

STRUCTURAL LIGHTWEIGHT CONCRETE



PHOTO COURTESY: THE SHERWIN-WILLIAMS COMPANY

CASE STUDY:

SHERWIN-WILLIAMS, CLEVELAND, OH

Sherwin-Williams, one of the largest and most recognized names in the paint and coatings industry, is in the midst of constructing a new global headquarters. The 1-million-square-foot facility, which includes a 36-floor office tower with an attached multi-level parking garage, will be a striking addition to the Cleveland, Ohio skyline.

Arcosa Lightweight aggregate is being used in the structural lightweight concrete floors of the office tower. "Our lightweight aggregate, manufactured at our Brooks, Kentucky operation, has significantly reduced the weight of the building's new floors, keeping construction costs down," said Arcosa Sales Representative Jeff Hochendoner. The expanded shale was sent by rail from Kentucky to Arcosa's Cleveland terminal. Longtime readymix customer Cuyahoga Concrete, a division of the Osborne Company, then trucked the lightweight aggregate to their nearby plant for wetting and stockpiling.

"Kurt Bell of Cuyahoga has worked closely with our sales and logistic teams to make lightweight aggregate deliveries on this complex project go smoothly," said Hochendoner. "He's staying on top of the building's progress and its evolving need for material."

The lightweight aggregate was pre-wet and batched at Cuyahoga's batch plant located along the Cuyahoga River near Downtown. Once delivered to the jobsite, the lightweight concrete is

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tested for quality then pumped by the Hydracrete Pumping Company, who sends it up multiple stories for placement on the building's metal floor decking.

About Structural Lightweight Concrete

Structural lightweight concrete offers design flexibility and substantial cost savings through reduced dead load, less supporting steel and smaller foundations. The expanded shale or clay (ESC) structural lightweight aggregate has a ceramic nature, resulting in an exceptional bond and elastic compatibility with the cementitious matrix of the concrete.

Compared with ordinary concrete, lightweight concrete using ESC lightweight aggregate has better thermal properties, higher fire ratings, reduced autogenous shrinkage, an improved contact zone between aggregate and cement matrix, less micro-cracking due to better elastic compatibility, and improved sound absorption. It is also readily placed by pumping.

Major Investment in Cleveland's Future

John G. Morikis, Sherwin-Williams chairman and CEO called the new facility "a next-generation workplace to serve our customers, retain and attract employees, as well as offer opportunities to celebrate the Sherwin-Williams brand and act as a catalyst for future development in and around our new campus."

Cleveland Mayor Justin M. Bibb said the city "applauds the decision Sherwin-Williams made to further invest in Cleveland and Northeast Ohio by building world-class facilities for the workforce of the future."

Construction on the project began in January 2022 and the new global headquarters is expected to open by the end of 2024