EUROPE TECHNOLOGIES
SONATS

ULTRASONIC IMPACT TREATMENT (UIT-HFMI) ON ALUMINUM WELDING

SONATS has developed an UIT solution for new building and in-service aluminum ship in support of superstructure crack repair, modernization and weld repairs on sensitized aluminum.

Advantages & characteristics:

- Treatment on sensitized 5XXX & 6XXX aluminum
- Treatment on Welding in new building
- Correct and/or minimize fatigue cracking that may have occurred in the aluminum superstructure
- Fatigue Lifetime Improvement

According to M.E.HAGGET [1] beneficial compressive stresses induced by SONATS' UIT removed all of the tensile residual stresses in the HAZ.

UIT has been successfully applied in the field to increase fatigue resistance and reduce Stress Corrosion Cracking on various metal structures.

	Before UIT		After UIT	
	Residual stress	Affected depth	Compressive residual stress	Affected depth
HAZ	+70 Mpa	0	< -150MPa	> 1mm
Weld Toe	+24 MPa	0	< -140MPa	> 1 mm

Capabilities:

- Operating Worldwide
- Proven Experience on several ships
- Using our own IUT patent STRESSONIC®
- SONATS UIT meets NAVSEA requirements [2]

Weld after UIT

UIT on Aluminum weld

[1] M.E.HAGGET Systematic review of UIT parameters on residual stresses of sensitized AA5456, Naval postgraduate school, Monterey, CA, 2014
[2] NAVSEA Ser 05D/022 NAVSEA Approval to Modify Inspection requirements When Ultrasonic Impact Technology (UIT) is applied

SONATS - Innovative impact surface treatment solutions
2 Rue de la Fonderie - B.P. 40538 - 44475 CARQUEFOU CEDEX (France)
Tel.: +33 (0)2 51 70 04 94 - Fax: +33 (0)2 51 70 05 83
Email: **contact@sonats-et.com** - Website: **www.sonats-et.com**