

CASE STUDY

UHX M-Bubble Cement Platform delivers over 290% expansion in its first deployment for a water shut-off project in the North Sea.

PROJECT

A platform well located in one of the 'Villages' gas fields in the Southern North Sea had been experiencing performance issues believed to be caused by water coning at start up. The operator wished to install a cement retainer in the lower completion to resolve the issues, which required a cement platform to be set in the liner. However, a significant challenge was to navigate an upper well restriction of 2.205" and then deliver over 290% expansion to set in the 7" (6.184" ID, 29 lb/ft) liner, with the resilience to support the cementing operation.

OPERATION

A 2-1/8" OD M-Bubble Cement Platform was selected for this project. It was run on slickline using a powered setting tool on a timer. The cement platform was set at a depth of 14,845 ft and a deviation of 63°, then ceramic balls were deposited on top followed by cement.

A production logging tool (PLT) run verified the integrity of the plugging operation and successful water shut-off.



QUICK FACTS

- First deployment of the M-Bubble Cement Platform.
- Over 290% expansion.
- 2-1/8" OD plug set in 7", 29 lb/ft liner at a depth of 14,845 ft and a deviation of 63°.
- Water shut-off application in a North Sea well.
- Ceramic balls and cement deposited on top of the platform.
- Success verified by PLT.

FEATURES & BENEFITS

DTI's Ultra-High Expansion (UHX) Packers and M-Bubble Plugs incorporate an additive manufactured expanding metal element and are the result of four years of research and development. They offer the industry an unrivalled combination of high expansion (up to 300%), pressure rating and temperature rating and have built an excellent track record in the field.

These products have the strength and durability for serious high-pressure sealing and can isolate pressured and flowing zones in a fast and cost-effective single run.

They help to solve a range of complex plugging, sealing and isolation challenges in a variety of wells and are typically used in applications where the tool is required to pass through the completion string and set and seal in the casing or liner below. They are suitable for water shut off, zonal isolation, plug and abandonment and CCUS applications.

A standard UHX M-Bubble is designed for 2-1/8" OD tools and will set and seal in up to a 6-5/8" casing/liner. 2-5/8" OD tools will set and seal in up to a 7" casing/ liner. Multiple other sizes, temperatures and pressure variants are in development.



KEY FIGURES & STATS

- Unrivalled 300% expansion.
- In-flow, thru-tubing, high-pressure deployment.
- Applications include permanent plugging, zonal isolation, cement retainer, hanger, well workover, abandonment.
- Flexibility in the design of the packers, packoffs and plugs makes the range suitable for a variety of well configurations and tubing/ casing/ liner sizes.
- Run on either slickline or electric line and set using powered setting tools or run on coiled tubing and set using flow activated running tools.