




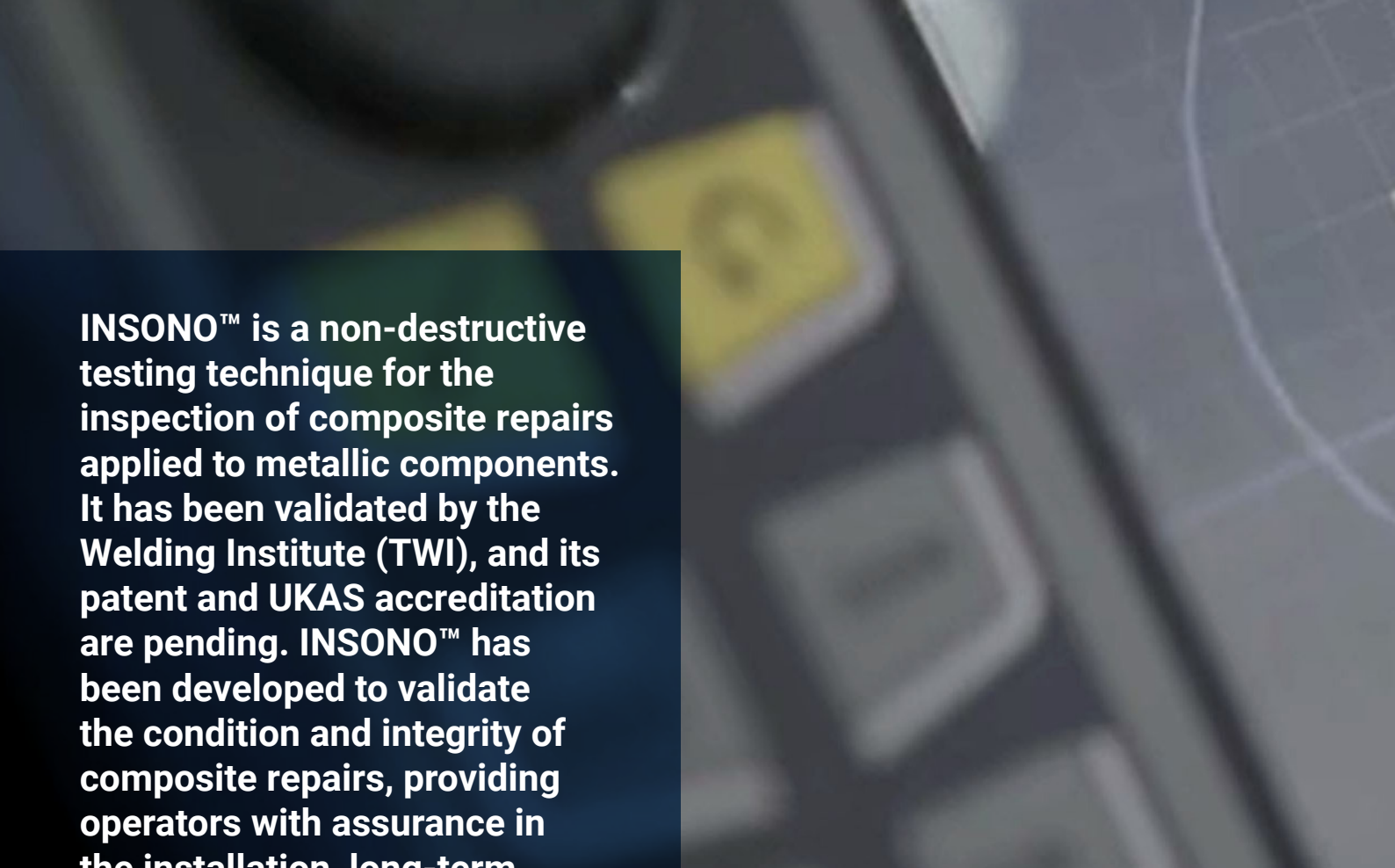
ICR.



INSONO™ composite inspection

www.icr-world.com





INSONO™ is a non-destructive testing technique for the inspection of composite repairs applied to metallic components. It has been validated by the Welding Institute (TWI), and its patent and UKAS accreditation are pending. INSONO™ 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 the life extension of the repair.

With over 30 years of experience, ICR is internationally recognised as a service leader and key player in the ongoing development and adoption of composite technology. INSONO™ complements the ICR Technowrap™ range and provides operators with the assurance that their composite repairs are fit for purpose and satisfy regulatory body guidelines regarding inspection criteria. Additionally, it allows for the extension of defined life repairs, reducing waste while 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 their life, allowing operators to avoid costly replacement options that may require the shutdown of the asset. Regulatory bodies are focusing on the integrity management and condition monitoring of repairs, and inspection of defined life repairs is a key enabler to ensure continued safe and reliable operations.

However, 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 to be used in higher risk locations (subject to risk assessment and engineering validation) where they may not have been previously considered.



INSONO™ capabilities

INSONO™ capabilities include detecting defects in the three main areas of concern:

- the bond line
- interlaminar dis-bonds
- the steel substrate

Based on the principles of acoustic inspection methods with pitch and catch, resonance, and mechanical impedance analysis, it can detect and size flaws.

A scanner will provide 3D models and visual representations of the composite repair, allowing for precise dimensions to be used in the assessment.

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

INSONO™ Benefits

INSONO™ offers several benefits, including allowing for the ongoing inspection and safe extension of defined life repairs, thereby reducing the carbon emissions associated with 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.

ICR's manually operated modified probes are designed to access all system configurations, detect defects in the composite material, the bond line, and the metallic substrate and provide an inspection report.

Additionally, an automated and 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.
- It is validated by the Welding Institute (TWI).
- It is pending patent approval.
- It is pending UKAS accreditation.
- The acceptance criteria are clearly defined and supported by extensive testing.

