

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. 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 1990s, Sika Sarnafil has recycled about four million pounds of trimmings annually from its manufacturing process — material previously destined for local landfills or third-party grinding companies to be shipped back to Canton. The company did not stop there. Very recently, Sika Sarnafil literally began taking resource recovery to new heights; it became the first company in its industry to recycle old vinyl roofs. Buoyed by its success in Massachusetts, Sika Sarnafil intends to expand its resource recovery program nationally.

Background

Headquartered in Baar, Switzerland, with subsidiaries in the United States, Canada and 70 other countries, Sika Corporation supplies products and services to the construction and other industries. Almost 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 10,000 employees and annual sales of about \$2.5 billion, Sika Corporation 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 1990s. 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 long-distance shipping. By then, the growing sustainability movement, increasing landfill restrictions and increasing 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 replace new polymer at a ratio of approximately four parts new material to one part recycled material. The company was concerned, however, because some of the used membrane would have been manufactured by other suppliers, could be from five to twenty years old and could contain lead or other toxic metals used at the time of manufacture.



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. Based upon its evaluation of the results, OTA helped the company determine that it would not exceed threshold amounts for metals reporting under federal or state regulations. Results indicated that the profiled roofing membrane would be considered neither a hazardous waste nor a regulated recyclable material. OTA also advised Sika Sarnafil on air permitting issues.

Right: Final step in grinding process at Sika Sarnafil



Above: The new roof at the Marriott Long Wharf Hotel in Boston



“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 diverts about four million pounds of vinyl trimmings from Massachusetts landfills. To date, the company has recycled more than one million square feet of "end of life" used membrane. It has contracts for an additional three million square feet of this membrane to be recycled through the summer of 2009. Sika Sarnafil plans to expand the program to the south and midwest and to make the program nationally viable by 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>