

## LEAD-FREE BRASS

Gov. Schwarzenegger's signature jump-started a movement that forced fabricators to consider a world without traditional leaded alloys.

### California's AB1953 turns on the tap for 'green' alloys

Change is the way of the world, and while some parts of it have been slower to adapt than others, there's no avoiding it. Such is the case in brass fabrication, particularly when lead is losing favor.

When Gov. Arnold Schwarzenegger signed California Assembly Bill 1953 in 2006 mandating that all faucets and plumbing fittings sold in the state be lead-free beginning in 2010, he jump-started a movement to overturn the entire copper and brass fabrication industry and force it to consider a world without traditional leaded alloys.

"For the first time in the history of the United States, a political issue caused a change in what could and could not be tolerated as an alloy in a specific application," Tim Strelitz, president of Los Angeles-based California Metal-X Inc., said.

AB1953, a state-wide initiative to reduce the lead content of plumbing fixtures to less than 0.25 percent from up

to 8 percent on wetted surfaces, was intended to minimize the California public's potential exposure to the toxic metal. But while California might have been the first step, it surely wasn't the last. As other states introduced similar legislation with mixed results, smart producers in all regions began to look for ways to increase their commitment to lead-free alloys as well.

Toronto-based Ingot Metal Co. Ltd. joined the lead-free bandwagon early in its development, a move that has proved worthwhile, according to Hy Shore, the company's director of purchasing. "The fastest-growing segment of our business is lead-free. These are definitely viewed as more progressive alloys," he said, noting that his company expects demand for lead-free products in the next few years to surge to the point that Ingot Metal will be able to drop its leaded product line completely.

Although a number of lead-free alloys

have been invented since the turn of the century, from Federal Metal Co.'s trademarked Federalloy line to the Copper Development Association's unpatented EnviroBrass family, perhaps one of the better known is the trademarked Eco Brass, a copper-zinc-silicon alloy patented by Japanese producer Sambo Copper Alloy Co., now Mitsubishi Shindoh Co. Ltd. Four North American companies have the rights to produce the material in its varying forms: U.S. licensee Chase Brass & Copper Co. LLC and sub-licensees Ingot Metal, California Metal-X and Concast Metal Products Co., Mars, Pa.

Spokesmen from all four companies said that current demand for Eco Brass is through the roof, despite the poor state of the overall economy. "With the economy being slow, I think more people are taking the time to look at something like this," Concast president Al Barbour said.

But even with demand on the rise,

lead-free alloys might not be the product for everyone, producers said. Adding lead-free alloys to a traditionally leaded product line provides a slew of challenges, they said, and some smaller or less-flexible producers might not be able to keep up. "You take a large manufacturing operation and they're scared to death about changing alloys," Strelitz said.

The biggest challenge for producers of lead-free copper alloys is the issue of product segregation along all stages of production, from the arrival of scrap to the packaging of finished product, sources said. Managing both leaded and lead-free alloys requires far more forward thinking and management than running a single alloy, they said.

"You have to keep the scrap separate from all the other leaded and low-lead alloys we produce, and we produce eight other rod alloys. Plus, you don't want to get the silicon from Eco Brass in the other alloys, since it changes the properties," said Larry Muller, manager of metallurgy and technical services at Chase Brass. Additionally, the company must schedule casting production in such a way that progressively lower-leaded al-

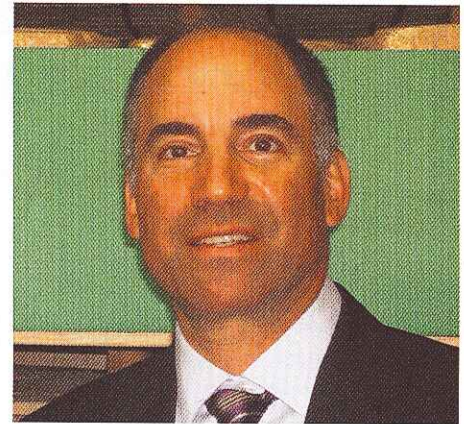
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loys are cast sequentially, virtually cleaning the machines of all lead before Eco Brass makes its way into the casting process.

Such an added attention to detail can prove expensive, too. "If I were to run Eco Brass in a rotary furnace I had just run leaded alloys through, I would run through copper to clean up. And that's a big expense: one-half to two-thirds of that furnace has to be washed out with a No. 2 copper to clean any lead that is in the refractory," Strelitz said.

"We think it's the alloy that's going to



be successful and we think it's going to be very good for American industry, but it's an uphill fight right now," he said.

But despite the challenges that go into removing lead from a traditionally leaded product line, producers of Eco Brass contend that the shift will be worth it in the long run. "In brasses and bronzes, I see the use of lead diminishing," Shore said. "No one wants to melt it, no one wants it in their plants and consumers don't want it in their products, and I don't see that reversing any time soon."

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