

Geocell & Eastman Demonstrate Rapid Deployment Flood Wall in Kingsport, Tennessee



Eastman product can help stem the tide

By Dawn Davenport
Press Business Writer

KINGSPORT — It's an image seen regularly on the 6 o'clock news: a human chain working against time and Mother Nature, passing sandbags hand to hand to build a wall they hope will stop coming floodwaters from wiping out a home or an entire town.

It's a stopgap measure that takes much time and money and many strong backs, but for a century it was the most reliable method of immediate flood protection. About 10 years ago, Al Arellanes, a San Francisco

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engineering contractor, designed something he hoped would be cheaper, more efficient and less labor intensive.

Arellanes was working with the Army Corps of Engineers in Twentynine Palms, Calif., to build a fortification wall with a honeycomb grid commonly used in road construction. It didn't work.

One night he was hashing the problem over with his father, who had just opened a case of wine. Inside the box was a collapsible cardboard grid used to protect the bottles in transit.

"My dad said, 'This is what you ought to use, you dummy,'" Arellanes said. To make the design work, though, he needed a material that was clear, tough, flexible and environ-

mentally responsible. A decade later, he found it: a polymer manufactured by Kingsport-based Eastman Chemical Co.

The Rapid Deployment Flood Wall, as it is called, was developed through a partnership among Arellanes' Geocell Systems Inc., Eastman Specialty Plastics and Missouri-based Spartech Corp.

"I've been chasing floods now since 1978," Arellanes said Tuesday at a news conference in Kingsport, where he and Eastman officials demonstrated how the flood wall works.

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Staff Photo by Tony Duncan

Representatives of Geocell Systems Inc. assemble a section of the Rapid Deployment Flood Wall during a demonstration

Eastman

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Here's how it works: Eastman makes pellets of polymer; Spartech forms the plastic into sheets. Geocell makes the grids from the sheets. Once collapsed, they are thin enough that hundreds can be stored in a small space, and the material is impervious to mildew and vermin.

When the flood comes, the wall can be built with as few as two people, who can load the collapsed sections onto a pickup, drive it to the site, unload it and assemble it in a matter of minutes. Sand then can be poured into it by shovel or bulldozer.

"It works with Mother Nature,"

Arellanes said. "Sand and water combine to make the best compacting agent."

In other words, the wetter the sand gets, the stronger the wall.

Using sandbags, it would take a crew of 35 — 15 filling bags with sand, 15 forming a daisy chain and five stacking — 19 hours to build a 100-foot-long wall. Using the Rapid Deployment Flood Wall, 35 people could build a 10,000-foot-long wall in that same amount of time, Arellanes said.

Eastman officials said the product has received vigorous backing from Congress and the Army Corps of Engineers. Rep. Bill Jenkins, R-1st, attended Tuesday's news conference to offer his support, comparing the wall to the "discovery of a better mousetrap."

"It's amazing that we lived all these years without it," he said. "We had all the ingredients to put it together, but we failed to recognize it."

The product could be used for more than flood protection. In fact, it originally was designed for military field fortification — as blast protection, artillery shelters and bunker walls.

It could be used also for traffic control.

"It can be made in orange," Jenkins said, adding that he could picture a "big orange barricade" to help control the flow of traffic around Knoxville during University of Tennessee football games.

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