

# 4502 Double-Ring Infiltrometer

## INTRODUCTION

The infiltration rate of fine- or coarse-grained soils is valuable information when evaluating surface soils' potential for leaching, leakage, and drainage in geotechnical and environmental studies. The Double-Ring Infiltrometer is used to determine field infiltration rates by measuring the one-dimensional flow of a liquid through surface soil. The two Mariotte Tubes are used to maintain a constant head within the two rings in addition to measuring the volume of liquid needed to maintain that head for the duration of the test. The Double-Ring Infiltrometer meets ASTM D3385 specifications for determining the infiltration rate of soils in the field.

## UNPACKING

Package includes the following items:

- 12in Diameter Inner Ring with Fittings
- 24in Diameter Outer Ring with Fittings
- Driving Cap/Lid with Alignment Pins
- 3,000cc Mariotte Tube with Stand
- 10,000cc Mariotte Tube with Stand
- Two Rubber Splash Guards
- 30ft of 3/8in ID Clear Vinyl Tubing



**Model 4502**

## SET UP & OPERATING INSTRUCTIONS

1. Follow the ASTM D3385 procedure to select and prepare the test site.
2. Once the site has been prepared, install the two rings in a concentric pattern. Use the included driving cap, in addition to a wood block and mallet to drive the rings into the ground. The driving cap can also be used as a lid during long term tests to reduce loss of water due to evaporation.
3. Attach the threaded three-way valve to each Mariotte tube by screwing into the base of the aluminum tube. Then arrange the Mariotte Tubes and infiltrometer as shown in the test setup diagram on the following page. Connect the tubing from the Mariotte Tubes to the infiltrometer as shown. Applying a small amount of oil or grease to the tubing connections will aid the seating and removal of tubing.
4. Fill the Mariotte Tubes via the 3-position valve at the base of each Mariotte Tube. The bottom valve has three positions, fill, off, and water out. Open the valve on the top of the Mariotte Tube to vent while filling. Once filled, close the valves. See the following page for a detailed diagram of the Mariotte Tubes.

5. Once setup is finished, follow the ASTM D3385 procedure to complete the test. Control the inflow of water into each ring using the bottom valve at the base of each Mariotte Tube. The vent valve should remain closed during testing.

## PARTS & ACCESSORIES

4502-1	12in Diameter Inner Ring with Fittings
4502-2	24in Diameter Outer Ring with Fittings
4502-3	Driving Cap/Lid with Alignment Pins
4503	3,000cc Mariotte Tube
4510	10,000cc Mariotte Tube
4502-5	Set of Two Rubber Splash Guards
TUBPVC375ID	3/8in ID Clear Vinyl Tubing (by the foot)

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# Double Ring Infiltrometer with Mariotte Tubes

