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Investments help Medway Plastics control energy costs

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George McDaniel, maintenance manager for Medway Plastics Corp. in Long Beach, Calif.

Long Beach, Calif. — Family-owned Medway Plastics Corp. is having success using fully insulated Thermal Control Solution-brand radiant heating systems on its larger injection molding machines.

“The heaters are all working well,” said Thomas Hutchinson Jr., Medway Plastics president and co-owner. “Some have been in service for more than six years without a failure. Wiring is different than the standard set-up, but it is not rocket science.”

George McDaniel, Medway maintenance manager, said, “I love the heaters. They are much more efficient. You can put your hand on them.”

McDaniel cites one problem: “Since we put in the TCS bands, they do not have covers, and the material guys can step on them,” although the systems can continue to function properly, he said. Older-style heater bands have metal covers.

Otherwise, “we love them and are happy with their operation,” McDaniel said. After previously using barrel insulation jackets, “we noticed a drastic temperature drop in the shop.”

McDaniel said he now notices the higher temperatures being generated by non-TCS-equipped small-tonnage machines with their standard covers.

The TCS-brand systems from Rex Materials Inc. help Medway control process temperatures within 1°F.

“That is amazing,” McDaniel said during an office visit in Long Beach.

Standard uninsulated mica and ceramic bands can yield tremendous amounts of excess heat.

The initial TCS systems at Medway utilized a six-part octangular-segmented design. Next came a clamshell TCS concept. The most recent TCS units — the system’s third design — have an exterior coating, a cable tray and revised electrical connections to ease installation.

Medway has installed TCS systems on 16 machines, all 500 tons or larger, McDaniel said. Medway operates 26 presses in Long Beach.

All four of the injection presses in Medway’s Pflugerville, Texas, plant use TCS systems.

Rex manufactured the systems at a greenfield-developed plant in Council Grove, Kan. Rex acquired another production facility in South Hill, Va., in 2013.

Medway received rebates from utilities in California and Texas for the equipment.

Rex Materials began manufacturing TCS units in 2004, and according to the company, very few replacement parts have been ordered.

“We’re seeing a rapid increase in demand for TCS, both to reduce energy use and to improve the working environment for the shop floor staff,” said Ken Van Nimwegen, global sales
manager for TCS-brand heater bands with Howell Township, Mich.-based Rex Materials. “Both cost reduction and employee retention are driving continuous improvement efforts.”

Van Nimwegen said in an interview that the medical molding operation of Franklin Lakes, N.J.-based Becton, Dickinson and Co. is installing a TCS system on any of its injection molding machines with a clamping force of 300 tons or above.

On average, installation of a TCS system may cost $4,000 to $6,000 per machine.

Depending on utility rates, the typical payback on investment is one to two years, according to the manufacturer.

A processor can obtain a customized TCS system design and software by identifying the barrel outside diameter, zone length and current heater voltage rating, Van Nimwegen said.

Energy consulting firm Bruce Blau & Associates of Fresno, Calif., is among sales representatives for the systems.

“TCS radiant heater bands are beginning to replace the mica and ceramic heating bands on both old and new injection molding machines,” Blau said.

Among those familiar with the TCS technology, Ritch Waterfield with the advanced plastic processing technologies segment of Milacron Holdings Corp. in Blue Ash, Ohio, recognizes energy savings as a key benefit of the radiant band heaters.

“We began providing this product to our customers in 2007, and customers with the most interest were high-throughput/fast-cycle applications,” said Waterfield, a sales engineer with the Milacron aftermarket unit. “Depending on application, customers typically see a 25 to 40 percent reduction in energy consumption.”

Milacron had served as the exclusive distributor of Rex’s TCS line in North America from 2007 through 2016. Rex Materials started selling the equipment direct to customers six months ago.

Also on the energy front, Medway utilizes a state-of-the-art system that generates electricity from natural gas, recovers the heat and converts it to refrigeration for mold cooling in the plant.

The co-generation system provides backup power for the entire plant and helps to control electricity costs during peak periods.

As part of the system, Medway in Long Beach has operated three 375-kilowatt generators with absorption chillers for about 11 years.

“Together, they generate more than one megawatt of power,” McDaniel said.

Thomas Hutchinson Sr. and his wife, Mary, founded Medway Plastics in 1974. Tom Sr. died in 2006, but Mary Hutchinson continues as chief financial officer with sons Tom Jr. as president, Gerald as vice president, Rick as vice president and design engineer and daughter Cheryl McDaniel as vice president of office operations. George McDaniel is Cheryl’s husband.