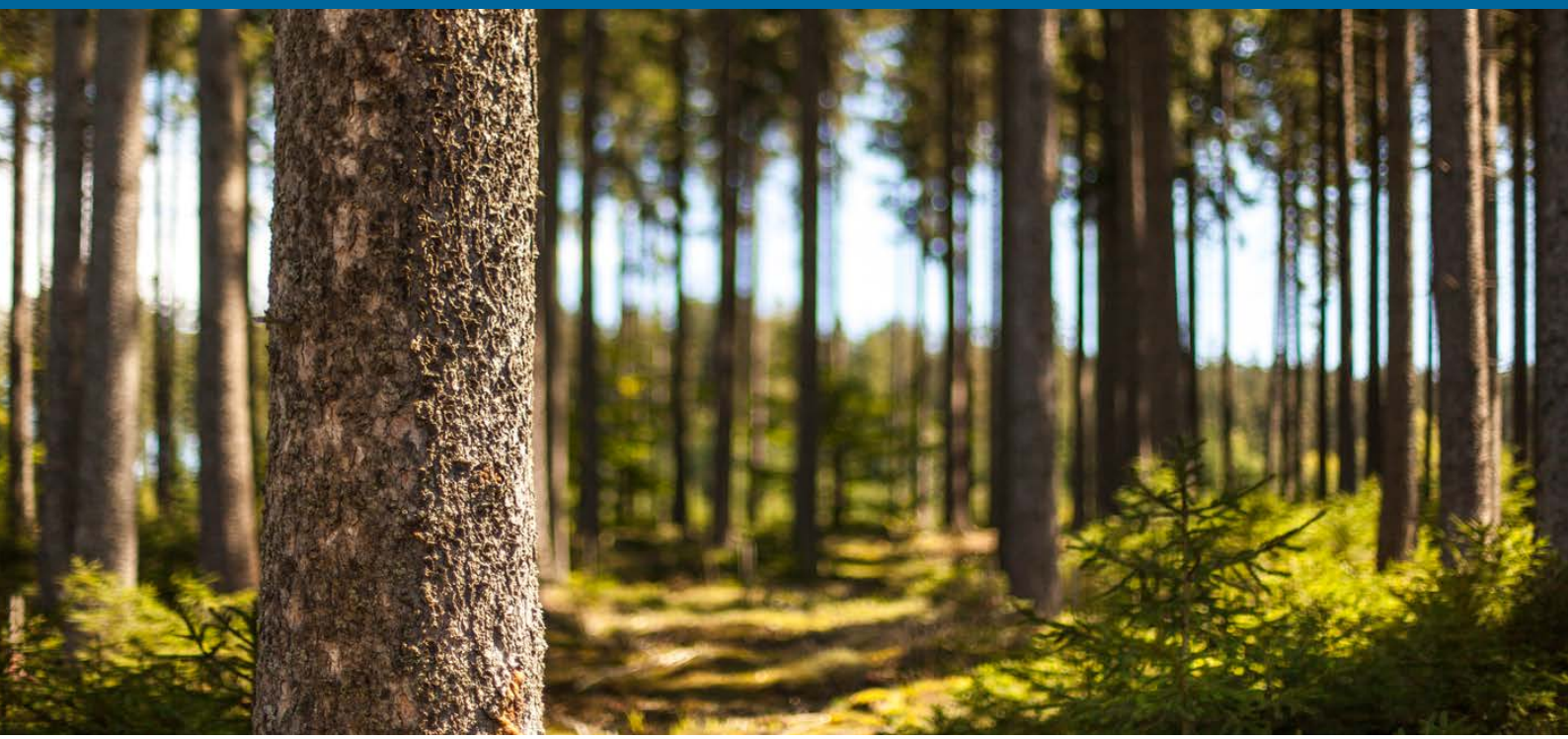


PiCUS TreeQinetic

Combined measurement technology
for tensile tests on trees

With Passion and Precision

Reliable assessment of stability and safety against fracture through tensile test

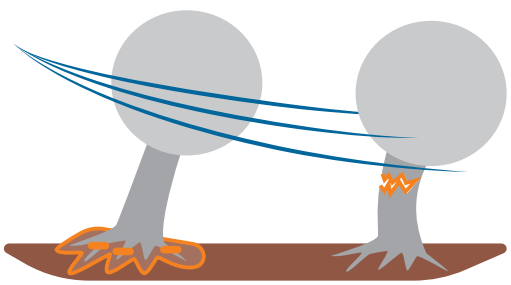
The tensile test with the PiCUS TreeQinetic provides the measurement data you need to determine stability and safety against fracture.

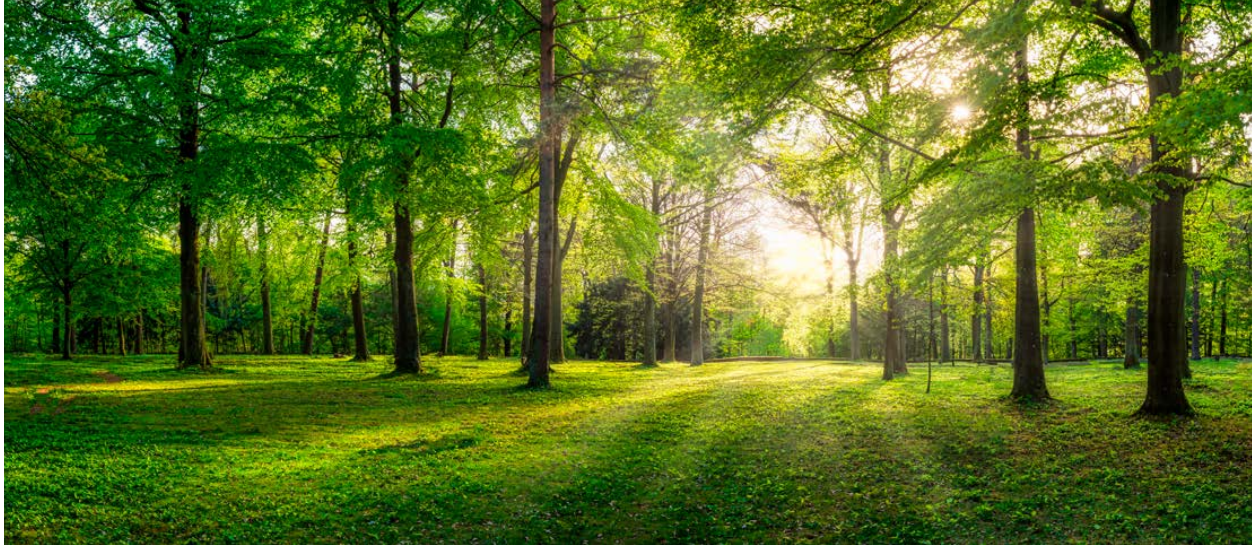
During the tensile test, the tree is exposed to a defined simulated wind load. The PiCUS TreeQinetic simultaneously records three measured variables:

- Applied force
- Stretching or compression of the wood fibres
- Root plate inclination

For this purpose, the tree is pulled with a rope and with the help of a winch. The load generated in this way and the tree's reaction are measured with the TreeQinetic's forcemeter, inclinometer and elastometer.

In this way, a single measurement setup can be used to determine how a tree behaves under load. This allows an assessment of the tree's stability and resistance to fracture under the expected loads.





The various sensors of the TreeQinetic

The inclinometer and elastometer sensor elements record the tree reaction to the tensile load in different ways.

Inclinometer

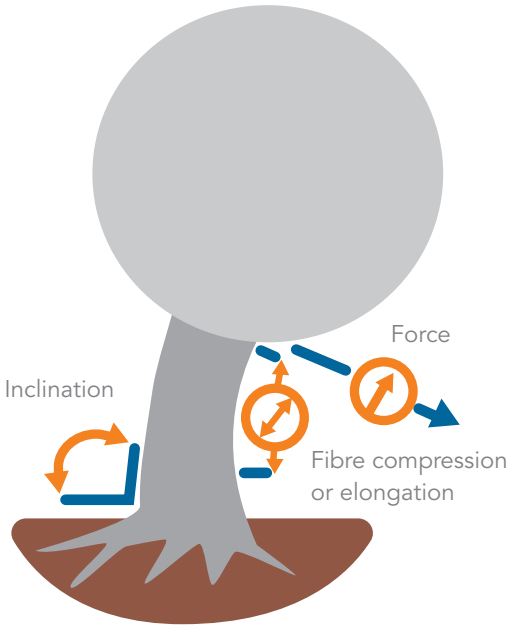
The TreeQinetic inclinometers measure the inclination of the root plate and trunk under the tensile load. This can be used to assess the root stability and the anchoring force of the tree in the soil.

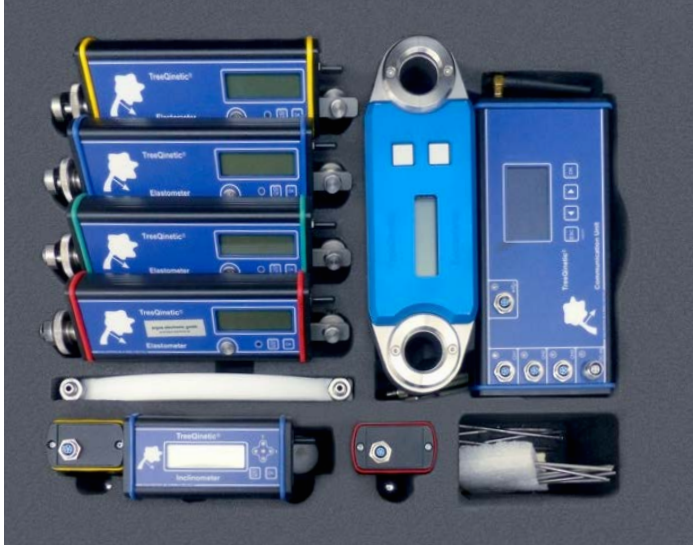
Elastometer

The TreeQinetic elastometers record the elongation or compression of the outer wood fibres of the trunk. The measured values serve as a basis for estimating the safety against fracture.

Forcemeter

The TreeQinetic forcemeter measures the force that is coupled into the tree via the rope during the tensile test. For improved handling, an inclinometer is integrated to measure the angle of the rope during pulling.





Defined load test without wind

The TreeQinetic measures the tree reaction under an artificial wind equivalent load - comprehensively and very specifically.

Wind is not necessary

By using the wind equivalent load, conclusions can be drawn about the stability and safety against fracture of the tree without having to wait for a wind event.

Extensive equipment

TreeQinetic starter set consisting of: Forcemeter, elastometer, inclinometer, communication unit, overload indicator, PiCUS software and various accessories.

Live view

The acquired data is displayed live on the PC by the associated PiCUS measurement software.

Automatic recording

The TreeQinetic system records all measurement data automatically and continuously.

Overload-Indicator

The supplied overload indicator uses a visual and acoustic alarm to prevent the set maximum tensile force from being exceeded.

Measurement of the rope angle

The Forcemeter has a built-in inclinometer to determine the rope angle during the pulling.

PiCUS TreeQinetic function range:

Range:	Radius of action up to 60 m
Accuracy:	Elastometer: 0.1 µm; Inclinometer: 0.005°; Forcemeter: 0.3 kN
Connection:	Wireless data transmission of all measurement data to the PC
Force build-up	A mechanical grip hoist with steel cable is optionally available to build up the tensile force
Extension:	The system can be upgraded with additional sensors at any time

Analysis of the measurement data with arbostat software

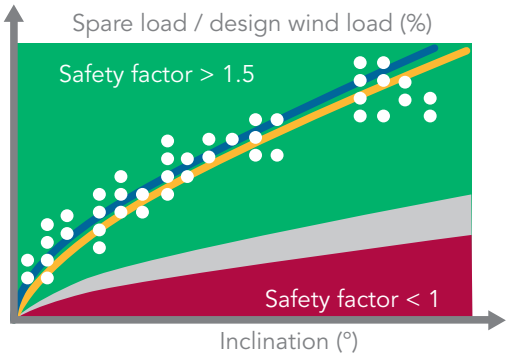
The determined data are displayed live by the TreeQinetic software on the PC. If required, the measured values can then be analysed in more detail with the arbostat evaluation software.

Optimum evaluation of tensile tests

Arbostat is the evaluation software for tensile tests. The programm uses the latest findings from research to create precise and easy-to-understand result graphics from the TreeQinetic measurement data. This makes it as easy as possible to draw reliable conclusions about the stability and fracture resistance of the tree.

Wind load analysis

The arbostat software uses the measurement results of the PiCUS TreeQinetic as a basis for determining a safety factor for the stability and safety against fracture.



More information
via QR code!

Do you have any questions?
We are happy to
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