

## Challenge

Rubber-to-metal bonded springs are produced in various sizes, forms and shapes. They are generally tested by application of a tensile or shear load, and observation of surface defects, which indicate a lack of bond integrity. This test is imperfect due to the subjective assessment made and the potential to damage the part during the test.

## Solution

Sciometric's advanced integrity analysis system test provides a cost-effective platform for product testing. The test system takes inputs from existing load cell and displacement transducers, together with additional sensors to assess bond integrity, stiffness and dimensional conformance.

The test system can be retrofit to existing test stands, or designed into dedicated end-of-line test stations. The bond integrity test strategy is adjusted to suit the product type, and test cycle requirements. Using the vibro-acoustic emission during the bond test provides a test method that allows detection of non-visible defects, and an extremely fast, objective measurement of bond integrity. The instrumentation can record results against a serial number and provide statistical information for continuous improvement processes and constraint management.

## Results

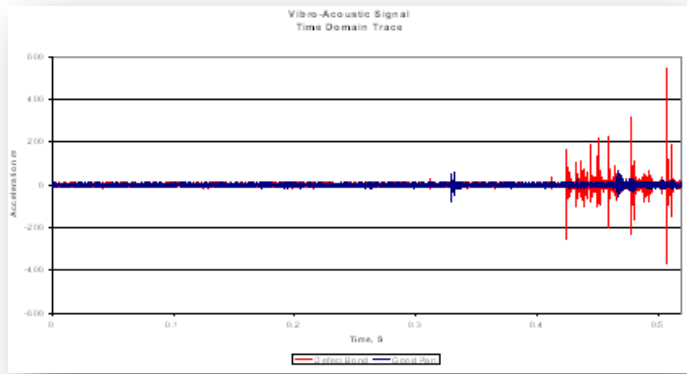
The manufacturer receives more accurate results from what is essentially a simplified and automated test process. The solution supports manufacturing line productivity improvement and reduces the potential of damaged parts being dispatched.

## RUBBER TO METAL BOND TEST KEY FEATURES

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- Detects subtle non-visible bond defects ruptures
- Increased cycle times
- Can be integrated with stiffness test algorithm to give 100% testing capability
- Increase reliability and safety for critical applications such as automotive, truck and rail vehicles

This graph clearly shows a comparison between a production and a known defective bond.



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