

# wel-lok™ CLS

## Casing Leak Seal

### Repairing Damaged Tubing or Casing

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™ CLS (Casing Leak Seal) was developed to address the shortcomings of traditional methods in sealing leaks in tubings and casings. This tool provides a V0 rated seal with higher pressure ratings than conventional casing patches.

If full bore access is required, it can be milled out leaving a seal only across the previously leaking area of the well.

### wel-lok™ CLS Features

- Advanced bismuth alloy technology with expanding metal seals
- Non-elastomeric seals
- Gravity fed, no need for surface pumping equipment
- 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
- Wireline deployable single trip solution
- High expansion through tubing solutions available

### wel-lok™ CLS Benefits for Intervention

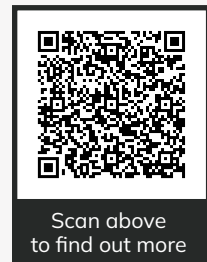
- Reduced intervention costs
- Non-corrosive and not affected by H<sub>2</sub>S, CO<sub>2</sub> or acids
- Reduced environmental impact
- Permanent solution
- Can seal in damaged, irregular or oval tubulars



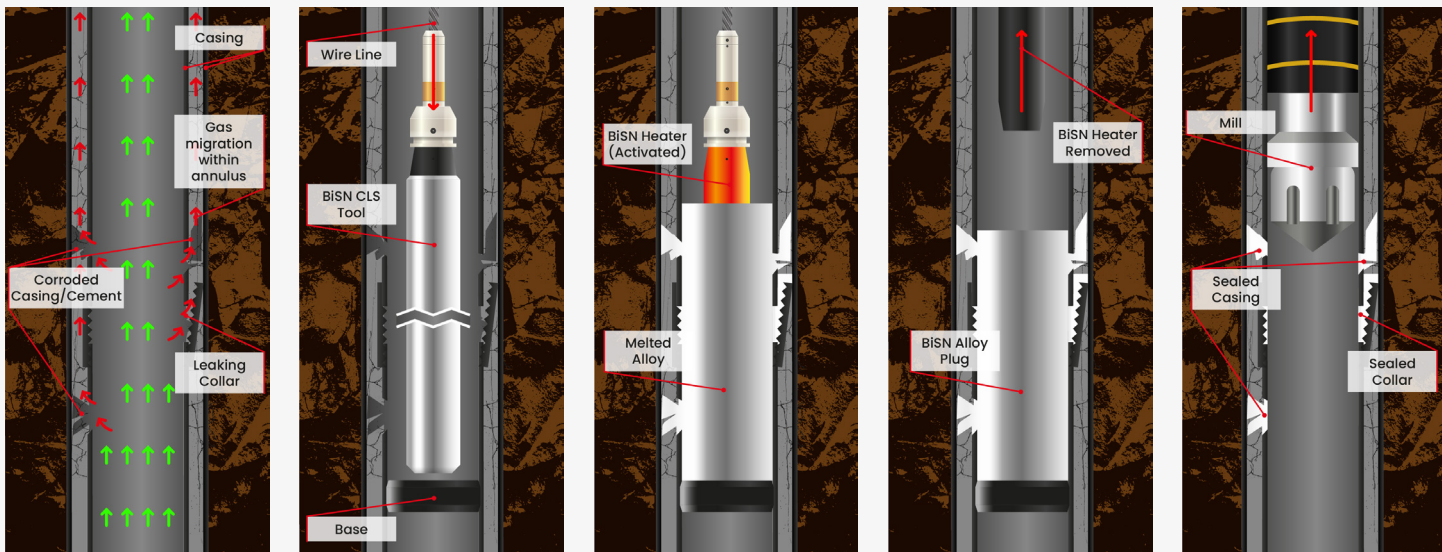
Casing Size	Tool OD
4 1/2"	2.125"
5"	2.125"
5 1/2"	2.375"
6 5/8"	2.375"
7"	2.375"
7 5/8"	2.75"
9 7/8"	3.25"
10 3/4"	3.5"
13 3/8"	5.5"

**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>.



**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.

