PiCUS Product Range

Precise measurement technology for tree surveys and defect development analyses

With Passion and Precision

Electrical resistance tomography allows early detection of possible damage to the wood

With the aid of the PiCUS TreeTronic 3, the trained user can make predictions of incipient rot and its future development.

PiCUS TreeTronic 3

The PiCUS TreeTronic 3 measures the electrical resistances in the wood, which depend on the water content, cell structure and chemical composition. Since rot usually has a high moisture content and thus a low resistance, it can be detected early with the TreeTronic 3.

Using PC software, the measurement results of the electrical resistance tomograph (ERT) can be displayed in 2D and 3D graphics. This shows the extent of the suspected defect in shades. The 3D view also shows a possible vertical course of the damage. This data can be used to make a forecast of how the tree's resistance to fracture might develop over the next few years.

At a glance:

TreeTronic 3:	Electrical resistance tomography
Sonic Tomograph 3:	Sonic tomography
TreeQinetic:	Wood fibre elongation, compression and root plate inclination under defined load (tensile test)
TreeMotion:	Inclination of the tree in natural wind
Tension:	Monitoring of soil water tension as a measure of water availability to plants

Detecting wood defects by measuring the transit time of sound

With the PiCUS Sonic Tomograph 3, damaged areas in the wood can be detected at an early stage and displayed graphically.

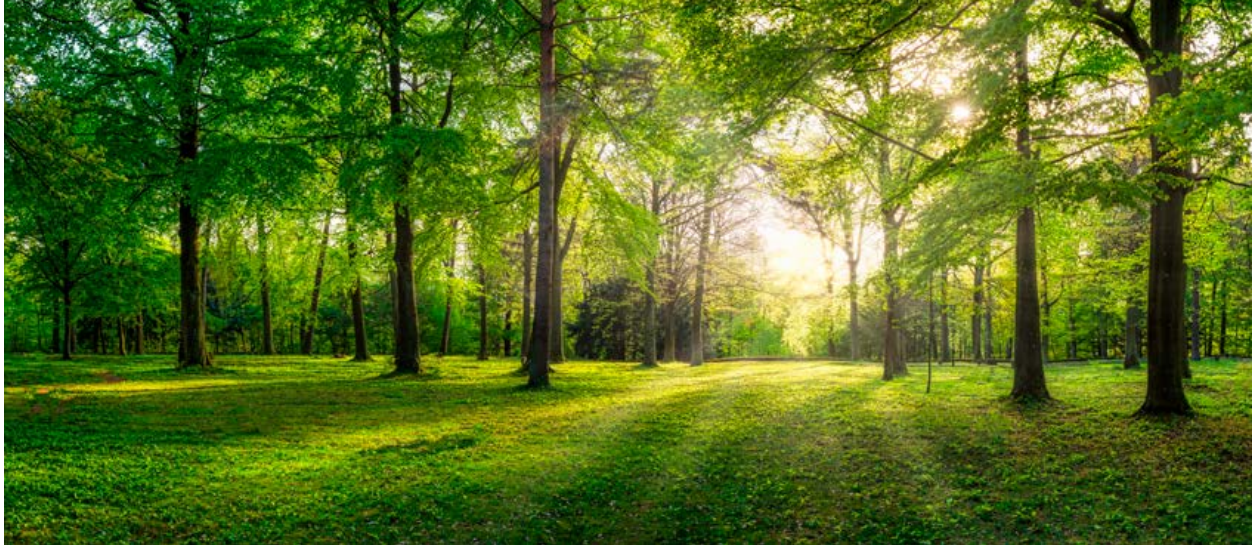
PiCUS Sonic Tomograph 3

The PiCUS Sonic Tomograph 3 is a device for detecting damaged areas on trees. To do this, it measures with high precision the transit time of the sound in the wood, which depends on the properties of the wood. In the case of a defect, the transit time is longer than in intact wood.

A 2-dimensional image is calculated from the measured speeds and including geometric information on the measuring plane.

In the graphical representation, the areas with different transit times are shown in different colours. From this, the trained user can interpret where defective and healthy areas might be located or how much decomposition might have progressed.

The optional Expert software also allows the creation of a 3D graphic from the levels of the tomogram. This allows the spread of the damage to be vividly depicted and inserted into a photo of the tree.



Reliable assessment of stability and safety against fracture through tensile test

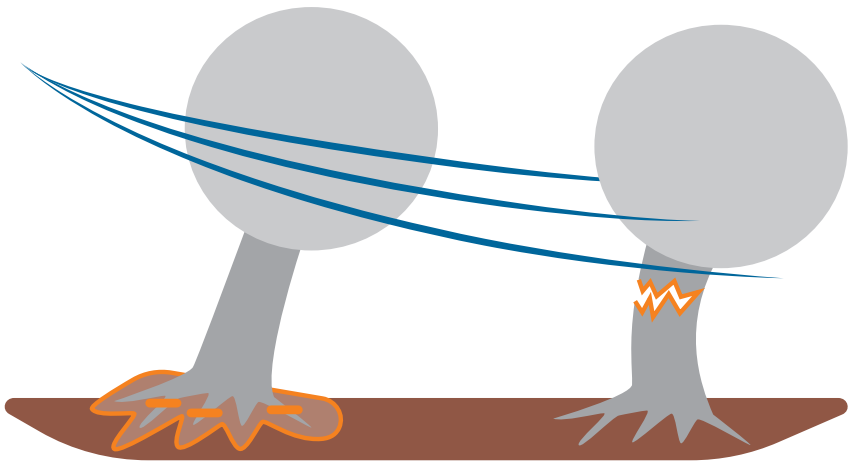
The tensile test with the PiCUS TreeQinetic provides you with the measurement data you need to determine stability and safety against fracture.

PiCUS TreeQinetic

During the tensile test, the tree is exposed to a defined simulated wind load. Three measured variables are recorded simultaneously with the PiCUS TreeQinetic:

- 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.



Measure the behaviour of the tree in natural wind

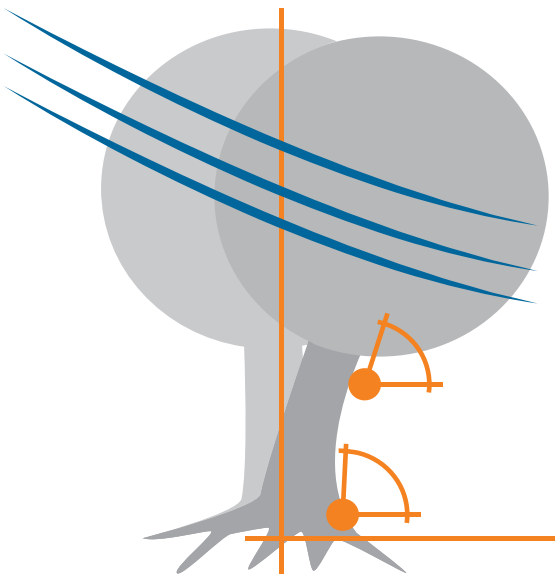
The TreeMotion measures the inclination of the tree in the wind. This allows you to assess the stability of a tree.

PiCUS TreeMotion

The wind reaction measurement of the TreeMotion sensor records the swinging movement of trees under real conditions and allows conclusions to be drawn about the anchoring of the roots in the soil. In addition to the properties of the tree, all factors influencing the wind in the environment are taken into account. This allows the stability to be assessed in the actual wind exposure.

A base sensor measures the root plate inclination directly at the base of the trunk. A control sensor measures the inclination at a height of 2 to 3 metres so that the real wind reaction of the tree can be distinguished from sources of interference.
The PiCUS TreeMotion sensor can record the measurement autonomously over hours, days or weeks. The data evaluation is done comfortably in the office.

Prerequisites for successful measurements are gusts of more than 45 km/h and a measurement time of at least two hours.



More information via QR code!

Do you have any questions? We are happy to assist you personally

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With Passion and Precision

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