MsS Guided Wave Corrosion Mapping

Corrosion Mapping Methodology

In corrosion mapping, the MsS system often employs a sector probe to scan the structure and produce a detailed 3-D map of defect severity. For instance, a specific example involves a 24-inch-OD pipe with a 8-inch-long MsS sector probe operating at a 64-kHz center-frequency with a 1-cycle tone burst. The mapping plot uses a color spectrum to indicate the level of reflection from defects, with red representing the highest reflection (indicating severe defects) and green the least. This method allows for high spatial resolution and is applicable to various structures, including simple pipe supports, welded pipe supports, precast concrete pipeline supports, hold-down/anchor straps, saddle support for horizontal pressure vessels, insulated tank walls, soil-air interfaces, concrete-air interfaces, insulated elbow areas, insulated T-joints, and complex geometric areas.

Feature	Details
Pipe Example	24-inch-OD pipe
Probe Specification	8-inch-long MsS sector probe
Frequency	64-kHz center-frequency, 1-cycle
Color Spectrum for Defect Severity	Green (least), Cyan, Blue, Magenta, Red (highest reflection)
Applications	Simple pipe support, welded pipe support, precast concrete pipeline supports, hold-down/anchor straps, saddle support for horizontal pressure vessel, insulated tank wall, soil-air interface, concrete air interface, insulated elbow area, insulated T-joint, complex geometric area

MsS Guided Wave Corrosion Mapping represents a significant advancement in non-destructive testing, offering a non-invasive, economically viable solution for corrosion detection in challenging environments. Its ability to map defects with high resolution and inspect large areas efficiently makes it a preferred choice for maintaining the integrity of critical infrastructure.