

## INSONO Composite Inspection Technology



**INSONO** is a Non-Destructive Testing technique for inspection of composite repairs applied to metallic components, validated by the welding Institute (TWI) with patent and UKAS accreditation pending. It has been developed to validate the condition and integrity of composite repairs providing operators with assurance in the installation, long-term performance, and evidence to support life extension of the repair.

With over 30 years' experience, ICR is internationally recognised as a service-leader and a key-player in the ongoing development and adoption of composite technology. **INSONO** complements the Technowrap™ range and provides operators with the assurance their composite repairs are fit for purpose, satisfying regulatory body guidelines regarding inspection criteria. It also allows for the extension of defined life repairs reducing waste whilst avoiding high-carbon emissions from traditional steel replacement alternatives.

### WHY INSPECT COMPOSITES?

- Due to aging assets and more composite repairs reaching the end of their design life, there is an increased requirement to revalidate or extend the life allowing operators to avoid costly replacement options that may require shut down of the asset.
- Regulatory bodies focussing on the integrity management and condition monitoring of repairs.
- Inspection of defined life repairs is a key enabler to ensure continued safe and reliable operations.
- Inspection techniques currently available are not practical to deploy in the field and unable to access complex geometries with a single technique or product.
- The ability to inspect repairs may allow composite repairs being used in higher risk locations (subject to risk assessment and engineering validation) where they may not have been previously considered).

### INSONO CAPABILITIES?

- **INSONO** can detect defects in the three main areas of concern; The bond line, Interlaminar dis-bonds and the steel substrate.
- Based on the principles of acoustic inspection method with pitch and catch, resonance and mechanical impedance analysis will detect and size the flaws.
- A scanner will provide 3D models and visual representation of the composite repair, allowing for precise dimensions to be used in the assessment.

- This innovative technique will offer our clients the confidence to validate and extend the life of repairs based on data driven assessments.

### INSONO BENEFITS:

- INSONO will allow for the ongoing inspection and safe extension of defined life repairs, reducing the carbon emissions associated traditional steel replacement.
- The portable hand-held equipment and specifically designed probes can be used on all system configurations and geometries, including areas with challenging access. The equipment fits in a small peli case and can be easily transported.
- ICRs manually operated, angled probes are designed to access all system configurations, detect defects in the composite material, the bond line and the steel substrate and will provide an automated inspection report.
- An automated, user-friendly visual inspection report / 3D model will be provided.

### ASSURANCE

- **INSONO** can validate the condition and integrity of composite repairs providing operators with assurance in their application and long-term performance.
- Validated by the welding institute (TWI).
- Patent pending.
- Pending UKAS accreditation.
- Acceptance criteria clearly defined and supported by extensive testing.

