

i-Trace CEM™

i-Trace CEM is a wireless passive intelligence system for production data collection and analysis. The i-Trace CEM is the result of a cooperation between NOV and RESMAN. Wireless reservoir surveillance technology is used to obtain reservoir data over time without risky interventions or costly modifications to the completion hardware.

The simple design consists of a protective carrier that is made up as part of the completion string, strategically spaced across the zone of interest and activated by proven ball-drop technology. When contacted by the target fluid (oil or water) and exposed to flow, the RESMAN Intelligent Tracers™ are designed to mark production with a unique chemical signature. The unique chemical signature from each downhole location flows to the surface, where production fluid samples are collected and analyzed.

A wide selection of intelligent tracers is available to customize and match various well conditions such as downhole fluids, temperature and monitoring objectives. The i-Trace CEM is compatible with cemented liner completions using plug and perf, or with our i-Frac cemented sleeve system. For plug-and-perf completions, one ball size accommodates all carriers. In cemented completions with i-Frac CEM™, a specific ball size is required for each corresponding stage.

Features

- Tracer system is protected during cementing operations
- Designed to match the liner specifications for the planned completion
- Available in standard service material or high alloys as required, according to completion design
- Run as part of the completion with pre-installed water and/or oil systems
- Simple and robust design

Benefits

- Reservoir monitoring over time allows the knowledge into how much production is coming from each monitored section of the well for up to 5 years
- Reduced risk and operating time - No cables, connections or well intervention required
- Cost efficiency - There is no additional rig time, no additional personnel on site, no intervention and no deferred production
- HSE friendly - No radiation or harmful chemicals are used
- Compatible with water disposal
- The Chemical PLT® system provides a chemical production log as accurate as a production logging tool

Applications

- Wireless reservoir surveillance for cemented plug-and-perf completions, or with i-Frac CEM™ stimulation sleeve technology
- Assist in allocating production by zone and identifying what flows where and how much
- Improve field development by updating field models
- Monitor well performance - verify investment of long/complex drilling
- Evaluate reservoir drainage patterns
- Determine where formation water is produced and optimizing the recovery
- Verify completion hardware integrity such as valves and packers



RESMAN®
WIRELESS RESERVOIR SURVEILLANCE

Technical Data

i-Trace CEM	OD in. (mm)	ID in. (mm)	Length in. (mm)	Material¹	Temperature² °F (°C)	Burst Rating³ psi (kPa)	Collapse Rating³ psi (kPa)	Tensile lbf³	Threads	Min Steel ID in Closed Position in. (mm)	Min Steel ID in Open Position in. (mm)
450	5.600 (142.24)	3.900 (99.06)	49 (1,245)	P110	270 (132)	12,969 (89,418)	11,600 (79,979)	381,843	All threads available	3.636 (92.35)	3.842 (97.59)
550	6.732 (170.99)	4.650 (118.11)	49 (1,245)	P110	270 (132)	16,917 (116,638)	14,662 (101,090)	766,124	All threads available	4.385 (111.38)	4.664 (118.47)

¹ P110 is standard, other materials are available

² Consult with application engineering if higher temperatures are required

³ Casing weight and grade will affect ratings