

Welltec[®] Annular Isolation (WAI[™])



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.

Welltec[®]

For cement replacement



01 Applications

Cement replacement across laminated & highly layered reservoir sections

Selective production

Selective stimulation

Water shut off

Overburden protection

02 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

03 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

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.

WCS product specifications

Welltec® WAI™	General Information
Product Name	Welltec® Annular Isolation (WAI™)
ISO Standard	ISO 14310
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

	Zonal Isolation		
*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) each joint	30ft (10m) each joint	30ft (10m) each joint
Maximum temperature °C (°F) ***	150°C	150°C	150°C
Base-pipe range (up to)	4 1/2"	4 1/2"	7"
ID in (mm)	Full bore (as per base-pipe)	Full bore (as per base-pipe)	Full bore (as per base-pipe)

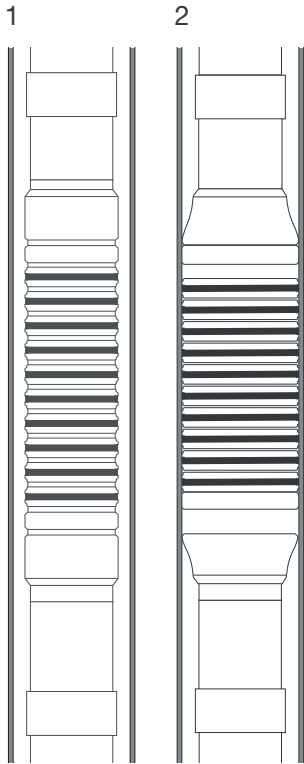
* Alternative metallurgy available on request

** Upgraded ISO 14310 Leak Rate Criteria available upon request

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

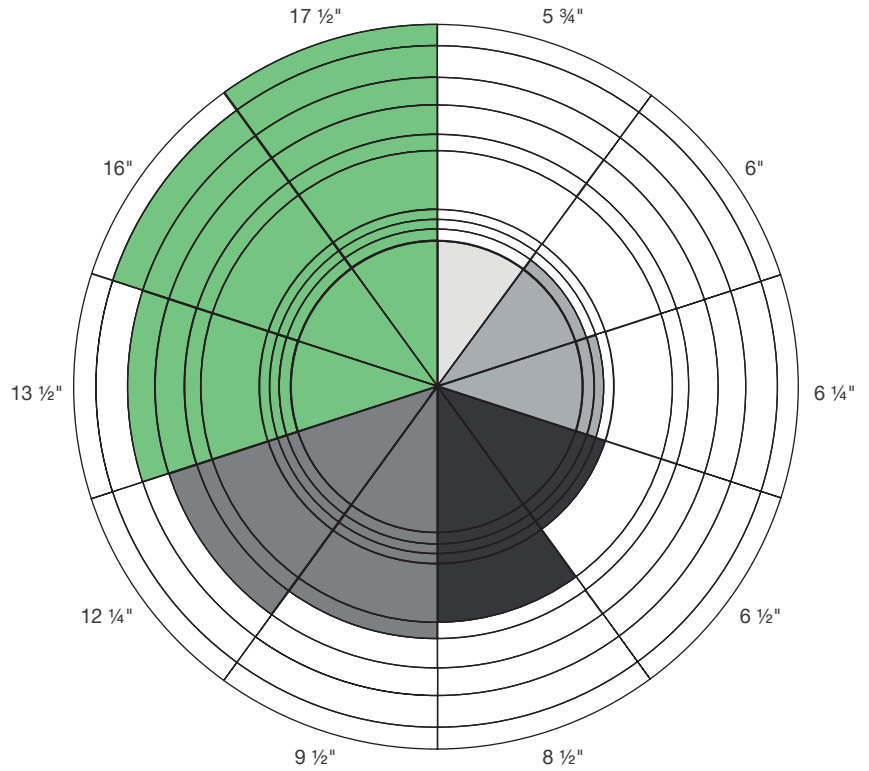
01. How it works

- 1: Mounted on base pipe
- 2: Hydraulic expansion controlled from surface



02. Our product range

Per open hole size.



03. The benefits

The WAI's metal construction provides a fast, high expansion, rugged seal against the open hole or casing irrespective of the fluid in the well. Furthermore, as shown in the chart below, there is no degradation of the maximum delta P capability versus expansion diameter.

- Conventional annular-barrier Delta P
- 812WAI Delta P

Delta P

