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Structural Composites Industries 'Green Initiative' Good for the environment *and* the bottom line!

Acetone has been a critical component for cleaning equipment used in the manufacture of composite reinforced cylinders at SCI's facility since the inception of the business in 1971. When the contaminated acetone was no longer suitable for the cleaning process, the chemical was stored in 55 gallon drums and identified as hazardous waste awaiting disposal.

However, disposal costs were nearly as expensive per 55 gallon drum as the replacement cost of fresh material. A drum filled with spent acetone cost $250 to properly dispose, while the replacement cost for new acetone was $300 per drum.

In 2001, SCI contracted with an outside recycling company to recover the used acetone. The recycling cost of a drum filled with acetone was $140 but the resin sludge generated by the recycling process was considered hazardous and, again, was subject to a $250/drum disposal cost. Additionally, each drum of sludge contained an estimated 20 gallons of unrecovered acetone, subject to an additional cost of $120 per drum. The total disposal cost of each drum of the acetone-resin sludge combination was therefore a substantial $370 per drum.

In 2004, **Ed Acree**, SCI's purchasing agent, attended a capabilities presentation conducted by Omega Recycling Technologies of Canada. Omega's representative analyzed SCI's acetone recovery and disposal issues and recommended a custom configured appliance to recover and pacify the acetone. The machine is a self-contained, computer-controlled distillation unit capable of processing 55 gallons of material in eight hours with 97% recovered acetone. The machine also reduces residual resin to a dry material which meets standard municipal disposal criteria. Between June 2, 2005, the start-up date of the new machine and July 14, 2005, SCI had recycled 18 drums of used resin. The total labor cost and the elimination of acetone/resin sludge disposal costs for processing the initial 18 drums has resulted in cost savings exceeding $3,000. **Norm Dunavant**, one of the original founders of SCI in 1971 and currently a consultant to the company, commented that, "The high cost of contracted recycling and acetone/resin sludge disposal have been eliminated, the liability of flammable liquid storage has been reduced, and a higher quality of acetone is recovered. Additionally, all here at SCI can take pride in the positive impact this green-business initiative has on our environment." ■

Sergio Martinez, a Manufacturing Engineer and **Norm Dunavant**, one of the original founders of SCI and a current consultant to the company, stand in front of the acetone recovery and disposal machines. Insert shows the before and after of the Acetone Recycling Process.