

Calcium Silicate Bricks - Ultrasonic Pulse Method: Effects of Natural Frequency of Transducers on Measurement Results

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Abstract : Modulus of elasticity is one of the important parameters of construction materials, which considerably influence their deformation properties and which can also be determined by means of non-destructive test methods like ultrasonic pulse method. However, measurement results of ultrasonic pulse methods are influenced by various factors, one of which is the natural frequency of the transducers. The paper states knowledge about influence of natural frequency of the transducers (54; 82 and 150kHz) on ultrasonic pulse velocity and dynamic modulus of elasticity (Young's Dynamic modulus of elasticity). Differences between ultrasonic pulse velocity and dynamic modulus of elasticity were found with the same smallest dimension of test specimen in the direction of sounding and density their value decreases as the natural frequency of transducers grew.

Keywords : calcium silicate brick, ultrasonic pulse method, ultrasonic pulse velocity, dynamic modulus of elasticity

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