

# wel-lok™ Perf-lok

## Perforation Seal

### Sealing Perforations in Cased Hole Completions

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™ Perf-lok was developed to isolate perforations in all completions for zonal isolation or well P&A. Unlike typical cement squeezes traditionally used for this purpose, the Perf-lok does not require squeezing as it flows into the perforation tunnels by gravity due to its viscosity and density.

Due to the expansion properties of wel-lok™ the resulting plug can be milled out leaving full bore access whilst maintaining a gas tight seal inside the perforations.

### wel-lok™ Perf-lok Features

- Advanced bismuth alloy technology with expanding metal seals
- Non-elastomeric seals
- Gravity fed, no need for surface pumping equipment
- Wireline deployable single trip solution
- Low viscosity high density molten metal alloy flows through micro annuli
- No moving parts, therefore high reliability
- Quick setting time - ready to pressure test in hours
- High expansion through tubing solutions available

### wel-lok™ Perf-lok Benefits for Intervention

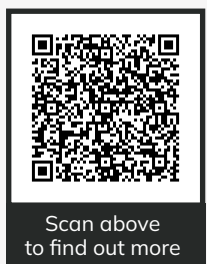
- Non-corrosive and not affected by H<sub>2</sub>S, CO<sub>2</sub> or acids
- Reduced environmental impact
- Permanent solution
- Reduced intervention costs
- Can seal in damaged, irregular or oval tubulars



Completion Size	Tool OD
4"	3"
4 1/2"	3.5"
5"	3.75"
5 1/2"	4.25"
7"	5.5"
7 5/8"	5.75"
9 5/8"	8"
10 3/4"	8"

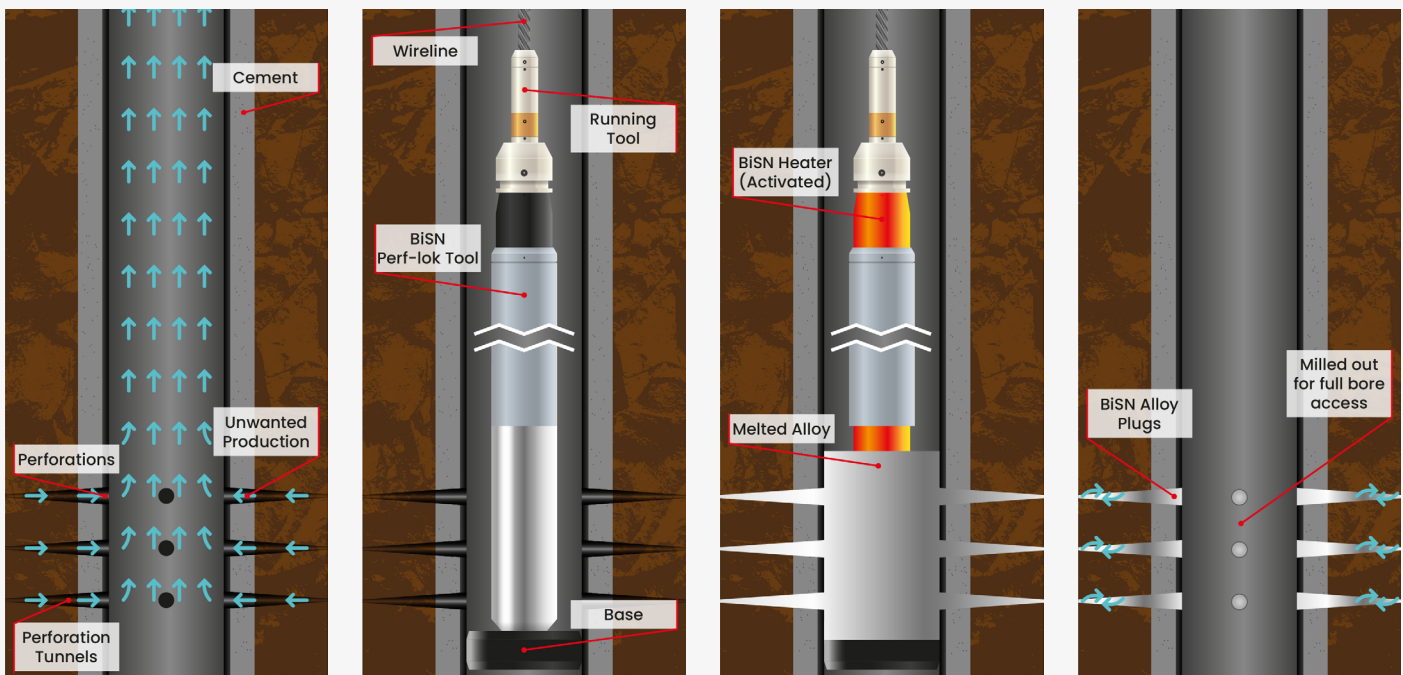
### wel-lok™ Technology Overview

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 H<sub>2</sub>S or CO<sub>2</sub>.



Scan above to find out more

### 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.

