Help for SCC

As more and more producers become better acquainted with self-consolidating concrete (SCC), some materials suppliers are responding with new methods and products to assist in creating more efficient mix designs.

Sometimes today's solutions come from past successes. Industries such as gypsum, flooring, paint, and plastics have been adding calcium carbonate to their products for decades with positive results. Now, Omvia Canada Inc. is pushing producers in the United States to start adding this material to their concrete mixes.

> The material acts like ball bearings.

The Montreal-based manufacturer is particularly touting the use of the product, sold under the Betocarb name, in SCC. It has been selling the product for several years to producers in Europe, particularly those in Netherlands, France, and Germany, who have been leaders in SCC. Omya sells more than 600,000 tons of Betocarb in Europe each year.

"A major advantage is the reduction of manpower," says Berndt Kanduth, vice president of marketing for Omya. "In Europe, you have one guy with a pump. It also eliminates vibrating."

Closer to home, Omya has been selling the product to block makers in Canada for the past 15 years. "We sell about 50,000 tons a year to the concrete block industry in Canada, basically replacing all of the sand," says Kanduth.

Ironically, Omya has produced the product—which essentially is ground and air-separated marble—in the United States for several years, at its operations in California and Arizona. This is the Betocarb being used by those other industries. Omya is the world's largest supplier of the product, with more than 100 plants in more than 40 countries.

Promoting here

Omya just recently started promoting the material to ready-mixed concrete producers in the United States. "Concrete is a conservative industry," says Kanduth. It wasn't until this greater emphasis on concrete's workability became mainstream, that QC managers became interested in products other than admixtures to gain better flowing characteristics.

"Omya's particles act like ball bearings," explains Kanduth. "We've measured a tremendous difference in slump values when producers add calcium carbonate. They almost double the slump without increasing their water in all applications, particularly with SCC. You get better pumpability and flowability, and the concrete gets into all of the nooks and crannies." The key, he says, is reducing aggregate size.

The product can also be a substitute for hard-to-find fly ash and depending on the strength requirements, will let producers "easily" replace 10% of their cement," he says. Testing continues. Kamal Khayat, a professor at the University of Sherbrooke in Montreal, is researching the material in sizes from 3 to 8 microns.

Omya also hopes action by ASTM will encourage producers to use its product. There had been confusion about how to classify calcium carbonate. After hearing several presentations, ASTM has decided to include the product in ASTM C-33 as a fine aggregate. Kanduth expects final approval at the June meetings.

Omya is aware smaller producers who are interested in using its product may be cash-strapped and not be able to easily afford storage. So the manufacturer offers various shipment methods—bulk, bags, or super-sacs. For those producers who desire a silo, Omya can arrange a three-year, interest-free, financing package.

—TOM BAGSARIAN

Omya already sells more than 600,000 tons of calcium carbonate, or Betocarb, to producers in Europe. Using it in self-consolidating concrete has several advantages, the company says.

OMYA CANADA

For more information on Omya, telephone 514-844-3425, visit the company's Web site at www.omya-na.com, *or circle reader service number* 2.