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Danger Overhead

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A BUSINESS CASE *for Sustainability*



Going green
improved
the bottom
line at
Ixon Ceramics.
by Nancy Westcott

As the realities of resource depletion and global environmental degradation become more evident, we can see a maturing and strengthening of the public's concern for and knowledge of the broad goals of environmental issues. Businesses will be increasingly scrutinized by both the public and regulatory agencies and will be required to develop approaches and practices to address immediate environmental concerns and adhere to the emerging principles and dictates of sustainability.

The business case for sustainability has been made by many, but it bears repeating here. According to Katrina Funk of Cap Gemini Ernst & Young, "The word 'sustainability' remains ambiguous and politically charged, particularly within the lexicon of business. When, as is commonly the case, the term is limited to encompass environmental management of social equity, sustainability is often perceived to be at odds with fiduciary responsibility and unlinked to business strategy.... A sustainable organization is one whose characteristics and actions are designed to lead to a 'desirable future state' for all stakeholders.

"For investors, a desirable future state would surely include sustained revenue



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growth over the long term. For the talent market, it would include workforce diversity. Regulators and the community at large value environmental stewardship and social responsibility. Consumers seek useful, reliable, price-efficient products and services. From the view of employees of the company itself, a desirable future state includes maintaining viability and profitability, as well as managing risk while promoting innovation. Companies that actively manage responses to a wide range of sustainability indicators are better able to create value for all of these stakeholders over the long term."

Managers are discovering the intangible indicators that gauge sustainability can also be indicators of efficacy—that is, of how well a company is run. A sustainable business strategy in manufacturing facilities can improve all aspects of the corporate manufacturing activity. Environmental management is a good proxy for gauging overall management capabilities at both the strategic and operational levels. Cost advantages can result from adopting best practices that focus on companies' production processes.

Process-focused best practices can be seen as the basic precondition for implementation

of all best practices at the environmental level and are the most basic building block of a responsible environmental strategy. The competitive result of environmental strategies that companies consider is short-term cost savings. In other words, process-focused best practices can create cost savings faster than other practices.

Firms can choose from a variety of technologies to reduce negative effects of their activities on the natural environment and on the business environment. Improved pollution prevention, attention to worker safety, reduction of VOCs, safe chemical handling, and using products that have no built-in obsolescence are some key components that demonstrate a firm's commitment to its environmental responsibility. They actually can improve the firm's financial status. In other words, going green improves the bottom line.

Some firms choose to meet or beat compliance targets as a way to demonstrate their commitment to sustainability. Proactive investing in environmental measures beyond those required by law can be good for the bottom line if for no other reason than to limit the downside risks of damages, hefty fines, litigation fees, and public relations disasters.

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Chemical Handling and Worker Safety

Ixon Ceramics, Inc. a Chattanooga, Tenn.-based subsidiary of Ixon Technologies, Inc. is a leading designer and manufacturer of microcircuit packaging for telecommunications, military, aerospace, satellite communications, and other high-tech applications. The company manufactures precision-engineered technical ceramics and metals in two buildings totaling more than 100,000 square feet.

Ceramic materials are prepared as "tape" or "pastes," while metals are prepared solely as "pastes." The process of making ceramic tape begins by milling precise amounts of raw materials into homogeneous slurry, a mixture that is principally ceramic powder of controlled particle sizes combined with organic binders and solvents. The slurry is then poured onto a carrier and passed under a blade to produce a uniform coating. Once dried, this material becomes a ceramic-loaded "tape" that is easily handled in rolls or sheets for unfired processing. Metal pastes prepared the same way are subsequently used for screen-printing on green ceramic tape to form electronic circuits, while the ceramic paste is used as screen-printed dielectric

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layers. These electronic circuits can then be layered on one another to form three-dimensional ceramic packages, which are then fired and plated—thus producing the final part. Ixion's customers then populate these ceramic packages with electronic components to be used in their final applications.

Observing industry-standard facility and safety considerations is a key component of Ixion's fluid management program. The pro-

cess chemicals are housed in a substantial environmental containment facility that will hold more than 6,000 gallons of fluids in the event of a spill or a flood.

With safety in mind and because of the flammable nature of the organic process solvents, including toluene and alcohols, Ixion has made it a policy that neither electric motors nor pumps can be used with or near these fluids. Most of the process chemicals and fluids arrive at the plant in 55-gallon containers. Until recently, many of these fluids were dispensed using a gravity-fed system.

The alcohols are used in the production of the liquid ceramic "slip" used to manufacture the ceramic tape. The cleaning solvents are used for various cleanup procedures in the tape casting and screen-printing departments. When handling the fluids and drums, the workers are protected from splashing by aprons, gloves, and safety goggles, and safety environmental spill containment pallets are in place in the event any local containment of spills is required.

David Kuster, the EHS coordinator for Ixion, wanted to improve the fluid transfer processes to make it safer for workers, more cost effective for the bottom line, and more environmentally compliant. Hand-operated pumps recently replaced several gravity-fed brass fixtures in Ixion's operation. The gravity-fed process involved threading the brass fixture into the small bung in the top of the drum, threading a vent into the large bung, placing the drum on a roll-down drum fixture, and tipping the drum into the horizontal position for dispensing.

There are many inherent difficulties with the gravity-fed spigot system. First, the spig-

ots can clog up easily and can be difficult to remove. It can be very labor intensive and awkward to remove the fluid from the drum. Second, it is difficult to control the flow rate from the drum. Third, leaks are common with the spigot system, which contributes to fugitive inventory loss. Finally, this system does not allow for complete removal of all fluid from the drum, so additional labor and handling is required to make the drum

Several people have commented that dispensing their own chemicals no longer daunts them.

'No More Leaking Drum Fittings'

"Now the drums can stay in the upright position," Kuster said. "This greatly reduces the handling of the drums, injuries to our workers, and, guess what? No more leaking drum fittings." He added that the pumps "are a definite improvement for my safety program. These pumps nearly drain a drum dry. This helps on the disposal end when every drum

Several people say dispensing their own chemicals no longer daunts them.



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RCRA (Resource Conservation and Recovery Act) ready. But with the new pumps, Ixion Ceramics can make all of its containers RCRA ready, which means the drums have no more than 2 inches of product left in the drum after dispensing operations are completed. According to Kuster, the EHS coordinator, "These pumps will literally leave a few ounces of fluid in the bottom of the drum, and that is a very good thing when you are paying for chemicals by the pound and or gallon. Our company was leaving approximately 5 to 8 gallons in the drums when we were utilizing the brass (horizontal drum caddy) setup, and that was returned to the company that we bought it from. Then we had to pay for that much product again. What a great cost saver to be able to use that extra product," he added.

The employees at Ixion appreciate how much easier fluid handling is with the pumps.

is already RCRA empty and ready to be disposed of. Our workers are safer and we are meeting the environmental goals of our company."

Besides being a safer alternative to the gravity-fed system, the alternative pump is "a real cost-saver," making it Ixion's pump of choice for its process chemicals, said Kuster. ■

Nancy Westcott is President of Westcott Distribution Inc. of New York, N.Y., which distributes hand-pressurized GoatThroat™ pumps for commercial and industrial handling of liquids and chemicals. For information, visit www.GoatThroat.com, call 646-486-3636, or e-mail pr@GoatThroat.com.

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