



Structural Integrity Associates, Inc.®

Structural Integrity Adds PowerFocus® Guided Wave Technology to Its Toolbox

Congruent with our commitment to provide best-in-class, advanced NDE services, Structural Integrity (SI) has added the PowerFocus® long-range guided wave inspection technology to our NDE toolbox. Developed by FBS, Inc., a strategic alliance of Structural Integrity, PowerFocus® adds some differentiating capabilities for the long-range guided wave inspection of pipe for metal-loss from corrosion. Incorporating new display technologies, dynamic data management methods, and active and passive phased-array focusing capabilities into one tool, the PowerFocus® system embodies a unique combination of capability and versatility. It's also built on a configurable platform that allows us to utilize the technology for new guided wave applications, including those beyond piping metal loss inspection.

Structural Integrity is the first to offer this new technology which provides an enhanced guided wave inspection service for our clients.

ABOUT POWERFOCUS

Recognizing that the guided wave technique and technology are relatively young and rapidly evolving areas, Structural Integrity added the PowerFocus technology to our services capability. Several key features we offer through the use of PowerFocus guided wave pipe inspection are:

IMPROVED DEFECT LOCALIZATION WITH TOTAL FOCAL SCAN® AND ACTIVE FOCUSING CAPABILITIES

Structural Integrity is the first Guided Wave Inspection provider to offer both enhanced active and passive guided wave focusing capabilities for enhanced flaw location and approximate sizing through the use of PowerFocus. Using physically based computational algorithms, the Total Focal Scan technology passively focuses guided wave energy at all locations in the diagnostic length, generating a virtual image of the pipe that lends to a more reliable interpretation of the guided wave data. For tough inspection conditions, such as buried or heavily coated pipe, the active focusing capability can be used to deliver concentrated wave energy to a specific axial and circumferential location, providing improved signal-to-noise ratios and enhanced flaw evaluation capabilities.

ADDED "PUNCH" FOR IMPROVED PENETRATION POWER POTENTIAL

The PowerFocus transducer modules contain approximately 15 times the amount of piezoelectric material (the active part of the GWT collar responsible for generating and receiving the wave energy) as other GWT technologies. Additionally, most collar sizes have up to up to twice as many transducer modules, resulting in an overall increase in the amount of guided wave energy being put into the pipe. The end-result is the potential for improved penetration power and signal-to-noise ratios in hard-to-inspect configurations, such as buried piping. Furthermore, the robust design of the transducer modules minimize any field interruptions associated with the equipment, thereby keeping project schedules on track.

For more information please contact:

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LOW-PROFILE, LIGHT-WEIGHT

The PowerFocus transducer collars require less than 1" of clearance between adjacent pipes and/or structures and less than 5" of axial space to complete a test. The collars are extremely light-weight, and all inspection equipment, including collar sizes from 2" to 24" can be fit into two ruggedized shipping cases and may be handled by one of our GWT technicians, resulting in reduced inspection/logistics costs. The small collar size opens a large population of previously inaccessible pipe to guided wave inspection, such as that often encountered when inspecting through wall penetrations, when inspecting pipes on racks, or when inspecting tightly spaced tubing in furnace components.

ENHANCED DATA ANALYSIS WITH FREQUENCY TUNING AND FREQUENCY MAP®

The PowerFocus system is capable of rapid data acquisition from 20kHz to 85kHz and higher, in 1kHz increments and, because data is collected at each discrete frequency increment and there is no interpolation of data, it is the most comprehensive inspection system on the market. Following acquisition, all the collected data can be viewed at once in the Frequency Map® plot available in the PowerFocus software. This allows our operators to quickly identify the optimal frequencies for any immediate follow-up investigations as well as any areas of concern, providing the most thorough analysis available in the industry.

WHAT THIS MEANS FOR OUR CLIENTS

Simply put, by adding the PowerFocus long-range guided wave pipe inspection system to our NDE offerings, Structural Integrity will be able to provide an enhanced inspection service with:

- improved penetration power potential (greater inspection lengths),
- improved sensitivity and inspection confidence (increased number of sensors),
- higher productivity and at a reduced cost.

Furthermore, due to the small footprint of the PowerFocus system, we can now access plant piping that was previously not inspectable using comprehensive guided wave techniques, eliminating the need for expensive alternative approaches such as excavation or in-line inspection.



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