FOERSTER

UCI HARDNESS TESTING OF WELD SEAMS ON PIPES AND BOILERS

Hardness peaks in weld HAZ raise crack risk in pipes and boilers. SONODUR 3 delivers precise UCI hardness testing directly on-site.



THE CHALLENGE

Weld seams on pressure pipes and boilers are exposed to extreme thermal and mechanical loads. In the heat-affected zone (HAZ), microstructural changes caused by welding and rapid cooling can lead to stress relaxation cracking or precipitation hardening. Hardness peaks or strong deviations between weld metal and base material (e.g. DIN EN 288-3) indicate increased crack risk. Without systematic hardness testing, such defects often appear only after prolonged operation under pressure and temperature.

THE SOLUTION

The SONODUR 3 applies the UCI method to determine precise hardness values directly on the weld seam and in the adjacent HAZ. After proper surface preparation, the probe is positioned manually and the defined zones are measured successively. Even curved pipe sections or difficult installation positions can be inspected reliably using adapted probe feet.



THE RESULT

Critical hardness peaks and irregular distributions in the HAZ are detected at an early stage. The very small indentation minimizes structural influence compared to rebound methods. Immediate graphical feedback and full documentation support quality assurance and reduce the risk of costly rework or weld replacement.



SONODUR 3

Portable, high-quality and suitable for industrial use - the user-friendly SONODUR 3 sets standards in the field of mobile materials testing

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