WoodInspector for quality identification of wood
IML WoodInspector

IML WoodInspector is an add-on module for the PD-Tools PRO Software package. The comprehensive evaluation and analysis features of PD-Tools PRO are further enhanced by technical innovations that significantly improve the traceability and efficiency of wood testing.

**Standard Program**

WoodInspector adds a significant feature to the standard program through its automated cavity detection. This feature is particularly valuable when used to test items such as wooden utility poles, wood for construction, wooden play equipment, half-timbered and historic houses, and split poles. WoodInspector offers both graphical and numerical displays of the cavities.

**Examples**

**Inspector A** wants to detect cavities that are wider than 1 cm. In this case, the parameters do not need to be changed because the default setting is 1 cm (see illustration above).

In addition to the drilling data, the measurement feed data can now be evaluated. This helps to almost completely eliminate shaft friction as a “disturbance variable” because it only has a minimal effect on the feed rate.

**Inspector B** wants to only detect cavities that are wider than 2 cm, but also wants to know when the extent of decay is above 10%. Here the amplitude (parameter level) can be set to 10% and the width to 2 cm.

The program can be adapted to the user’s individual requirements and operating conditions by setting cavity parameters based on the particular application (see charts and examples).
Pole Program

The pole program was specifically designed to meet the requirements of utility pole maintenance. The pole program has two key functions: controlling the drilling device and evaluating measurement data.

The newly developed software for the drilling device has automatic diameter recognition and controls the device so that it drills all the way through the pole and automatically retracts the needle when it exits on the other side. This information is then used to compare the calculated and the actual exit of the needle. In addition, the needle is protected from excessive wear and tear.

Pic. shows graphical display by exit of the needle
Detecting Early Decay

Detecting early signs of decay uses a unique system of autonomous detection of different densities in the wood.

The level of decay (broken yellow curve in the graph) is automatically adjusted, depending on the density of the wood. A hardwood pole would be set at a higher level and a softer pole at a lower level.

The specifications for decay and cavity detection can also be flexibly adapted to customer specifications.

For example, one can set the levels of decay and porosity that require a pole to be marked as being in poor condition. Alternatively, one can set a range for which only a warning is displayed.

Displaying Test Results

The test results can be displayed as good or poor immediately after the drilling process. This eliminates the subjective aspect, not only accelerating the process, but also making it objective and verifiable.

Of course, there is also the option of later evaluating or adjusting the measurements with PD-Tools PRO on a PC or laptop.

Ultimately, the advanced functions of WoodInspector make checking wood as easy, safe and economical as possible and contribute significantly to optimising the quality of the data collected.
Pole in good condition

Pic. shows early signs of decay

Pic. shows pole in good condition

Measuring/object data
- Measurement no.: 6
- ID-number: 
- Drilling depth: 23.97 cm
- Date: 18.09.2012
- Time: 09:50:14
- Feed speed: 200 cm/min

WoodInspector
- Program: Pole (IML 1.00F)
- Start/stop: 0.37 cm/20.25 cm
- Effective length: 19.88 cm
- Decay detection: 0.00 cm/0%
- Cavity detection: 0.00 cm/0%
- Result: PASS

Pic. shows pole in poor condition

Measuring/object data
- Measurement no.: 91
- ID-number: 
- Drilling depth: 23.97 cm
- Date: 18.09.2012
- Time: 16:39:50
- Feed speed: 200 cm/min

WoodInspector
- Program: Pole (IML 1.00F)
- Start/stop: 1.33 cm/22.78 cm
- Effective length: 21.45 cm
- Decay detection: 14.62 cm/68%
- Cavity detection: 11.49 cm/54%
- Result: FAIL

Pic. shows early signs of decay

Measuring/object data
- Measurement no.: 260
- ID-number: 
- Drilling depth: 24.42 cm
- Date: 19.09.2012
- Time: 09:47:09
- Feed speed: 200 cm/min

WoodInspector
- Program: Pole (IML 1.00F)
- Start/stop: 0.38 cm/23.42 cm
- Effective length: 23.04 cm
- Decay detection: 13.63 cm/59%
- Cavity detection: 0.00 cm/0%
- Result: FAIL