

Sandhill Industries

Recipient of the
EPA Evergreen Award for Pollution Prevention

Fact Sheet



U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 10

August 2002

EPA recognizes Sandhill Industries of Boise, Idaho for environmental excellence and leadership in pollution prevention. Sandhill uses innovative techniques to eliminate emissions, reduce energy consumption and make products from recycled glass that compete head-to-head with products made from ceramics or cement.

Sandhill Industries is a small company (7 employees) based in Boise that manufactures glass wall and floor tile. Sandhill was founded in Fairbanks, Alaska and recently moved to Boise to be closer to major markets and the supplier of its recycled glass input materials. Sandhill is a growing, innovative company that uses new, clean technology to manufacture an exceptional product from recycled material. More information about Sandhill products is available at www.sandhillind.com.

Pollution Prevention Success

Energy. By using granular recycled glass in a sintering rather than a melting process, Sandhill has achieved a spectacular reduction in the energy needed to manufacture tile when compared to alternatives. The production of Sandhill tile uses less than one-half of the energy used to make comparable products such as ceramic tile. Energy consumption for the manufacture of ceramic tile is estimated by the National Institute of Standards and Technology (NIST), on average, at about 1,800 Btu per pound of finished tile. Sandhill uses less than 750 Btu per pound of finished tile. Based on the NIST figures in the past 12 months Sandhill consumed about 60 million Btu less energy than a comparable ceramic tile producer.

In 2001 Sandhill was awarded a Small Business Innovative Research (SBIR) Grant for their development of outdoor glass pavers. The glass pavers are thinner, lighter, and stronger than

concrete unitary pavers. They also are made using less energy than is used in the manufacture of a comparable amount of portland cement concrete. In addition, Sandhill's process generates no CO₂ emissions, while the manufacture of portland cement generates about one pound of CO₂ emissions for each pound of portland cement produced (NIST estimate). Sandhill's pavers will be available for commercial sale beginning in 2003.

Recycling of Glass. Sandhill began acquiring glass through the pick-up of scrap glass from window and door shops in Fairbanks. The business has grown to the extent that they now have a relationship with Enviroglass, an innovative glass processor near Boise. Sandhill's tile manufacturing process uses post-industrial recycled glass, traditionally a waste without recycling options in the Pacific Northwest. Over the past 12 months Sandhill used over 50,000 pounds of recycled glass.

Sandhill's outdoor pavers will use mixed-color post-consumer glass, which is a problem for recyclers throughout the country, with millions of tons available. Sandhill has proven that they can make the pavers using minimally processed post-consumer glass, creating a new market for mixed-color recycled glass.

Transportation. Sandhill's move to Boise has reduced transportation costs and the environmental impacts of shipping raw materials and finished

products substantially. The recycled glass they use is generated in the Boise area, processed near Boise, and manufactured in Boise!

Emissions. Sandhill's process produces zero emissions! There are neither organic burn-off nor inorganic emissions from the manufacturing process. Zero emissions is an oft sought but seldom achieved goal for P2 work in manufacturing. When developing the process, Sandhill recognized that recycled glass has some unique properties not available in the virgin materials used to make glass and ceramic tile. They applied equipment and techniques from semi-conductor manufacturing in ways that have never been used before. The result is a manufacturing environment with zero emissions.

Commitment to Environmental Quality

Sandhill has a total commitment to both the external and internal environment. Sandhill provides a quality work environment. In their recent move from Alaska the entire hourly production staff also moved. Whenever possible Sandhill uses recycled and recovered materials in all of its processes. For

example, Sandhill makes molds using fly ash from coal combustion plants and crushed aggregate from porcelain manufacturing waste.

Terri Raudenbush, Sandhill's president, was executive director of the Alaska Greenstar program in Fairbanks, a non-governmental pollution prevention organization.

Environmental Leadership

The Small Business Innovative Research grant awarded to Sandhill in 2001 was the only grant given that year under the EPA's division of that program for manufacturing using recycled material. Sandhill's long-term dream is to extend the innovations they have developed to small businesses and communities throughout the nation. They know that these techniques are applicable to manufacturing a multitude of products. This effort is being led by Robert Kirby, Sandhill's manager for research and development. Kirby has been involved with glass recycling technology for over a decade, and can be contacted at kirbgood@aol.com.

For more information about Sandhill Industry's products and environmental program call Teri Raudenbush, President at 208-345-6508.



The Evergreen Award for Pollution Prevention

EPA's Evergreen Award recognizes outstanding pollution prevention efforts within all sectors of the greater Pacific Northwest business community.

For more information about EPA Region 10's Evergreen Award for Pollution Prevention contact:

Robert Drake, US EPA Region 10
1-800-424-4EPA or 206-553-4803
drake.robert@epa.gov

on the WEB at www.epa.gov/r10earth/evergreenaward.htm