CBR, California bearing ratio

ASTM D1883 – 16 Standard Test Method for California Bearing Ratio (CBR) of Laboratory-Compacted Soils
BS EN 13286-2:2010 Unbound and hydraulically bound mixtures. Test methods for laboratory reference density and water content. Proctor compaction

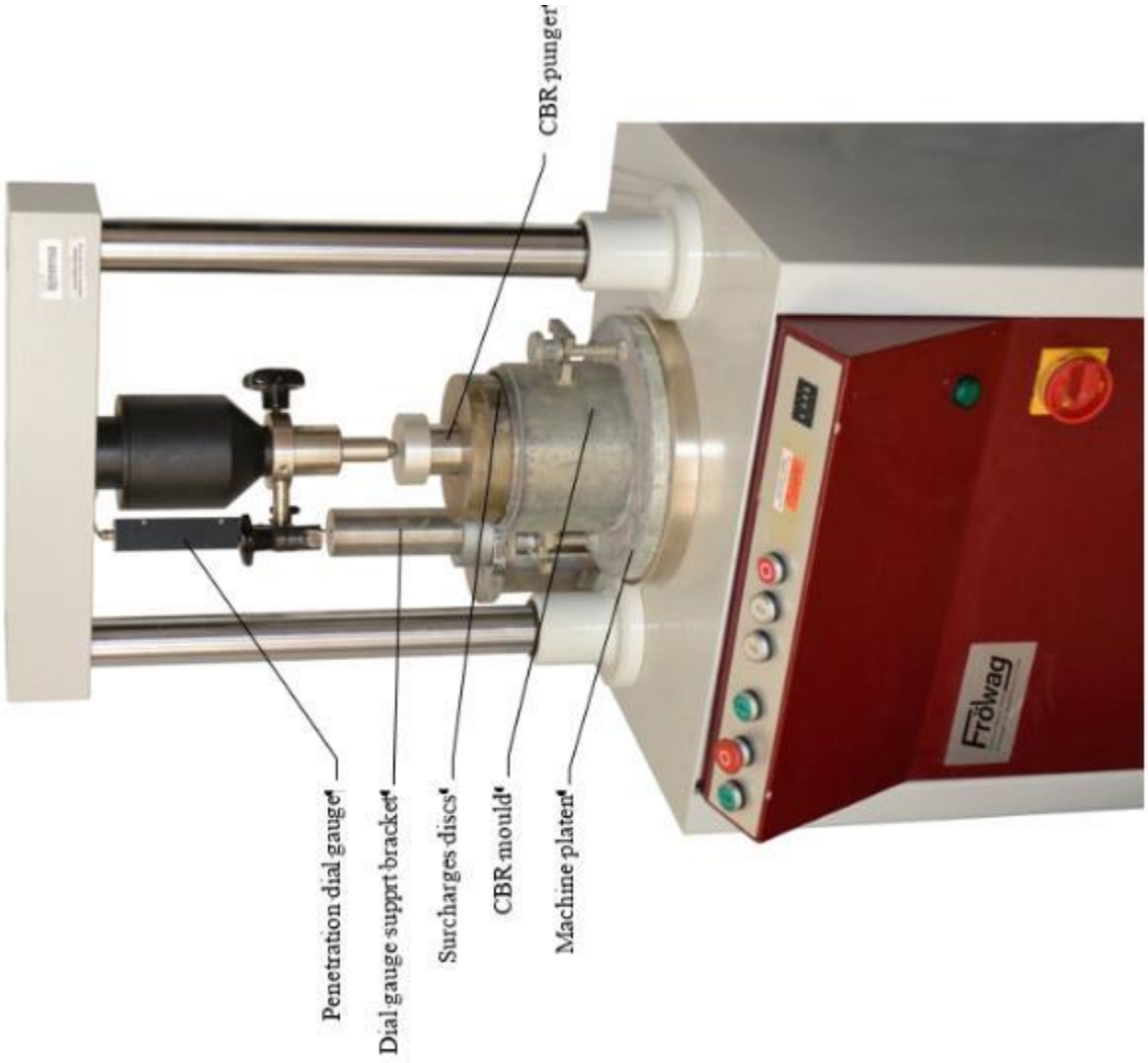
The California Bearing Ratio test, or CBR test, is an empirical test to estimate the bearing value of sub-base.

The CBR test is a constant rate of penetration shear test in which a standard plunger is pushed into the soil at a constant rate and the force required to maintain that rate is measured at suitable intervals. The load–penetration relationship is drawn as a graph from which the loads corresponding to standard penetrations are read off and expressed as ratios (percent) of standard loads. The accepted percentage is known as the CBR value of the soil in the

$$CBR = \frac{F}{F_s} 100\ \%$$

- F measured force (kN),
- F_s standard force (kN).

The soil is prepared using the Proctor test.


CBR plunger
Penetration dial gauge
Dial gauge suppt bracket
Surcharges discs
CBR mould
Machine platen
Frölwag

Record – CBR

Sample identification Location: Laborer: Date:				Swelling time:		
water content						
Type of Proctor mould: Weight: Weight with soil: Weight of soil:				Height: Diameter: Volume of soil: Dry unit weight:		
Penetration [mm]	Standard force [kN]	Test n. 1		Test n. 2		Average CBR [%]
		Force [kN]	CBR [%]	Force [kN]	CBR [%]	
0,5						
1,0						
1,5						
2,0						
2,5	**13,2**					
3,0						
3,5						
4,0						
4,5						
5,0	**20,0**					
5,5						
6,0						
6,5						
7,0						
7,5						
8,0						
8,5						
9,0						
9,5						
10,0						
Notes:						