

H-4140 GeoGauge™ Soil Compaction Control via In-place Stiffness and Modulus

- Dynamically Measures Soil's In-Place Engineering Properties
 - Structural Layer Stiffness, MN/m (klbf/in)
 - Young's Modulus, MPa (kpsi)
- In-Place QC/QA of Design Requirements
 - Links Compaction Directly to Design
 - Advances Mechanistic Pavement Design
- Maximum Stiffness with Minimum Compactive Effort
- Uniform Stress Distribution From Pavement to Subgrade
 - Longer Pavement Life
 - Reduced Maintenance Costs
 - Longer Lasting Surface Smoothness
- Reduces Variability In Construction
- In-Place QC/QA of the Strength Gain of Stabilized Materials
- Data Base Development In Support of Performance Specifications and Mechanistic Design
- Portable, Fast, Reliable and Non-Nuclear
- Other Applications
 - Lime, Cement, Fly-Ash and Polymer Stabilized Materials
 - Cement Treated and Rehabilitated Bases
 - Large Particle Aggregate Bases
 - Underground Utility Backfills
 - Asphalt
 - Cold In-Place Recycling



The GeoGauge is the advanced soil compaction process control instrument that enables construction of higher quality and lower cost roadways and highways. Pavement components and layers can now be compacted to relevant engineering properties taken directly from design.

Compacting and monitoring the soil directly to design's requirement of structural stiffness or material modulus during the actual process establishes the means to effectively control structural uniformity, strength and deflection, as well as enabling the monitoring and control of the construction quality of various materials. This leads to longer lasting products that cost less to build and maintain.

Applicable Standards

Meets ASTM Standard Test Method D 6758.

Specifications

Stiffness	.17 to 400 klbf/in (3 to 70 MN/m)
Young's Modulus	.4 to 90 kpsi (26 to 610 MPa)
Measure Depth	.9 to 12 inches (230 to 310 mm)
Measure Duration	.75 seconds
Power	Six D-Cell Batteries (500 to 1500 measurements)
Accessories	Transit/Carrying Case, Batteries & Manual
Dimensions	Gauge Only: 11" dia. x 10.5" high (280 mm x 270 mm) With Case: 18.5" x 16.5" x 13" (470 x 420 x 330 mm)
Net Weight	Gauge Only: 22 lbs. (10 kg) With Case: 34 lbs. (15.5 kg)
Shipping Weight	.39 lbs. (17.7 kg)

Specifications may change without notice

Patent Pending

Ordering Information

H-4140—GeoGauge—Stiffness/Modulus Gauge

Optional Accessories

H-4140.12—Infrared Interface & Serial Port Adapter with Software Template (PC only)

H-4140.20—Verifier Mass (verifies GeoGauge operation)



The GeoGauge is the only hand portable gauge available to provide the required simplicity, quickness and precision to directly measure and monitor the in-place engineering properties and do so at construction speed. The GeoGauge applies a constant load vibrating force to the soil's surface and measures the resulting displacement. This dynamic technology simulates actual in-use conditions. One instrument to link design specifications with compaction in 75 seconds for enhanced QC/QA. The GeoGauge supports, links and advances soil compaction process with Mechanistic Design and performance specifications. Soil and other materials are compacted to create a functional structure with the desired engineering properties for the application and life intended.

Effectively monitors the compaction of soil to the preferred engineering properties for no wasted effort and no damaging over-compaction. Readily reveals problem areas for quick remedy while equipment is still onsite. Superior to density measurements in reducing construction variability by monitoring for uniform layer properties to enhance the stress distribution from surface to subgrade for longer life, longer lasting surface smoothness and reduce maintenance—all for improved life-cycle cost.

Applications include subgrade, subbase, base, monitoring the strength gain of lime, cement, fly-ash and polymer stabilized materials, monitoring the re-compacting of underground utility backfills to previous properties or to match surrounding undisturbed materials, monitoring the compaction of asphalt and cold in-place recycling to peak properties to prevent wasted effort and damaging over-compaction. The GeoGauge compliments and provides alternative to resilient modulus, Falling Weight Deflectometer, field California Bearing Ratio, plate load test, dynamic cone penetrometer and other measures of strength, stiffness, modulus and deflection.

Stiffness:

A layer's resistance to deflection. (structural property)

Young's modulus:

A material's resistance to change in shape in direction of stress. (material property)



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