



armfield

DRAINAGE AND SEEPAGE TANK

S1
issue 11



Practical demonstration and visualisation are essential elements of fluid flow study. This Drainage and Seepage Tank has been designed to allow students to make an experimental study of flow through permeable media.

PRACTICAL DEMONSTRATION AND VISUALISATION CAPABILITIES

- *Flow line visualisation*
- *Flow net construction*
- *Determining seepage rates*
- *Verification of Darcy's Law*
- *Comparison of experimental results with analytical solutions*

DESCRIPTION

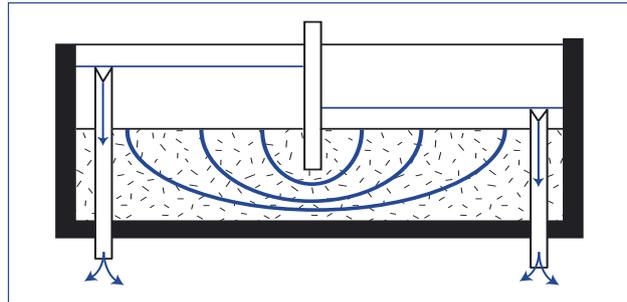
The bed of the tank is made from painted mild steel. The sides of the tank are supported and sealed by a well proven method which allows free access to the interior and results in minimum sight obstruction. One side is of toughened glass to give good scratch-free visibility over a long period of use while the other is made of aluminium which permits the insertion of pressure tapping points as required. The ends of the tank are made of steel plate.

Adjustable overflows are provided close to each end of the tank so that constant water levels may be maintained in each half of the tank. These may be lowered to a position close to the bed of the tank for some experiments to provide sub-soil drainage. The equipment is self-contained, requiring only an initial fill with cold water and connection to the electricity supply. The sump tank can be emptied to a laboratory drain.

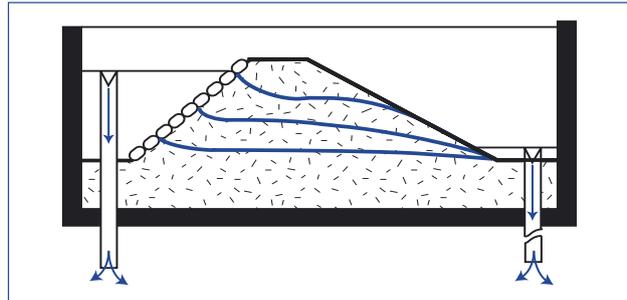
Typical student experiments include:

- Seepage underneath a sheet pile wall
- Seepage through an earth dam
- Control of seepage through permeable soils by sub-soil drainage
- Distribution of uplift pressure on hydraulic structures
- Reducing uplift pressure and lateral thrust by drainage
- Formation and behaviour of 'Quicksand'
- Stability of an earth dam
- Draining an excavation site using wells

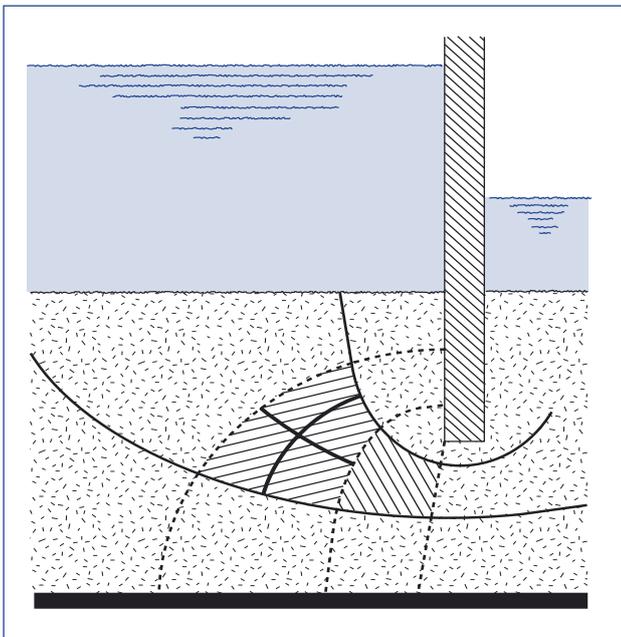
Note that the tank is supplied without sand. (0.1m³ is required of washed, narrow range sand (coarse) with no fraction finer than 0.5mm)



Seepage under a sheet pile wall



Seepage through an earth dam



Determination of flow nets

Specifications may change without notice.

iss11/5k/0505/BCP.

BASIC ACCESSORIES

- Foundation pressure plate
- Straight permeable membrane
- Curved permeable membrane
- Lateral pressure plate
- Tile drain

ORDERING SPECIFICATION

- A self-contained facility for study of flow through permeable media.
- The tank has a toughened glass front and aluminium back to permit the insertion of pressure tappings as required. Six tapping points are provided.
- The design of the side supports allows free access to the interior with minimum sight obstruction.
- Supply includes sump tank, pump, starter and control valve. Also a dye injection system and a selection of models.
- Comprehensive instruction manual with data sheets and student experiments.
- Working section 1500mm x 100mm x 600mm.

SERVICES REQUIRED

Electricity supply:

- S1-A: 220/240V/1PH/50Hz@1Amp
- S1-B: 120V/1PH/60Hz@2Amps
- S1-G: 220V/1PH/60Hz@1Amp

OVERALL DIMENSIONS

Length: 1.60m
 Width: 0.60m
 Height: 1.45m

SHIPPING SPECIFICATION

Volume: 2.4m³
 Gross weight: 270kg

Armfield Limited
 Bridge House, West Street, Ringwood,
 Hampshire BH24 1DY, England

Tel: +44 (0)1425 478781 Fax: +44 (0)1425 470916
 E mail: sales@armfield.co.uk
 URL: <http://www.armfield.co.uk>

USA Office:
 Armfield Inc.

436 West Commodore Blvd (#2)
 Jackson NJ 08527

Tel: (732) 928-3332 Fax: (732) 928-3542
 E mail: info@armfieldinc.com