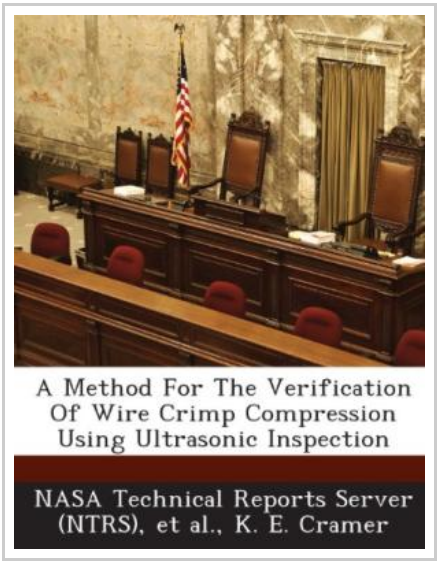

A Method for the Verification of Wire Crimp Compression Using Ultrasonic Inspection

By K. E. Cramer

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 24 pages. Dimensions: 9.7in. x 7.4in. x 0.1in.The development of a new ultrasonic measurement technique to assess quantitatively wire crimp terminations is discussed. The amplitude change of a compressional ultrasonic wave propagating at right angles to the wire axis and through the junction of a crimp termination is shown to correlate with the results of a destructive pull test, which is a standard for assessing crimp wire junction quality. To demonstrate the technique, the case of incomplete compression of crimped connections is ultrasonically tested, and the results are correlated with pull tests. Results show that the nondestructive ultrasonic measurement technique consistently predicts good crimps when the ultrasonic transmission is above a certain threshold amplitude level. A quantitative measure of the quality of the crimped connection based on the ultrasonic energy transmitted is shown to respond accurately to crimp quality. A wave propagation model, solved by finite element analysis, describes the compressional ultrasonic wave propagation through the junction during the crimping process. This model is in agreement within 6 of the ultrasonic measurements. A prototype instrument for applying this technique while wire crimps are installed is also presented. The...

Reviews

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