



Case Study:

The HETS External Patch

An ISO Approved Well Recovery Solution

READ Well Services Ltd. has delivered a valuable well recovery solution that allows drilling operators to recover and replace damaged or corroded casing without compromising integrity. With support from ITF, the Hydraulically Expandable Tubular System (HETS) External Patch is the world's first ISO 13679 gas tight qualified connection system.



The Requirement:

The HETS External Patch system was originally developed in 2001 for drilling contingency on StatoilHydro's HPHT Kristin field. Subsequently External Patches have been manufactured in various sizes and to suit different material grades.

To further extend the available range of External Patches, ITF worked in collaboration with READ to establish an ISO qualification for the HETS External Patch system.

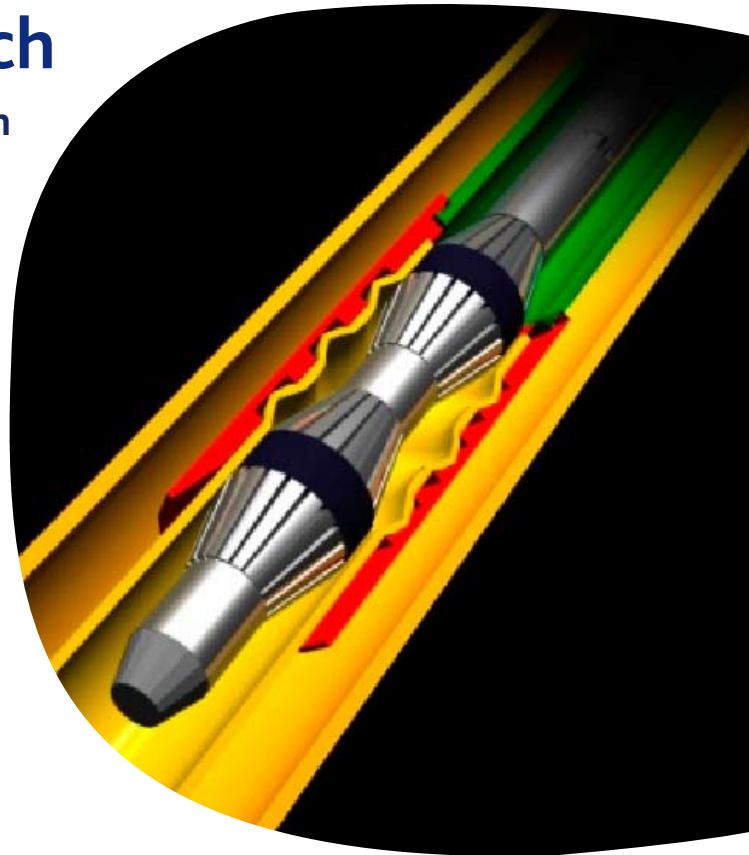
The Solution:

In September 2006 ITF launched a Joint Industry Project (JIP) with support from three major oil and gas operators to establish ISO 13679 accreditation. This verifies the design conforms to the manufacturer's claimed test load and pressure envelopes and limit loads and meets industry standards.

The project was set to provide the industry with the world's first and only ISO13679 gas tight qualified connection system for non-threaded connections, enabling a new operational technique for well construction, workovers or completions.

The Method:

READ developed the HETS External Casing Patch system to provide a method of reconnecting two pieces of casing downhole. This allows damaged or corroded casing (or tubing) to be cut and removed from the well and replaced and connected without affecting the well integrity. The system allows a drilling operation to recover from a stuck casing situation providing a method of hanging off the casing with a life of well gas-tight solution. Slot recovery is also possible on mature wells with badly corroded casings. The External Patch is unique and effectively provides a long term casing connection that is gas tight and capable of withstanding high cyclic loadings (hundreds of tons) at well temperature, whilst maintaining the integrity and full I.D. of the original casing.



Implementation:

To date the HETS External Patch has been successfully deployed for StatoilHydro on Oseberg, ConocoPhillips on Eldfisk and Nexen on Blackbird. In addition the system has been mobilised on numerous occasions as a contingency drilling solution. READ are now working with a major Norwegian oil and gas company on a multilateral project that is set to provide deployment of the External Patch system in an inverted position, as a replacement for PBRs.

The Outcomes:

The External Patch provides a VO gas tight, "life of well", metal to metal seal. It is a speedily activated industry rated solution which can allow operators to avoid a potentially time consuming and costly sidetrack or compromises in well construction. The technology has already brought significant cost savings to operators by reducing the cost by cutting and pulling the casing instead of sidetracking the well.

