

## RECYCLED GLASS AGGREGATE BEING DEVELOPED AS LIGHTWEIGHT ROAD MATERIAL

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*Recycled glass rock used for first time in North America in roadbed for Langley Ave. reconstruction at the Navy Yard.*

*Photo: Andrew Maykuth/The Inquirer.*

AeroAggregates LLC opened a plant to produce lightweight construction material from mixed recycled glass. The company manufactures foamed glass aggregate, which resembles crushed rock and serves a similar purpose in construction projects, but it weighs 85 percent less than stone and is very strong.

“We can take Philadelphia curbside glass and make a construction product that’s going right back into the city of Philadelphia,” said Archie Filshill, chief executive and cofounder of AeroAggregates, which has spent approximately \$10 million on the project. “It’s post-consumer waste. That’s something that hasn’t been done before.”

The product was developed in Europe decades ago, and AeroAggregates licensed the process from the German firm SGGC. The process starts by crushing the glass into a powder and mixing it with silicon carbide, which acts as a “foaming agent.” The blended powder then passes on a conveyor belt through a 60-foot-long gas-fired kiln at about 1,800 degrees, where the material melts, and the silicon carbide produces carbon dioxide bubbles that make the mix rise like bread. The material then emerges 40 minutes later in a continuous gray sheet that cracks into 2-inch wide pieces as it cools.

In Europe, the product was used in road building and bridge abutments where heavier fill materials would compress soft soils or crush underground utilities. The foamed glass also acts as an insulator and has potential applications in green roofs and gardens. Filshill tells the news agency that researchers at Drexel University and Lafayette College are exploring the use of foamed glass aggregate in concrete to create a lightweight alternative for nonstructural applications, such as poured-concrete floors in a high-rise.

The big market, however, is in highway projects, and Filshill and cofounders Thomas McGrath, company president, and Robert Schoen, chief financial officer, are introducing the material to state highway engineers. Transportation departments in Pennsylvania, New Jersey, Maryland, Virginia, and New York have given a preliminary thumbs-up to the new material. PennDot used it for the first time in North America under a section of the Langley Ave. reconstruction project at the Navy Yard, which is nearly complete, and just broke ground on an Interstate 95 ramp project that will use it. The company is also under contract to supply 30,000 cubic yards of the recycled-glass aggregate for the Wittpenn bridge project in Kearny, N.J. this year.

“Since this is a totally new aggregate, we have to make decisions on how to make proper use of it,” PennDOT spokesman Rich Kirkpatrick said. “We are open to its use, but our reviews are continuing.”

Each kiln can produce about 80,000 cubic yards of aggregate per year from about 12,000 tons of mixed glass, the equivalent of about 55 million empty beer bottles. “That’s our way of giving back after drinking all that beer,” Filshill tells the news agency, adding that a second kiln will be installed this year.

*Source – Pit & Quarry*