



FIBRWRAP®

Worldwide Specialized Contractors

Strengthening Structures | Protecting Lives Worldwide.



Transportation



Buildings



Pipelines



Waterfront



Industry



Blast hardening of Urbana Armory, Urbana, USA.

Fiber Reinforced Polymers (FRPs) are very good products to use for blast hardening applications. Extensive testing has proven their ability to improve the performance of existing structures under high pressure or blast conditions. This project was a complete renovation of an armory located in Urbana, Illinois. Due to the juxtaposition of the building and the roadway, it was necessary to reinforce one exterior wall of the armory. This wall was approximately 50 feet long and 10 feet high. The substrate was concrete. The project was competitively bid using a performance specification. The Fyfe design used 2 to 3 layers of carbon applied vertically over the entire wall surface. In order to connect the wall to the floor levels, both Tyfo anchors and steel angles were installed. Fibrwrap installed the FRP and Tyfo anchors while a steel subcontractor installed the steel angles. The surface preparation was done using a sandblasting technique instead of grinding. This proved to be efficient and resulted in a very good surface for bonding the FRP. In summary, this was a good example of blast hardening or blast mitigation using FRPs. Other types of hardening would have certainly impacted the useable space of the building. The work was done quickly and within the schedule limitations of the project.

Project: Blast hardening of Urbana Armory

Location: Urbana, USA

Client: Illinois National Guard

Scope of Works:

- Blast hardening of existing structure exterior wall.

