Sika Sarnafil, Inc.

Resource Conservation Case Study

Pioneering Resource Recovery Program Set for National Launch

Summary

Sika Sarnafil, a division of Sika Corporation, is a leading manufacturer of high-tech thermoplastic membranes used in roofing and waterproofing systems. Sika Sarnafil prides itself on production efficiency. The company, which has a manufacturing plant in Canton, converts more than 98 percent of the raw material it receives into product. Since the early 1990's, Sika Sarnafil has recycled about 4 million pounds of trimmings annually from its manufacturing process — material previously destined for local landfills. In addition to using nearly all of their raw material, the company looked into recycling the vinyl roofs they were replacing. In 2005, Sika Sarnafil took resource recovery to new heights; it became the first company in its industry to recycle old vinyl roofs. With technical assistance from OTA, the company significantly increased the amount of post consumer roofing material they recycled. Within two years Sika Sarnafil increased their recycled post consumer roofing material by more than 200,000 pounds, which kept customer's vinyl roof waste out of landfills and saved $100,000 in waste disposal and raw material costs. Buoyed by its success in Massachusetts, Sika Sarnafil has expanded its resource recovery program nationally.

Background

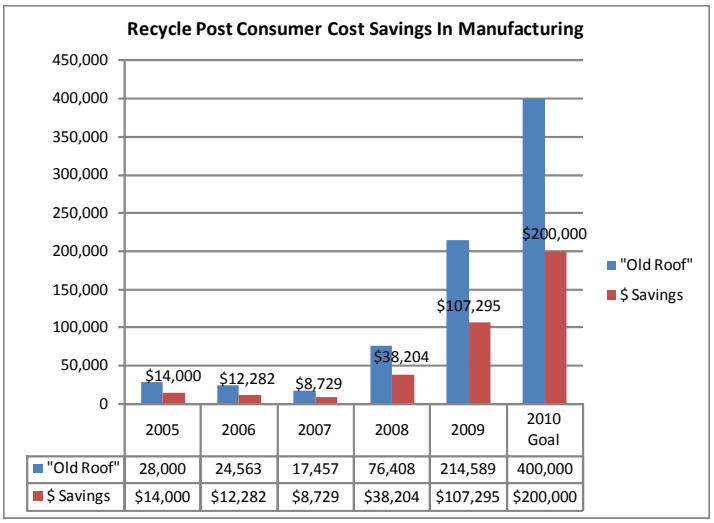
Headquartered in Baar, Switzerland, with subsidiaries in the United States, Canada and 70 other countries, Sika AG supplies products and services to the construction and other industries. More than 15 billion square feet of Sika Sarnafil roofing membranes protect arenas, museums and educational and commercial facilities worldwide. In addition to high-quality thermoplastic membranes, its divisions manufacture concrete admixtures, specialty mortars, sealants, adhesives, damping, and reinforcing materials. With over 12,000 employees and annual sales of about $2.5 billion, Sika AG serves North American, European and Asian markets.

Why Sika Sarnafil Recycles

Increasing disposal costs and the potential lost value of raw material prompted Sika Sarnafil to begin recycling trimmings from its production process during the 1990's. Initially, the trimmings were shipped to a facility in Canada for processing into roofing walkway pads. Eventually the company developed a process to reintroduce the processed material back into the membrane manufacturing system. In 2005, as volume grew, Sika Sarnafil invested in state-of-the-art grinding equipment at the Canton facility to eliminate the negative environmental impact and costs associated with the long-distance shipping related to using third-party grinders. By then a growing ethic of sustainability and increasing landfill restrictions and disposal fees helped make the case for large-scale recycling of roofs that had reached the end of their useful life. Sika Sarnafil's plan was to transport used membrane to the Canton plant, grind it to a suitable size and then add it to the manufacturing process to blend with new polymer.

The 158,000-square-foot roofing system at the Carver-Hawkeye Arena at the University of Iowa features membrane Sika Sarnafil recycled from the old roof, which had been damaged by a severe storm.

OTA's Role



In 2007, Sika Sarnafil contacted the Office of Technical Assistance and Technology (OTA) to discuss the regulatory implications of recycling used roofing membrane. OTA recommended that Sika Sarnafil have a Massachusetts Department of Environmental Protection-certified laboratory analyze a profile of used roofing membrane for metal content. Results indicated that the profiled roofing membrane would be considered neither a hazardous waste nor a regulated recyclable material. Prior to the OTA site visit, the company recycled more than 17,000 pounds of post consumer roofing material with a cost savings of almost $9,000. By 2009 that increased to more than 200,000 pounds with a savings of greater than $100,000. In total the company has recycled more than 360,000 pounds of roofing material and saved close to $200,000. Although Sika credits OTA assistance in 2007 for the substantial increase in the amount of post consumer roofing material recycled in 2008 and beyond, the initiative is part of a company-wide effort that began long before OTA visited the facility.

"The OTA staff assisted us in wading through the federal and state regulatory requirements and provided us with the pertinent information so that we could move the resource recovery project forward. We are currently working with OTA on an effort to recycle manufacturing scrap and to address energy conservation issues."

Mark Franklin, Environmental Health and Safety Manager, Sika Sarnafil

Project Profile

Sika Sarnafil supplied the roof membrane that solved water infiltration problems at the Marriott Long Wharf Hotel in Boston. A unique feature of the installation was the amount of materials recycled. At least 95 percent, by weight, of the existing materials were recycled, including the original roof membrane, metal flashings, insulation and gravel ballast. The stone ballast was shipped to a local landscape supplier for resale and the roofing membrane from the previous roof was processed for reuse in new Sarnafil products. The roof insulation was also recycled for other applications.

Looking Ahead

Sika Sarnafil's resource recovery program has diverted about 4 million pounds of vinyl trimmings from Massachusetts landfills. To date, the company has recycled more than 360,000 pounds of "end of life" used membrane. It has contracts for an additional 750,000 pounds of this membrane to be recycled. Sika Sarnafil introduced the program nationally at the end of 2009 and as a result expect the program to continue to grow in 2010.

Contact Information

OTA is ready to help you reduce toxics use and conserve energy, water and other resources. To learn more about our non-regulatory, confidential services — which are provided at no cost to Massachusetts companies, call (617) 626-1060, fax an inquiry to (617) 626-1095, or visit OTA's website: http://www.mass.gov/eea/ota