Ultrasonic Welding Inspection of a Wind Tower

Introduction

The control has been performed in accordance with the ISO 11666.

This document specifies two ultrasonic acceptance levels known as acceptance level 2 (AL 2) and acceptance level 3 (AL 3) for full penetration welded joints in ferritic steels, which correspond to ISO 5817:2014, quality levels B and C. An acceptance level corresponding to ISO 5817:2014, quality level D is not included in this document, as ultrasonic testing is generally not requested for this weld quality.

These acceptance levels are applicable to testing carried out in accordance with ISO 17640.

The nominal frequency of probes used in this document is between 2 MHz and 5 MHz, unless attenuation or requirements for higher resolution call for other frequencies. It is important to consider the use of these acceptance levels in conjunction with frequencies outside this range carefully.

Challenge

In this specific case, the challenge is connected to the possibility to share all the information in real-time with the 3rd level expert who is working remotely. The Proceq UT8000 allows the 2nd level, of the supplier, to demonstrate step by step all the control - from the calibration to the inspection itself.

Traditional solution

In the traditional way, all the STEP are covered by the technician independently. At the end of the control, a PDF report is released and sent to the 3rd level for final approval.

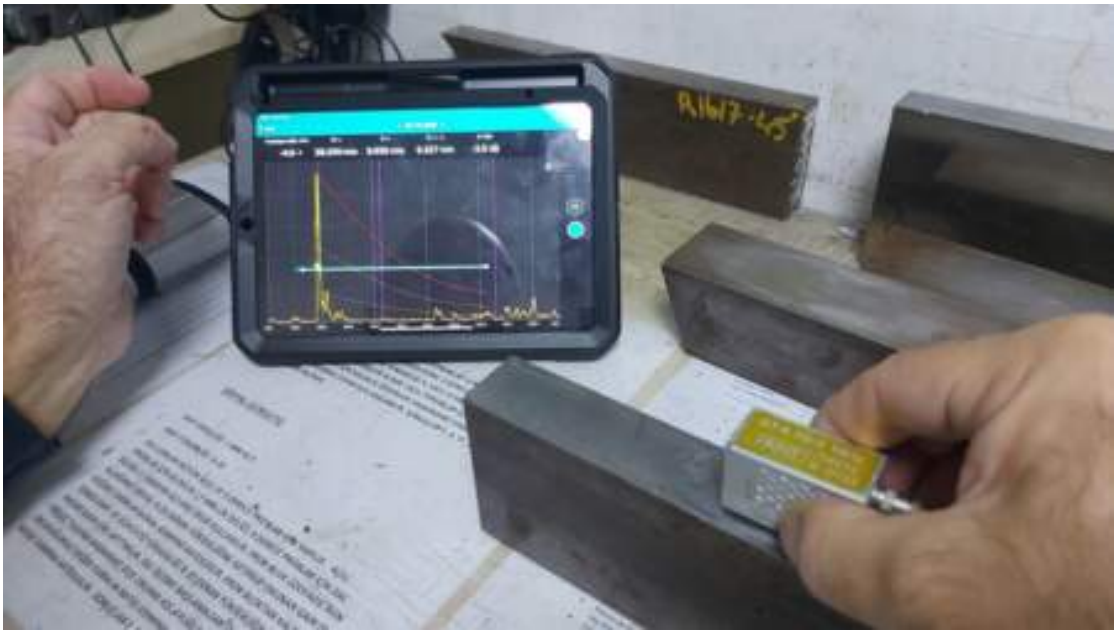
There is no real traceability of the single step performed by the technician. Calibration as well the inspection itself are not shared.

Screening Eagle solution

The technician has been able to share every single step to the customer's third level expert thanks to the UT8000.

Through the use of Zoom software, calibration on the block has been done while sharing the tablet's screen and camera. The third level has had access to real-time footage of the calibrating process. The calibration has been carried out according with Technique 1, (point 5 of the EN 11666).

- The acceptancy levels have been set up, and DAC curves have been produced.
- Less than 20 minutes were needed to finish the process.
- One of the probe used is the 2 MHz, 70 degree.



After the calibration the 2nd level has performed the inspection sharing video, in real-time.

This has allowed the 3rd level inspector to verify the boundary condition of the control.

At the end of the control the raw data, as well the preliminary report, have been shared via Workspace to the inspector.

See more applications of the Proceq UT8000 in our Tech Hub.