SOIL

Universal Multispeed Load Frame, 50 kN



The Universal Multispeed Load Frame – 50 kN is a high-performance, servo-controlled electromechanical testing system designed to perform a wide range of geotechnical and pavement material tests using a single versatile platform. Engineered for both routine quality control and advanced research laboratories, the machine is suitable for applications including California Bearing Ratio (CBR), Marshall Stability and Flow, Unconfined Compression, Quick Triaxial, and Indirect Tensile (Marshall Splitting) tests. Its universal design eliminates the need for multiple dedicated testing machines, providing a cost-effective and efficient solution for modern laboratories.

The machine features a robust two-column load frame with an adjustable upper crosshead, ensuring excellent rigidity and precise alignment throughout the testing process. Load is applied by a precision electromechanical actuator with a maximum capacity of 50 kN, controlled through a closed-loop servo system that delivers smooth, accurate, and highly repeatable loading. The programmable loading speed can be adjusted from 0.00001 to 51.00000 mm/min, enabling the machine to satisfy the requirements of numerous international testing standards and specialized laboratory procedures.

The measurement system incorporates a 50 kN high-accuracy load cell mounted on the upper crosshead and a 25 mm travel LVDT displacement transducer, providing precise measurement of load and displacement throughout the test. An integrated LCD data acquisition and control system continuously displays load, displacement, test speed, and test progress in real time, ensuring reliable data collection and simplified operation. The machine also features motorized platen positioning with convenient front-panel controls, allowing rapid specimen setup and improved laboratory productivity.

Thanks to its flexible loading speed range, the Universal Multispeed Load Frame is capable for Unconfined Compression Tests at 0.635 mm/min, CBR Tests at 1.00 mm/min or 1.27 mm/min, Marshall Stability Tests at 50.8 mm/min, as well as user-programmable loading rates for Quick Triaxial and other specialized applications. Different test fixtures can be installed quickly, allowing laboratories to perform multiple testing methods on the same machine without requiring mechanical modifications.

Manufactured to meet the demanding requirements of geotechnical, civil engineering, asphalt, and construction materials laboratories, the Universal Multispeed Load Frame complies with the relevant ASTM, EN, BS, and AASHTO standards, depending on the selected test configuration. Combining high measurement accuracy, excellent repeatability, and a rugged mechanical design, it offers a reliable and long-lasting solution for professional laboratories requiring versatile material testing equipment.

Related Standards

EN 12697-34, ASTM D1559, D5581, D6927, EN 13286-47, CNR UNI 10009, ASTM D1883, BS 1377, NF P94-078, AASHTO T193, ASTM D2166

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