



TECHNICAL DATA SHEET

ABI-43 Cement Mode
Acoustic Borehole Imager

The ABI-43 is an ultra-compact scanning solution for borehole casing and cement evaluation. This state-of-the-art technology provides 360° data coverage and 3D imaging of the cement behind the completion. The tool employs ultrasonic pulses that are generated from within the 1 11/16 (43mm) tool body and directed using a rotating internal mirror, therefore no moving parts are exposed to the well environment.

The ABI-43 emits an ultrasonic beam towards the formation, and records the amplitude and travel time of the reflected signal. The amplitude record is representative of the impedance contrast between casing and fluid. The travel time is used to determine accurate borehole diameter data, which makes the tool ideal for casing inspection. While in cement logging mode, the in-house developed acoustic sensor is optimised to receive signals from the interface between the completion and the formation, allowing for higher resolution and greater fidelity data to be acquired at the area of interest. Complementary completion ID and casing thickness data are also acquired, albeit to a lower resolution. The CADI (Cement Attenuation Decay Index) generated is a qualitative index directly related to the cement bonding.

Applications

- Cement evaluation

Benefits

- Most compact tool of its kind currently available
- Extensive measurement range from 2 7/8 in to 15 in tubulars
- Deployable on electric line with mono, multi or coax cables
- Suitable for all well deviations, including horizontal
- Comprehensive range of log analysis and report services available from READ ANSA





Specifications

Temperature rating*	170°C (338°F)
Pressure rating	10,000 psi (700 Bar)
Tool diameter	1 11/16 in (43 mm)
Tool length	248 in (6.3 m)
Tool weight	65 lb (29.5 kg)
Logging speed**	Nominal 30 ft/min (9 m/min)
Azimuthal resolution	Standard 36 ppt post processing
Vertical resolution	Standard 1 in
Inclination accuracy	±0.5°
Depth of investigation	Casing to cement interface
Frequency	0.5 MHz
Ultrasonic Acoustic sensor	Fixed transducer and rotating focusing mirror
Collimated Acoustic beam	Focal distance diameter 0.12 in (3 mm)
Primary curves	360° unwrapped CADI image; CADI average
Output	Cement Attenuation Decay Index (CADI)
Borehole fluid	Water, water based mud, brine, oil (oil based mud not applicable)
Materials	Corrosion resistant throughout

*With Gamma Ray - CCL reduced to 125° (257°F).

**When combined with DDS (memory sub).

