

WELLTEC® ANNULAR ISOLATION (WAI™) FOR CEMENT REPLACEMENT

The WAI™ provides long length open hole zonal isolation (ZI), substantially removing the free annulus space between the liner (casing) OD and the open hole ID. The removal of this annular space can be beneficial in highly layered reservoirs of varying permeability, where selective production, stimulation or water shut off is required.

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Welltec®

At Welltec®, we design and test the WAI™ range (Welltec® Annular Isolation) in accordance to ISO 14310 V6 to V3 leak criteria.

The WAI metal expandable sleeve is hydraulically expanded quickly, under full surface control via the application of well bore pressure using the rig pumps. Sealing on the ID of the open hole is achieved via a series of compliant, elastomeric seals, backed up by full circumferential metal to rock contact fins that prevent seal extrusion under high differential pressure.

Applications

- Cement replacement across laminated & highly layered reservoir sections
- Selective production
- Selective stimulation
- Water shut off
- Overburden protection

Features

- Rugged, all welded, metallic construction
- Expansion assurance
- High expansion capability
- Constant, high pressure Δp over full expansion range
- No premature expansion
- Slim OD allows for high rate circulation during deployment
- NACE compliant

Benefits

- Rotatable during deployment enabling liner to TD in challenging environments
- Replaces cement across reservoir section
- Removes need for under-reaming / extended shoe tracks
- Enables pinpoint perforation of production / stimulation intervals
- No CBL required across reservoir section
- Rapid set nature of WAI reduces time to production
- WAI can be expanded online or offline
- High rate circulation capability
- Full bore – as per casing / tubing



WCS PRODUCT SPECIFICATIONS

Welltec® WAI™	General Information
Product name	Welltec® Annular Isolation (WAI™)
Product structure	Multiple single piece sleeve's, fully welded, optimized to base pipe length
Seal length	Bespoke
Base casing	Compatibility with all standard casing material / weight / threads
Standard material*	316 / Alloy 28
Standard elastomers & seals	HNBR / Aflas / FFKM / PTFE

Welltec® WAI™	6WAI	612WAI	812WAI
Expansion range	6.00 > 7.00"	6.50 > 7.25"	8.50 > 10.00"
Minimum running OD	5.75"	6.10"	8.18"
ISO14310 Standard **	V3	V3	V3
Maximum internal pressure psi	5,000psi	8,500psi	7,500psi
Constant element ΔP across expansion range	2,000psi	4,000psi	2,000psi
Maximum element length ft (m)	30ft (10m)	30ft (10m)	30ft (10m)
Maximum temperature °C (°F) ***	150°C	150°C	150°C
Base-pipe range (up to)	4 ½"	4 ½"	7"
ID in (mm)	Full bore (as per base-pipe)	Full bore (as per base-pipe)	Full bore (as per base-pipe)

* Alternative metallurgy available on request

** Upgraded ISO 14310 Leak Rate Criteria available upon request

*** Maximum Temperature is based on HNBR seals & elements

