

# Devoted concrete tester

INSPECTION Instruments, of Cleveland, Ohio, has recently announced that its Acoustic Concrete Tester (ACT) can help assess whether concrete structural elements are free of defects such as delaminations, spalls and horizontal flaws.

The unit is designed to be able to evaluate the thickness of structural elements such as tunnel linings, concrete slabs, columns and retaining walls, to name a few.



*ACT determines the resonant frequency as its transmitter emits a broadband wave field*

Structural elements up to 900mm thick and as thin as 75mm can be tested using the ACT's ultrasonic echo technology. Using the unit means that there is no need to generate an impact manually nor assume a wave speed.

The unit works on the basis that, for a given structural element and material, there is a one-to-one relationship between resonant (dominant) frequency and thickness.

ACT determines the resonant frequency as its transmitter emits a broadband wave field that contains the necessary frequencies to test structures between 75 and 900mm. Most of these frequencies get dissipated but the one that matches the resonant frequency of the concrete element remains, is amplified and gets picked up by the receiver.

Inspection Instruments adds that an unexpected or an additional dominant frequency indicates a discontinuity (possible defect) in the structural element. This can be a spall, delamination or horizontal flaw.