

H-Ometer™ Strength Measuring Device for Weak Rock and Hard Soil**Award Winner**

H-Ometer is a new device to measure the indirect tensile strength of weak rock and hard soil. The device is a cylindrical probe with an expendable flexible membrane design to apply a uniform pressure to the walls of a cavity, such as borehole. There is no need to cut core specimen to a particular shape for H-Ometer testing, making it an attractive option for weakly bonded rocks and hard soils. It is only necessary to pre-drill a small hole so that the H-Ometer can be inserted. The H-Ometer is then inflated using a suitable fluid (usually de-aired water) until the specimen fails, while volume and pressure are monitored.

The H-Ometer is a hollow steel tube 12mm in diameter, open at one end with a hole in the mid portion of the curve surface, and 50mm in length. A membrane encloses the central portion of H-Ometer, is attached at either end with special clips. Membrane calibration is achieved by inflating the membrane in air, with the H-Ometer placed up right. New membranes are inflated and deflated several times prior to calibration. Line calibration is achieved by inflating the membrane inside a thick wall steel cylinder. The thickness of the membrane is 1.0mm.

*H-Ometer™*

The H-Ometer is mainly for use in civil engineering especially in Geotechnical and Geological Engineering. The device also costs significantly less than other indirect tensile equipment. It is small and compact, and easy to handle. The H-Ometer is also easy to install, comes with customer service and technical support and is user friendly. The H-Ometer is in the process of commercialization and has been granted a patent by USPTO with patent No. 6,560,550 in May 2003 and is Malaysia patent-pending (PI 20001081).

The H-Ometer provides a useful method for testing extremely weak rock materials and hard soils. The method is robust with respect to the details of equipment design and sample size within the limits investigated.

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