



The unprotected timber piles that received marine borer damages.



Uninstalled SeaShield™ Fiber-Forms being prepped and awaiting install.



Completed Denso Fiber-Forms installation to the timber piles.

Project Data

Location	New York
Completed	2005
Project Type	Timber Pile Rehabilitation
Products / Systems Used	Denso Fiber-forms

Project Details

New York's Battery Maritime Building received a \$58 million renovation in which Denso's SeaShield™ Fiber-Forms were used to rehabilitate the timber piles supporting the slips. The building is listed on the National Register of Historic Places built in 1909 in the "Iron Age" with vaulted arches and ornamental structures steel. The building has over 140,000 square-feet and offers rare waterfront views of Manhattan and The Statue of Liberty.

In service for over 95 years, the timber piles had received marine borer damage, which threatened the structural integrity of the slips. The pile repair system chosen was concrete encapsulation with rebar and fiberglass forms. This major rehabilitation called for more than 5,000 linear feet of timber pile repair with Denso Fiber-Forms. The fiberglass forms provide a strong rigid form to allow concrete to be pumped into the annulus space between the jacket and timber pile.

Denso's Fiber-Forms used for the Battery Maritime Building were custom fabricated to 3/16" thick utilizing woven-roven construction. Installation included installing a reinforcement cage around the piles and then installing the fiberglass forms. The concrete was then pumped into the annulus space and to provide ease of application the forms were fabricated in a translucent color to allow the contractor to view the concrete level during the pumping operation. The complete repair will provide years of maintenance free structural integrity to the timber piles.

The contractor, David Hoy of Weeks Marine stated, "The SeaShield Fiber-Forms were extremely durable, high quality and provided on-time delivery". The engineers and owners were pleased with the installation as the application was completed ahead of schedule.

Benefits

- High impact resistance
- Protects against marine borers
- Non-corrosive and lightweight
- Long maintenance-free service life
- Quick to install
- Long term cost effective corrosion protection

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