

## Finding opportunity in aluminum waste

Entrepreneur's cooling machines now going global

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The Hamilton Spectator

(May 5, 2010)

Ray Dubosq sees profit where others see only an ugly waste.

The ugly waste is called dross. It's the scum that forms on the top of a pot of molten aluminum as it cools. The problem for the industry has always been the longer the molten metal takes to cool, the thicker the crust of waste will be and the greater the amount of potential metal lost.

"The problem has always been if you don't cool it right away, then it turns to garbage," said Ray Dubosq, owner of Hamilton-based MFS Systems (2007) Inc.

For the past 20 years, first as a contractor and now as the owner, Dubosq has been building a reputation in the metals industry for a new solution to that problem -- a simple and environmentally sensitive way of cooling metal quickly to reduce losses.

"We've got quite a niche in the market now," Dubosq said. "Before us, there was a lot of dumping going on, a lot of this material would end up going to the dump."

At its most basic, Dubosq's system involves cooling the metal by placing it in a drum rotating through water. The water cools the drum, which in turn cools the metal without releasing any noxious steam or vapours into the air.

Traditionally, dross has been skimmed off the surface before the metal is poured into a mould or casting flask. By remelting the dross, a company could recover about 30 per cent of its volume in usable aluminum.

Dubosq's rotary coolers, however, can cool a load from 920 C to 100 C in about an hour, compared with eight hours for traditional methods. The dross resulting from rotary cooling contain up to 55 per cent usable aluminum -- that means a better payoff for the trouble of remelting it and less energy used to achieve more results.

At current prices of \$1 a pound for aluminum, that's a healthy boost for the industry.

"When you melt aluminum six to 10 times a day, that can all add up really fast," Dubosq boasts. "The worst that happens with our process is the heat evaporates some of the water."

Dubosq bought the rights to the MFS technology three years ago through his Hamilton welding company RRD Welding and Fabrication.

The system was developed in 1972 by Oakville-based engineer Philip McMahon, who also pioneered the bulk cooling of heated materials such as quicklime.

By 2007, he was ready to retire and wanted to sell his brainchild to someone with the skill to market it properly.

For most of those years, Dubosq was involved with MFS as a contract welder before buying the technology.

The rotary coolers are now made by RRD Welding's associate company MFS Systems (2007) Inc. The company also makes rotary reclamation furnaces, scrap drying and preheating systems, and sand handling and preparation systems.

MFS is a small operation for now. Six employees have turned out four machines in two years, but as environmental regulations around the dumping of dross tighten, inquiries are coming in from around the world about a promising new way of dealing with the problem.

Companies in South Korea, Thailand, Norway, Iceland and the United States have all expressed interest in the machines that cost between \$650,000 and \$1.5 million, depending on size. Each takes about 10 weeks to complete.

"We're gearing up to do half a dozen machines a year and we'll grow to 20 employees once we get going strong," Dubosq said.

Part of that growth, he said, will come from finding other uses for rotary coolers.

"Anything that's bulk heated can be cooled in our machine," he said. "I bought this technology because I see the potential for it."

Companies like his, Dubosq said, can be an example to other small firms with big ambitions.

"Companies all around us are closing, but a few others are starting to thrive," he said. "We're a local company doing global work because the markets really are open to everybody."

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