



Non-destructive, Quick Determination of Compressive Strength and Modulus of Elasticity on Samples of Cement, Mortar and Concrete

 Wide range of strength - Mortar, normal concrete up to Ultra High Performance Concrete


 Higher level of production monitoring and better quality assurance

 Easier and more precise than ultrasound measurements


 Measurement only takes a few seconds

 Robust algorithms

 No alignment effort

 Mobile use - up to 6 hours battery operation

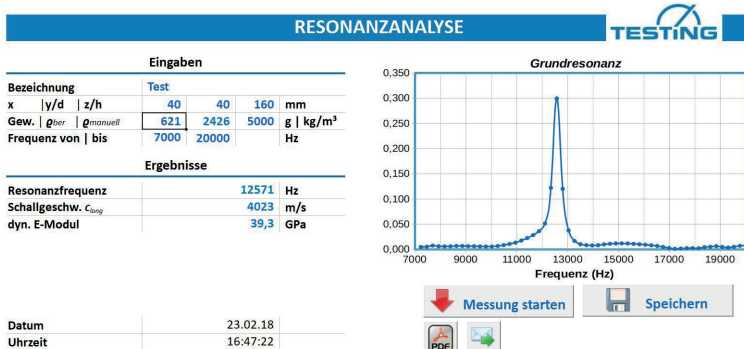
 Validity of measurement immediately identifiable

 Ongoing recording of different factors influencing the strength development:
Temperature, moisture, composition, additives, aftertreatment, freeze-thaw cycles, chemical and other environmental impacts starting from the encasing date of the young concrete



For Laboratory, Production and Construction Site Measurements on Cylinder, Bar and Cube Samples





By mechanical stimulation of resonance frequencies, the RA100 Concrete measures according to the Impact Resonance Method easily and quickly the sound velocity. Compressive strength, static and dynamic modulus of elasticity are determined directly and with calibration values.

Test Bench

- High quality steel - stainless steel design
- Dimensions: 530 x 250 x 230 mm
- Weight: 7 kg
- Max. load up to 100 kg
- Mount for adapter and chuck
- Acrylic glass downpipe with steel balls
- Integrated microphone 50 Hz - 18000 Hz
- Test bench operating temperature -10 to +85 C°
- Sample temperature range -40 to +150 C° (temporary up to +250 C°)

Computer and Software

- Standard 10 Inch Tablet (opt. rugged Toughpad)
- Windows 8.1
- External keyboard
- USB connector cable
- Pre-installed RA100 Concrete software
- Extensive possibilities for documentation and archiving
- Interface for easy data export (CSV, DIFF etc.)

Measurement Range

- Compressive strength: 0,1 MPa - 200 MPa
- Modulus of elasticity: 1 - 70 GPa
- Sound velocity: 300 m/s - 6000 m/s

Reference to Standards

- Resonance measurements of concrete test specimen for determination of dynamic modulus of elasticity are described in American ASTM C215, British BS 1881-209
- Dynamic modulus of elasticity can be converted to static modulus of elasticity by established reference curves. Direct measuring of static modulus is standardized in European EN 12390-13 and American ASTM C469
- Compressive strength can indirectly be determined by calibration with the measured sound velocity. Standardized measurement of compressive strength are usually made according to European EN 12390-3 (cube, cylinder), EN 196-1 (mortar prism) and American ASTM C39 (cylinder)
- In the freeze-thaw resistance test standards European CEN/TR 15177 and American ASTM C666 the relative change of the dynamic modulus of elasticity is used to evaluate internal structural damage

Samples

- Test bench for common standard test samples of the concrete industry: Cylinders 300 x 150 mm, cubes 150 mm and bars 40 x 40 x 160 mm
- Moreover, all bar-shaped samples like drill cores with uniform profiles (cylinders and bars) with 1 - 16 cm diameter and 10 - 40 cm height