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Shearography Testing on Aerospace CFRP Components and Other Compounds

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Abstract

Due to further development of the shearography-measurement technique with improvements regarding handling and insensitivity against disturbing environmental factors, it is now possible to use shearography with a stationary measurement set-up for quality control in production, as well as for in-service-testing with a robust mobile measuring system.

The use of the patented spatial phase shift technique (1) - with which for each measurement only two video images are required, and with which no mechanic phase shift unit is needed as with the temporal phase shift technique- results in a considerably higher robustness of the measuring system. In addition, the use of laser diodes for the object illumination leads to advantages in size and handling of the shearography system.

The reliability of the shearography system is proven by practical measurements. Shearography has become an effective measurement technique for full field, non-destructive inspection of CFRP components and many other compounds.