

# BRUGG FLEXWELL-HL Pipe Rises Above the Rest ...

BRUGG-FLEXWELL-HL piping to supply fuel for Boat Fueling Dockskung



James Taylor,  
Walter's West End Supply

"After I saw the BRUGG FLEXWELL-HL pipe, I knew that the County authorities would be completely satisfied with it. After examining the pipe firsthand, the County approved its use. As a result, the customer decided to proceed with the project, and gave us a very narrow timeframe to complete it in. I want to acknowledge the hard work and effort of BRUGG, and their knowledge and experience in constructing marina fueling sites. Without their assistance, we would not have finished the project on time, and to the satisfaction of the customer."

Marinas located on the ocean present special challenges when installing fuel systems. Especially for floating dock marinas, BRUGG has developed new ways of connecting the mainland with the floating dock utilizing its proven and virtually indestructible FLEXWELL-HL piping system. Until now, flexible fuel hoses were used to absorb the tidal variations and the resulting length changes across the gangway in addition to the continuous wave action. This means that there are couplings located over the water which can lead to leaks. BRUGG developed a system, in which the flexibility of the FLEXWELL-HL would compensate this change in length and the wave action at the same time. As a result this pipe eliminates any couplings over the water, and in most cases, can be installed in one continuous length from the fuel storage tank to the fuel pumps. This not only saves installation time, but also eliminates the cost of pipe couplings, transition boxes, etc.

The owner of the Wyncote Yacht Club in Huntington (Long Island, New York, USA) received an order from the authorities to upgrade and improve their fueling operation. They contacted an engineering firm,

Transition of pipe from gangway to floating dock



Connection to the dispenser sump

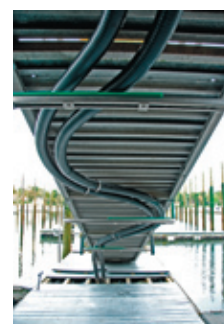
who in turn worked with a petroleum equipment supply company to develop the required fueling system upgrade. This firm contacted BRUGG, because of BRUGG's reputation with marine applications. This installation required running two 2" lines, one for gasoline and one for Diesel. These lines would run from a sump on the shore, across the gangway and over about 459 feet inside a floating dock to the fueling pumps. In this case, the difference between high and low tide was approx. 10 feet, which can be even greater during storm conditions. As a result, the piping would have to compensate a length change across the gangway of almost two feet.

Before any work could begin, the piping and installation concept had to be approved by the authorities. This review didn't just address the approval request for the BRUGG FLEXWELL-HL pipe, but they

Right:  
Pipe run from gangway to fuel dock



Far right:  
FLEXWELL-HL pipe installed underneath gangway



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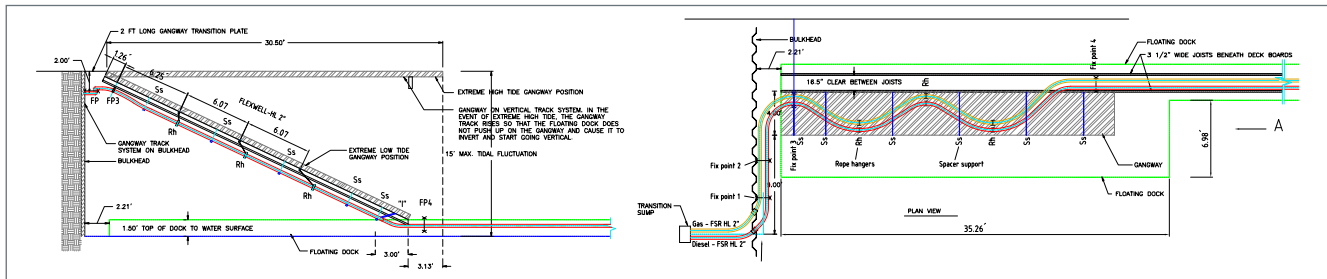
completed their own intensive internal investigation using their own engineers. They analyzed every aspect, including our own concept for the compensation of the tidal fluctuations. As a result of this detailed and exhausting review, the BRUGG FLEXWELL-HL pipe is the only approved fuel piping for marinas in Long Island today.

BRUGG personnel supervised every aspect of the pipe installation. First, the two pipe runs were pulled from the shore, across the gangway, to the manway in the dock, and then brought to the fuel dispensers. Because the filling dock and the boat dock are separate from each other, the fueling lines had to be kept free and flexible over this transition. After this segment of the installation was complete, both pipelines had to be laid in a serpentine fashion under the gangway, so that the twice daily tidal effects on the pipe length could

be absorbed. This serpentine-shaped piping was then supported by frames, which were attached to the underside of the gangway.

Lastly, both pipelines were attached along the seawall and fed to the shore through two underground openings. The piping was run approximately 10 feet inland from the seawall to a transition sump, and connected to the rest of the installation. The total length of each of these two pipe runs was 560 feet, with eight bends.

Thanks to the professionalism and preparation shown by the engineering team, the installation company and the expertise provided by BRUGG, this installation was completed in four days. Also, as a result of this installation, three employees of the installation company were certified as BRUGG FLEXWELL-HL pipe installers.



Layout drawing of the Wyncote installation

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