

Overview

The C-ZIP provides effective annular isolation where the cement operation fails or develops a micro annulus, removing the need for remedial work.



- Swellable rubber bonded to the external of the casing
- External rubber swells and seals where cement performance has been poor
- Reacts to fluid ingress sealing off developing micro annuli
- Performs well in out of gauge open hole sections
- Installation could remove the need for cement squeeze



Also available in sleeve form

Features and Benefits

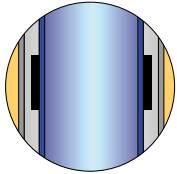
- Provides significant cost savings
- Can remove the need for a cement squeeze
- Available on casing or as a sleeve
- Strong and durable packer
- Simple - there are no moving parts
- No additional site crew
- Long life span
- Seals automatically as flow begins in the micro annulus
- Prevents annular flow
- Available for water or oil activation

Installation Process

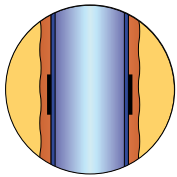
The C-ZIP swellable elastomer is vulcanized directly onto the pipe to creating a strong and durable packer. The C-ZIP is shipped from our manufacturing plants to the well site or customer's warehouse in a ready to run condition. All that is required for installation is that the rig crew remove the protective covering prior to the C-ZIP being made up to the casing string.

Typical Installation

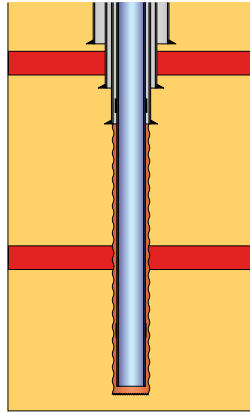
Layout



Casing Annulus Cementation Solution



Micro-Annulus Cementation Solution



The C-ZIP is a bespoke design integrated into the casing and specific to the well conditions.

After the cementation process a C-ZIP (full bore) swellable, reactive to water or oil can seal off the entire annulus in the upper casing section of the well. In the lower section of the well a C-ZIP Micro-Annulus packer will react and seal off any flow of oil or water that could be created by a micro annulus during the lifetime of the well. Where a problem is expected and time is critical C-Sleeve's are available as an off the shelf sleeve solution.

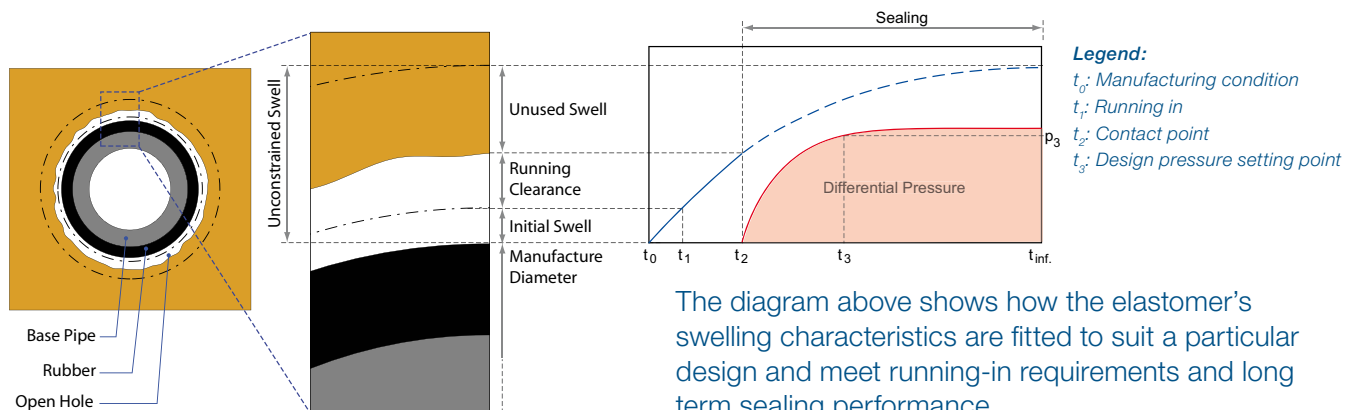
Typical C-ZIP Specification

Base Pipe OD (in)	5 1/2" - 20"	Time to set	1 - 20 days
Temperature (oC)	40 - 150*	Operates in Oil	Yes
Salinity (ppm)	0 - 200,000**	Operates in Water	Yes
Elastomer Selection	Water and / or Oil	Base Pipe Material	Any, including most coatings
Sealing Pressure (psi)	200 - 6,000	Standard Lengths	R3(38') R2 (20')
Running Tools	None	Bespoke Lengths	yes
Additional Crew	None	Chemically Resistant	Yes
Handling Equipment	As base pipe	Life Span	Life of Well
Training Required	none		

* not all combinations are available - ask for details

** only water swellable elastomers - ask for further details

Swell Design Parameters



The diagram above shows how the elastomer's swelling characteristics are fitted to suit a particular design and meet running-in requirements and long term sealing performance