

# wel-lok™ TS

## Tubing Seal

### Provide a Permanent Seal in Well Abandonment

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™ TS (Tubing Seal) was developed to overcome the shortcomings of a traditional tubing barrier.

Run on wireline/slickline it can pass through small restrictions like damaged or crushed tubing to create a superior permanent barrier compared to existing bridge plugs or other technologies.

### wel-lok™ TS 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
- High expansion through tubing solutions available
- Quick setting time - ready to pressure test in hours
- Wireline deployable single trip solution

### wel-lok™ TS Benefits for Intervention & Plug & Abandonment

- Non-corrosive and not affected by H<sub>2</sub>S, CO<sub>2</sub> or acids
- V0 Qualified ISO 14310 Gas Tight "Eternal" Barriers
- Reduced environmental impact
- Permanent solution
- Can seal in damaged, irregular or oval tubulars

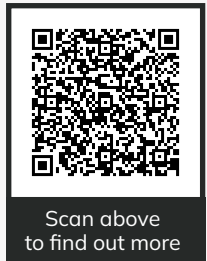


Sealing ID	Tool OD
2 3/8"	1.5"
2 7/8"	1.9"
3 1/2"	1.9"
4 1/2"	2.125"
5"	2.125"
5 1/2"	2.375"
6 5/8"	2.375"
7"	2.375"
7 5/8"	2.75"

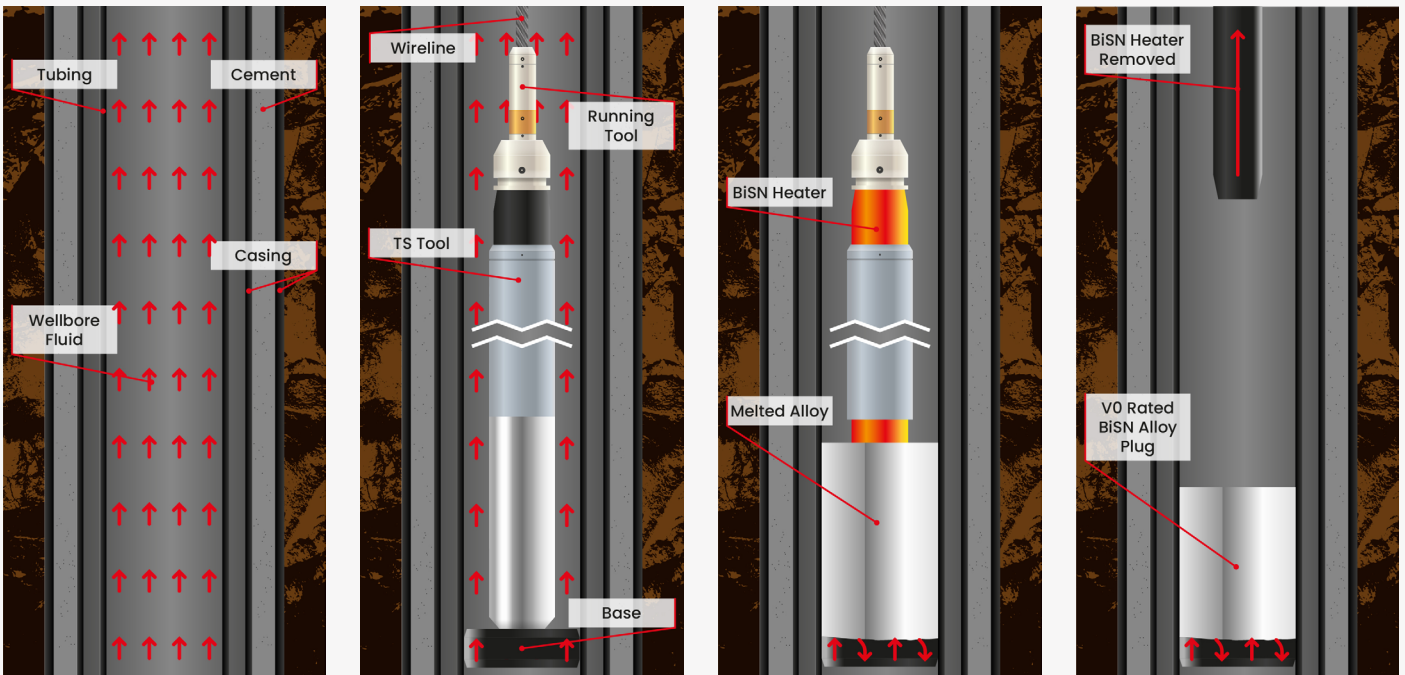
Sealing ID	Tool OD
9 5/8"	3.25"
10 3/4"	3.5"
13 3/8"	5.5"
16"	5.5"
18 5/8"	7.625"
20"	7.625"
24"	10.75"
30"	12.75"
36"	22"

**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.

