

Stresstech Group Product News

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X-RAY ELASTICITY CONSTANT DETERMINATION WITH XSTRESS 3000

Using experimentally determined X-ray elasticity constant is recommended for improving the X-ray stress measurement accuracy. This constant is needed for calculating the stresses from lattice strains. Experimental determination of the constant is now possible with the XSTRESS 3000 X-ray elasticity constant determination system developed by Stresstech.

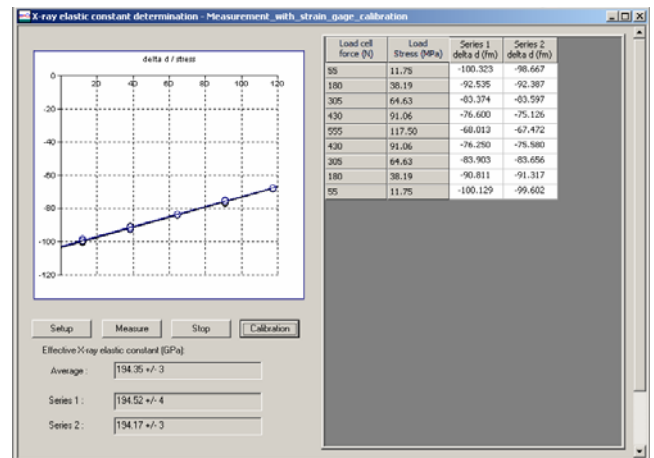


Elasticity constant device (four-point bending device).

The correct, experimentally determined X-ray elasticity constant increases the stress measurement accuracy compared to using the macroscopic or calculated constants.

XSTRESS 3000 X-ray elasticity constant determination system includes all the necessary hardware and software to measure and determine this constant. The determining functions and phases are integrated in the X3000 software so that the measurement routine is automatic and easy after positioning the bar sample.

The X-ray elasticity constant determination system works with load cell or strain gage. It is in accordance with the ASTM standard E 1426-91.



X-ray elasticity constant determination window.

Measurement principle

In the X-ray elasticity constant determination process the test specimen is bent applying load that changes in steps. XSTRESS 3000 system makes a normal stress measurement during each step. From each measurement X3000 software calculates the change in interplanar spacing as function of known bending stress. From this the X-ray elasticity constant is determined.



Measuring elasticity constant using strain gages.