SA224-KIT

Plate Bearing Tester

The electronic plate bearing tester is used in the SA224-KIT to measure the bearing capacity and the deformability of soils in situ.

The device allows to apply and release the load on the soil repetitively.

According to standards:

Belgium: SB250, TB2000, Meetmethode OCW MN 40/78 [adapted]

Germany: DIN 18134-2012, ZTV E-StB 09

France: NF P 94-117-1 ver.2000

Luxembourg: CSDC-CT

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Anix's plate bearing tester SA224-KIT provided by Macben is a high quality device used for earthworks, foundations and road construction. The electronic device allows to measure:

⇒ **determination of the load bearing capacity of single layers** by evaluation of modulus M_1 (or M_2) and/or by evaluation of strain modulus E_{v1} (or E_{v2})

⇒ **evaluation of the compaction level** by a ratio of strain modulus E_{v2}/E_{v1}

⇒ **The Westergaard modulus k_s** that gives an approximate consideration of the yieldingness of the building ground

ADVANTAGES OF THE SA224-KIT

- **According to standards: Belgium: SB250,TB2000, Meetmethode OCW MN 40/78 [adapted]; Germany: DIN 18134-2012, ZTV E-StB 09; France: NF P 94-117-1 ver.2000; Luxembourg: CSDC-CT**
- Reaction for consolidation of the soil <0.02 mm/min
- The inclinometer measures max. plate tilt (need for only 1 displacement transducer)
- The results can be printed directely at the building site
- The measuring data are shown as a printed diagram
- The instrument with waterproof case is adapted to the demanding environment
- Equipped with outside lying buttons and an illuminated display
- Equipement can be handled wearing work gloves
- Hemispherical feet provides a optimal placement at rough layers
- The device can be used for measurments in pits deeper than 0.3 m
- The feet are height-adjustable by the leveling screw at the rear foot
- The test tripod can be folded or extended and the carrying handle allows to the easy transportation

Technical data:

Electronic measurement device

- **Diameter of bearing plate:** 159.6mm, 300 mm, 600 mm, 762 mm adjustable
- **Lever ratio** 1:1
- **Resolution**: settlement/displacement 0,01 mm,
- **Standard load**: 0,0001 MN/m² (printed and saved), 0,001 MN/m² (displayed)
- **Thermal printer**, paper width 58 mm
- **SD-card, storage** of about **200 test**,
- **Connection with PC**, Excel reports
- **Rechargeable battery**, fast charger 2 h; approx. 48 h battery life

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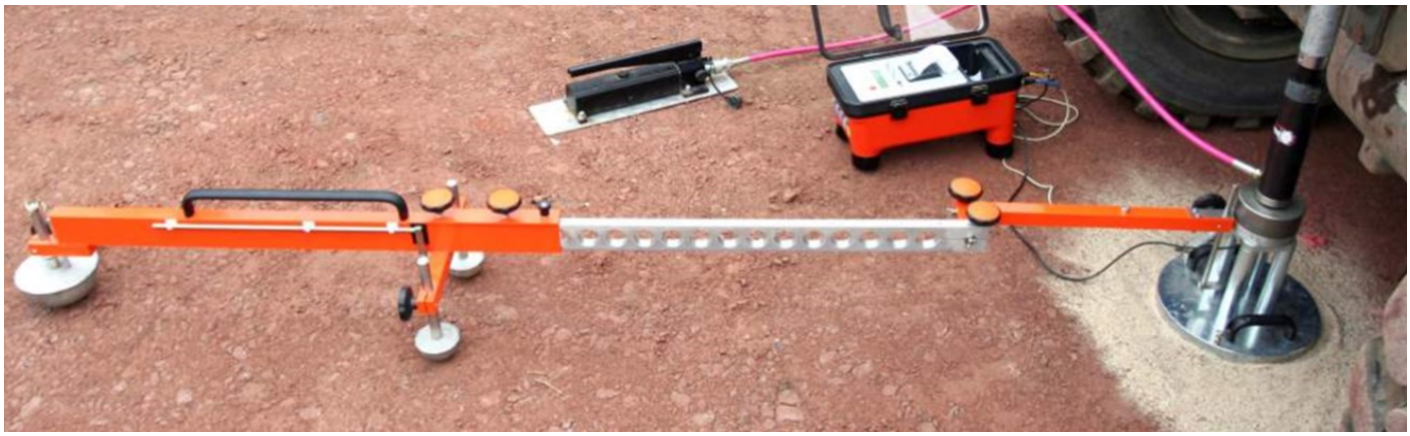
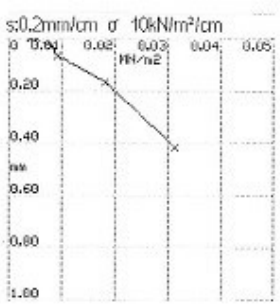
Material Testing Equipment



$$M = \frac{Dplate \times \Delta pressure}{\Delta consolidation}$$

Modulus M for determination of the load bearing capacity.
The test's results are displayed and printed immediately by the device.



max. plate tilt: 0.67 mm

Nr.	σ[MN/m²]	s[mm]	t[s]
First loading			
1	0.0043	0.00	497
	0.0042	0.00	15
2	0.0083	0.03	28
	0.0094	0.07	15
	0.0184	0.17	30
3	0.0315	0.42	35

Poisson: 0.2122

Technical data: mechanics

- **Direct measurement of the compaction** with only one displacement transducer (with inclinometer)
- **Manual hydraulic pump** compressive force 100 kN
- **Force sensor** 100 kN
- **Displacement sensor** stroke 15 mm
- **Reaction for the consolidation of the soil:** <0.02 mm/min
- **Bearing plate** ø 159.6mm and ø 300 mm with rectangular opening, mounting plate for force sensor and adjustable circular level
- **High-pressure hose:** length 2m
- **Supporting frame** with telescopic measuring arm and round bases
- **Pluggable extension kit** (total length 650 mm)
- **Upper magnetic clamp with ball joint** (rated for up to 50 kN)
- **Displacement sensor mounting**: 250 mm and 500 mm long ability to measure in pits deeper than 0.3 m

Dimensions: (Plate bearing tester SA224-KIT)

- **Supporting frame**: folded 1150 × 340 × 260 mm; mounted 2330 × 340 × 310 mm
- **Bearing plate** with force sensor: diameter 300 mm, h.265 mm
- **Extension parts**: 2 × 25 mm, 2×50 mm, 2×100 mm, 2×150 mm
- **Weight of the hydraulic jack assembly** (jack+pump+hose): 11.9 kg
- **Weight complete** (without packaging and transport box): about 67kg

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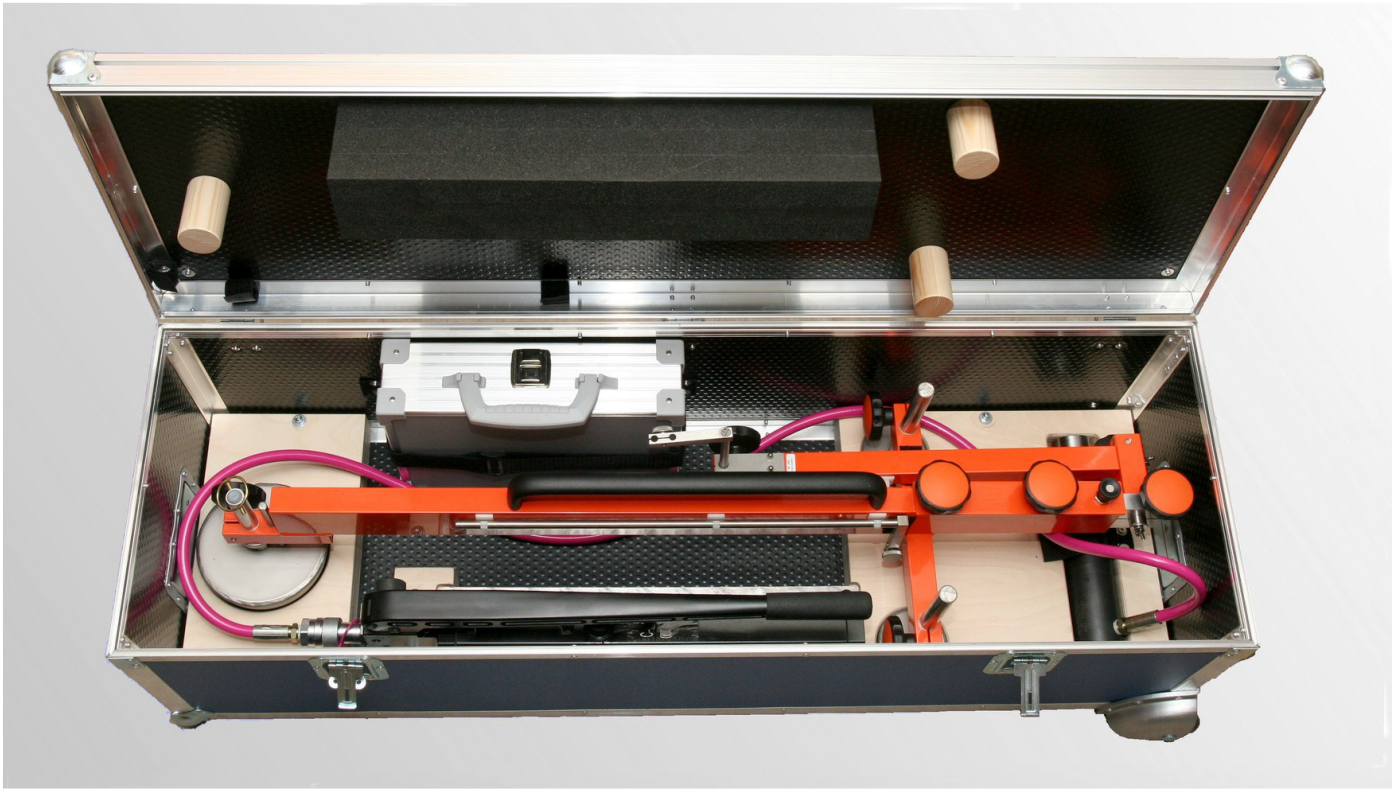
Material Testing Equipment

The results are stored at the SD card, can be transferred to the PC and are available for future processing. The device equipped with an inclinometer mounted on the bearing plate (replacing two displacement sensors) may measure the tilt of the plate according to Belgian standards.



Thanks to this solution reading of the results is quicker and simplified. Additionally, the thermal printer built into the device provides an immediate printout of the measurement data. The results are shown in a diagram that may be helpful for interpreting test results.

Macben— Plate bearing tester – SA224-KIT

German-manufactured, according to DIN 18134 and SB250, TB 2000

Electronic registration, built-in printer, SD card, protection against rain, loader for 230 V/12 V/24 V, external USB card reader and software Windows for Excel, with tripod (length 1150 mm folded, expanded 2330 mm), hydraulic hand pump, pressure plate slide 159.6 mm and slide 300 mm, inclinometer, level control, two sets vertical extensions, upper ball joint with a magnet, force sensor 100 kN, suitcases with wheels. Total weight: about 96 kg

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