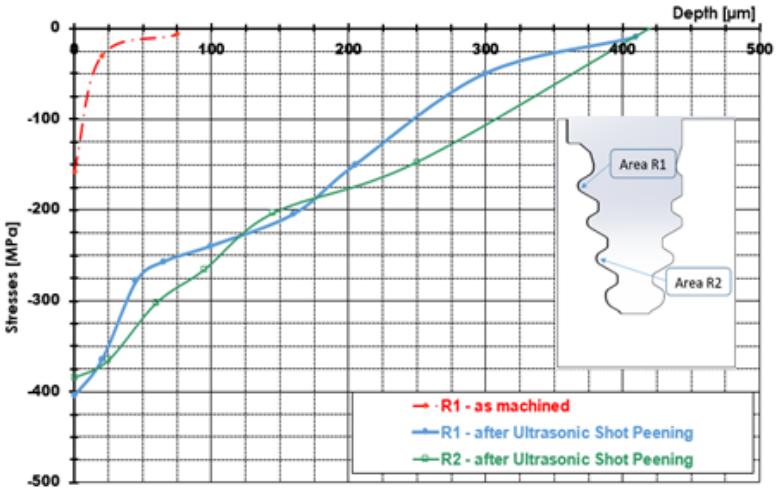
EUROPE TECHNOLOGIES
SONATS

ULTRASONIC SHOT PEENING (USP) IN THE ENERGY INDUSTRY

SONATS has developed a portable Ultrasonic Shot peening system to increase fatigue strength and reduce Stress Corrosion Cracking on critical components for commercial nuclear power plants.

Since our STRESSONIC® technology is portable, an operator can conduct localized in-situ shot peening without disturbing surrounding components as there is no risk of media loss and no requirement of masking or bagging the environment.

Fir Tree Groove shot peening with portable equipment



Residual Stress profiles on Fir Tree Groove

According to R.J. ORTOLANO [1] shot peening for Power generation equipment [...] improve fatigue life and minimize the incidence of stress corrosion cracking (SCC).
Y.SAKAI [2] showed that the failure time under SCC is at least twice as long for shot-peened material compared to unpeened material.

USP benefits:

- Introduces beneficial compressive stresses
- Improves fatigue life performance
- Reduces Stress Corrosion Cracking (SCC)

Applications on Steam turbines, Gas Turbines

USP on Fir Tree Groove, Axial Locking Groove, Air Slot, Spacer

[1] R.J. ORTOLANO, Shot Peening in Steam Turbines. [2] Y.SAKAI, Recent Technologies for Geothermal Steam turbines.

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