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Operating Instructions

Shear Wave Transducers 250 kHz

Required steps before measurements can be performed

1. Put a small amount of shear wave coupling gel on the transducers.
2. Firmly press the transducers on either side of the 25 μs calibration rod (Part No 710 10 028). Make sure that the coupling gel is properly distributed and that no air is trapped between the transducer and the calibration rod.
3. Connect the transducers to Pundit Lab.
4. Select the 250 kHz transducer from the list of supported transducers (see Pundit Lab manual chapter 3 for more details).
5. Zero the instrument as described in the Pundit Lab manual chapter 2.1.

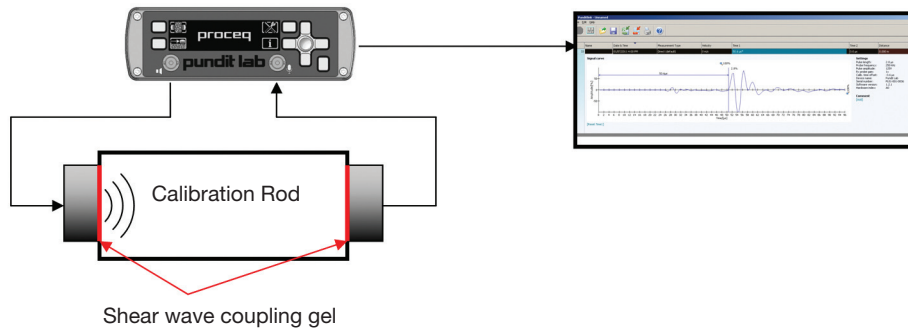


Figure 1: Performing measurements with the 250 kHz shear wave transducers.

Performing measurements (see Figure 1)

When measurements with the 250 kHz shear wave transducers are performed, it is crucial to use the special shear wave coupling paste, otherwise shear waves cannot be properly transmitted into the object under test. The shear wave coupling paste is a non-toxic, water soluble organic substance of very high viscosity.

Furthermore, we highly recommend using Pundit Link's waveform display in order to manually locate the onset of the shear wave echo. Since the latter is always preceded by a relatively weak longitudinal echo (see Figure 2), the transit time determined by Pundit Lab, would correspond to the longitudinal instead of the shear wave.

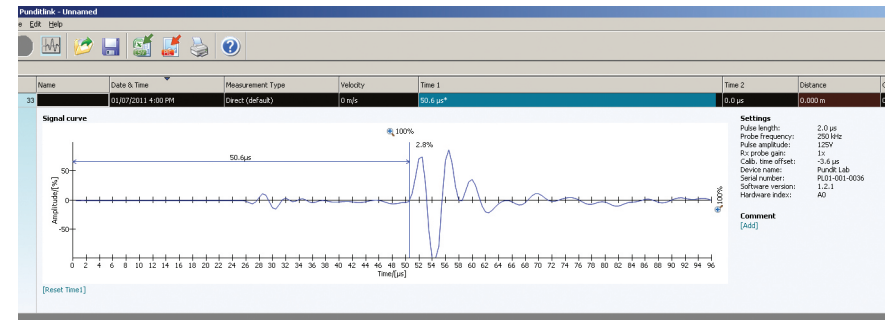


Figure 2: Typical echo signal obtained, with an experimental setup according to figure 1.

The first echo arrives at approximately 25.4 μs and corresponds to the weak longitudinal wave generated by the shear wave transducer. After 50.6 μs the much stronger shear wave echo appears in the signal.