

## SONIC15

Instrument for Ultrasonic Pulse velocity and sonic tests with instrumented hammer

### :: METHODOLOGIES ::

Sonic test  
Sonreb  
Ultrasonic Pulse Velocity  
P.I.T. Pile Integrity Test



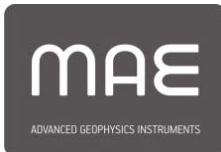
SONIC15 is a device for non Destructive Tests and surveys which uses ultrasonic pulse velocity and sonic tests on masonry with instrumented hammer. It supports extension, too for surveys on foundation piles with P.I.T. methodology. In spite of compact dimension of the unit, there is a wide monitor of 7" with integrated touch screen which allows to use it in immediate and effective way during construction.

Acquisition and visualization parameters of waves could be easily changed in simple and immediate way through touch screen so that you can do the first exam on construction of recording data. SONIC15 could be used, according to configurations, for surveys both on cement and concrete as diaphragms poles or structural elements than on masonry structures. According to different kind of performed tests, it's enough to connect instrument to necessary accessories as different kind of ultrasonic probes or impulsive instrumented sources or not for impact tests.

SONIC15 instrument together with the new Controls digital sclerometer can be used for Sonreb tests

#### Available versions:

- Cod. KSONIC15, sonic 14, ultrasonic in contact + sonic test with instrumented hammer
- cod. KSONIC15IT, extension module I.T. TEST



# SONIC15

## SPECIFICATIONS

### Acquisition:

- Signal range:  $\pm 2.5$  V
- amplification factors: x1, x2, x4, x5, x8, x10, x16, x32
- generator with two levels of power: normal, high
- band width: 200 kHz
- filter for ultra-sounds: central frequency 50 kHz
- mode: manual (with push-button or hammer control) or automatic (with timing)

### Probes:

- Resonant frequency 53 kHz
- Diameter: 48 mm
- Excitation peak voltage: 500V (normal), 2000V (high)
- Maximum frequency for pulse emission: 1 per second

### Hammer:

- Trigger: piezoelectric
- Knockers: plastic and metal

### Generals:

- CPU Quad Core Cortex-A9, 1.4GHz
- RAM 1G DDR3 32bit bus
- Flash 8GB eMMC
- LCD 7" TFT full color, LED backlight, capacitive touch screen, resolution 800x480
- Normative compliance: ASTM C597-09 e UNI En 12504-4
- Graphic visualization of acquired signal
- Interactive graphics with zoom functions and cursor reading
- Automatic zoom on cursor or on a temporal set up window
- Memorization of each single signal acquired
- Possibility of modifying acquisition parameters while measuring
- Saving measurements campaign in a single file
- USLab software for PC for report processing and generation
- Inner lithium battery of 13Ah
- Rechargeable by micro USB 2.0 type-B connector
- Typical consumption: 500 mA during rest, 1A during measurements
- Box with belt
- Operating temperature: 0-60°
- Sizes and weight: L. 200 x H. 50 x P. 145 mm, 0.90 Kg



[mae-srl.it/go/SONIC15](http://mae-srl.it/go/SONIC15)

## KSONIC15

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Sonic test  
Ultrasonic Pulse Velocity

### SONIC15 Kit Ultrasonic Pulse Velocity + Sonic Test with trigger hammer



Kit is equipped by all the necessary to perform non destructive tests with Ultrasonic pulse velocity and Sonic test with instrumented hammer. With ultrasonic pulse velocity is possible to evaluate transit velocity of pulses (thickness and time noted). The main aim of ultrasonic test is to record Time of Fly (TOF, Time of Fly) and the following velocity calculation. The principle of ultrasonic test on masonry is the same of ultrasonic test on concrete.

Ultrasonic Test could be performed by:

- **Direct Method**
- **Semi-direct Method**
- **Indirect Method**

The principle of sonic tests is the same of ultrasonic test on concrete, the only difference is the production of longitudinal elastic wave used for measurement: instead of ultrasonic pulse, it uses a blow with a small hammer. These produced frequencies (around one hundred of Hz), lower than those of ultrasonic (around tens of KHz), can go through more compact masonry, as dry masonry and bricks one, so that it is possible to evaluate the state of conservation, through velocity measurement and/or of attenuation of produced wave.

## KEXPSONIC15IT

:: METHODOLOGIES ::

P.I.T. Pile Integrity Test

Extension module SONIC15 for PIT (Pile Integrity Test)



Kit includes:

- n.1 accelerometer with cable 3 mt.
- n.1 not instrumented mallet in gum
- n.1 report software
- n.1 transport case

### Intellitest Solutions Pvt. Ltd.

12A08, Business Hub, Sector - 81, Faridabad - 121007 (Delhi NCR), India  
+91-1294096069 / +91-9250059892 / +91-9250059893  
[solutions@intellitest.co.in](mailto:solutions@intellitest.co.in), [intellitestpl@gmail.com](mailto:intellitestpl@gmail.com), [www.intellitest.co.in](http://www.intellitest.co.in)