

# Penetrologger CBR

The Eijkelkamp penetrolgger CBR measures by a static penetration test directly CBR values using the standard CBR cone.

The standard **California bearing ratio (CBR)** is a penetration test for evaluation of the mechanical strength of road subgrades and basecourses. The CBR is the basis for determining the thickness of soil and aggregate layers used in the design of roads and airfields.

A soil's CBR value is an index of its resistance to shearing under a standard load compared to the shearing resistance of a standard material (crushed limestone) subjected to the same load. The test is performed by measuring the pressure required to penetrate a soil sample with a cone of standard area. The measured pressure is then divided by the pressure required to achieve an equal penetration on a standard crushed rock material. The CBR test is described in MIL CRD-C 654-95, ASTM Standards D1883-05 (for laboratory-prepared samples) and D4429 (for soils in-situ), and AASHTO T193. The correlation between field test and laboratory test is described in TRRL-Report 901.

## Applications

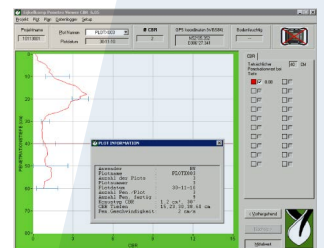
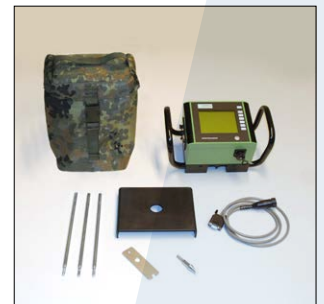
- Landing strips
- Pavement bearing

## User groups

- Geotechnical engineers
- Military
- Civil

## Features

- CBR measurement result evaluation
- User-friendly and easy operation
- Accurate measurement principle
- Display background lighting
- GPS
- Field bag
- Compact design, detachable handles
- Battery compartment for 2 types Lithium batteries
- Administrator/ user rights configurable operational accessibility
- Ultrasonic depth measurement
- Non reflective color design
- Data file export i.e. Excel
- Excellent price-quality-functionality ratio
- Nato stock number 6635-12-384-3267
- Developed in cooperation with Bundeswehr



## Technical specifications

### Environmental

Temperature	-10 to +70 °C
Relative humidity	0..100% RH
Temperature shock	50 °C

### Physical

Dimension bag	30 x 25 x 15 cm (h x w x d)
Total weight	5.5 kg
IP classification	IP 54

### Cone CBR standard

Diameter	0.5 Inch (1,27 cm)
Angle	30 °
Surface	0.2 Inch <sup>2</sup> (1,27 cm <sup>2</sup> )

Penetration depth	0-70 cm
Resolution	1 cm
Penetration speed	1-5 cm/sec
Force	0 - 15% CBR (0 - 700 N)
Force resolution	0.1% CBR
Accuracy	2% (re-calibration when error > 5%)

GPS accuracy	2 m CEP Circular Error Probable 3.5 m SEP Spherical Error Probable (Egnos compensated) CEP, 50% 24 Hours static, - 130 dBm (type $\mu$ Blox LEA-6H)
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Display	LCD monochrome green/black
Background light	LED intensity and contrast adjustable

Power supply	Battery pack Lithium SEM52 8.4 V or BH8AA 12 V
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Battery operational life	> 600 measurements
Memory	1500 Penetration measurements

Leveling	Water level (libelle)
Soilmoisture	Optional sensor available

### Modus measurements

Calculation CBR	Average value of depth range specified by user
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Software language	English, German, French, Spanish, Dutch
P.C. connection	RS232 / USB



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