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## **GE Protimeter**

*Ashworth Instrumentation Division*



**Speedy® moisture testers for soils, sands, powders, aggregates, concrete and masonry**

## Speedy® Moisture Tester

Speedy moisture testers from Ashworth Instrumentation are used throughout the world by a diverse range of industries to measure the moisture content of materials including soils, aggregates, concrete, sand and powders. Principal users include geotechnical engineers on civil engineering projects, building surveyors and restorers. Other substantial user groups include mining, steel production, foundries and ceramics.



## Operating Principle

The Speedy tester is a portable system comprising a vessel with an integral pressure gauge, a weighing scale and a carry case. A small sample of the material is prepared, weighed and placed into the vessel. A reagent is then added and the vessel is sealed and shaken to mix the reagent with the sample. Free moisture within the sample reacts with the reagent to produce a gas and pressure rise within the vessel that is proportional to the amount of moisture. The moisture content value is then read directly from the calibrated pressure gauge.



## Speedy® User Benefits

When compared with other moisture measurement systems, the Speedy tester is often the most practical solution, especially when working in the field.

- Accurate and simple to use
- Robust and reliable
- Portable and requires no external power source
- Versatile - many materials can be measured over a wide moisture content range

## Speedy® 2000 Series Test Procedure

The Speedy 2000 series of moisture testers combines time proven dependability of the pressure test procedure with the convenience of an electronic balance.



Moisture measurements are obtained by following a simple test procedure:

- Prepare and weigh the material sample using the electronic balance
- Place the sample in the Speedy vessel
- Add the reagent to the recess in the Speedy cap and seal the vessel
- Shake the Speedy to mix the reagent with the sample
- Read the moisture content directly from the integral gauge

## Speedy® Series Components

All the component parts of the Speedy 2000 series have been selected for their quality, functionality and durability for use in demanding field or site locations.



- Speedy vessel manufactured from cast aluminium and fitted with a calibrated pressure gauge
- Electronic balance with large scale pad
- Comprehensive user instructions
- Waterproof and shockproof carry case with high density foam insert

A pressure gauge with a moisture measurement range of 0 - 20% is fitted as standard to both the Large and Small vessels, but gauges with both wider and narrower moisture ranges are available.



Standard Size Speedy

## ***Roads and Highways***

Knowledge of the moisture content of soil is crucial throughout geotechnical engineering practice. Engineers use the Speedy for field control of compacted earth embankments and other structures and to measure the water content of soil to ensure it is within specified ranges.



Confidence in the test results is crucial, but the test equipment also has to be robust and simple to use. The Speedy tester meets both of these requirements. It is recommended by the American Highway Authority and is approved by the American Society of State Highway Transportation Officials (ASSHTO) and by the American Society for Testing and Materials (ASTM).

## ***Aggregates, Sand and Concrete***

The moisture content of freshly mixed concrete affects the workability, blending, segregation, strength and drying rate of the finished product. The Speedy tester is an ideal on-site quality control tool that enables the site manager to ensure best practice is being followed.

Moisture levels of aggregates and sand can be checked prior to use to ensure that the correct amount of water is added when mixing



with cement. The moisture content of ready-mix concrete can be checked on site arrival to ensure it is within specification.

## ***Building Restoration and Refurbishment***

Building surveyors involved with diagnosing the cause of dampness in buildings use the Speedy tester to determine the moisture level in walls and floors. The Speedy complements moisture meters and hygrometers that are also used for diagnosis.



If the structure under investigation is contaminated with conductive hygroscopic salts, moisture meter readings may not truly reflect the moisture condition. Ambiguity that may be associated with interpreting moisture meter readings in contaminated material are reduced by also measuring the actual moisture content of wall or floor samples with the Speedy tester and by using a hygrometer to measure the material's equilibrium relative humidity (ERH).

The Building Research Establishment Digest 245 details how a Speedy tester is used in the context of rising dampness diagnosis and treatment.

## ***Solid Floors***



If moisture-related floor failures are to be avoided, concrete floor slabs, cementitious screeds and anhydrite screeds have to be in a dry condition

before decorative floor finishes, including wood, vinyl and carpet are laid.

Many countries have adopted floor testing standards that use ERH measurement techniques whilst others use the DIN18365 standard which specifies moisture content measurement techniques. The Speedy tester is used to measure the moisture content of a sample of material removed from the floor before the decorative finish is laid.

## Speedy 2000 Series Specification

Series	L2000	S2000
		
Scope of supply (Note that the calcium carbide reagent that is used with the Speedy testers must be ordered separately)	Large Speedy vessel fitted with calibrated pressure gauge, electronic balance, heavy duty carry case with fitted foam inserts, cleaning brush and cloth, two steel sample-pulverising balls, measuring scoop, instructions	Standard Speedy vessel fitted with calibrated pressure gauge, electronic balance, heavy duty carry case with fitted foam inserts, cleaning brush and cloth, measuring scoop, instructions
Nominal gross weight	6kg	5.5kg
Nominal gross dimensions	51 x 38 x 20 cm	51 x 38 x 20 cm
Moisture measurement range expressed as a percentage of the wet weight of the sample.	0 - 20 % (standard) 0 - 10 % (option) 0 - 50 % (option)	0 - 20 % (standard) 0 - 5 % (option) 0 - 10 % (option)
Sample weight	For 0 - 20 %mc range : 20g For 0 - 10 %mc range : 40g For 0 - 50 %mc range : 8g	For 0 - 20 %mc range : 6g For 0 - 5 %mc range : 10g For 0 - 10 %mc range : 12g
Maximum sample size	20mm	10mm

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