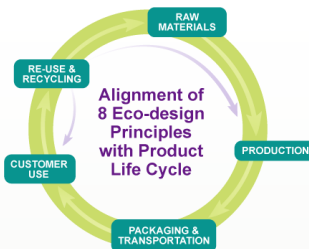


Showcasing Eco-Innovation

Capturing the Value of Silica Fume



PRODUCTION

1. Minimize waste and consumables
2. Use renewable and reclaimed external feed stocks
3. Increase energy efficiency and reduce greenhouse gas emissions
4. Design less toxic and environmentally safer products and processes

PACKING AND TRANSPORTATION

5. Optimize packaging and transportation logistics to minimize energy and materials requirements and reduce potential for accidents

CUSTOMER USE

6. Enable use of renewable energy and raw materials
7. Enable resource conservation by customers and end-use consumers

RE-USE & RECYCLING

8. Create value from waste

Eco innovation blends Dow Corning's passion for innovation with one of our corporate values - sustainable development. It's an approach that brings together our focus on meeting our customers' needs for new environmentally compatible products and processes with our commitment to responsible management of resources.

We're using our eco-innovation model and principles to help conserve precious natural resources; rescue waste and increase use of renewable energy materials. This case study shows you how we are bringing our sustainability value to life.

Brief Description

Silica fume (SF), a very fine solid material generated during silicon metal production, has historically been considered a waste product. The silicon industry, however, has discovered that silica fume can be used in a variety of productive ways. SF increases the compression and abrasion resistance of high-performance concrete and seals it from attack by other chemical elements. In the refractory business, silica fume increases high temperature strength and thermal conductivity in castables.



Eco-Innovation – A Closer Look

Silica fume is unique in its ultra-fine particle size – the particle diameter averaging from 0.02 to 0.5 microns. With a surface area 100 times larger than cement, SF improves concrete properties by an effect called “particle packing” or “micro filling.”

Silica fume is captured in fume hoods installed on top of the metal production furnaces. After larger elements are removed through a cyclone process, the remaining material is captured in filters, densified, packaged and shipped.

Dow Corning's Simcala (US) site currently captures and sells 16,000 tonnes of silica fume annually. The CBCC (Brazil) site produces 22,000 tonnes a year, which will be captured and available for sale starting in 2009.

Alignment with Eco-Design Principles

Principle 1 – Minimize waste and consumables

Principle 7 – Enable resource conservation by customers and end-use consumers

Principle 8 – Create value from waste

Health, Environmental & Social Benefits

- Silica fume extends construction life, resulting in resource savings.
- The use of silica fume converts a waste product into a useful, marketable product.

Value Relating to the Eco-Sustainable Attributes

Silica fume complements Dow Corning's portfolio of building protection products, contributing to stronger, longer-lasting structures. SF recovery minimizes waste, saves resources and creates value from a waste product, demonstrating Dow Corning's continuing commitment to protecting the environment.

Learn More

To learn more about sustainability in action at Dow Corning, visit <http://www.dowcorning.com/content/about/sustainability.aspx>

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