

1.3.81. IMPROVEMENT OF THE NEAR-FIELD RESOLUTION OF ULTRASOUND PROBES

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The near-field resolution of ultrasound probes is limited by a „dead zone“. The usable time area in the echo signal can be limited by capacitive coupling of the transmitted signal at the input amplifier. This can happen also by the use of SE-probes. The crosstalk of the transmitted signal superimposes with the received signals of the surface-near areas. Additionally disturbances by Rayleigh and SH-waves occur, which are emitted directly by the transmitter at the surface of the specimen and which are picked up by the receiver, too. This effect limits the near-field resolution as well.

The influence of electric disturbances (crosstalk) can be minimised by shielding. Acoustic disturbances caused by the surface waves can not easily be removed.

By means of measurements at concrete specimen, carried out with a commercially available probe-array, a method is introduced, which reduces the acoustic disturbances and minimises the „dead zone“ of the array. Especially for the investigation of surface-near reinforcement this method has been applied successfully in practice.