

POBT

Pull-Out-Bolt Tester – non-destructive testing of rock bolts

GEOSIGMA
PART OF REJLERS

Non-destructive pull-out testing is carried out to verify that a grouted steel rock bolts holds for the intended load. Geosigma provides personnel, equipment and performs pull-out tests. Rental of the pull-out test equipment is also possible.

Geosigma has developed the Pull-Out-Bolt Tester, POBT, for non-destructive testing of rock bolts.

The advantages of the equipment are:

- Lightweight aluminum hydraulic cylinder
- Equipment mounted on trolley
- Guaranteed axial pull-out
- Continuous logging of pull-out force and deformation
- Controlled traction by means of a pressure gauge
- Deformations are measured with an extensometer
- Measurement data are stored digitally.

The POBT is a compact measuring unit built up in modules attached to a trolley for easy transport and flexibility of use.

To ensure a perfectly axial traction force, Geosigma has developed a hand-held flatbed milling machine that routes a slot around the bolt end for applying the pull-out force.

The POBT consists of:

- Hydraulic pump
- Extensometer
- Pressure gauge
- Control system
- Digital data storage system
- Flatbed milling machine.

The milling machine is applied to the axis of the drawbar used for the pull-out test, which ensures that the slot is perpendicular to the bolt axis and the bolt will be perfectly axially loaded.

Measuring

When measuring, information about the bolt's thread dimension, yield strength and desired fraction of the yield strength are input to the POBT that calculates the traction force to be applied in the test.

It is possible to enter the following additional data to be stored in the output data file: test site name, location, bolt identification and name of the operator performing the test.

After the test is started, traction on the bolt is automatically applied to the given traction test traction force. The test usually takes about 25 seconds. Thereafter, the traction force is kept

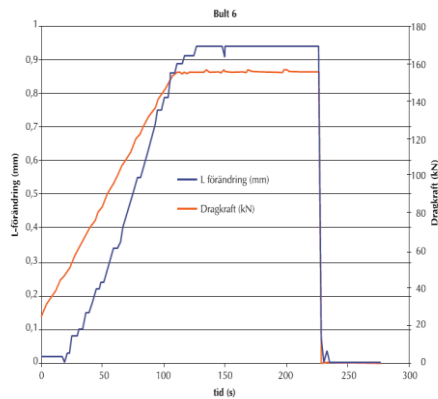
constant (within 5 kN) until the test is completed and the force released.

The value for traction forces and test bolt deformations can be directly read on the POBT's display throughout the measurement.

Results

Test results are stored on an SD memory that can be removed for data transfer to a computer.

The test results are stored in text format. Test results contains data from the whole non-destructive pull-out-test in terms of force and deformation increase and release.



Pull-out force and movements diagram, example.



Geosigma provides personnel, equipment and performs pull-out tests.

Contact

Flavio Lanaro, Head of Unit for Rock Engineering

Phone: 010-482 88 95

E-mail: flavio.lanaro@geosigma.se

www.geosigma.se

GEOSIGMA
PART OF REJLERS