

GEOSIGMA

RBT

RBT (Rock Bolt Tester) is a new digital ultrasonic instrument developed by Geosigma for non-destructive inspection of rock bolts

RBT applies long-range ultrasound guided waves to investigate the conditions of an installed grouted bolt, with focus on the conditions of the grout. RBT is equipped with modern electronics, a new communication platform and features easy operation for a modern way of quality checking rock bolts of various types.

A modern testing technique

Most of the underground constructions in rock demands rock support. The most common support method today consists of rock bolts anchored to the rock with cement grout.

It is of vital importance for the long term safety of the excavation to check that rock bolts are installed in an adequate way by a contractor. This control may either be done by destructive and time-consuming testing techniques, such as pullout tests or overcoring, or by non-destructive testing techniques (NDT), such as Boltometer, an instrument developed in the '70s. There are today only a handful of Boltometer-instruments still in operation.

The measurement technique of the Boltometer is robust, but the instrument is obsolete. Therefore, Geosigma initiated the development of a new instrument in 2010, Rock Bolt Tester (RBT). RBT, based on the same measuring principle as the Boltometer, ultrasound technique, but equipped with modern electronics, a new communication platform and much easier to operate.

How it works

RBT features an application-tailored ultrasound probe that transmits high-energy, low frequency guided waves (below 100kHz) through the bolt and grout. It is capable of receiving weak echoes reflected from cavities and defects in the grout along the bolt as well as the bolt's end-echo.

RBT is a portable instrument featuring custom-designed analog electronics for generating and receiving the guided waves, and an embedded digital computer for performing signal processing, operational communication and data storage.



RBT, portable and easy to use.

In 2019, RBT was approved by the Swedish Transport Administration (Trafikverket) as a fully equivalent replacement for the Boltometer.

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[More about the RBT on geosigma.se](http://www.geosigma.se)