

# PowerFlex and PowerEcho

Annular barrier evaluation services

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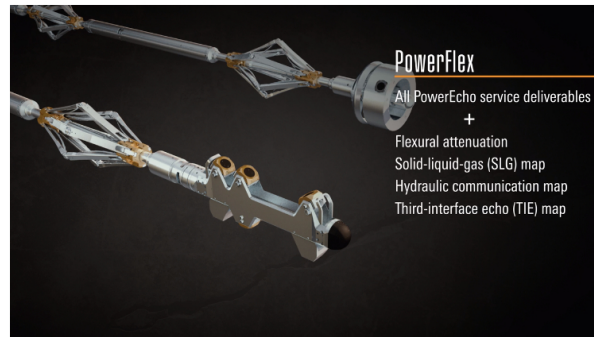
## Extending ultrasonic measurement to ultralight through heavyweight cements and heavy well fluids in large, thick casings

PowerFlex and PowerEcho annular barrier evaluation services significantly extend the operating range of ultrasonic cement and casing measurement to provide certainty for drilling, cementing, well integrity evaluation, and well abandonment operations. This powerful family of services answers the need for robust and reliable data to quantify annular cement and bond status and to confirm centralization and condition of the casing, especially for the growing number of wells with heavy well fluids and large-diameter, thick-walled casings.

## Overcoming the attenuation challenges of mud and casing

PowerFlex and PowerEcho services integrate new mechanical designs and powerful new transducers to effectively receive pulse-echo and flexural wave signals despite significant attenuation in heavy muds, where conventional ultrasonic tools cannot function. Performance has been proved in mud weights from ultralight to exceeding 18 ppg.

New processing algorithms similarly extend PowerFlex and PowerEcho services to multiple casings up to a diameter of 22 in and thickness of 1 in.



## PowerFlex

All PowerEcho service deliverables

+  
Flexural attenuation  
Solid-liquid-gas (SLG) map  
Hydraulic communication map  
Third-interface echo (TIE) map



The processing workflow for PowerFlex and PowerEcho services delivers confidence and certainty to well integrity decisions.

## Providing field answer turnaround in 2 hours or less

Not only do PowerFlex and PowerEcho services greatly increase wellsite efficiency via faster logging speeds, but enhanced wellsite processing enables a turnaround time of 2 hours or less from acquisition to receipt of the field answer product.

Postprocessing can be conducted with either operators' in-house workflow or the **Techlog** wellbore software platform.

## Processing workflows for cement and bond certainty

In addition to enhanced wellsite processing that powers an efficient 2-hour turnaround time from acquisition to answer, PowerFlex and PowerEcho annular barrier evaluation services provide multiple workflows that enable confidence and certainty in critical decisions.

## Related Products



### Integrated Well Abandonment | Verify

Confirm isolation and barrier integrity. Accurately tag the placement of each barrier in the wellbore, evaluate the contents of the annulus, and run pressure tes...

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<p><b>TECHNOLOGY</b> Validating Ultrasonic Log Response Against Reference Barrier Cells Simulating Downhole Well Condition</p> <p>Creating reference barrier cells to simulate downhole oil well conditions, such as free and cemented pipe, ragged barrier...</p>	<p><b>TECHNOLOGY</b> Cement Evaluation Service Guides Efficient Casing Retrieval to Optimize Cut-and-Pull Operation, Offshore Norway</p> <p>PowerFlex service's flexural attenuation measurement pinpoints top of cement, solid sag, and casing position.</p>
<p><b>TECHNOLOGY</b> PowerFlex and PowerEcho Annular Barrier Evaluation Services</p> <p>Reliable barrier evaluation for assuring well integrity.</p>	<p><b>TECHNOLOGY</b> Saving Rig Time by the Use of New-Generation Ultrasonic Transducers</p> <p>Evaluating cement in outer casing through section milled window of the liner casing.</p>
<p><b>TECHNOLOGY</b> PowerFlex and PowerEcho Annular Barrier Evaluation Services</p> <p>Quantify annular cement and bond and to confirm centralization and condition of the casing.</p>	<p><b>TECHNOLOGY</b> Ultrasonic Cement Logging</p> <p>Expanding the operating envelope and efficiency.</p>

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