

Integrity eXplorer Z

Redefining cement integrity with flexural insight

The **Integrity eXplorer™** cement evaluation service from Baker Hughes provides accurate information that helps operators gain an understanding of the cement bond—regardless of weight or contamination—to make critical downhole decisions with confidence.

The service can obtain measurements accurately across the widest range of cement weights in the industry—with weights as low as 7 ppg. This makes the service ideal for evaluating contaminated, lightweight, and foam cement slurries.

Capable of measuring the cement bond in any wellbore fluid environment, the Integrity eXplorer service eliminates the need to unnecessarily add wellbore fluids for evaluation.

The Integrity eXplorer service eliminates the need for expensive and time-consuming procedures to pressurize the casing for evaluating cement with a suspected microannulus.

The sensors are mounted on a pad design engineered to make it insensitive to moderate decentralization.

With the data provided by the Integrity eXplorer service at the rig site, operators can make faster decisions regarding long-term zonal isolation.

The INTeX Z™ service by Baker Hughes introduces a new dimension in cement evaluation by delivering flexural acoustic impedance measurements alongside traditional cement bond

analysis. This breakthrough enables operators to make confident decisions about long-term well integrity and zonal isolation—even in challenging environments with lightweight or contaminated cement.

Beyond conventional cement evaluation

Historically, cement integrity assessments have focused on compressive strength and basic bond logs. However, flexural properties play a critical role in the cement sheath's ability to withstand dynamic loads and maintain isolation over the life of the well. INTeX Z™ provides in-situ flexural acoustic impedance data, offering a more complete picture of cement performance under real-world conditions.

Flexural acoustic impedance deliverables

Quantifies the cement's ability to resist bending forces, reducing uncertainty in wells exposed to thermal cycling, pressure fluctuations, and mechanical stresses.

Applications

- Conventional and unconventional wells
- Wells with contaminated, lightweight or foam cement
- Plug and abandonment operations
- CO₂ and gas storage wells
- Deepwater wells with a variety of cement or fluid conditions

Features and benefits

- Ability to evaluate the cement bond accurately across the widest range of cement weights in the industry
- Provides accurate answers in heavy wellbore fluid environments
- Evaluates the quality of the cement bond in the presence of a microannulus
- Enables cement evaluation in air-filled boreholes
- Pad-mounted sensors ensure log quality is not compromised by moderate decentralization
- Delivers solid-liquid-gas-microannulus maps
- Provides data at the well site for prompt decision making

Enhanced zonal isolation assessment

Combines shear strength characterization with flexural impedance mapping for a holistic evaluation of cement integrity.

Advanced EMAT technology

Utilizes patented electromagnetic-acoustic transducer technology for accurate measurements independent of fluid type, contamination, or wellbore geometry.

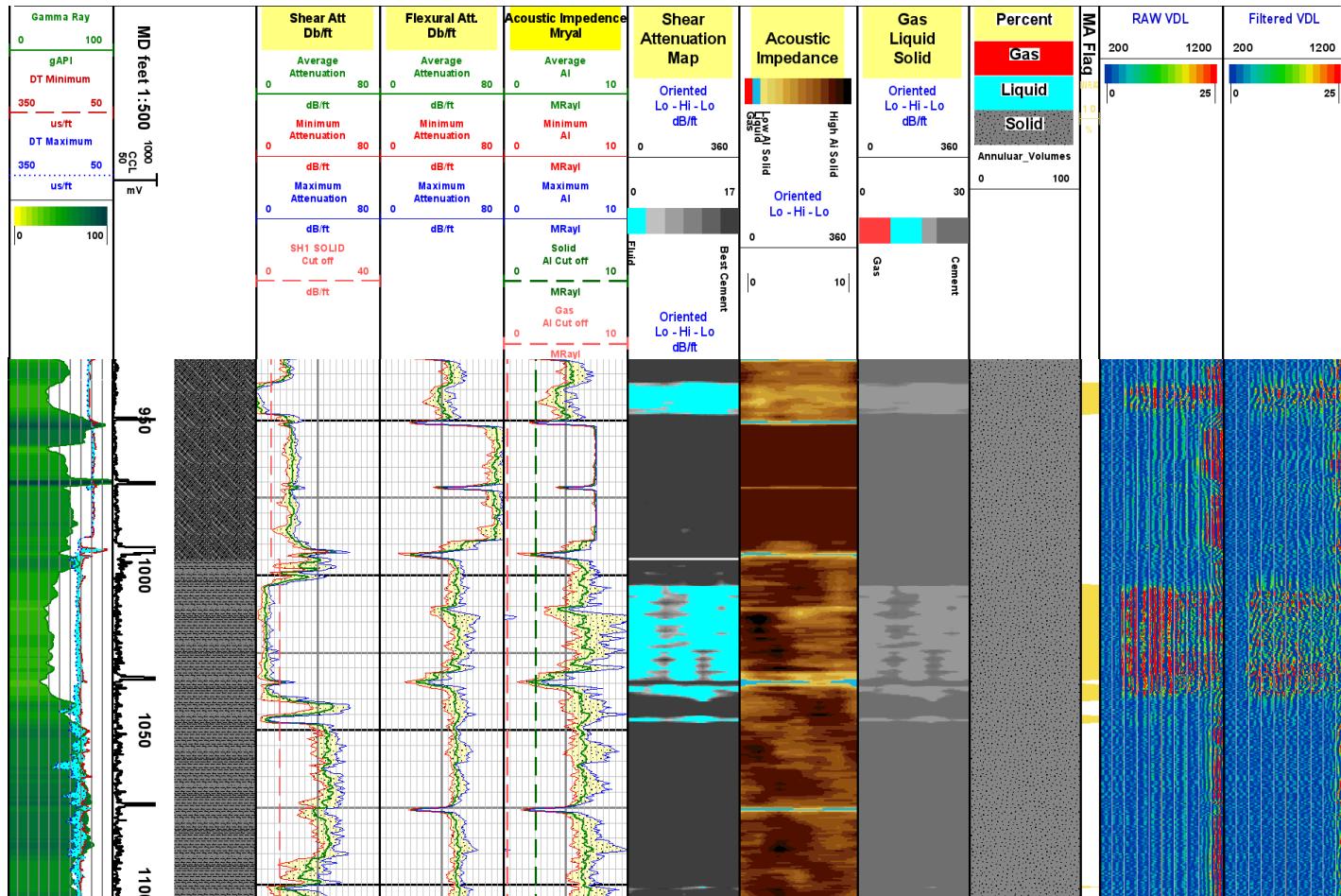
Comprehensive cement property suite

- Shear modulus
- Young's modulus
- Bulk modulus
- Flexural acoustic impedance

Solid-liquid-gas-microannulus mapping

Identify and quantify channels, microannuli, and fluid distribution with precision. The integrated mapping system accelerates interpretation and eliminates guesswork, ensuring timely and reliable decisions.

To learn more about how Baker Hughes' INTeX Z service can help you make confident, long-term decisions that impact well integrity, contact your Baker Hughes representative or visit bakerhughes.com.



The Integrity eXplorer Z service can deliver shear cement evaluation maps in addition to industry standard Acoustic Impedance based solid-liquid-gas-microannulus maps utilizing Flexural Acoustic Impedance measurement

Baker Hughes 

Integrity eXplorer Z service specifications

Answer products	Shear modulus, Young's modulus, Bulk modulus, Flexural Acoustic impedance, Solid-liquid-gas-microannulus maps
Accessibility	
Maximum operating pressure	20,000 psi (138 Kpa)
Maximum operating temperature	350 °F (177 °C)
Maximum casing size (OD)	16-in (406.4 mm)
Minimum casing size (OD)	4.5-in. (114.3 mm)
Maximum casing thickness	1.04-in
Mud type or weight limitations	
Maximum water-base mud weight	Any weight
Maximum oil-base mud weight	Any weight
Tool OD	3-5/8-in. (92 mm)
Length	19.94 ft (6.08 m)
Maximum logging speed	30 ft/min (9.14 m/min)
Combinability	ULTeX, DAL