

## Cargo Dock Constructed Using OPEN CELL™ Structure and L.B. Foster Sheet Pile

The South Harbor Cargo Dock is the farthest upriver barge terminal on the free-flowing section of the Mississippi River before entering Lock No 27. Completed in the summer of 2015, L.B. Foster supplied Goodwin Brothers Construction with over 1,660 tons of PS27.5 flat web sheets to create the 400-foot-long OPEN CELL™ dock. The dock is long enough to accommodate two barges at a time and is situated above the 100-year flood elevation, providing uninterrupted year-round workspace. The dock required 1,200 sheet pile, up to 80 feet long, creating an exposed wall height of 65 feet. The structure formed two acres of hardstand, surfaced with crushed aggregate, able to support a live load of 1,000 psf. Originally intended to be a Z-sheet tie-back wall, the OPEN CELL approach was estimated to be a third of the cost of the conventional design.



### **OPEN CELL Bulkheads**

OPEN CELL bulkheads are used primarily in docks and similar marine structures. The bulkheads are simple to construct, often resulting in shortened construction times and, by design, eliminating the need for labor-intensive tie-back systems consisting of walers, tie rods, and deadman soil anchors. This also eliminates the related issues of backfill settlement often associated with these tie-back designs. The OPEN CELL bulkhead can also serve as a temporary excavation support that would enable the contractor to eliminate the need for walers, as well as internal bracing, resulting in an easily accessible excavation in addition to potential time and cost savings. L.B. Foster's strategic alliances with PND Engineers, Inc., who currently holds three U.S. patents for the OPEN CELL technology as the designer, and Gerdau, who manufactures the flat web sheets that the designs utilize, ensure cost-effective design as well as timely supply of the OPEN CELL system.



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