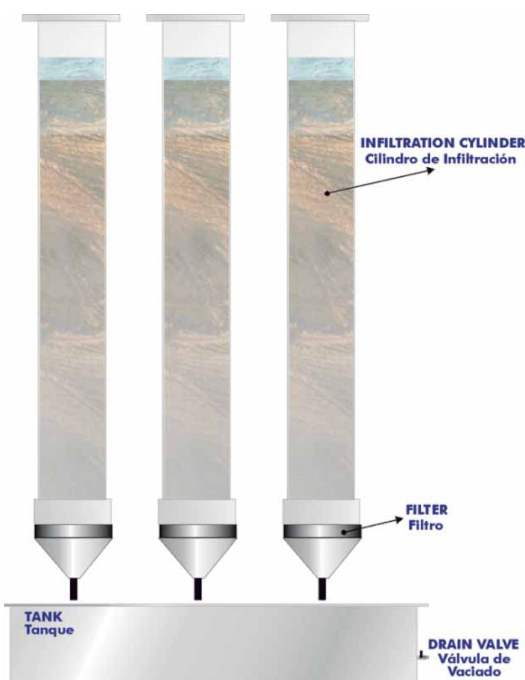




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Products
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Units
13.- Environment

PROCESS DIAGRAM AND UNIT ELEMENTS ALLOCATION



ISO 9000: Quality Management
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European Union Certificate
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Certificates ISO 14000 and
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(environmental management)



Worlddidac Quality Charter
Certificate
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INTRODUCTION

Infiltration is a process in which water enters the soil, generally by downward flow through all or part of the soil. An understanding of the processes and factors influencing infiltration is needed for effective soil and water management, particularly in the field of irrigation.

The rate at which water infiltrates into the soil is an important factor to be considered when designing an irrigation system. It varies from one soil to another, depending on the structure of the soil and moisture conditions.

Research work on infiltration rates is frequently carried out on undisturbed soils in the field, but this can involve complex techniques and a large investment of time, particularly as field demonstrations are difficult to replicate because the moisture content and structure of the soil will vary considerably through the year.

The Demonstration Infiltration Unit (PEDI) has been developed for the comparative study of infiltration processes in the laboratory, which are essential for the study of any form of irrigation. Water movement through the soil can be seen and measured and infiltration and penetration rates can be ascertained.

GENERAL DESCRIPTION

The Demonstration Infiltration Unit (PEDI) is a small scale unit designed to demonstrate infiltration processes and to understand the effects of soil texture and structure on infiltration and the effects of existing moisture conditions of the soil on infiltration.

The unit is mounted in an anodized aluminum structure with panels made of painted steel. This unit comprises three transparent graduated cylinders in which soil samples are placed. Water poured onto the soil surface can then be observed as it infiltrates the sample. Each cylinder features a graduated scale so that observations may be quantified. The cylinders have a permeable perforated plate at the bottom that retains the soil samples while allowing the water to drain through and facilitates drainage without undue soil loss.

Placed under the cylinders, there is a tank to collect the water and the smaller soil particles under study.

Water is poured onto the soil surface into each cylinder and its progress through the samples can be observed.

SPECIFICATIONS

This Demonstration Infiltration Unit (PEDI) is a self-contained unit suited for use as a teaching and demonstration unit of the infiltration processes.

Anodized aluminum structure and panels made of painted steel.

Main metallic elements made of stainless steel.

Diagram in the front panel with similar distribution to the elements in the real unit.

Three transparent graduated cylinders. These cylinders have a permeable perforated plate at the bottom, where a filter to disable the soil introduced to be swept by the water is placed.

A tank to collect the water and the smaller soil particles under study.

Manuals: This unit is supplied with the following manuals: Required Services, Assembly and Installation, Starting-up, Safety, Maintenance & Practices manuals.

EXERCISES AND PRACTICAL POSSIBILITIES TO BE DONE WITH MAIN ITEMS

- | | |
|--|---|
| 1.- Determination of the principles of the relationship between the type of soil and infiltration and penetration rates. | 7.- Study of the effect of non-homogeneous soil strata on infiltration and penetration rates. |
| 2.- Comparison of the cumulative infiltration, infiltration rate and penetration depth as a function of time in different types of soil. | 8.- Study of the effect of moisture content on the infiltration and penetration rate. |
| 3.- Study of the empirical equations as an approximation of infiltration rate. | 9.- Study of the effect of straw mulch on infiltration rate. |
| 4.- Visualization of the effect of crusting on infiltration. | 10.- Study of the effect of soil texture and structure on infiltration. |
| 5.- Visualization of the effect of soil particle size on infiltration. | 11.- Study of the effect of surface on infiltration. |
- Additional practical possibilities:
- 6.- Study of the effect of organic matter content on the infiltration and penetration rate.

REQUIRED SERVICES

- Water supply and drainage.
- Soil samples.

RECOMMENDED ACCESSORIES

- A chronometer to enable the speed of infiltration to be measured.
- A 2 mm sieve.

DIMENSIONS & WEIGHT

- Dimensions: 500 x 400 x 900mm. approx.
(19.68 x 15.75 x 35.43 inches approx.)
- Weight: 50 Kg. approx.
(110 pounds approx.)

*Specifications subject to change without previous notice, due to the convenience of improvements of the product.



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