

▶ Slag silos permit greater flexibility in delivering the best blend.

On the Rise

Looking for a way to improve your ability to compete, break out of commodity-based, price-driven sales, and give your customers more choices? Think slag.

Growing numbers of concrete producers are building silos to add slag cement to their product lines. A dedicated slag cement silo allows them to offer a variety of portland-slag and even ternary blends—a capability that lets them win more contracts, work more efficiently, improve customer satisfaction, and set themselves apart from more traditional competitors.

Some customers prefer slag cement blends because of their enhanced strength and durability. Others like their placing and finishing characteristics. Some choose slag for aesthetic reasons. One residential developer in the Chicago area reportedly specifies slag blends for all curbs and driveways because the light color offers more “curb appeal” than traditional gray concrete.

Slag cement sales are at an all-time high and growing. A record 3.1 million metric tons of slag cement was shipped for use in concrete and construction applications in 2003, a 5.4% increase over 2002, according to the Slag Cement Association. Shipments of portland cement grew at 3.7% in the same period. Since 1996, the availability of slag cement has nearly tripled, growing faster than any other cementitious material.

“Slag cement is the fastest-growing part of our cement business,” says Greg Daderko of Lafarge North America, the supplier based in Herndon, Va. “We’ve made significant investments to increase our capacity, and we think its popularity will continue to grow.” In 2002, Lafarge completed a new slag-grinding facility in South Chicago, and demand exceeded projections in its first two years of

operation. This and other facilities are keeping supplies plentiful and costs competitive, even as shipping shortages and overseas demand are putting a crimp in portland cement supplies in North America.

Sustainability issues are also spurring more interest in slag cement. It reduces embodied energy and emissions in concrete and can help earn credits toward project certification in the U.S. Green Building Council’s Leadership in Energy and Environmental Design (LEED) program.

Should you add a slag silo?

Concrete producers can stock an existing silo with a commercial portland-slag blend, or they can erect one or more silos strictly for slag cement. A dedicated slag silo is a major capital investment, but permits greater flexibility in delivering the best blend for each job. For example, producers can create a mix with higher slag-cement proportions to retard set times in hot summer months, and use higher proportions of portland when the weather turns cooler. And a slag silo allows producers to deliver different blends for different jobs.

Here’s a look at three producers, in three very different markets, who decided to make the investment:

Delaware Valley Concrete, Hatboro, Pa.

A family-owned company just outside Philadelphia, Delaware Valley Concrete (DVC) operates in a market where slag cement blends have been used for many years. Charles DiLiberto and his wife, Frances, founded the firm in 1955. Their son, Mario DiLiberto, has

been president since 1970. DVC built its first slag cement silo at the main plant in 1982.

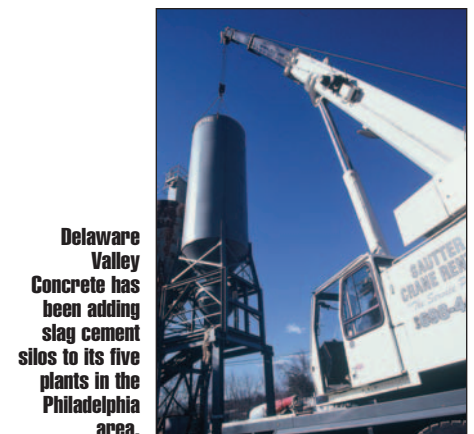
Even in this well-established market, DiLiberto has seen rising demand for slag cement in recent years, and the company has been busy adding new silos to its five plants in the region. As of this year, every plant now has a dedicated slag cement silo.

DVC added the silos as part of an overall expansion. “As our business grew, we needed to increase capacity. So it made sense to increase our flexibility at the same time,” says Mario DiLiberto.

With a well-established market for portland-slag blends and a crowded market—his largest competitor is just a couple miles down the road—DiLiberto sees the investment as a way to remain competitive. “Every producer has to decide: Do you want to be a major player or restrict yourself to a certain segment? We want to have the ability to compete for any job, from any of our plants.”

Slag blends’ slower set times also increase his operations’ efficiency by allowing his trucks to work larger territories. And jobs go faster because the blends flow more easily.

Many in this part of the country are familiar with slag cement—a consequence of the region’s steelmaking heritage. Contractors are used to working with it. Specifiers and engineers know its performance characteristics and often prefer it for roads, bridges, and other major construction projects. Even so, the producer works to educate the market.



Delaware Valley Concrete has been adding slag cement silos to its five plants in the Philadelphia area.



Mario DiLiberto, president of Delaware Valley Concrete, has seen rising demand for slag cement in recent years. Producers shouldn't limit themselves to certain segments, he says.



Dedicated slag silos are major capital investments, but they permit greater flexibility in delivering the best blend for each job.

"New people are coming into the business all the time, and it's important to make sure that they understand the product," DiLiberto says. Once a year, DVC hosts a luncheon for his existing and prospective customers in the area and invites manufacturers to make technical presentations. "These meetings are part social, part learning," DiLiberto says. "It's a great way to build loyalty."

Irving Materials Inc., Hopkinsville, Ky.

Unlike DVC, Irving Materials Inc. (IMI) operates in a part of the country where slag cement blends aren't widely used. And that suits area manager Larry Phillips just fine. Blends are the magic ingredient that makes IMI's concrete better than the next guy's, he says.

With 155 ready-mix plants in Indiana, Ohio, Kentucky, and Tennessee, IMI is one of the largest ready-mixed producers in North America. Its Hopkinsville plant serves residential, industrial, commercial, and paving customers in south-

western Kentucky. Its largest customer is the nearby Ft. Campbell U.S. Army base.

About three years ago, IMI added a slag cement silo to its plant in Hopkinsville. Not long afterward, it built a new plant in Oak Grove, just outside the gates of Ft. Campbell, and included a dedicated slag silo there as well. Plans are in place to add more silos throughout the company.

The Hopkinsville plant supplies paving contractors that work on roads throughout the state, and portland-slag blends have been especially popular for slip-form pavers, Phillips says.

"Finishers come from other areas and say, 'Why can't we get this concrete at home? It's so much easier to work with.' The blends definitely give us an edge over our competition," he explains.

IMI first used slag cement for a 12,000-square-yard parking lot. "The results just blew us away," Phillips says. "It was easier to place, required less water, and strengths were out of the ballpark. Normally, we'd expect strengths of 4000 psi and we were getting strengths of up to 6300 psi, with 700-750 psi flexural strength. So we started feeling real good about slag right away."

It took some effort to educate contractors, specifiers, and engineers in his area about the blends. "Customers are cautious about trying anything new, especially when you're dealing with federal contracts," says Phillips. Initially, IMI wasn't permitted to supply slag blends for jobs at the base because the Army specified portland. IMI tapped its supplier to provide technical experts, and also set up informal meetings with other users—including local departments of transportation—to educate its customers on the superior performance of the portland-slag blends. Eventually, Army engineers agreed to trials, and the blends passed with flying colors. Now, blends are routinely specified for work on the base.

"It took a lot of work, but the payoff has been worth it," Phillips says. "We see more interest in slag cement all the time. Most specifications now permit portland-slag blends, and contractors love them. We've never had a problem with the blends."

Having a dedicated silo gives lots of options. "If a specification calls for 100% portland, we can offer that," Phillips adds. "And

we can adjust the proportions to meet just about any specification."

A low-key approach has been the key to winning acceptance. "People are slow to accept change, so we don't make a big deal about it," Phillips says. "Once they use it and see the results, they know it's better than what they've been getting. That keeps them coming back to us."

Herbert J. Hinchman & Son, Wayne, N.J.

Hinchman & Son, a third generation producer established in 1928, primarily serves a residential and light-commercial clientele. Smaller contractors look to the producer to provide the best mix for the job. About two years ago, Hinchman & Son took advantage of a manufacturer's program that helped it finance a new slag cement silo. It uses slag cement from a variety of suppliers.

"We use slag cement because it saves us money and makes a better mix," says owner Don Hinchman. "The concrete is creamier and strengths are better."

The workability was especially important because of local shortages of natural sand. Hinchman's aggregate supplier provides a blend of natural and man-made sand, which tends to make the concrete more difficult to work with. Slag cement's fine particle size helps improve the workability of the mix.

Customers have been very pleased with the results, says Hinchman. "We've been producing these mixes for two years, and they have become very popular."

Better cement builds loyalty

Each of these producers operates in different markets, facing different challenges. For each, adding a slag cement silo was a good business decision. The silos allow producers to offer mixes with better performance and better placeability and give them more ways to compete, making concrete no longer a commodity. **TCP**

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