

Micro-Seal[™] *Isolation System-Unit* (*MSIS-U*)

Weatherford's patent-pending swellable elastomer *Micro-Seal* isolation system-unit (MSIS-U) safeguards long-term production integrity by preventing the unwanted migration of well fluids through microannulus leak paths between the casing and cement sheath. This system offers a low-risk, cost-effective alternative to expensive and time-consuming remedial cementing operations, often necessitated by microannulus pressure migration.

The *Micro-Seal* isolation unit incorporates Weatherford's proprietary hybrid-swellable technology. This feature means that the element swells when immersed in water/hydrocarbon-based wellbore fluids and/or wet gasses or any combination of these, ensuring that any potential microannulus is effectively sealed.

The *Micro-Seal* isolation unit is a standalone, slip-on device designed for use in cased-hole and openhole wellbore sections. The MSIS-U is the heart of the *Micro-Seal* isolation system and when combined with one of Weatherford's industry-leading mechanical cementing products provides excellent casing standoff.



Applications

- Any well where the risk of microannulus gas migration is present
- · Gas or liquefied petroleum gas (LPG) storage and injection wells
- · Wells that must be fractured or acidized
- · Wells with perforation damage to cement sheath
- Multiple completion wells (one or multiple casing strings)
- Wells to be stimulated by steam or other thermal processes and experience wide variances in temperature and/or pressure
- Any well location where there is history of wellhead pressure buildup



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Features, Advantages and Benefits

- The Micro-Seal isolation unit is a cost-effective solution to prevent microannulus gas migration, eliminating the need for expensive remedial cementing operations translating into significant cost savings.
- The swellable element effectively seals against the OD of the casing and the ID of the cement sheath, sealing regular and irregular annular geometries.
- The hybrid-swellable element can be activated by water/hydrocarbon-based fluids and/or wet gasses or any combination of these, ensuring zonal isolation in any environment.
- End rings protect the swellable element from damage while running-in-hole.

- Swellable elements can operate in downhole temperatures of up to 300°F (150°C), providing operational flexibility. Swellable elements with higher temperature requirements are available upon request.
- The tool can be fitted between stop collars in any required configuration on any section of the tubing/ casing. Alternatively, the set screws in the unit's end band enable it to be secured to the tubing/casing (only if no rotation is planned). It can also be deployed with Weatherford's industry-leading mechanical cementing products.

Tubular Size (in./ <i>mm</i>)	Maximum Rigid OD (in./ <i>mm</i>)	Overall Length (in./ <i>mm</i>)	Element Length (in./ <i>mm</i>)	Minimum Hole Size (in.)
4-1/2	5.52	7.50	4.00	5-3/4
114.30	140.10	190.50	101.60	
5	6.02	7.50	4.00	6-1/4
127.00	152.80	190.50	101.60	
5-1/2	6.53	7.50	4.00	6-3/4
139.70	165.70	190.50	101.60	
7	8.04	7.50	4.00	8-1/4
177.80	204.20	190.50	101.60	
7-5/8	8.67	7.50	4.00	8-7/8
193.70	220.10	190.50	101.60	
8-5/8	9.68	7.50	4.00	9-7/8
219.00	245.80	190.50	101.60	
9-5/8	10.69	7.50	4.00	11
244.50	271.50	190.50	101.60	
11-3/4	12.91	7.50	4.00	13-1/8
298.50	327.80	190.50	101.60	
13-3/8	14.56	7.50	4.00	14-3/4
339.70	369.90	190.50	101.60	

Specifications

For sizes and configurations not listed, contact an authorized Weatherford representative

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