



# Project Profile

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## Erie Art Museum – Ground and Polished Floor

Erie, PA

July 2010



Application: Joint-Free Polished Floors  
Owner: Erie Art Museum, 411 State Street, Erie, PA 16501  
Architect: Edge Studio, Pittsburgh, PA  
Structural Engineer: Desimone Consulting Engineers, San Francisco, CA  
Civil Engineer: Civil and Environmental Consultants, Pittsburgh, PA  
LEED Consultant: Evolve, Pittsburgh, PA  
Construction Manager: Spaulding Banks Project Management, Erie, PA  
Concrete Contractor: Maya Brothers Inc., Erie, PA  
Grind/Polish Contractor: Diamond Designer Concrete, Erie, PA  
Ready-Mix Supplier: Baycrete Ready-Mix, Erie, PA  
Original Reinforcement: #4 bar @ 18" O.C. both directions  
Fiber Alternate: FORTA-FERRO® 2 ¼" macrosynthetic @ 7.5 lbs./cubic yard



### Description:

Macrosynthetic fibers played an important reinforcing role in the \$9 million expansion project at the Erie Art Museum in Erie, PA. The museum owner's desire for an eye-catching and joint-free floor surface for their 10,000 sq. ft. addition prompted concrete contractor Tom Maya to submit high-volume macrosynthetic fibers as an alternate to the specified matt-steel reinforcement. Based on previous macro-fiber experiences, Maya felt fibers offered the best opportunity to minimize joints and cracking on the high-profile gallery floor. Critical to success however, would be the fibers' ability to mix and distribute uniformly and finish well, even at the high dosages required (7.5 lbs./cu.yd.), while not affecting the aesthetics of the grind-and-polish surface treatment. While the results speak for themselves, the FORTA-FERRO® macrosynthetic fiber succeeded in controlling shrinkage, cracking, and curling in the large and irregularly-shaped joint-free floor sections. The final floor finish was impressive enough to cause concern by museum curators that the floor might actually divert attention from the gallery exhibitions. The floor system included a 1 ½" thick fiber-reinforced mud matt required due to poor sub-grade conditions, and topped with a 5" thick concrete floor separated by a double slip-sheet to allow for possible movement. The floor was comprised of a 3,000 psi high-performance exposed-aggregate concrete, that involved a 5-step grind-and-polish process. Grinding contractor Diamond Designer Concrete of Erie plans to use the project as a showcase reference for their fiber-reinforced, polished-floor system after the official museum opening in October 2010. The green-practice project is currently awaiting notification of silver or gold-level LEED certification for its green design and sustainable building operation.



[Also see FORTA® Project Profile: Erie Art Museum – Previous Concrete]