

TEPEX

The straight burden checker

INSTRUCTION MANUAL



LASER PROFILER - TABLET



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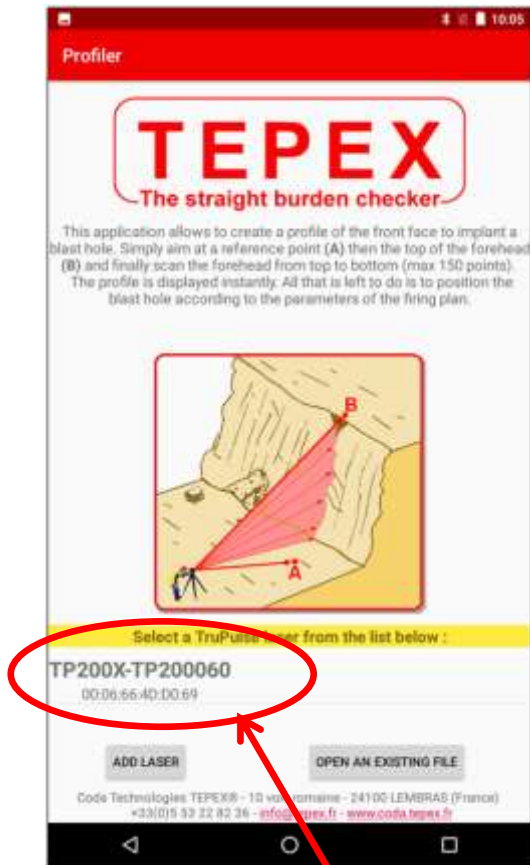
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A - INSTRUCTION MANUAL OF LASER-TABLET PROFILER

I - USE OF THE APPLICATION

I A - MAIN MENU



Laser type (200 or 200X) - Serial number
Bluetooth ID

Three possibilities are offered on the homepage :

1. To profile, click on the Bluetooth laser you want to use in the list and follow the profiling section of this manual.
2. The opening of an existing profile is done by pressing the « **OPEN AN EXISTING FILE** » button.

During the first press, the application will ask for read permission on the Micro SD card.

3. Finally, the button « **ADD LASER** » allows to add a Bluetooth device, for example a replacement laser.

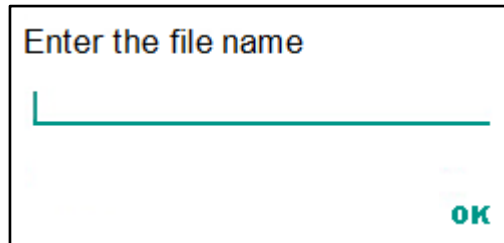
After pressing this button, refer to the « Bluetooth Association Procedure » above.

In general, follow the instructions highlighted in yellow to perform profiling.

I B - Application « Profiling »

Step 1 : enter the filename

After clicking on the name of the Bluetooth device in the main menu, a screen appears when connecting the tablet and the laser rangefinder. When the connection is established, the reference measurement screen appears and asks for the name of the job file for the profile.



This file will be saved on the Micro SD card installed in the tablet.

The file name is automatically complemented by the current date. For example if the user says « test » the file name will be :

test_jj_mm_aaaa.log

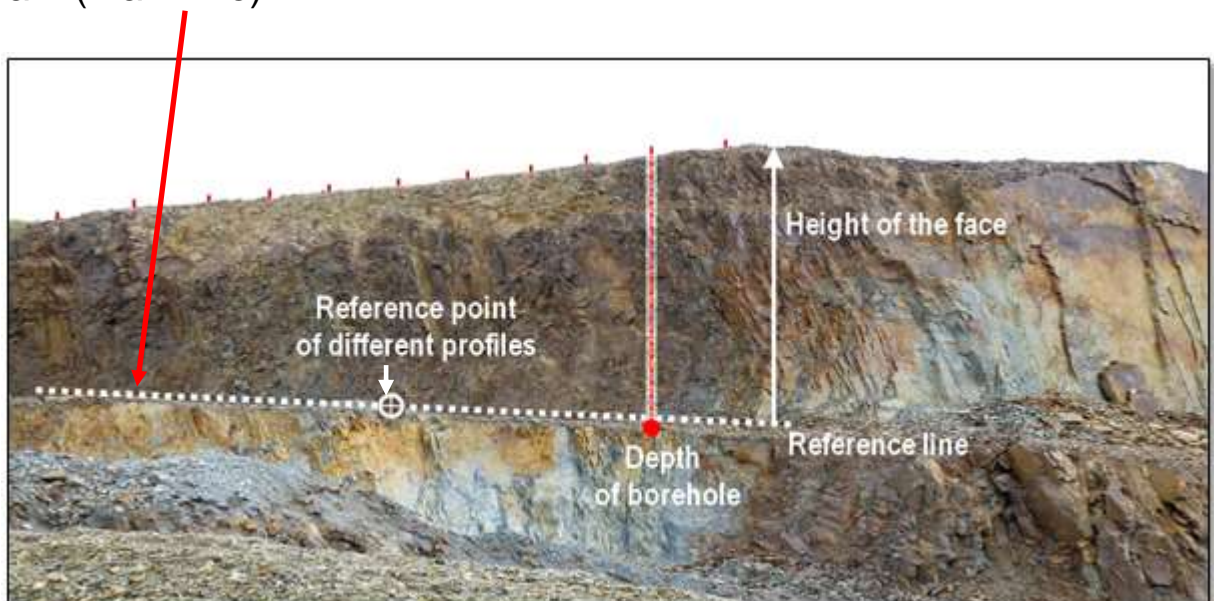
ATTENTION !! Do not put spaces, accented characters or special characters (< > : " / \ | ? *)

Step 2 : setting of the height reference

All the profiles are bound to a reference level.

(All heights measured points are referenced to this level 0 - ⊕ on the picture below)

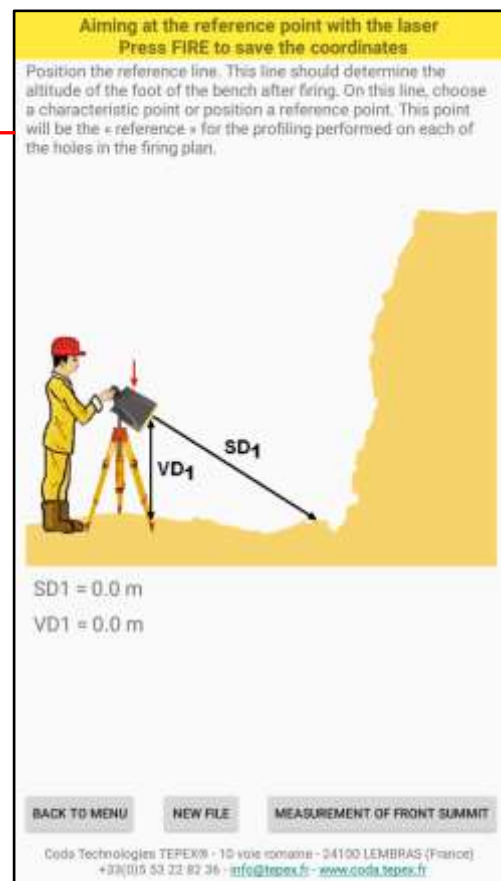
The calculation of the depth of each hole will be linked to the searched mark (mark line).



Position the reference line. This line should determine the altitude of the foot of the bench after firing.

On this line, choose a characteristic point or position a reference point. This point will be the « reference » for the profiling performed on each hole in the firing plan.

- Aim at the reference point and press the <FIRE> button of the rangefinder until you hear a beep (+ vibration of the tablet) ⁽¹⁾. Check the consistency of the measurement on the display screen.
- ⁽¹⁾ To hear the beep sound, go to Settings ⇒ Sound and check that the « **Alarm volume** » est au maximum is at maximum (cf. the user's manual of the tablet)
- Press the « **NEXT** » button to proceed to the next step.

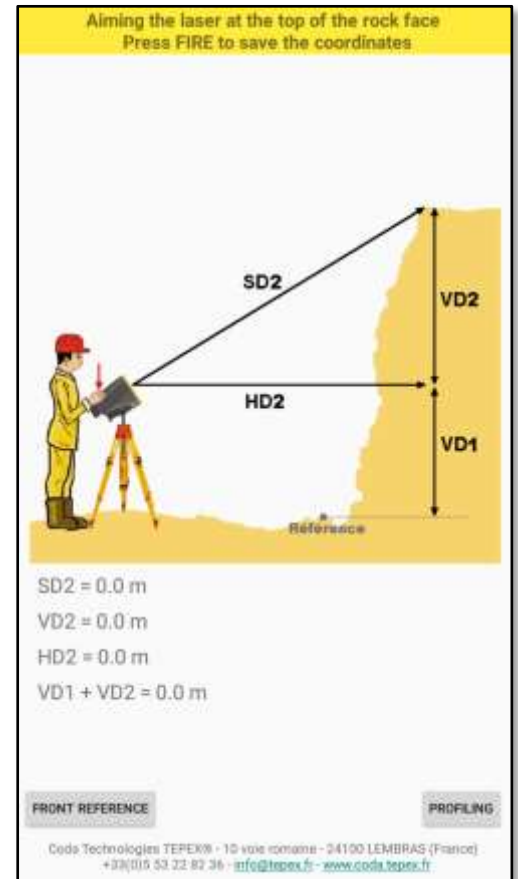


Description of the buttons :

- The « **BACK MENU** » button is used to return to the main menu of the application.
 - The « **NEW FILE** » button is used to change the name of the job file for future profiles.
 - The user enters « profil1 » as file name, measures a profile and saves.
 - The reference measurement screen is displayed again.
 - The user presses « **NEW FILE** » and enters « profil2 », measures a profile and saves.
 - There will be two files « profil1_jj_mm_aaaa.log » and « profil2_jj_mm_aaaa.log », each containing a profile.
- The « **NEXT** » button allows to proceed to the next step.

Step 3 : measure the crest of the face

- Aim at the reference point and press the <FIRE> button of the rangefinder until you hear a beep (+ vibration of the tablet). Check the consistency of the measurement on the display screen.
- Press the « **NEXT** » button to go to the next step or the « **BACK** » button to return to the previous step.



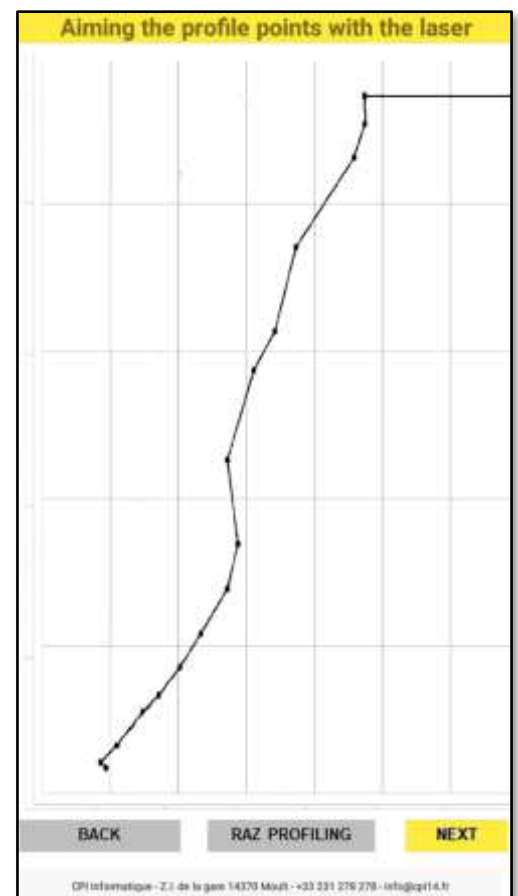
Step 4 : profiling

- Profiling is done from top to bottom.
To insert a measuring point, aim it and press the <FIRE> button of the laser until you hear a beep.
The absence of « beep » means that the software has not received the information. Repeat the operation.

150 measuring points can be recorded to represent a profile.

Description of the buttons:

- The « **BACK** » button returns to the previous step
- The button « **R.A.Z. PROFILING** » allows to erase the last point or to completely start the profiling.
- The button « **NEXT** » leads on the next step



Step 5 : enter the characteristics of the borehole

- Enter the values by successively typing in the editable zones.
- To implant a borehole, enter the value of the depth of drilling.

The depth (or length) of the hole is calculated automatically based on the drill angle and measured height of the face.

Description of the buttons :

- The « **BACK** » button is used to return to the previous step.
- The « **NEXT** » button moves to the next step.

Step 6 : display of the profile

By pressing the « **NEXT** » button, the screen shown opposite is displayed.

The position of the blast hole is indicated by a red line **[1]** located at the chosen distance (here 2.3 m).

Three red lines **[2]** are placed on the screen.

- Their position depends on the value of the chosen bench (here 3.7 m).
- The distance between these three lines will depend on the percentage chosen when entering the parameters (see step 5: percentage indicated +/- 5%).

These three lines are to be positioned on the profile of the waistline in order to integrate the maximum number of points raised during profiling.

By carrying out this operation, the optimal thickness of the bench to be retained in the firing plane is determined for each hole.

Enter the parameters for the hole implantation

Profile without hole

Number of the hole : **1**

Bench at the top of the face (m) : **2.3**

Angle of the borehole (°) : **15.0**

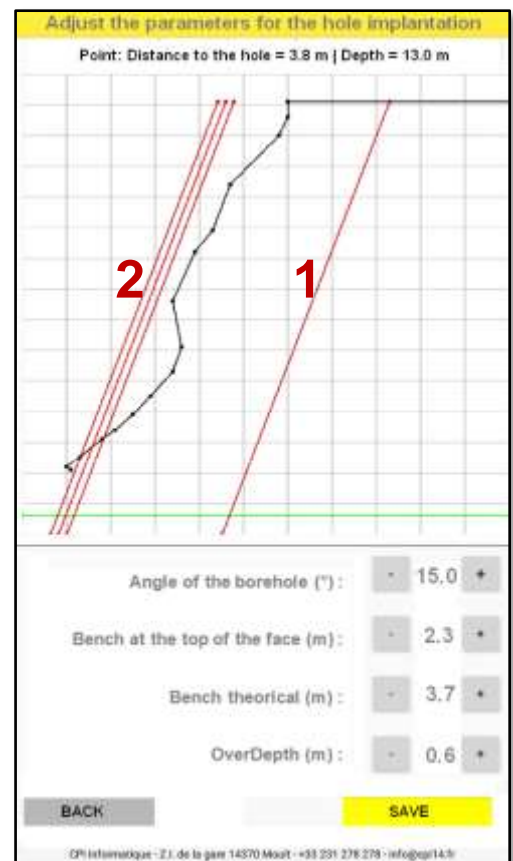
OverDepth (m) : **0.6**

Depth of the borehole (m) : 14.6

Bench theoretical (m) : **3.7** (m) - **5** (%)

BACK **NEXT**

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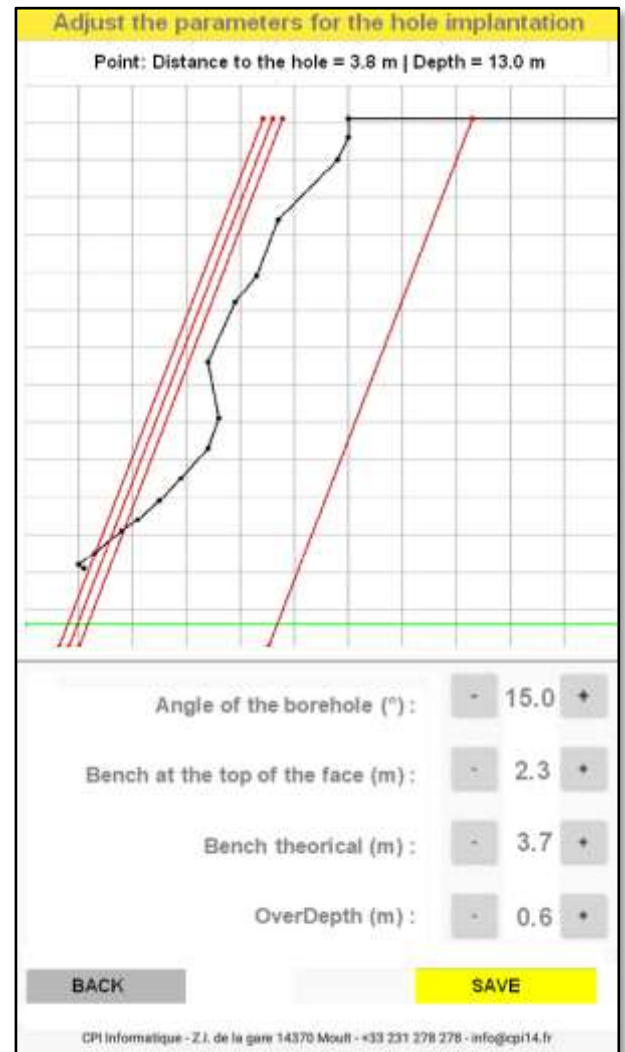


Description of the buttons :

- Change the values by pressing the - and + buttons of the parameters.

Note : a press on the profile displayed on the screen gives the depth and distance from the point to the mine hole.

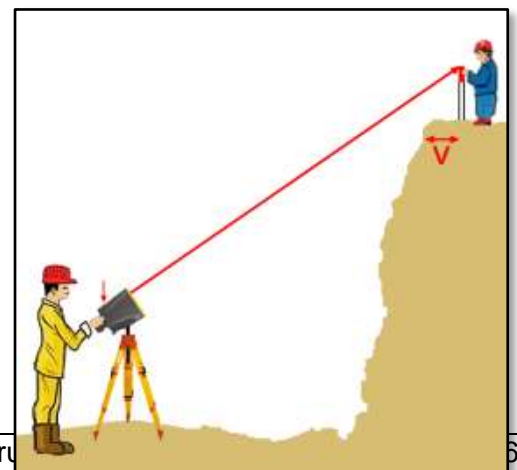
- Press « **SAVE** »



The implementation of the hole-by-hole shot ends here.

Marking on the ground the borehole

(see ANNEXES I - page 12).



If no profiling has been recorded on the Micro SD card, the following screen is displayed :

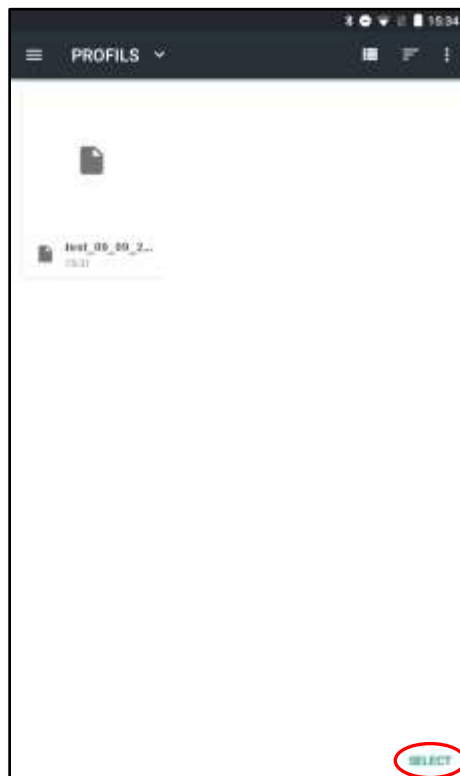
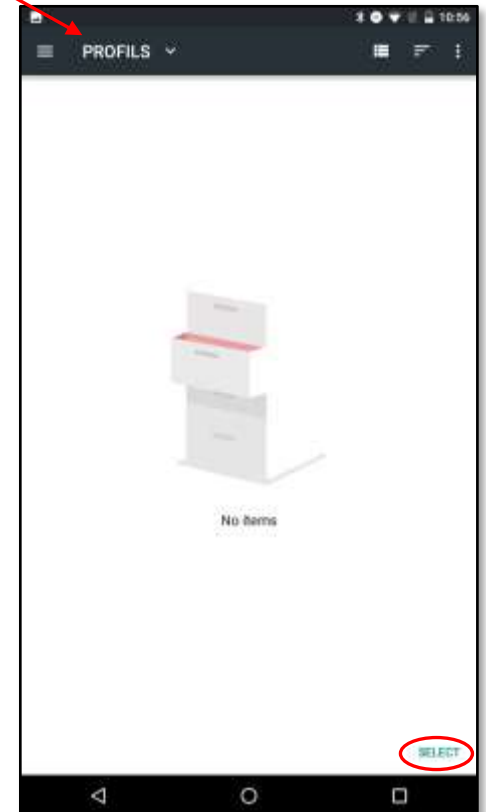
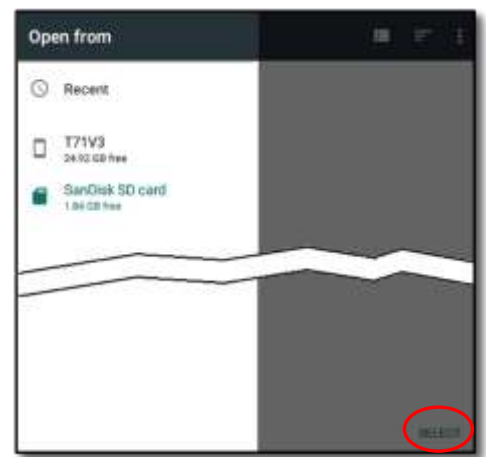
Press « **SELECT** ».

A second screen appears. Select the PROFILS folder on the SD card when a file explorer is displayed.

Press « **SELECT** ».

The backup is done...

When profiles are already registered on the tablet, the screen below



Press « **SELECT** » to save the file.

Description of the buttons:

- The button « **BACK** » returns to the previous step.
- The « **SAVE** » button saves the profile in the « **PROFILS** » folder and then displays the « Measure reference with laser » screen (see step 2).

I C - Opening of existing profiles

Click on « **OPEN AN EXISTING FILE** » in the main menu.

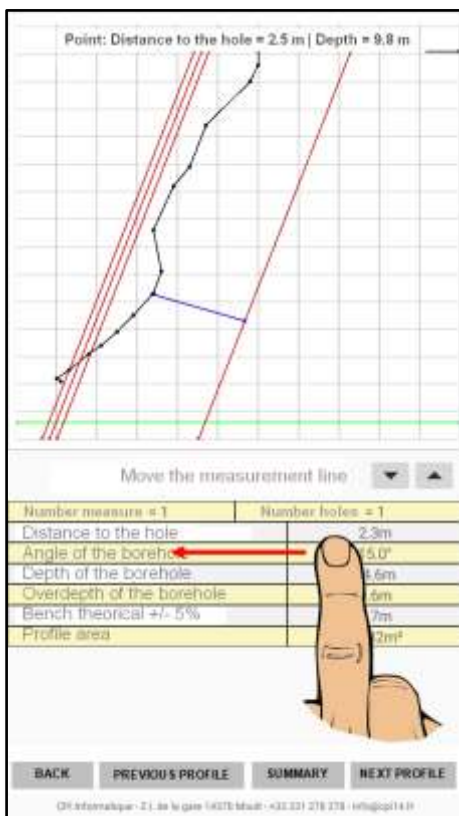
A screen appears with the list of files present in the PROFILS folder of the Micro SD card.

Click on the name file to open it (it's possible to scroll through the list by dragging a finger on the screen).

The application opens the profile contained in the selected file.



It is then possible to navigate in the profiles with the buttons « **PREVIOUS PROFILE** » and « **NEXT PROFILE** ».



By screen pressing, the application displays the depth and distance of the point at the blast hole.

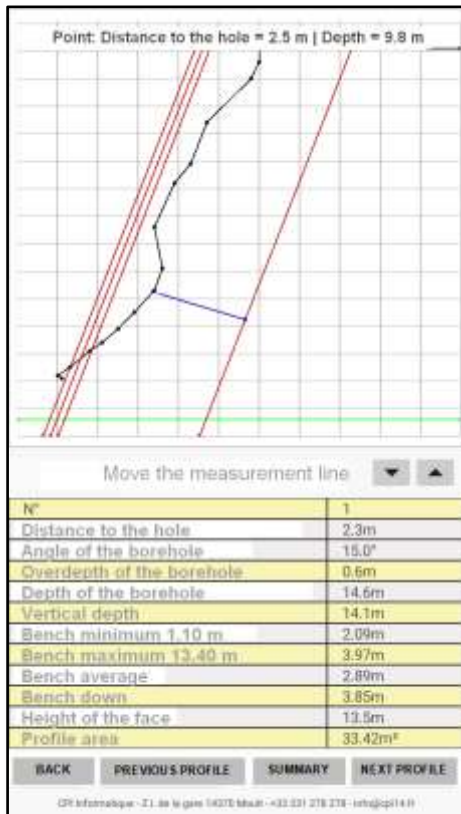
The measurement line can be moved with the ▼ and ▲ buttons.

It is possible to display different information by sliding your finger from left to right.

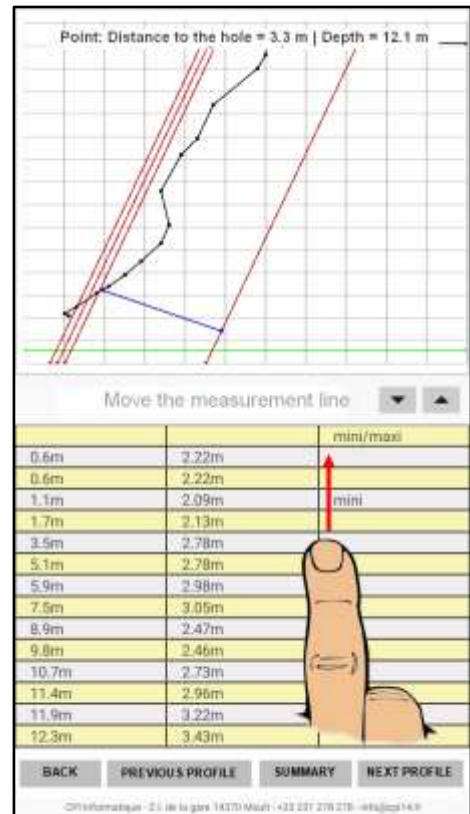
The « **SUMMARY** » button allows you to quickly have information on the seat, the depth and the drilling angle of all the profiles contained in the file.

Finally, the « **BACK** » button returns to the previous screen.

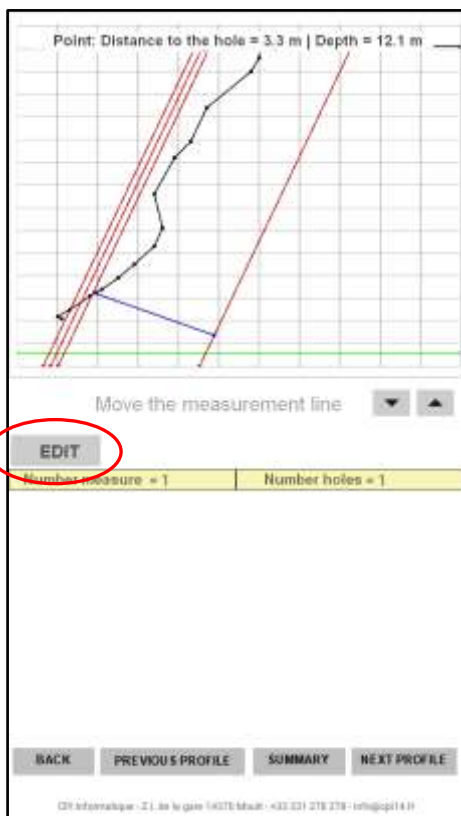
Profile Information



Screen 2



Screen 3
Scan the table by moving the finger



Screen 4

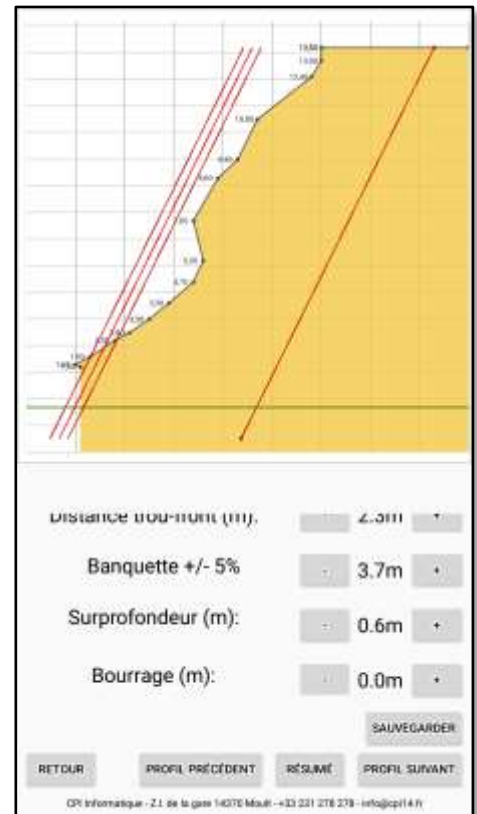
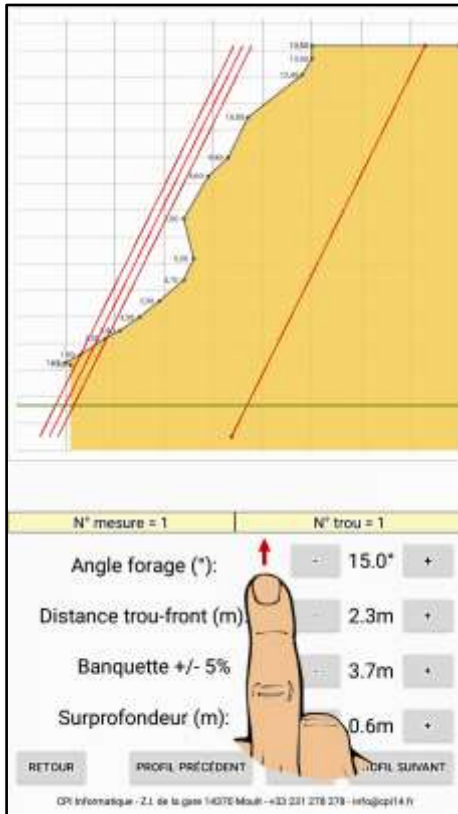
Slide your finger from right to left to go from screen 2 to screen 3 and then from screen 3 to screen 4.



Pressing « **EDIT** » takes you to screen 5.

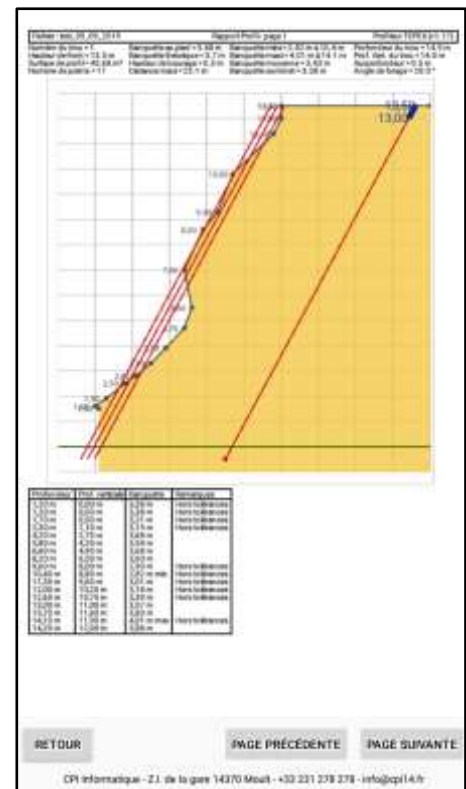
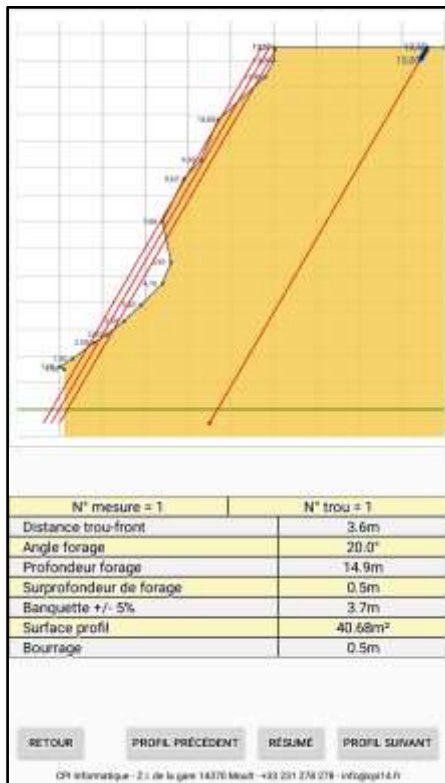
(see next page)

Screen 5 : EDIT



The values relating to the drilling angle, the hole-to-front distance, the bench seat, the over-depth and the filling height at the top of the borehole can be modified by pressing the **-** and **+** buttons.


By pressing the « SAVE » key, the modified values are saved as well as the report in « pdf » format.



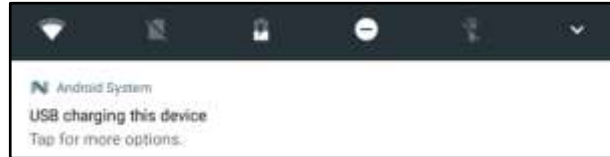
Report in « **PDF** » format

II - TRANSFERRING FILES TO A COMPUTER

To transfer the files, connect the tablet to a computer with the supplied USB cable.

If necessary, unlock the tablet ( icon at the bottom of the screen). Slide your finger towards the top of the screen.

Then, slide your finger from the top of the screen. A menu appears ...



Press it for more options, then choose « Transfer files »



Once the manipulation is done, launch the file explorer on the computer and navigate on the Micro SD card. The files are in the PROFILS folder.

They can then be copied to a dedicated folder of the PC for operation thanks to the « optimization and editing profiles software » (see Part B below).

B - ANNEXES

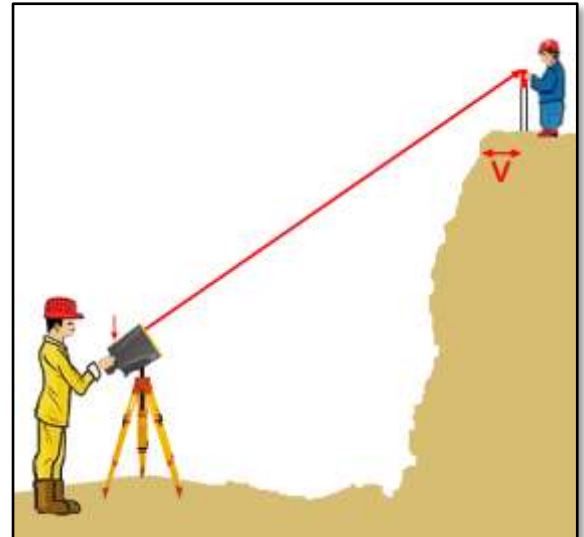
I - OTHER OPERATIONS

Marking on the ground the borehole

The attendance of a second operator and the use of a reflector target are necessary.

The operator on the top of the face , according to the indications of the other operator, moves forward or back to put the target at the distance **V** selected point 6 (3,7 m on screen above).

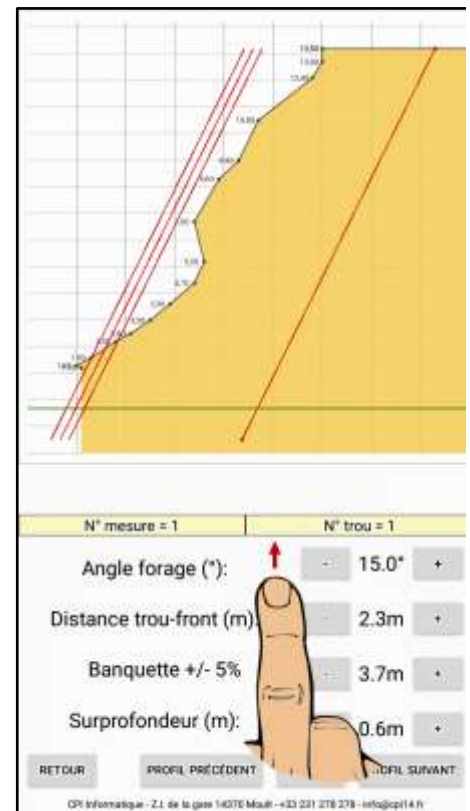
The « Marking » application has been installed on the tablet to automate the procedure.



Modifying a profile to adjust the load (phase 3 of TBlast System)

After checking the seat thickness with TEPEX 2S, a saved profile can be modified :

- in the main menu, press « **OPEN EXISTING FILE** » and select the file to open it by pressing the « **SEE** » key ;
- scroll through the tables horizontally with your finger to reach the one that allows the modification (see page 10 above). By pressing the graph, a blue line appears. Position it at the bottom of the waistline. The thickness of the seat is then displayed at the top of the screen ;
- by changing the drilling angle, make this value identical to the one measured with TEPEX 2S ;
- press « **SAVE** ».



II - BLUETOOTH

Bluetooth with automatic connection

II A - Bluetooth activation on the laser rangefinder



- Press the <FIRE> button (1) to turn on the rangefinder.
- Press the button ▼ (3) for four seconds ; « UnitS » is displayed.
- Press button ▲ (2) once to display the « bt » option.
- Press the <FIRE> button to enter the Bluetooth menu.
- Press button ▼ or ▲ to display « bt_on ».

Bluetooth is now activated.


At each start-up, the laser rangefinder takes the last Bluetooth configuration used.

Information :

with Bluetooth enabled, the laser range finder automatically turns off after 10 minutes of inactivity. This is a long time and the battery load level decreases.

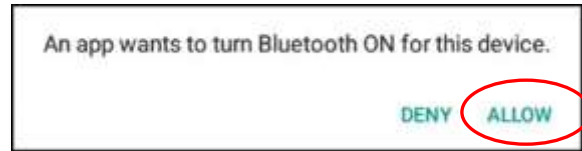
It is therefore preferable to stop it once the measurements have been made by pressing the ▲ and ▼ buttons until the display disappears in the laser. Preferably use two 1.5 V lithium batteries (or one CRV3 battery).

II B - Bluetooth association procedure

Turn on the tablet **(1)** and start the application ⇒  (on screen).



- 1** If Bluetooth is not enabled, the application prompts for activation.



If no Bluetooth device has been previously associated, the application automatically opens the Bluetooth settings and the combination of « laser rangefinder → tablet » can be performed.



Proceed to the association by clicking in the list of Bluetooth devices on the laser rangefinder with the name « TP200B-XXXXXX » where XXXXXX is its serial number (here 203706).

A window opens ; enter a PIN.



Type 1111, check the first option and click OK.


The laser appears in the associated devices.

Press the back button (◀ bottom left of the screen) to close the Bluetooth settings on the tablet and return to the profiling application.

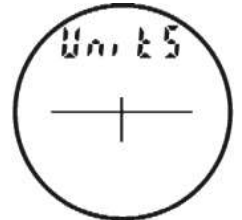
II - TILT SENSOR ALIGNMENT

The tilt sensor is aligned during assembly.

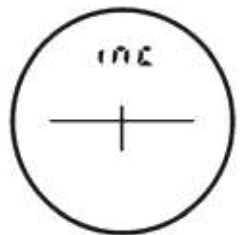
In the rare event that the laser telemeter suffers a severe drop shock, refer to the instructions below to re-align the tilt sensor.

- 1 From the Measurement Mode, press  for 4 seconds to access the System Setup Mode.

« **UnitS** » will appear in the Main Display.



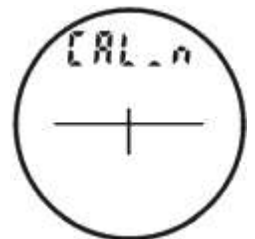
- 2 Press  to display the « **inc** » option.





- 3 Press  to select the « **inc** » option.

The message « **CAL_n** » appears in the Main Display.

Press  or  to display the previous or next « **CAL** » option.



- A If « **CAL_n** » is displayed, press  to exit the « **inc** » option and return to the Measurement Mode

- B If « **CAL_Y** » is displayed, press  to align the tilt sensor.

The message « **CAL_1** » appears in the Main Display



- Place the laser telemeter on a flat horizontal surface. Position the TruPulse on a flat, as shown in Figure #1. Use one finger to hold the front of the unit is flat on the surface (indicated by the arrow in Figures #1 and 2). Keep the finger in place and do not lift the laser telemeter until the end of step 7.

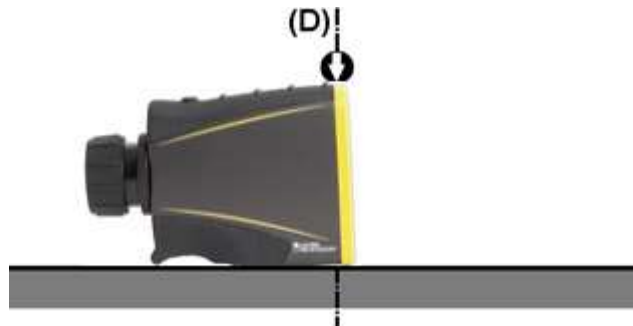


Figure #1

- Press  to store the first inclination measurement.

The message « **CAL_2** » appears in the Main Display.



- Important** - Without displacement and in permanent contact with the support, rotate the telemeter 180° about the axis (D) and holding the finger at the arrow [cf. Figure #2 below].

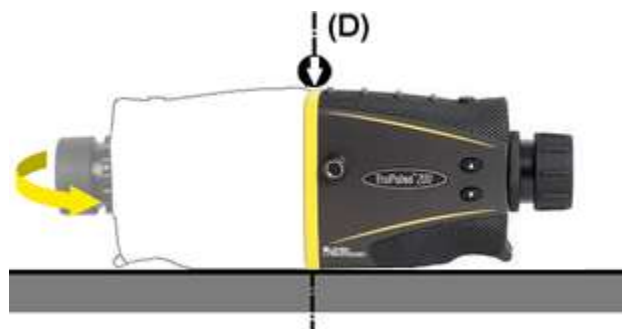

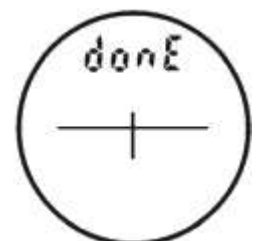


Figure #2

- Press  to store the second inclination measurement and complete the zero offset correction.

The message « **donE** » appears in the Main Display.



- Press  to clear the « **donE** » message and return to the Measurement Mode.