IML-RESI

PD-Series

WoodInspector

Manual

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Contents

1 General

The WoodInspector is an add-on module designed for use and operation in conjunction with the software program PD-Tools Pro as well as with the firmware for the IML-RESI drilling device.

An automatic analysis of measurement profiles can be performed with two different programs which can be selected depending on intended purpose and use. This should serve to simplify analysis of measurements and further still may even completely automate it in part.

One of the two programs is the standard program. This program can be applied to all objects (trees, poles, wood beams) and makes simple analysis options available. The main function of the standard program is to detect and display cavities both graphically and numerically.

The second program provides options for pole inspection. This program was specifically developed for the pole inspection process and offers comprehensive automation and analysis options. In addition to cavity detection (advanced decay), areas of early decay can be automatically detected and analyzed.

In addition to its integration into PD-Tools Pro, the WoodInspector was also fully implemented into the firmware of the IML-RESI drilling instrument so that measurement results can be displayed directly on its display immediately after taking a measurement.

The settings of the WoodInspector are saved in the drilling device after each measurement has been taken and then transferred to PD-Tools Pro. Therefore, the measurement results of the WoodInspector that are displayed in PD-Tools Pro software programs appear exactly as they appear on the display of the drilling instrument itself. Beyond that, all parameters can first be modified in PD-Tools Pro software before being transferred to all current or all open measurements in order to perform corrections or simulations quickly and conveniently.
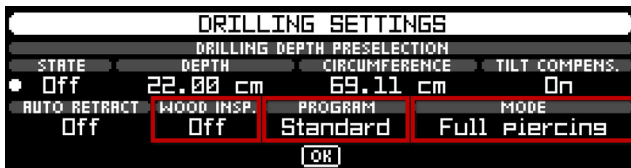
2 Program Standard

The Standard Program consists of the Start/Stop Detection as well as the Cavity Detection which are described in detail in the following.

2.1 Operation on the IML-RESI

2.1.1 Turn on the WoodInspector

Ensure that the main menu is displayed and the safety button is not pressed.

Hold the red button down until the menu for the drill settings appears:

Using the **WOOD INSP.** option, turns the WoodInspector on. Under **Program**, select the **Standard** setting.

Under the **MODE** option, select the **Full piercing** setting if you want to drill through the object. Select **Partial pierc.** if you only want to partially drill into the object. Ensure that this option is set correctly for each measurement taken.

After the measurement has been taken with the WoodInspector switched on, the measurement is analyzed after the drilling has stopped and the results from the cavity detection function are then displayed.
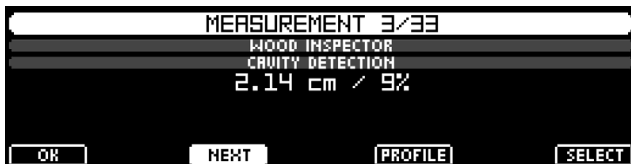
2.1.2 Display Measurement

The complete result is stored after every measurement and can be displayed retroactively. To do this, display a measurement and select the **NEXT** button as illustrated in the following:

```
╔═══════════════════════════════════════════════╗
║              MEASUREMENT 3/33                   ║
║         ID NUMBER              REMARK           ║
║ DRILLING DEPTH   FEED SPEED   NEEDLE SPEED   TILT    ║
║   24.62 cm    150 cm/min  3000 r/min   -30°     ║
║      DATE         TIME       NEEDLE STATE   OFFSET  ║
║   17.04.13    19:09:42      ---      109/173    ║
║ [ OK ]      [ NEXT ]        [PROFILE]    [SELECT]║
╚═══════════════════════════════════════════════╝
```

The selected program, the drilling mode and the results from Start/Stop Detection are displayed on the next screen.

```
╔═══════════════════════════════════════════════╗
║              MEASUREMENT 3/33                   ║
║                WOOD INSPECTOR                   ║
║          PROGRAM              MODE              ║
║         Standard           Full piercing        ║
║       START          STOP        EFFECTIVE LENGTH║
║     0.26 cm       23.86 cm       23.60 cm       ║
║ [ OK ]      [ NEXT ]        [PROFILE]    [SELECT]║
╚═══════════════════════════════════════════════╝
```

Select button **NEXT** to display the results from the cavity detection:

```
╔═══════════════════════════════════════════════╗
║              MEASUREMENT 3/33                   ║
║                WOOD INSPECTOR                   ║
║               CAVITY DETECTION                  ║
║                2.14 cm / 9%                     ║
║                                                 ║
║ [ OK ]      [ NEXT ]        [PROFILE]    [SELECT]║
╚═══════════════════════════════════════════════╝
```

Select the **PROFILE** button to display the profile with graphic results:
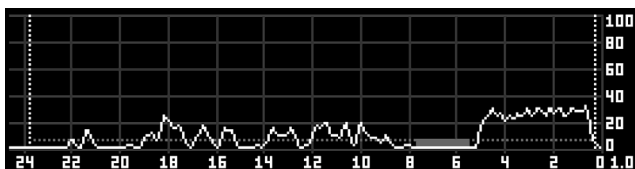
Other options are available for adjusting the graphics. Press and hold the navigation button to display the toolbar:
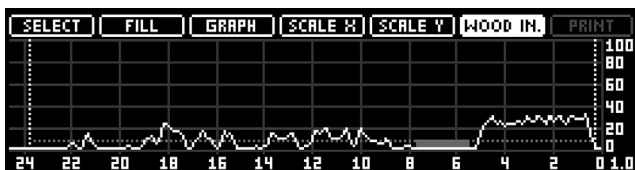

Using the **WOOD IN.** option, the cavity graphics can either be hidden or shown in the display.

2.2 Operation in PD-Tools Pro

After transferring the measurement readings to PD-Tools Pro, the analysis of the measurement readings is displayed immediately if the WoodInspector was switched on while the measurement readings were being taken.

For measurements taken while the WoodInspector switched off, the WoodInspector can be activated retroactively by PD-Tools Pro.

To switch the WoodInspector on, first double-click on the data field for the WoodInspector on the top right.
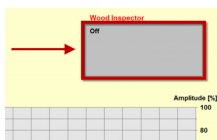
Switch the WoodInspector **ON** at the top left and select the **Standard** program. Select **OK** to close the dialog.

The WoodInspector analyzes the curve and displays the start and stop depths as well as any detected cavities in graphical format:
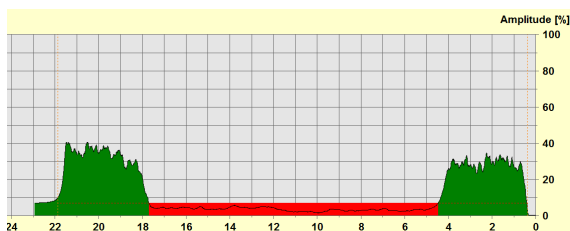
Additionally, the selected program, the drilling mode, the numerical results of start/stop and cavity detection data is displayed as shown in the following sample display:

Wood Inspector

|	
Program	: **Standard**
Mode	: **Full piercing**
Start / stop	: **0,38 cm / 21,87 cm**
Effective length	: **21,49 cm**
Cavity detection	: **13,43 cm / 62%**

You can modify the graphic and parameters display under menu point: **View, WoodInspector**.

2.3 Configuration

The settings options for standard programs in PD-Tools Pro are explained in the following.

According to the configuration of parameters in PD-Tools Pro, the parameters can also be modified directly at the drilling instrument . The corresponding menu can be found in the system control under the menu point: **WoodInspector, Program Standard**.

To modify the settings, first double-click on the data field for the WoodInspector at the top right.
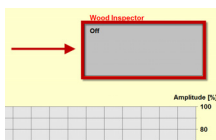
The options for individual modes will be explained in the following.

2.3.1 Start/Stop Detection

Start/Stop Detection is for automatic detection of needle entry and exit points. The following options are available:

Using the **State** option, you can set whether Start/Stop Detection should be switched on or off. If detection is switched off, then the start depth will be set by default at 0 cm and the drilling depth will be used as the stop depth.

The **Data source** option indicates whether the drilling or the feed profile should be analyzed for Start/Stop Detection. Please be aware that for the analysis of the feed profile, the add-on module FEED must be installed on the drilling device.

The **Level start** parameter defines the amplitude level (amplitude peak) for the automatic detection of the point of needle entry. If this level is exceeded, then it will register as a point of needle entry into the wood. The WoodInspector is active beginning at this drilling depth,.

The **Maximum start depth** parameter defines the point of the maximum drilling depth at which the WoodInspector should be activated if the start level has not already been reached. This should prevent areas such as outer decay from not being detected.

The **Stop mode** option defines the operating mode in which the WoodInspector is operating. In **Partial piercing** mode, the assumption is that the object has not been fully pierced and the drilling needle, therefore, is still in the object at the end of the measurement reading. The last drop in amplitude below the set cavity level is thus recorded as a cavity and added to the overall cavity length.

In **Full piercing** mode, the assumption is that the object has been fully pierced. In this case, the following **Full piercing detection** settings become relevant.

Piercing detection offers two operating modes. The first operating mode is the **Fixed** operating mode. Here, the last drop below the set **Level** is detected as a needle exit. The following figure shows an example of Start/Stop Detection in full piercing mode and the **Fixed** option selected.
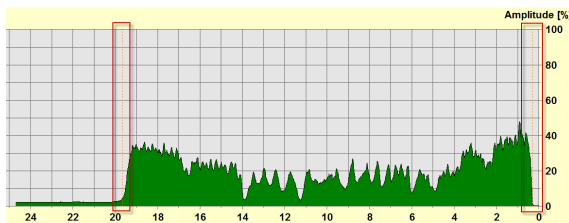
The second **Full piercing** option is the **Delta mode**. In this operating mode, needle exit is detected by the relative change and not by the absolute peak of the amplitude. If the drilling needle has completely pierced the object, the amplitude changes only minimally. The advantage of this is that the shaft friction has no negative impact on the detection of the needle exit. The **Delta** mode is thus preferable to the **Fixed** operating mode.

The **Level** parameter defines the fluctuation margin of the curve within the **Width** parameter. The following figure illustrates the advantages of the **Delta** operating mode. In the **Fixed** mode, the needle exit would have been set at the end of the measurement reading process. In contrast, the **Delta** operating mode securely detects the needle exit.
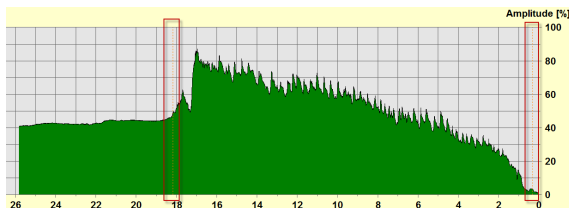
2.3.2 Cavity Detection

The cavity detection is for detecting advanced decay. The following options are available:


Using the **State** option, you can set whether the Start/Stop Detection should be switched **ON** or **OFF**

The option **Data source** defines whether the drilling or the feed profile should be analyzed for Start/Stop Detection. Please be aware that for the analysis of the feed profile, the add-on module FEED must be installed on the drill.

The **Level** and **Width** parameters define the characteristics of a cavity. For the settings shown in the figure, a cavity is detected as a cavity if the curve is below a level of 7% for at least 1 cm.

The following figure shows an example for detecting advanced decay.
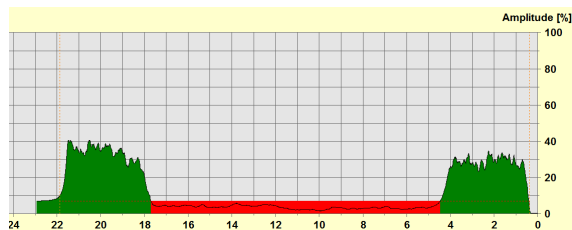
The option **Include Tilt** defines whether the minimum cavity width should be adjusted to the tilt angle of the device. If, for example, drilling is done at an angle of 30° in accordance with the aforementioned settings, the minimum cavity width would be 1.15 instead of 1.00 cm (trigonometrical function calculation).

3 Program Pole

3.1 System Requirements

To achieve the best possible analysis and display results, the following add-on modules (in addition to the WoodInspector module WI) are required on the IML-RESI drilling device:

Scaling Package (SCL)

The scaling package is required in order to display the measuring profile optimally on the screen. To achieve this, the scaling of the drilling depth must be set to the measuring length.

Feed Measurement (FEED)

The IML WoodInspector standard configuration does require an analysis of the feed rate data which the FEED module provides. The advantage of this particular analysis, in comparison to the analysis of the drilling profile, is that the needle shaft friction has almost no impact on the feed date and therefore almost none on the measurement results.

Tilt Sensor (TLT)

The tilt sensor is required for the control of the automatic drilling depth when drilling below ground level.

3.2 Functionality

The pole program consists of Start/Stop Detection, Decay Detection and Cavity Detection modes. In the following section, the basic functionality of these modes will be described.

3.2.1 Start Stop Detection

The Start Detection is for automatically detecting the needle entry into the pole. The area prior should thus be separated out and excluded from analysis.
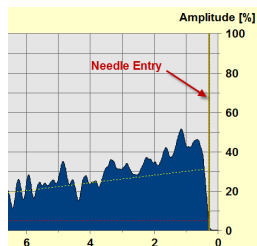

Stop Detection is for automatically detecting the needle exit. The subsequent area (such as earthen soil) should thus be separated out and excluded from analysis.

Given a potential needle drift, the actual needle exit can be before or after the calculated needle exit depth. Without the automatic stop detection feature, the analysis of the curve could therefore include an area that no longer belongs to the pole but to the soil, for example, and can thus lead to an incorrect analysis.

To adjust for this problem, depending on the tilt and diameter, the WoodInspector calculates an area (drift range) in which the needle can exit and searches for the actual needle exit in this area.

The following figure provides more detail regarding the automatic process of detecting the actual versus the calculated point of the needle exit.
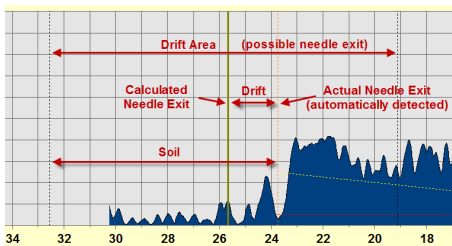

Detecting the actual point of exit of the needle provides a basis for avoiding errors in the subsequent decay and cavity detection.

If no needle exit is found within the drift range, the calculated needle exit is used as the needle exit depth.

3.2.2 Decay Detection

The adaptive decay detection makes it possible to detect early decay. The system adjusts itself automatically to the wood density and simultaneously compensates for the wear of the drilling needle.
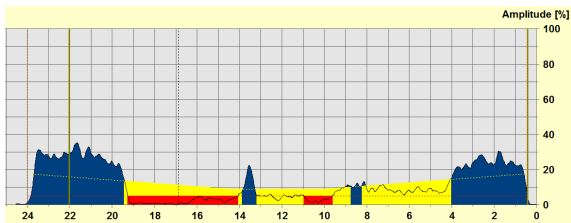
The following figure shows an example for detecting early decay (yellow-marked area).
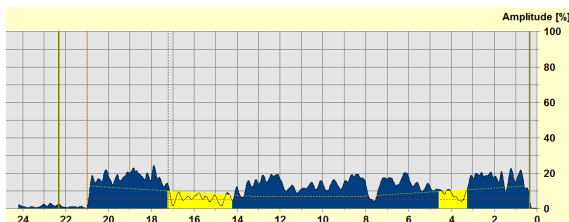
3.2.3 Cavity Detection

While detecting early decay, the WoodInspector also provides advanced decay detection in its pole program.

The following figure shows areas with early decay (yellow areas) and advanced decay (red areas).

3.3 Operation of the IML-RESI

In the following, specific instructions on how to perform a measurement in accordance with the IML standard configuration are provided. This configuration requires that a reference measurement above ground level is taken to determine the diameter, and then followed by two measurements taken below ground level with a tilt angle of 30 degrees and then subsequently offset from each other by 90 degrees.

3.3.1 Turning on the WoodInspector

Before the measurement process can begin, the WoodInspector must be turned to **ON**.

Ensure that the main menu is displayed and the safety button is not pressed.

Hold the red button down until the menu display for the drill settings appears:
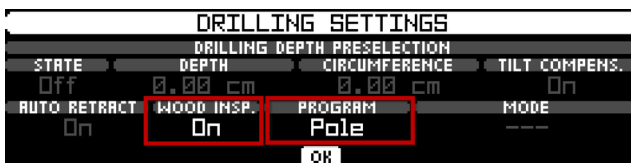
Using the **WOODINSP** option, turn the WoodInspector on and select the **Pole** setting under **Program**.

Exit the menu by pressing the **OK** button.

3.3.2 Entering the Pole Number

In order to correlate the measurement to the pole in a later step, enter the pole number.

3.3.3 Reference Measurement

The reference measurement fulfills two tasks. The first task is to determine diameter of the pole which is required for both controlling the depth of automatic drilling and detecting the needle exit point for subsequent measurements below ground level. The second task utilizes the reference measurement as a point of reference for an optical review of the results.

Please understand that an analysis of the reference curve for decay and cavities is not performed. The reference measurement is only intended for the aforementioned purpose. Depending on customer requirements, the analysis can, however, activated if necessary.

Take the reference measurement approximately at a height of 1m. Pay particular attention that the IML-RESI drilling instrument is aligned at a 90° angle in relation to the pole. The measurement process stops automatically when the pole has been completely pierced and the drilling needle has extended 5 cm from the pole.

After that, the result from determining the diameter appears:

If the value is correct, select the **YES** button. If the value is incorrect, select **NO**. In this case, the dialog for correcting the diameter appears.

Correct the diameter by turning the navigation button and confirm the entry by pressing the **OK** button.

The measurement is saved and then the main menu appears. The diameter will thereafter be displayed as in the following example.

If the reference measurement was performed incorrectly, it can be repeated as often as needed. The stored diameter value is overwritten with the newly determined diameter.

The automatic determination of the diameter can be deactivated. In this case, a manual entry of the value for diameter is required. For more information about manual entry, see the description of the configuration contained later within these instructions.

3.3.4 Measuring Below Ground Level

Position the IML-RESI drilling instrument on the ground and align the device at -30 degree angle as illustrated in the following display.

Start the measurement. The IML-RESI will automatically complete the measurement if either a valid needle exit point is detected or the end of the drift range is reached.

When detecting a valid needle exit point, the device drills 1 cm further to verify separation from the ground and then retracts the needle. The following figure explains this process.
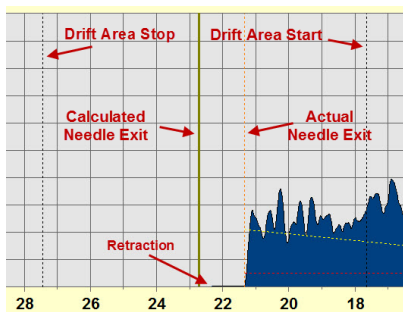
If no valid needle exit point is detected, the device drills at maximum until the end of the drift range. The following figure explains this process.
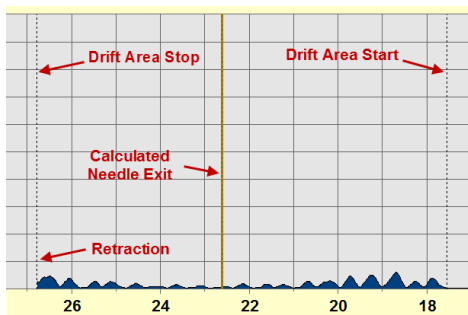
Depending on the type of the pole installation, you may not want the drilling to continue past the calculated diameter. To accomplish this, the drift range can be adjusted individually. Contact the IML Service Department for further details in making an individual adjustment to the drift range.

Otherwise, there is the option to switch from the automatic drilling depth control to a fixed control of the drilling depth. This makes it possible to drill precisely to the calculated diameter. In addition a positive or negative offset can be set, so that the needle can always be retracted shortly before the calculated needle exit point or shortly after it. For more information, please see the description of the configuration contained later within these instructions.

After the drilling needle has been retracted completely and the measurement data has been stored, the curve is analyzed and the result is displayed. The example below shows that the inspected pole has failed.

Select the **OK** button and the profile will be displayed.
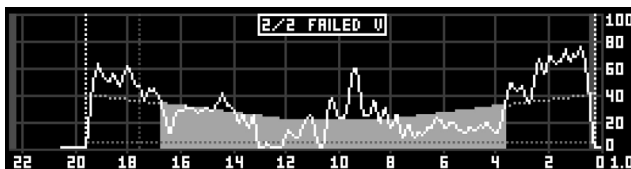
Decay and cavities are highlighted in color. The graphics also contain the assigned markings for the needle entry and exit points (light dotted lines). In addition, you can also see the start of the drift range (dark dotted line) and the calculated needle exit point (on the left edge).

Select the **OK** button, and the main menu is displayed.

You can select whether or not the WoodInspector results are displayed after the drilling in the general settings of the WoodInspector. For more information, see the description contained later within these instructions.

You can also select whether or not the profile is displayed after the drilling. This option can be set in the control panel under the menu option **General**.

The first measurement below ground level has now been taken. Offset the IML-RESI drilling instrument by 90 degrees and perform the second measurement.

After completing the second measurement, the diameter value will be automatically reset.

Due to the diameter being reset, it is systematically necessary to take a reference measurement for the next pole. This function can also be deactivated.

There is also an option to automatically delete the ID number.

After taking the second measurement below ground level, the measuring process is complete and the next pole can be located. The total number of measurements that are taken below ground level can be adjusted.

If one of the two measurements below ground level shows the result FAIL, the overall result of the pole inspection is failed.

To adjust the aforementioned settings, see the description of the configuration contained at a later point within these instructions.

3.3.5 Measuring a Tilted Pole

If you take a measurement on a tilted pole, the angle display does not correspond to the alignment of the device relative to the pole.

To calibrate the measuring device to the tilt of the pole, hold the device at a 90 degree angle to the pole and then press and hold the red and black button until a signal sounds and the relative mode is activated.

Take the measurement at this point. If the measurement is a reference measurement, you have to take the subsequent, following measurement below ground level in the same direction (at the same tilt as the pole) as the case with the reference measurement.

Relative mode will be automatically deactivated after a measurement below ground level has been taken.

3.3.6 Display Measurement

To subsequently display measurement results, open measurements in the main menu using the following symbol:

Page 1 of the measurement data is displayed.

```
          MEASUREMENT 23/36
         ID NUMBER              REMARK
       MAST 0123-45
 DRILLING DEPTH   FEED SPEED    NEEDLE SPEED      TILT
  15.59 cm    150 cm/min   3000 r/min      -31°
      DATE          TIME      NEEDLE STATE     OFFSET
  22.04.13    11:20:40        ---          113/172
 [  OK  ]        [ NEXT ]           [PROFILE]       [SELECT]
```

Select the **NEXT** button to display page 2.

```
          MEASUREMENT 23/36
              WOOD INSPECTOR
          PROGRAM                  DIAMETER
    Pole (IML 1.00F)          10.00 cm
       START            STOP        EFFECTIVE LENGTH
    1.10 cm         12.75 cm        11.65 cm
 [  OK  ]        [ NEXT ]           [PROFILE]       [SELECT]
```

The selected program, the diameter, and the results from the Start/Stop Detection are displayed. Behind the program, the configuration version of the WoodInspector is displayed. In this case, the IML standard configuration V1.00F is displayed.

Select the **NEXT** button to display page 3.

```
          MEASUREMENT 23/36
              WOOD INSPECTOR
      DECAY DETECTION          CAVITY DETECTION
   8.72 cm / 75%          1.53 cm / 13%
                   RESULT
                   FAIL
 [  OK  ]        [ NEXT ]           [PROFILE]       [SELECT]
```

In addition to the specific results from the Decay and Cavity Detection, the overall result will also be displayed.
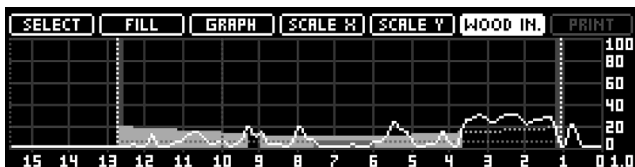
Select the **PROFILE** button to display the profile.
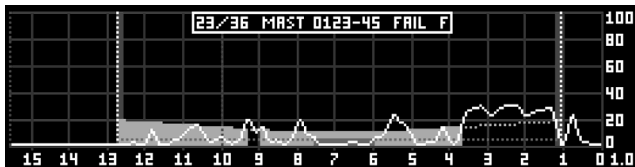
Alternatively, you can also open the profile from the main menu by selecting the following symbol:

In profile view, you can also set whether or not the decay and/or cavity graphics should be displayed. To change this setting, hold the navigation button down until the toolbar is displayed.

Select the **WOODIN** button and then the desired setting. To accept the changes and hide the toolbar, hold the navigation button down.

In order to best display the curve, you should set the scaling to **Measurement length** using the **SCALE X** function.

3.4 Operation in PD-Tools Pro

3.4.1 Display Measurement

Transfer the measurement data to your computer and open it using PD-Tools Pro. There should be 3 measurements for each pole (1 reference measurement, 2 measurements below ground level).

In the following displays, you can see an according example:
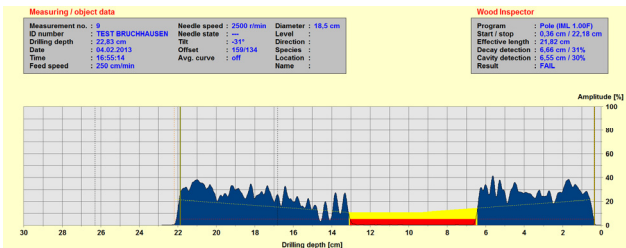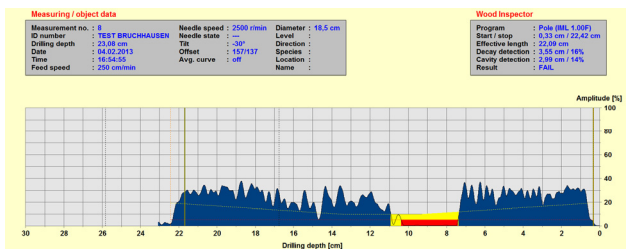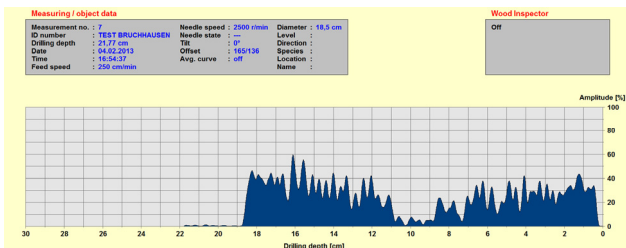
While taking the reference measurement, the WoodInspector is deactivated since it is only used to determine the diameter and for optical inspection and control of the measurements below ground level as already mentioned previously in these instructions.

In the drilling profile, early decay (yellow) and advanced decay (red) are represented graphically.

At the top right the selected program and numerical results are displayed as follows.

Wood Inspector

Program	**: Pole (IML 1.00F)**
Start / stop	**: 0,33 cm / 22,42 cm**
Effective length	**: 22,09 cm**
Decay detection	**: 3,55 cm / 16%**
Cavity detection	**: 2,99 cm / 14%**
Result	**: FAIL**

Behind the name of the program (pole), you will find the identifier label of the WoodInspector configuration used to analyze the measurement. In this case, **IML 1.00F** is displayed. If 3 dashes appear (---), then the settings either in the device or in PD-Tools have been modified and the analysis may be invalid.

The result text is saved separately in PD-Tools Pro and may deviate from the display on the device. You can modify this text via the menu option: **Settings, WoodInspector**.

You can modify the graphics and parameter display via the menu option: **View, WoodInspector**.

The colors used to represent decay and cavities can be modified via the menu option: **Settings, Colors**.

3.4.2 Correct Measurement

There is still a chance that errors arise in the Start/Stop Detection and due to this, the curve may be analyzed incorrectly as shown in the following figure.
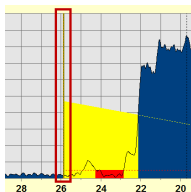
To correct the needle exit depth, first double-click on the data field for the WoodInspector at the top right.
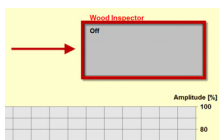
At the top left of the data field, switch **Start/Stop Detection** from **Automatic** to **Manual** and enter the correct value. Exit the dialog by pressing the **OK** button.

The following figure shows the corrected measurement.

3.4.3 Subsequent activation of WoodInspector

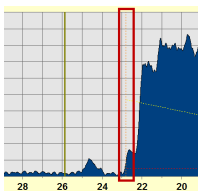For measurements performed with the WoodInspector switched off the WoodInspector can be activated retroactively in PD-Tools Pro.

To switch the WoodInspector on, first double-click the data field for the WoodInspector at the top right.
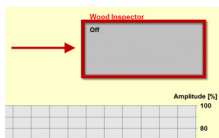
At the top left of the data field, switch the setting from **OFF** to **ON** under **WoodInspector.** Exit the dialog by pressing the **OK** button.

3.4.4 Transfer Settings to Other Measurements

It is possible to apply the WoodInspector settings of a specific measurement to all other opened measurements.

To do this, first double-click the data field for the WoodInspector at the top right.
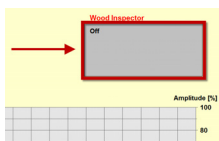
At the bottom right, select **Apply data to all windows** option and press the **OK** button.

3.5 Configuration

In the following, the configuration of the IML-RESI drilling instrument and the PD-PRO tools are explained in more detail.

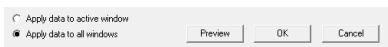The configuration of the IML-RESI drilling instrument consists on the one hand of the device's configuration for taking measurements (performance while drilling) and the configuration of the analysis module (WoodInspector) for the analysis of captured measurement values.

3.5.1 Device Configuration

To achieve the highest possible accuracy of the analysis, it is very important that the device is properly configured.

If the device you are using was not pre-configured prior to delivery or you have procured WoodInspector subsequently, the IML Service Department can provide you with a configuration file. Transferring it to your device will configure it automatically.

Only use the drilling needles for construction wood as illustrated in the following:

The drilling needle speed should be set at 3,000 U/min. The feed speed should be selected between 100 and 200 cm/min.

If the device is used exclusively for pole inspection, it is generally delivered pre-configured. In addition to the aforementioned drilling needle speed, the feed levels are configured as follows.

Stage 1: 100 cm/min
Stage 2: 150 cm/min
Stage 3: 200 cm/min
Stage 4: deleted
Stage 5: deleted

The WoodInspector offers different setting options to adjust the performance of the device to meet your requirements.

Open the control panel on the IML-RESI drilling instrument and select the menu option: **WoodInspector, Program Pole, General**.

The following dialog will open.

With the help of the **USER INPUT** option, you can choose if either the diameter or the circumference of the pole should be displayed or entered.

The **MINIMUM DIAMETER,** will set the minimum diameter for the diameter detection or user entry. Values below the set minimum diameter are not accepted.

The automatic diameter detection contains two options. Using the **STATE** option, the automatic determination of diameter can be switched on or off.

When the automatic diameter detection is switched off the diameter must be entered manually. To do this, press the red button briefly when the main menu is displayed and the safety button is not pressed. Then, the dialog for entering the diameter appears.

When the the automatic diameter detection is switched off the drilling depth is based on the drilling depth settings, which are described a little bit further down below.

The **LENGTH RETRACTION** option is used to set how far the device continues to drill during diameter detection once the pole has been fully pierced. The smaller the value, the larger the probability is that the measurement will end before the drilling is complete. This can especially be the case if the pole suffers from advanced decay and the drilling needle runs through this cavity without resistance.

Turn the navigation button to display page 2.

```
GENERAL 2/5
DRILLING DEPTH
MODE
Auto
OFFSET DEPTH                    OFFSET DIRECTION
0.00 cm                              +
```
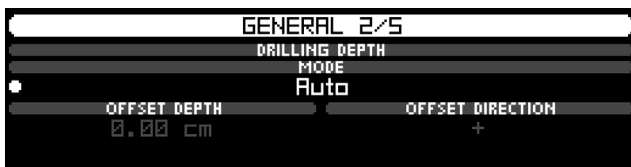
Using these options, the drilling depth for measurements below ground level and the reference measurement can be set (when the automatic diameter detection is switched off).

The **MODE** option defines which drilling depth mode is active. The **Auto** setting specifies that the measurement will automatically be interrupted if either a needle exit point is detected or the end of the drift range is reached. You can find a detailed explanation previously within these instructions in the section on *Measurements Below Ground Level*.

The **Fixed** setting specifies that the drill will always continue until the calculated pole diameter has been reached. If this option is activated, you can enter a positive or negative length as an offset value. This offers you the option of drilling to just before or just after the calculated point of the needle exit.

The following figures explain the settings for positive and negative offsets.
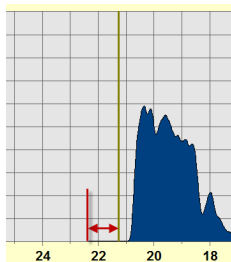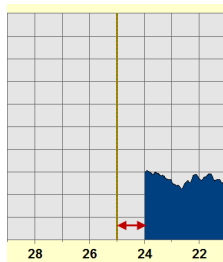
Drilling mode Fixed with offset +1.00 cm   Drilling mode Fixed with offset -1.00 cm

Turn the navigation button to display page 3.

```
┌─────────────────────────────────────────────┐
│              GENERAL  3/5                     │
├─────────────────────────────────────────────┤
│                  ANALYSIS                     │
│  WITHIN ANGLE A              OUTSIDE ANGLE A   │
│ •      No                        Yes          │
│  SHOW RESULT AFTER DRILLING  SHOW END OF DRIFT RANGE │
│        Yes                        No          │
│                                               │
└─────────────────────────────────────────────┘
```
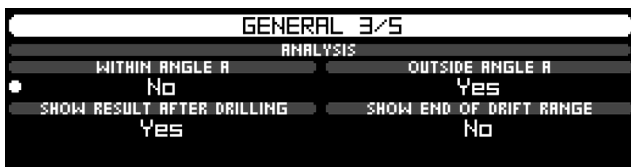
The option **WITHIN ANGLE A** defines whether or not the measurement with a tilt within Angle A (setting tilt sensor), namely the reference measurement, should be analyzed. In the IML standard configuration, this measurement is not analyzed since the analysis algorithm is only optimized for measurements below ground level.

The option **OUTSIDE ANGLE A** defines whether or not the measurement, with a tilt outside Angle A (setting tilt sensor), namely a measurement below ground level, should be analyzed.

The option **SHOW RESULT AFTER DRILLING** defines whether or not the numerical results should be displayed after saving the measurement.

You can set whether or not graphical profiles are automatically displayed after the completion of measurement operations under general settings in the control panel. To do this, see the operator's manual for the IML-RESI drilling instrument for more according details and information.

The option **SHOW END OF DRIFT RANGE** defines whether or not the end of the drift range should be displayed in the profile display in the case that the x-axes scaling is set to the measuring length.

Turn the navigation button to display page 4.

```
              GENERAL  4/5
          SAVE TIME        NO. OF MSMTS BELOW SOIL LEVEL
●           Yes                       2
       RESET DIAMETER    RESET ID NUMBER    RESET RELATIVE MODE
          Yes              No                 Yes
```
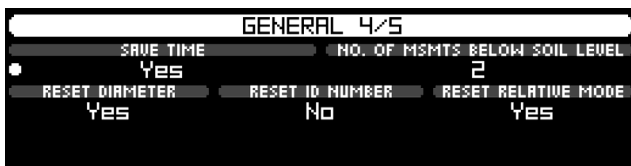
The option **SAVE TIME** defines whether or not the time should be saved along with each measurement.

The option **NO**. **OF MSMTS BELOW SOIL LEVEL** defines the maximum number of measurements that can be taken below ground level.

The option **RESET DIAMTER** defines whether or not the diameter should automatically be reset after all of the measurements below ground level have been taken.

The option **RESET ID NUMBER** defines whether or not the ID number should automatically be reset after all of the measurements below ground level have been taken.

The option **RESET RELATIVE MODE** defines whether or not the relative mode should automatically be reset after a measurement below ground level has been taken.

Turn the navigation button to display page 5.

```
              GENERAL  5/5
                  TEXT GREEN
●PASS
                  TEXT YELLOW
 ---
                  TEXT RED
 FAIL
                   [ OK ]
```

Here, the result texts for classifying the pole can be modified.

3.5.2 WoodInspector Configuration

The configuration of the WoodInspector contains all of the parameters necessary for calculating results. The device is delivered with the standard IML settings.

If the device you are using was not pre-configured or you have procured the WoodInspector subsequently, the IML Service Department can provide you with a configuration file. Transferring it to your device will configure it automatically.

The standard setting is a very sensitive setting. If this setting does not correspond with your specifications, the WoodInspector can be modified to suit your individual requirements. To do this, contact the IML Service Department.

The standard setting for decay detection is

State	**:**	On	
Data source	**:**	Feed data	
Width	**:**	0.75 cm	
Green	**:**	0-10%	
Yellow	**:**	---	
Red	**:**	11-100%	
Connect ring decay	**:**	Yes	

State indicates that decay detection is switched on. The feed data is used as the **data source**. The **Width** of a decay area must be at least 0.75 cm to be detected as decay.

For classifying the pole, three (3) areas can be defined. These are **green, yellow,** and **red.** A descriptive term can be assigned to each of these areas. In the standard settings, the assignment of these descriptive terms is as follows:

Green: Pole PASS   Decay 0% to 10%
Yellow: not used
Red: Pole FAIL   Decay 11% to 100%

The standard setting for cavity detection is

State	**:**	On
Data source	**:**	Feed data
Width	**:**	1.00 cm
Green	**:**	---
Yellow	**:**	---
Red	**:**	0-100%
Connect ring cavity	**:**	Yes

State indicates that cavity detection is switched to **ON**. The feed data is used as the **Data source**. The **Width** of a cavity area must be at least 1.00 cm to be detected as a cavity.

Green: not used
Yellow: not used
Red: Pole FAIL   Cavity above 0%

The connect ring decay or ring cavity option defines whether or not the ring-shaped defect areas are connected to each other because the area between them no longer contributes toward the load-bearing capability of the pole. The connection is only made, however, if it is not the case of shell decay.

The following figures show an example with and without connected ring decay.