


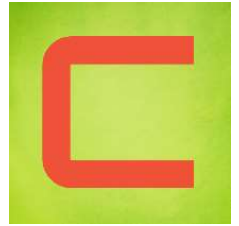


User Manual

CIVILAB 2023
CBR TEST

R.BAKHTI
BAKHTI SOFTWARE
bakhti@bakhtisoftware.com





How to use CiviLab to perform the CBR test?

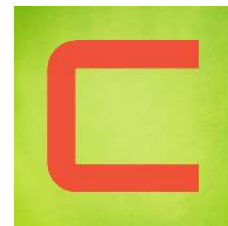
I- Loads-penetration curve

1- Test Data:

Click on the "Mechanical Tests" tab then click on the "Data" button in the "CBR" panel, then input:

- The test name;
- The test date;
- Select the layer which should be used in the drawing process;
- Select the standard;
- Select the type of the test;
- The moisture content;
- The density;
- The values of Force-penetration or pressure penetration (depending on the standard used);
- Choose the type of curve (linear, cubic spline, cubic spline Akima, cubic spline Pchip, b-spline)
- The desired correction value

Click on the button of "Add/Modify";



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Footings-Static penetrometer

BAKHTI Software Ltd
Civil engineering software development
Website: <https://www.bakhtisoftware.com>
Email: bakhti@bakhtisoftware.com / support@bakhtisoftware.com

Project: Suivi RN 18 Project No: Ref 002/2020

Test No. CBR N=1 Curve Cubic Spline
Layer Graphs Correction 0 Degree 3
Test date Monday, October 17, 2022
Standard NF P 94-078
Type Immediate bearing ratio
Y_d (kN/m³) 19.5
Moisture content (%) 5.3

Load (kN)	Penetration Depth (mm)
0	0
2.51	0.625
4.92	1.25
8.21	2
10.23	2.5
19.02	5

CBR (%)
95.43
55.39
45.76

Load (kN) Penetration Depth (mm)

Draw

Add/Modify Remove

CBR

Test No. CBR N=1 +
Layer Graphs +
Test date Monday, October 17, 2022
Standard NF P 94-078
Type Immediate bearing ratio
Y_d (kN/m³) 19.5
Moisture content (%) 5.3

Data

Load (kN)	Penetration Depth (mm)
0	0
2.51	0.625
4.92	1.25
8.21	2
10.23	2.5
19.02	5

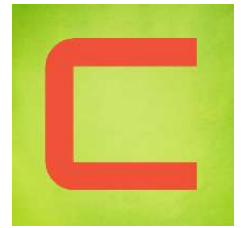
Curve
Cubic Spline
Correction 0 Degree 3

Load (kN) Penetration Depth (mm)

Draw

Add/Modify Remove





2- Add a sheet:

Click on the "Sheets" button in the "CBR" panel and input:

- The sheet name;
- Select the font;
- Select the layer used in the background drawing;
- Select the tests;
- To display general project information's check the corresponding box;

Then click on "Add/Modify" button

The screenshot shows the software interface with the 'Sheet editions' dialog box open. The dialog box has the following fields and options:

- Name: CBR-Sheets N°=1
- Inherit texts from: (empty)
- Font: (Font Name=Arial, Size=9, Units=3,1)
- Layer: (empty)
- Grid: (empty)
- Display: CBR N°1, CBR N°2, CBR N°3
- Display general project informations
- Buttons: Add/Modify, Remove

The 'CBR' panel on the left shows a tree view with the following items:

- Summary
- Drill hole
- DPT
- Pressuremeter curve
- Pressuremeter profiles
- CPT
- SPT
- Geometric properties
- Grain size distribution
- Atterberg limits
- Sand equivalent
- Micro-Deval
- Los-Angeles
- Los-Angeles-Sheets N°=1
- Los-Angeles-Sheets N°=2
- Los-Angeles-Feuilles N°=3
- Proctor
- CBR
- CBR Group
- CBR Group-Sheets N°=1
- Direct shear test
- Cisaillement la boîte-Feuilles N°=1
- Direct shear test-Sheets N°=1
- Oedometer test
- Concrete Mix Design-ACI
- Concrete Mix Design-Orean- Gorisse
- Concrete Mix Design-Bolomey
- Concrete Mix Design-Faury
- Compression of concrete
- Ultrasonic Testing
- Combined method
- Bitumen Extraction
- Bulk density of bituminous specimen
- In-situ density
- Footings- C-q
- Footings-Dynamic penetrometer
- Footings-Static penetrometer

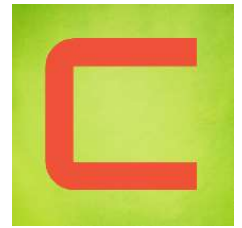
The main window displays the 'BAKHTI Software Ltd' logo and contact information, a 'T REPORT' table, and a graph of Penetration Depth (mm) vs. (%). The table data is as follows:

vd (kN/m ²)	ω (%)	Penetration		CBR (%)
		2.5 mm	5 mm	
19.50	5.30	10.23	19.02	95.43
18.00	4.20	3.60	11.04	55.39
17.50	3.70	5.43	9.12	45.76

3- Display the report

To display the report, click on the sheet name in the tree view





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Footings-Dynamic penetrometer
Footings-Static penetrometer
Footings-Menard PMTs
Footings-SPT
Settlement-Menard PMTs
Settlement-Oedometer test
Linear elasticity

BAKHTI Software Ltd
Civil engineering software development
Website: <https://www.bakhtissoftware.com>
Email: bakhti@bakhtissoftware.com / support@bakhtissoftware.com

Project: Suivi RN 18 Project No: Ref 008/2020
Client: DTP
Location: Medea
Date: 2022-10-17

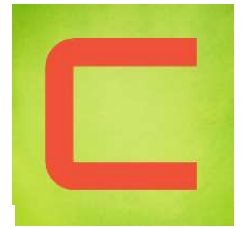
TEST REPORT
CBR Test NF F 94-078

Type: Immediate bearing ratio
 $v_d = 19.9 \text{ kg/cm}^2$
 $w = 5.3 \%$
Correction = 0 mm
CBR: 55.43

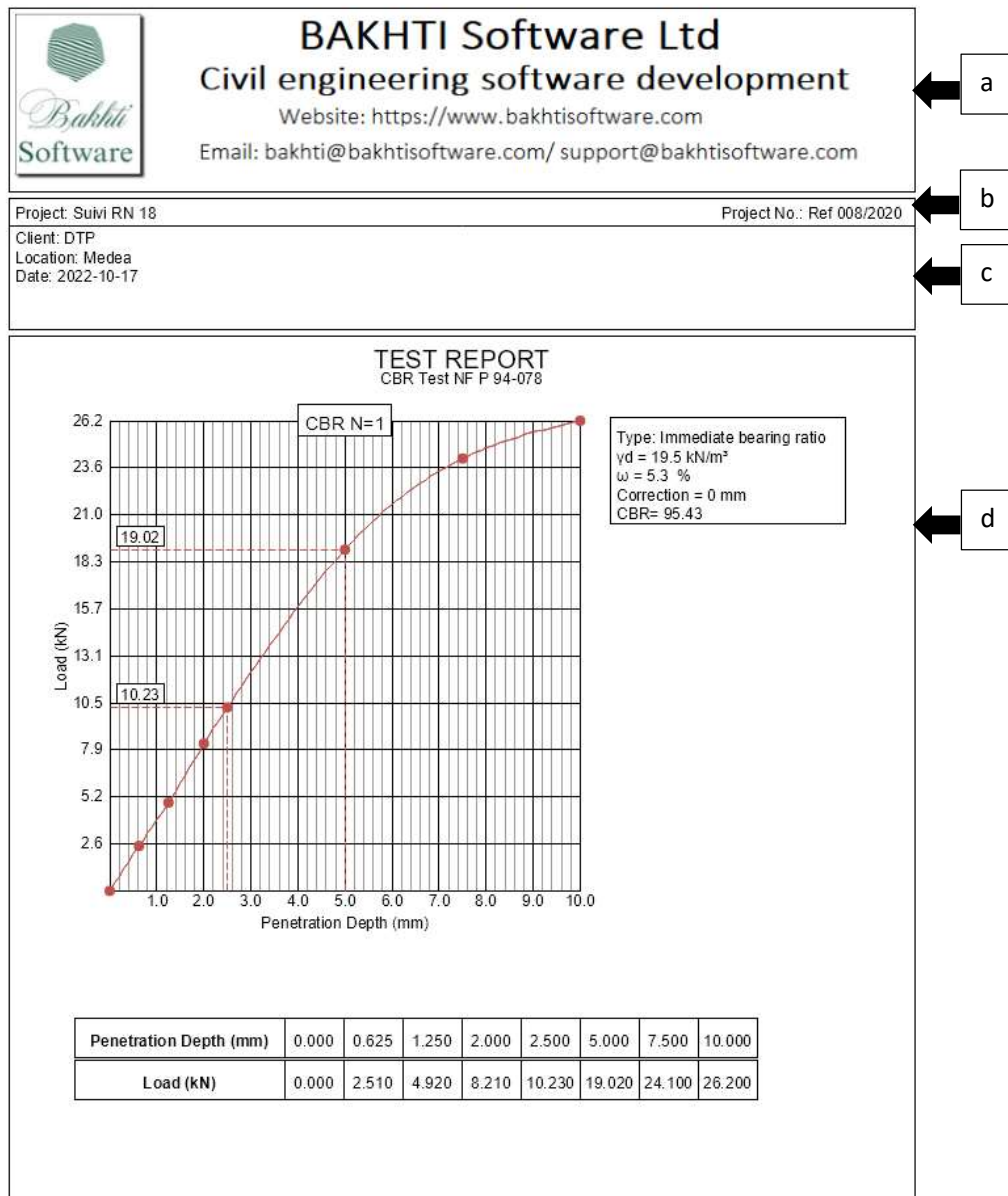
Penetration Depth (mm)	0.000	0.625	1.250	2.000	2.500	5.000	7.500	10.000
Load (kN)	0.000	2.510	4.920	8.210	10.230	19.020	24.100	26.200

To export or print the report, click on "Home" tab, then click the appropriate button in the outputs panel (Print or Export button)





4- Test report :

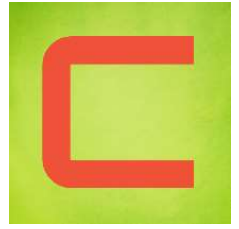


Software: Civilab 2023

a. Sheet Header Presentation: To import or modify the sheet header, go to the "Home" tab and select the "Header" button.

b. Project Name and Reference: These details can be entered from the project's general information found in the File menu.





c. Area for Displaying Test Information: Test information can be input within this area from the Test Information window (to show it click on the “+” button next to the name of the test on Data window) and project's general information window.

d. Area for Plotting Curves: this area is designated to visualize curves and the test results.

II- CBR-Water content curve / CBR-density curve

1- Test Data:

Click on the "Mechanical Tests" tab then click on the "Data" button in the "CBR" panel, then input:

- The test name;
- The test date;
- Select the layer which should be used in the drawing process;
- Select the standard;
- Choose the type of curve (linear, cubic spline, cubic spline Akima, cubic spline Pchip, b-spline)
- To display the CBR-Moisture content curve, check the corresponding box;
- To display the CBR-Density curve, check the corresponding box;
- Select CBR tests

Click on the button of "Add/Modify";



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Footings-Dynamic penetrometer
Footings-Static penetrometer
Footings-Menard PMTs
Footings-SPT
Settlement-Menard PMTs
Settlement-Oedometer test
Linear elasticity

BAKHTI Software Ltd
Civil engineering software development
Website: <https://www.bakhtisoftware.com>
Project No: Ref 002/2020

Test No. CBR Group N°=2
Test date Thursday , April 4, 2024
Layer Graphs
Standard NF P 94-078
Curves Linear Degree 3
 CBR-Molded Density curve
 CBR-Moisture Content curve
CBR
 CBR N=1
 CBR N=2
 CBR N=3

TEST REPORT
Test NF P 94-078
Type: Immediate bearing ratio
 $v_d = 19.5 \text{ kN/m}^2$
 $w = 5.3 \%$
Correction = 0 mm
CBR₁₅ = 66.43

Penetration Depth (mm)	0.000	0.625	1.250	2.000	2.500	5.000	7.500	10.000
Load (kN)	0.000	2.510	4.920	8.210	10.230	19.020	24.100	26.200

CBR Group

Test No. CBR Group N°=2

Test date Thursday , April 4, 2024

Layer Graphs

Standard NF P 94-078

Curves

Curves Linear Degree 3

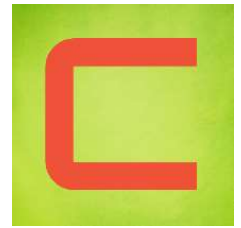
CBR-Molded Density curve
 CBR-Moisture Content curve

CBR

CBR N=1
 CBR N=2
 CBR N=3

Add/Modify Remove





2- Add a sheet:

Click on the "Sheets" button in the "CBR" panel and input:

- The sheet name;
- Select the font;
- Select the layer used in the background drawing;
- Select the tests;
- To display general project information's check the corresponding box;

Then click on "Add/Modify" button

The screenshot shows the software interface with the 'Sheet editions' dialog box open. The dialog box has the following fields and options:

- Name: CBR Group-Sheets N°=2-
- Inherit texts from: (empty)
- Font: (Font Name=Arial, Size=9, Units=3,1)
- Layer: Grid
- Display: CBR Group N°=1
- Display general project informations
- Buttons: Add/Modify, Remove

The background shows the 'CBR' panel with a tree view on the left and a report on the right. The report includes the following data:

Penetration Depth (mm)	0.000	0.625	1.250	2.000	2.500	5.000	7.500	10.000
Load (kN)	0.000	2.510	4.920	8.210	10.230	19.020	24.100	26.200

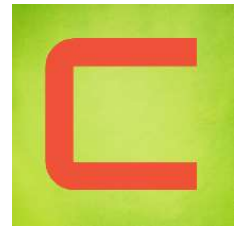
The report also includes a graph of Load (kN) vs Penetration Depth (mm) and a table of test results:

Type	Immediate bearing ratio
vd	= 10.5.9kN/m²
ω	= 5.3 %
Correction	= 0 mm
CBR _r	= 55.43

3- Display the report

To display the report, click on the sheet name in the tree view





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Los-Angeles
Proctor
CBR
CBR Group
CBR Group Sheets IV-1
Direct shear test
Oedometer test
Concrete Mix Design-ACI
Concrete Mix Design-Dreux- Gorisse
Concrete Mix Design-Bolomey
Concrete Mix Design-Foury
Compression of concrete
Ultrasonic Testing
Combined method
Bitumen Extraction
Bulk density of bituminous specimen
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Footings- C- ϕ
Footings- Dynamic penetrometer
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Settlement-Oedometer test
Linear elasticity

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Email: bakhti@bakhtisoftware.com / support@bakhtisoftware.com

Project: Suivi RN 18 Project No: Ref 002/2020
Client: DTP
Location: Medea
Date: 2024-04-04

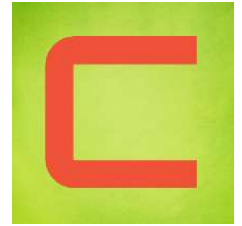
TEST REPORT
CBR Test NF P 94-076

vd (kN/m ²)	w (%)	Penetration		CBR (%)
		2.5 mm	5 mm	
19.50	5.30	10.23	19.02	95.43
18.00	4.20	3.60	11.04	55.39
17.50	3.70	5.43	9.12	45.76


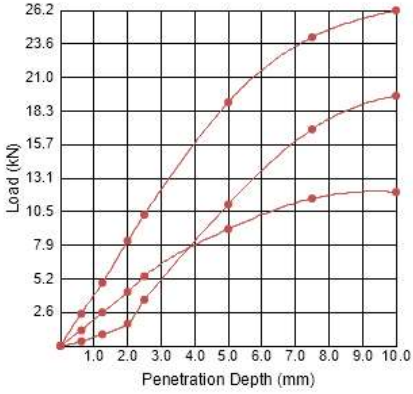
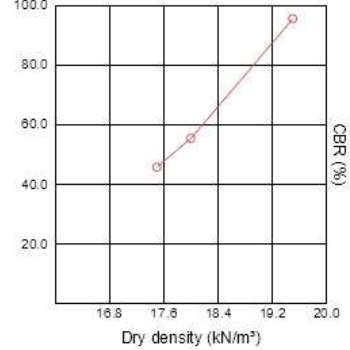
vd (kN/m ²)	w (%)	Penetration	CBR (%)
19.50	5.30	10.23	95.43

To export or print the report, click on "Home" tab, then click the appropriate button in the outputs panel (Print or Export button)





4- Test report :

	BAKHTI Software Ltd Civil engineering software development Website: https://www.bakhtisoftware.com Email: bakhti@bakhtisoftware.com / support@bakhtisoftware.com																						
Project: Suivi RN 18	Project No.: Ref 008/2020																						
Client: DTP Location: Medea Date: 2024-04-04																							
TEST REPORT CBR Test NF P 94-078																							
	<table border="1" style="border-collapse: collapse;"><thead><tr><th rowspan="2">γ_d (kN/m³)</th><th rowspan="2">ω (%)</th><th colspan="2">Penetration</th><th rowspan="2">CBR (%)</th></tr><tr><th>2.5 mm</th><th>5 mm</th></tr></thead><tbody><tr><td>19.50</td><td>5.30</td><td>10.23</td><td>19.02</td><td>95.43</td></tr><tr><td>18.00</td><td>4.20</td><td>3.60</td><td>11.04</td><td>55.39</td></tr><tr><td>17.50</td><td>3.70</td><td>5.43</td><td>9.12</td><td>45.76</td></tr></tbody></table>	γ_d (kN/m ³)	ω (%)	Penetration		CBR (%)	2.5 mm	5 mm	19.50	5.30	10.23	19.02	95.43	18.00	4.20	3.60	11.04	55.39	17.50	3.70	5.43	9.12	45.76
γ_d (kN/m ³)	ω (%)			Penetration			CBR (%)																
		2.5 mm	5 mm																				
19.50	5.30	10.23	19.02	95.43																			
18.00	4.20	3.60	11.04	55.39																			
17.50	3.70	5.43	9.12	45.76																			
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Software: CivilLab 2023

