

RoCD EMAT-C Ultra Service

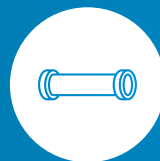
In-line Ultra-High-Resolution Axial Crack Detection and Sizing



Accurate crack detection, sizing and characterization



Global availability and largest tool fleet in the world



Technologies suitable for both liquid and gas pipelines

External factors such as corrosion, stresses, pipeline movements, and fatigue cycling may lead to the formation of axial and circumferential cracks in pipelines. Safe pipeline operation and avoiding performance and eventual containment loss demand a complete understanding of cracks and crack progression. Our RoCD Suite of technologies offers comprehensive detection, characterization, and analysis of axial and circumferential cracks in your pipeline. RoCD technologies provide superior sensitivity and resolution backed by tailored probe production and industry-leading carrier systems. Our understanding and experience of crack analysis and detection are supported by an in-house crack database that enhances identification and characterization accuracy.

Stress corrosion cracking and other forms of axial cracking must be considered and mitigated to ensure safe pipeline operation. Our RoCD EMAT-C Ultra service provides high sensitivity and accuracy for gathering data for improved pipeline integrity management.

The sensors on our EMAT-C Ultra tools are mounted in a way that the corresponding sensor traces overlap, and improved data coverage can be obtained:

- Leading to a 200% sensor coverage in the pipe body and longitudinal weld area
- Improved POD for cracking of up to 95%
- Clockwise and counterclockwise scan of all pipeline anomalies
- Improved sensitivity down to 20x2mm small flaw sizes



Benefits




Utilizing ultra-high-resolution inspection service for better crack detection:

- Improved inspection and data collection, as a higher number of sensors results in higher data resolution
- Detection and identification of all common types of radial, longitudinal cracks that terminate in the internal or external wall surface, including the weld bead
- Applied to lower bound toughness pipelines our Ultra technology leads to a simplification of the integrity assessment due to its better sensitivity
- Probability of Identification for cracking is 90%
- Utilizing EMAT-C Ultra can lead to cost-savings compared to standard EMAT-C due to the reduced need for field verification or excavations
- Technology also suitable for hydrogen pipelines*



*Modification on tool setup might be necessary (more information on request)

Technical Specifications

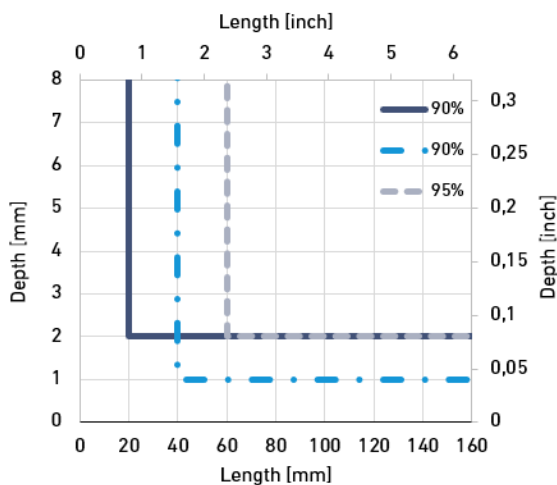
Isolated radial cracks & colonies w/ axial orientation in pipe body

POD	90%		95%
Minimum length	20mm (0.79") 	40mm (1.57") 	60mm (2.36") 
Minimum depth	2mm (0.08")	1mm (0.04")	2mm (0.08")
Sizing Certainty	80%		
Depth sizing accuracy for t<10mm	+/- 0.20t	+/- 0.15t	+/- 0.15t
Depth sizing accuracy for t≥10mm	+/- 0.25t	+/- 0.20t	+/- 0.20t
Length sizing accuracy	+/- 20mm (0.79")		
Width sizing accuracy in colonies	+/- 30mm (1.18")		

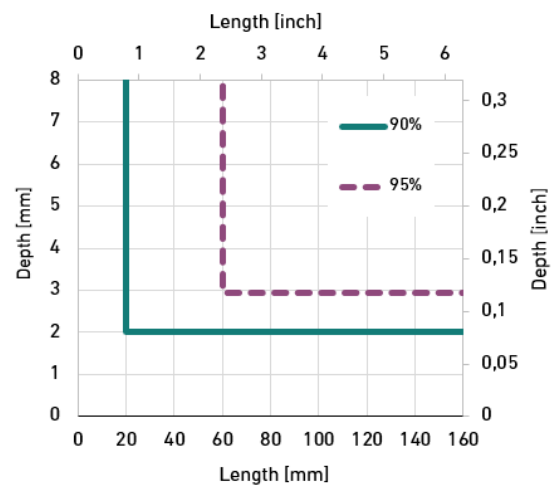
Isolated radial cracks w/ axial orientation in longitudinal weld area

POD	90%		95%
Minimum length	40mm (1.57") 		60mm (2.36") 
Minimum depth	2mm (0.04")		3mm (0.08")
Sizing Certainty	80%		
Depth sizing accuracy for t<10mm	+/- 0.15t		
Depth sizing accuracy for t≥10mm	+/- 0.20t		
Length sizing accuracy	+/- 20mm (0.79")		

POD @ Pipe Body



POD @ Longitudinal Weld Area



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