

Flooring Manufacturer Reduces Operating Costs with a Customized Heat Recovery System

Rising energy costs effect your bottom line. You don't have to be a CFO to understand that energy costs are high and show little sign of relief these days. To combat the rising cost of natural gas, many companies that operate air pollution control systems are beginning to look at methods that economically recover heat for use somewhere else in their manufacturing operations.

One leading vinyl flooring manufacturer called on Catalytic Products International, Inc. to analyze and ultimately design and install a customized heat recovery solution for their operations. The company has operated a 60,000 scfm RTO for over 5 years. The RTO processed VOC emissions from a specialized curing oven. The customer was interested in using this amount of waste heat in either the process oven or in building heat. Since building heat can only be used during the cold months of the year, we know the best payback on investment will be to recover the waste heat for use in the process. The challenge for CPI was determining how best to return heat to the oven without upsetting the delicate pressure balances and temperature profiles that are required to meet the products high quality standards.

Catalytic Products International arranged for our Applications and Design Engineer's to meet with the company to review the details relating to the oven and RTO's operations. Our staff conducted a comprehensive study of the air volumes, temperatures, and pressures for the entire system. Several options with budgetary cost estimates were presented. Ultimately, the customer choose to contract with Catalytic Products International for the design and installation of a RTO Waste Heat Recovery System.

The Heat Recovery System incorporated our specialized heat exchanger package and control system that is designed to return heat back to the coating oven. The system draws in waste heat from the RTO exhaust stack at about 380 F and passes this over our heat exchanger. Fresh outside air is pulled in over the counter cross-flow heat exchanger and is heated to over 300 F. This warm fresh air is delivered to several locations across the 200 ft long oven. The installation required over 200 ft of ductwork, two blowers, VF Drives, and instrumentation. A sophisticated controls interface and system constantly monitors system temperatures and pressures to meet the demanding quality needs.

Once the project was completed, the Heat Recovery System exceeded the original expectations by recovering almost 4 million BTU/hr of waste heat for use in the curing oven. This allowed a return on the projects investment of less than 2 years. After that, a savings to the bottom line of over \$ 230,000 per year will be realized.



Catalytic Products International is a worldwide leader in the design and manufacture of custom air pollution control systems, energy conservation equipment, and catalyst products.

For more information about this system or any of the VOC abatement systems designed and manufactured by Catalytic Products International, please contact them at:

Catalytic Products International
980 Ensell Road
Lake Zurich, Illinois 60047
tel: 847-438-0334
fax: 847-438-0944
e-mail: info@cpilink.com
website: www.cpilink.com