

wel-lok™ STC

Seal Through Casing

Provide a Permanent Seal in Multiple Annuli

Differential Pressure	Up to 10,000 psi
Maximum Tool Pressure Rating	20,000 psi
Temperature Range	0 - 175°C
Conveyance	Eline, Slickline, Coiled Tubing, Drill Pipe
ADR Classification	Not classified as dangerous goods
Casing Grade	All grades
Max Well Bore Deviation At Setting Depth	0 - 86°

Application

The wel-lok™ STC (Seal Through Casing) tool has been developed to achieve a gas tight V0 seal in well annuli that cannot be achieved by traditional cement balance plugs. Run on electric line, this tool is a truly rigless solution without the need for any surface pumping equipment to circulate the alloy in place. Most commonly used in conjunction with a short section milled window, the tool can also be deployed in a perforated zone. The high viscosity and density of alloy means once it is in molten form it can easily flow through the perforations to seal off the annulus.

As the alloy cools below its melting point it solidifies, expands and creates a gas tight seal across the entire wellbore. The entire process, from melting to solidification, takes place in minutes and the seal is ready to test within an hour.

wel-lok™ STC Features

- Advanced bismuth alloy technology with expanding metal seals
- Non-elastomeric seals
- Customizable for API and Non API Casing sizes
- No moving parts, therefore high reliability
- Quick setting time - ready to pressure test in hours
- Reduced operational footprint
- Wireline deployable single trip solution

wel-lok™ STC Benefits for Intervention & Plug & Abandonment

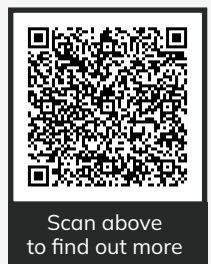
- Non-corrosive and not affected by H₂S, CO₂ or acids
- V0 Qualified ISO 14310 Gas Tight "Eternal" Barriers
- Reduced Section Milling Cost
- Reduced environmental impact
- Permanent solution
- Can seal in damaged, irregular or oval tubulars



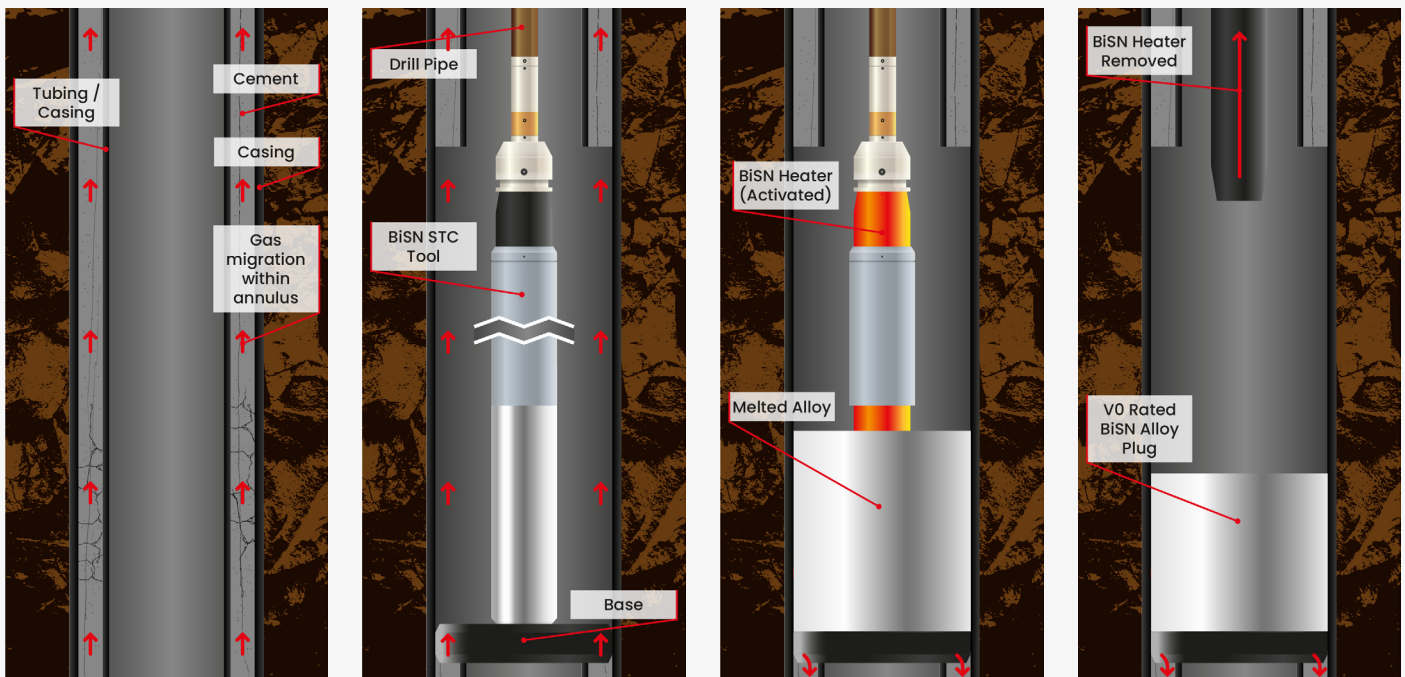
Inner Casing	Tool OD	Outer Casing
4 1/2"	3.5"	8 1/2"
5"	3.75"	9"
5 1/2"	4.25"	9 1/4"
7"	5.5"	12 1/2"
7 5/8"	5.75"	13"
9 5/8"	8"	16 1/2"
10 3/4"	8"	16 1/2"
13 3/8"	11.75"	20"
16"	11.75"	24"
18 5/8"	16"	24"
20"	18"	30"
24"	20"	36"

wel-lok™ Technology Overview

The wel-lok™ technology consists of utilising a modified chemical reaction heater to melt bismuth-based alloys downhole. The melted alloys have a viscosity similar to water, and a specific gravity 10 times that of water, allowing them to flow into the smallest areas of a wellbore without the need of any surface pumping equipment. As the alloys cool and solidify, they expand to provide a seamless gas tight seal that is non-corrosive and not affected by H₂S or CO₂.



About the Application



As world leaders in the use of bismuth-based alloys and chemical reaction heaters in the downhole environment, BiSN has a portfolio of products aimed at tackling some of the most difficult issues faced by the oil and gas industry. We pride ourselves in building a responsive long-term working relationship with our customers and working closely with them to provide innovative solutions. With many hundreds of commercial deployments with all operators, in all conditions and with wide regulatory oversight globally, wel-lok™ technology is changing the face of downhole sealing in the energy industry. See our website for our extensive case study portfolio as well as further information about us and our investors.