrial fuel injection systems to fire hydrants and small valves. The compacted grain structure and alloy homogeneity of C314, C616, C510 and C544 are important factors in electronic components, an area for which Concast supplies wrought products but didn't initially expect.

"We're talking about a vast number of usages," Lemaire says.

## Growing the business

The company's business for wrought alloys can be viewed as two arrows, Little says. "After casting, one goes up to our traditional business and the other to our new wrought alloy business."

By establishing itself in what was a quiet domestic wrought production market, Concast can cut lead times to its customers, reducing their reliance on imports. Barbour says the company's goal, as for its other cast products, is to have about 80 percent of what any customer needs in stock on the day they inquire, effectively slashing lead times.

Although the wrought production has been increasingly active for about a year, Little says from a sales and marketing standpoint, one of the difficulties is "things never happen fast enough." He says Concast's sales staff and outside representatives are eager to answer calls from customers, which is an exciting position to be in.

For five decades, Concast has been in business manufacturing continuous cast



Concast stocks a wide range of wrought alloys and sizes.

products, a testament to its longevity and adaptability—traits that any successful company must embrace to remain relevant and competitive. Debra Beevers, marketing director, says the majority of Concast's wrought business is coming from its existing distribution network that carries its cast products. Combined with consolidating the customer service group to Birmingham, Ohio, Concast's additional staff and training will "streamline our internal processes and service all of our accounts in a more efficient manner."

With regard to the company's longevity, Barbour describes his part of the business as a craft built up over time with experience.

"We want to be very diligent in how we develop our craft," he says, noting Concast's emphasis on customer satisfaction. "At the same time, we're building up our knowledge base."

"In our world, we handle a lot of different alloys. They all have different characteristics, and we want to get kind

of an intimate knowledge of how that material acts and reacts," he continues. "Although it's not difficult, it takes time."

Even as Concast is developing the wrought product line, Little says the company is comfortable meeting all of its market's needs. "The product will grow dramatically for us in the next two years," he says. "So what it is today will be vastly different than when we're manufacturing it full steam."

Nonetheless, the company appears seasoned and poised to deliver those products and eventually grow its market.

"That part takes some time, and we want to feel comfortable all those pieces are together," Barbour says. "At the end of the day, it has to be right." ■

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