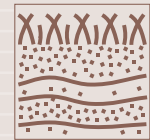


WATER INFILTRATION MEASUREMENTS

You will return to the contents of P1 SOIL by clicking the pictogram



The measure of infiltration of water into the soil is an important indication concerning: the efficiency of irrigation and drainage, optimizing the availability of water for plants, improving the yield of crops and minimizing erosion.

09.04 Double ring infiltrometer

The double ring infiltrometer is a simple instrument that is used to determine the rate of infiltration of water into the soil.

The rate of infiltration is determined as the amount of water per surface area and time unit, that penetrates the soil. This rate can be calculated on the basis of the measuring results and the Law of Darcy.

The standard set of the double ring infiltrometer consists of a number of sets of stainless steel rings with different diameters (for reasons of transportation).

Several measurements can be executed simultaneously, yielding a very reliable and accurate mean result. As vertically infiltrated water runs away to the sides, the outer ring of the infiltrometer serves as a separation. The measurements exclusively take place in the inner ring through which the water runs virtually vertical.

To achieve good measuring results it is important to take into account several factors that may influence the measurement: the surface vegetation, the extent to which the soil has been compacted, the soil moisture content and the soil layers (strata). The best measuring results are obtained at 'field capacity' of the soil.

The ring infiltrometer may be used for determining the rate of infiltration and capacity for irrigation and drainage projects, studying drainage, determining the intensity of artificial precipitation and the effect of treatment of the soil.



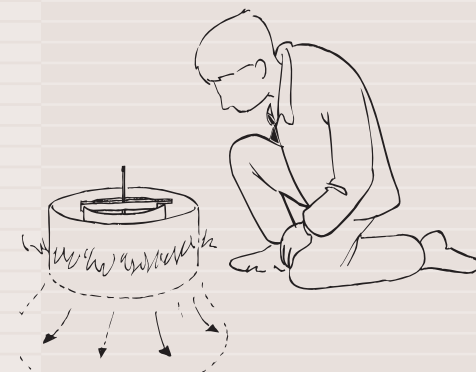
Double ring infiltrometer, complete set

P1.61

The inner- and outer ring are driven a number of centimeters into the soil by means of a driving plate and an impact absorbing hammer.



Because the inner- as well as the outer ring are filled with water, the water flows virtually vertically through the inner ring into the soil.



BENEFITS

09.04 Double ring infiltrometer

- Ideal for infiltration measurement of top soils
- Perfect for flood / furrow irrigation advice
- Triple rings to get a representative average
- Stainless steel rings will last forever



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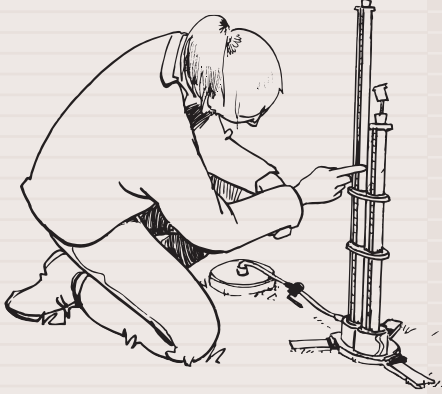


You will return to the contents of P1 SOIL by clicking the pictogram

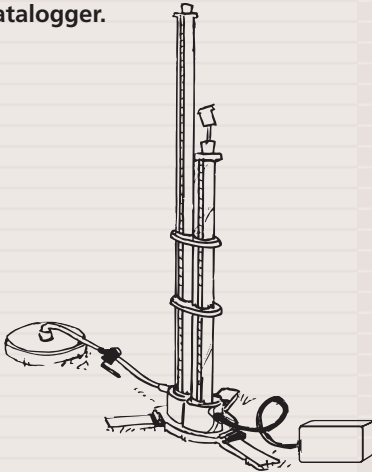
WATER INFILTRATION MEASUREMENTS

P1.61

The flow rate is read directly from the water column.



The tension infiltrometer with pressure transducer is connected to a datalogger.



BENEFITS

09.09 Tension infiltrometer

- Measures unsaturated infiltration capacity
- Ideal for sprinkler irrigation advice
- Insensitive for root tunnels, insect borings
- Comes to an equilibrium quickly
- Intermediate sand for optimal soil contact
- Very limited soil surface alteration

09.09 Tension infiltrometer

The tension infiltrometer measures the hydraulic properties of unsaturated soil. Water held under tension infiltrates into a dry soil through a highly permeable nylon membrane.

The time dependent infiltration rate is used to calculate unsaturated hydraulic conductivities and related hydraulic properties. Infiltration rates are recorded manually.

With the pressure transducers, which can be connected to a datalogger, the rates can also be read electronically. The pressure transducers can be attached to the top and the bottom of the water reservoir.

The standard set contains:

A tension infiltrometer with separate base plate, a small hand-operated vacuum pump for use during calibration, a metal ring and spare nylon mesh screens. Pressure transducers and a datalogger are optional items (see P4.30).

Advantages

- ❑ Separate infiltration disc for greater stability.
- ❑ On site determination of hydraulic properties.
- ❑ Low volume of water.
- ❑ Three adjustable tension settings.
- ❑ Flow rates read directly from water column or with an optional tensimeter.
- ❑ Optional transducers and datalogger or tensi-recorder allow electronic data collection.
- ❑ Polycarbonate and plexi-glass materials.
- ❑ Replaceable nylon mesh screen membrane.



Tension infiltrometer, complete set



Art.no.	Description	Qty. in set	Art.no.	Description	Qty. in set
Water infiltration measurements (P1.61)					
	For measuring the water infiltration in the soil we provide two standard sets.				
09.04	Double ring infiltrometer, standard set for synchronic measuring in threefold				
**09.04.01.01	Infiltration ring, Ø 28 cm	1	**09.09.12	Cable 5 m, incl. calibration certificate	
**09.04.01.02	Infiltration ring, Ø 53 cm	1		Coupling part for transducer, for connection of transducer with tension infiltrometer	2
**09.04.02.01	Infiltration ring, Ø 30 cm	1	**09.09.16	CD-rom with software for datalogger type Datahog 2 1 (for use with tension infiltrometer). To configure the datalogger and to read out and process the measuring data with an IBM compatible PC. Software to be used with Windows 95/98/NT/ME/2000/XP	1
**09.04.02.02	Infiltration ring, Ø 55 cm	1			
**09.04.03.01	Infiltration ring, Ø 32 cm	1	**16.99.90.01	Basic set-up of measuring station with Datahog 2 datalogger with meteo mast: logger configuration, functional and life test, composition of logbook. Excl. connection of sensors	1
**09.04.03.02	Infiltration ring, Ø 57 cm	1			
**09.04.05	Driving plate for hammering in infiltration rings with Ø 28 to 57 cm	1	**16.99.90.02	Connection of various types of sensors to the Datahog datalogger. Incl. testing and coding. Per type of sensor	1
**09.04.06	Measuring bridge for ring infiltrometer, synthetic design	3	**16.99.90.03	Connection of more sensors (of 1 the same type) to the Datahog datalogger. Incl. testing and coding. A piece	1
**09.04.07	Float with measuring rod	4			
**09.04.09	Pull-out hook	2			
**09.01.09	Stopwatch, digital, measuring range 10 hours, incl. 1.5 Volt Penlite (AA) battery	1			
**04.05.05	Steel hammer with nylon heads, Ø 70 mm, 2 kg, impact absorbing design	1			
09.09	Tension infiltrometer for measuring hydraulic properties of unsaturated soil, complete standard set				
**09.09.01	Tension infiltrometer, supplied with 20 cm Ø infiltration plate (incl. nylon mesh screen)	1			
**09.09.03	Hand vacuum pump for use with tension infiltrometer during calibration	1			
**09.09.05	Metal ring, Ø 20 cm	1			
**09.09.07	Nylon mesh screen for 20 cm Ø infiltrometer	1			
	Optionally to be used with 09.09 set (for automatic data recording):				
09.09.20	Read-out unit for Tension infiltrometer, set consisting of: - Datahog 2, 2 channels - Transducers, 2 pcs. - Coupling parts, 2 pcs. - Software infiltrometer Win. - Configuration, building, testing				
**16.99.02	Datalogger model Datahog 2, with 2 input channels. Measuring interval between 10 s and 12 hours. Memory 8068 measurements/channel + date and time. Incl. RS232 cable. Power supply: alkaline batteries (excl. software)	1			
**09.09.11	Transducer for tension infiltrometer. Used for continuous measurements with datalogger. Elec. pressure transducer, range -100 - +700 hPa, output signal -10 - +70 mV +/- 3 mV.	2			