

V for Victaulic

A World War I pipe joining system still solves problems today

Back in 1917 when the World War I was at its height, Winston Churchill - who was then the British Minister of Munitions

- had a problem. As British troops moved across mainland Europe they needed fuel and water. But with no friendly suppliers to call on, he needed to be able to deliver these vital elements by pipeline.

Churchill's specification was demanding: it had to be possible to lay these pipelines quickly and, if the tanks and troops had to retreat, they had to be dismantled and taken away. He gave the problem to the Royal Engineers, a corps of the British Army, which devised a way of connecting pipes with bolted mechanical couplings that could be joined and dismantled using just a few readily-available tools.

It took them until 1919 - after the war was over - to meet Churchill's specification. That year one of those engineers, Ernest Tribe, founded the Victory Pipe Joint Co, which joined with the War Department and coined the name Victory Hydraulics, or Victaulic, for its collaborative effort to create mechanical joining techniques.

The couplings later played a vital role in World War II following the 1944 D-Day landings. A fuel supply line was laid under the English Channel - dubbed the pipeline under the ocean, or Pluto - constructed using Victaulic couplings.

Speaking to *Marine Propulsion* during the Kormarine exhibition, the company's vice president Didier Vassal cited the Korean War in the early 1950s as another military example, when all the piping to help the US Army and its allies was installed using Victaulic couplings.



Victaulic couplings were used under London's streets after World War I (photo: Victaulic)

Their civilian use spread across the British Commonwealth, to countries including Palestine, Egypt and India. Some early Victaulic couplings are still in service: examples dating back to 1921 can be found in London, where the pipes they connect once carried water but now protect cables as part of the city's modern infrastructure.

Those original couplings featured a grooved ring that was mounted on the outside of the pipe. It was in 1925 that the familiar grooved pipe concept was developed and a US licence was sold to Frederick Bedford, who could see its potential for laying water pipes to oil wells. He established the Victaulic Company of America and did a lot of work for John D Rockefeller's Standard Oil.

Victaulic couplings were also installed on the US-built Liberty Ships during World War II. One surviving vessel, *John W Brown*, still sails regularly. Mr. Vassal was on board last autumn and saw its original Victaulic ballast pipe couplings that had been fitted in 1942. "They never leaked," he said.

In the UK, major yards including Harland and Wolff, Cammell Laird and Swan Hunter used Victaulic connectors from the late 1920s.

Mr. Vassal, who takes a keen interest in researching the product's history, recently had a chance meeting with a retired Swan Hunter engineer who has been able to provide details of many of that yard's ships that had been fitted with Victaulic couplings.

More recently, high-profile land-based projects have generated business, including London's Shard - which is the tallest building in the EU - and the world's tallest building, Dubai's 830m Burj Khalifa.

Four years ago, however, the company relaunched its maritime business. Many engine manufacturers and other equipment makers have adopted Victaulic's products, and they are also proving popular for ballast water treatment systems.

Victaulic's technology has not changed much since its development nearly a century ago, but it still finds new applications to address current technical developments. "I had no idea there would be such a fantastic synergy," Mr Vassal said. "It is quite fun."

Source: Marine Propulsion – April/May 2014

Quick system launched for small pipes

Victaulic's technology may have a long history (see above) but it has recently developed a new joining system for small pipes, Vic-Press. Unlike the company's established system, which uses grooved pipes, this uses off-the-shelf stainless steel pipes that engineers can readily source.

To make the joint, pipes are cut to length and de-burred and then inserted into a Vic-Press coupling or fitting, which contains a pre-lubricated gasket. A hand-

held tool presses this onto the pipe to form a permanent leak-tight joint. Victaulic has also developed technology to identify any joints that have not been pressed as the system is filled and tested.

The system is suitable for air, fuel and water supply lines and can be used in combination with the standard Victaulic grooved joining system. It has been type-approved by a number of class societies, including Lloyd's Register, Germanischer Lloyd, DNV and ABS.