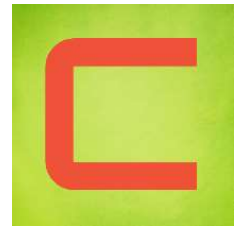




# User Manual

CIVILAB 2023  
LOS ANGELES ABRASION TEST

R.BAKHTI  
BAKHTI SOFTWARE  
[bakhti@bakhtisoftware.com](mailto:bakhti@bakhtisoftware.com)



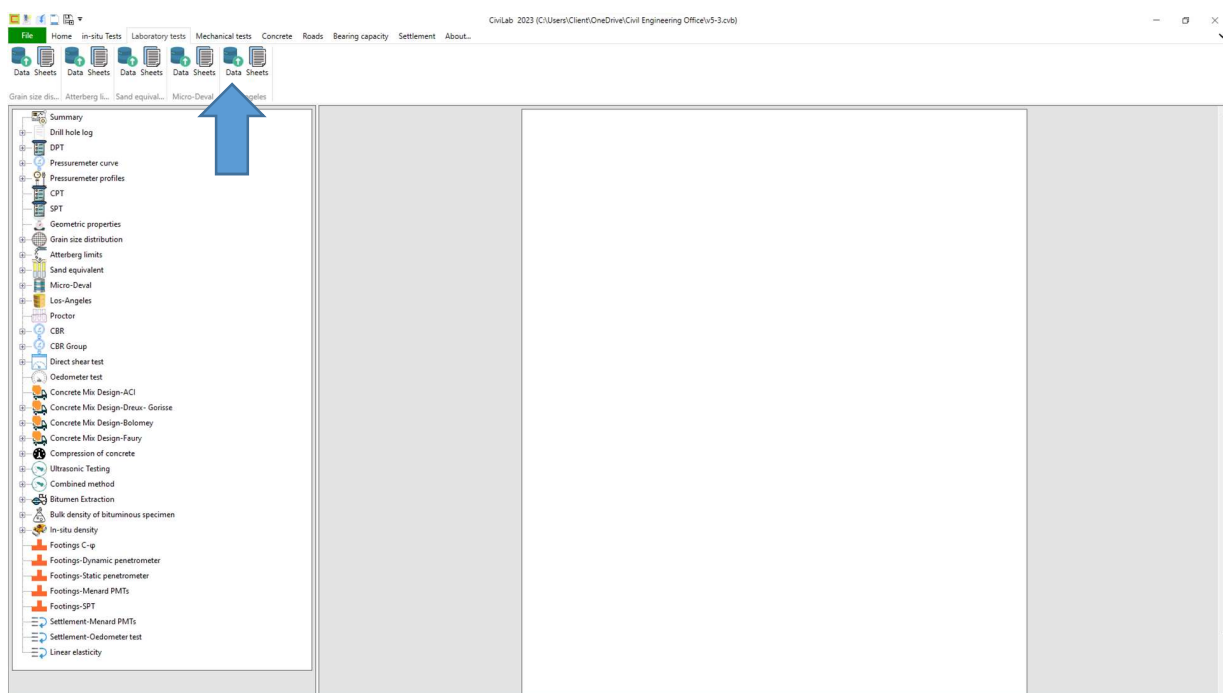
## How to use CiviLab to perform the Los-Angeles abrasion test?

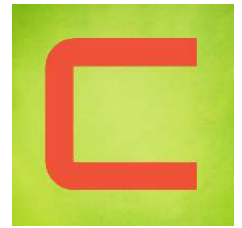
### 1- Test Data:

Click on the "Laboratory tests" tab then click on the "Data" button in the "Los-Angeles" panel, then input:

- The test name;
- The date of the test;
- Select the layer which should be used in the drawing process;
- The standard used;
- The mass of the sample;
- The granular class;
- The number of steel spheres;
- The LA requirement;
- The test outcomes
  - Dry mass of sieve retained

Click on Add/Modify button.





Los-Angeles

Test No. Los-Angeles N°=2

Test date samedi 21 mars 2020

Layer Texts

Standard ASTM C 131

Sample mass (g) 5000

Granular class 10/14

Number of steel spheres 11

Requirements (LA  $\leq$ ) 25

	Dry mass of sieve retained (g)	Dry mass of passing (g)	LA (%)
▶	3332	1668	33,36
	3335	1665	33,3
	3328	1672	33,44

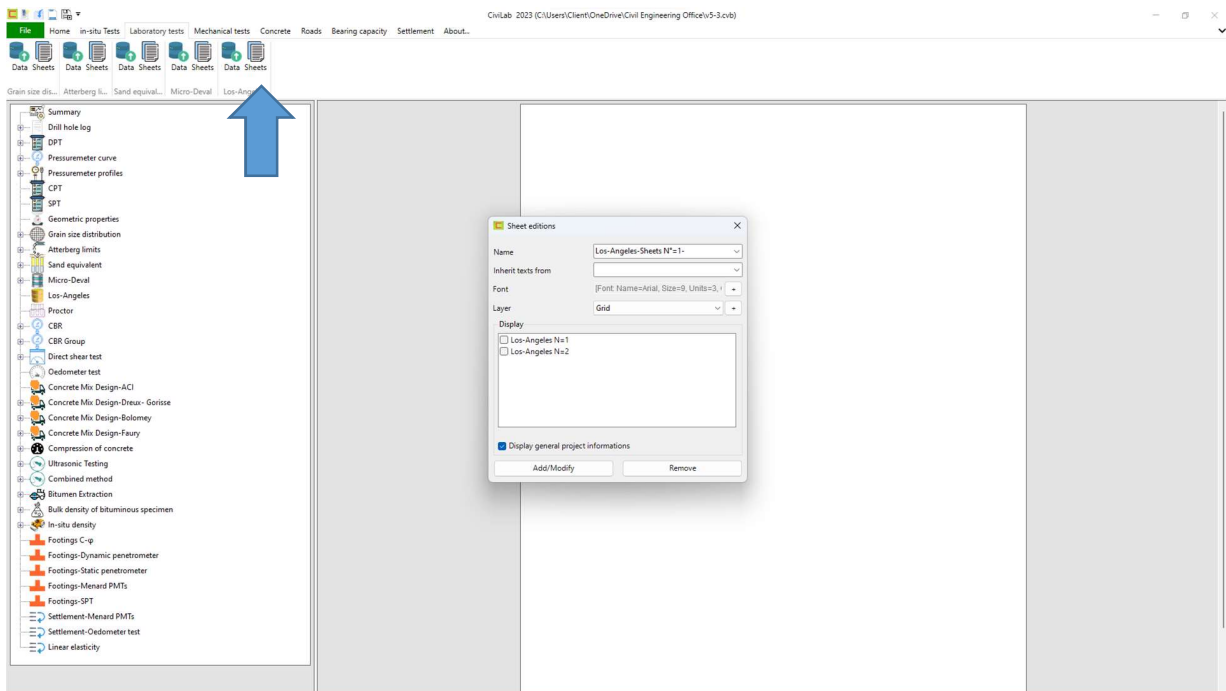
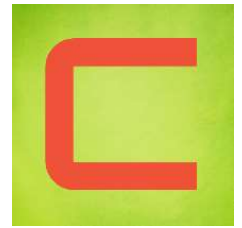
Add/Modify Remove

2- Add a sheet :

Click on the "Sheets" button in the "Los-Angeles" panel and input:

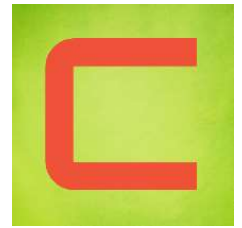
- The sheet name;
- Select the font;
- Select the layer used in the background drawing;
- Select the tests;
- To display general project information's check the corresponding box;

Then click on "Add/Modify" button



### 3- Display the report

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



CivilLab 2023 (C:\Users\Client\OneDrive\Civil Engineering Office\3-cvb)

File Home In-situ Tests Laboratory tests Mechanical tests Concrete Roads Bearing capacity Settlement About...

Data Sheets Data Sheets Data Sheets Data Sheets Data Sheets

Grain size dis... Atterberg li... Sand equival... Micro-Deval Los-Angeles

Summary  
Drill hole log  
DPT  
Pressuremeter curve  
Pressuremeter profiles  
CPT  
SPT  
Geometric properties  
Grain size distribution  
Atterberg limits  
Sand equivalent  
Micro-Deval  
Los-Angeles  
Proctor  
CBR  
CBR Group  
Direct shear test  
Oedometer test  
Concrete Mix Design-ACI  
Concrete Mix Design-Dreun- 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- $\phi$   
Footings- Dynamic penetrometer  
Footings-Static penetrometer  
Footings-Menard PMTs  
Footings-SPT  
Settlement-Menard PMTs  
Settlement-Oedometer test  
Linear elasticity

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Civil engineering software development  
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Email: [bakhti@bakhtisoftware.com](mailto:bakhti@bakhtisoftware.com) / [support@bakhtisoftware.com](mailto:support@bakhtisoftware.com)

Project: Suivi RN 18 Project No. Ref 006/2020  
Client: DTP  
Location: Media  
Date: 2020-03-21

**LOS ANGELES ABRASION TEST**  
Standard NF P18-573 / NF EN 1067-2

Test: Los-Angeles N=1  
Sample mass: 5000 g

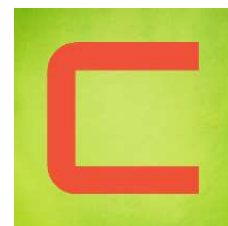
Granular class	Number of steel spheres	Dry mass of sieve retained (g)	Dry mass of passing (g)	% loss	% loss (Average)
10/14	11	3332.00	1668.00	33.36	33.37
		3335.00	1665.00	33.30	
		3328.00	1672.00	33.44	

Requirements: L.A. abrasion loss  $\leq$  25.00 %


Results:  
- Unacceptable value  
- Material not accepted

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



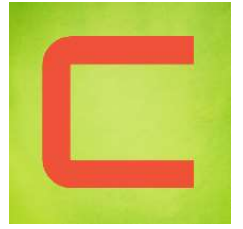


A- Test report :

	<b>BAKHTI Software Ltd</b> Civil engineering software development Website: <a href="https://www.bakhtisoftware.com">https://www.bakhtisoftware.com</a> Email: <a href="mailto:bakhti@bakhtisoftware.com">bakhti@bakhtisoftware.com</a> / <a href="mailto:support@bakhtisoftware.com">support@bakhtisoftware.com</a>	a																		
Project: Suivi RN 18		Project No.: Ref 008/2020	b																	
Client: DTP Location: Medea Date: 2020-03-21 Sample No: A-05	Source of sample: SC-10 Tested by: R.BAKHTI Checked by: LAIB		c																	
<b>LOS ANGELES ABRASION TEST</b> Standard: ASTM C 131																				
Test: Los-Angeles N°=2 Sample mass: 5000 g			d																	
<table border="1"><thead><tr><th>Granular class</th><th>Number of steel spheres</th><th>Dry mass of sieve retained (g)</th><th>Dry mass of passing (g)</th><th>% loss</th><th>% loss (Average)</th></tr></thead><tbody><tr><td rowspan="3">10/14</td><td rowspan="3">11</td><td>3332,00</td><td>1668,00</td><td>33,36</td><td rowspan="3">33,37</td></tr><tr><td>3335,00</td><td>1665,00</td><td>33,30</td></tr><tr><td>3328,00</td><td>1672,00</td><td>33,44</td></tr></tbody></table>	Granular class	Number of steel spheres	Dry mass of sieve retained (g)	Dry mass of passing (g)	% loss	% loss (Average)	10/14	11	3332,00	1668,00	33,36	33,37	3335,00	1665,00	33,30	3328,00	1672,00	33,44		
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		3335,00	1665,00	33,30																
		3328,00	1672,00	33,44																
Requirements: L.A. abrasion loss ≤ 25,00 %																				
Results: - Unacceptable value - Material not accepted																				

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 results:** this area is designated to visualize the test results.