

**W
SERIES**

The Armfield Filterability Apparatus enables a water quality test to be made on a suspension to be filtered through sand or similar granular media.

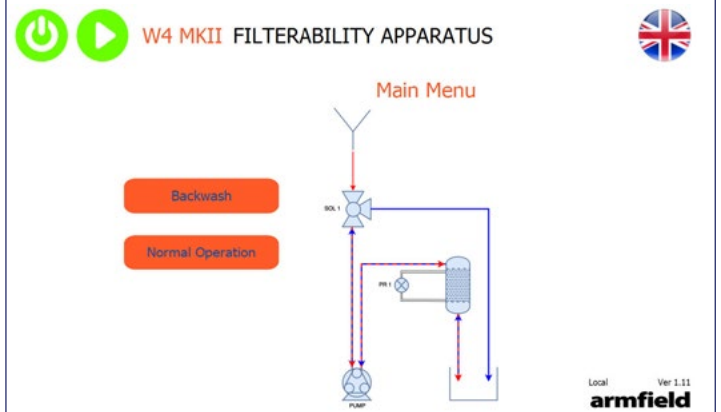
As well as for student teaching, it can be used in routine control at waterworks, or at a sewage treatment works that employs tertiary filtration.



FILTERABILITY APPARATUS – W4MKII

**UNIVERSAL SINGLE-WIRE INTERFACE
DATA LOGGING AND CONTROL SOFTWARE
ELECTRONIC PRESSURE SENSOR**

Software screen shot



armBUS ports and USB connection



W4MKII sample tube



Description

The Filterability Apparatus utilises a bed of granular material, which can be chosen by the investigator to suit their own purposes.

The measurements taken with this apparatus enable a filterability number to be calculated, which has significance in deep-bed filter performance. For example, the effects of changing pre-treatment dosing can be evaluated before making changes on the operating plant.

Solenoid valves enables the operator to select the direction of flow through the granular bed. At the base of the column is a sieve mesh to retain the granular media. Wastewater can either flow downward via gravity from the funnel into the column to demonstrate filterability or via a pump to demonstrate head loss characteristics using an electronic pressure sensor.

The new W4-MkII also enables backwashing of the granular bed using the pump. All tubing connections are transparent to enable operations to be observed and air bubbles avoided.

Learning objectives

- ▶ Basic principles of filter operation for research
- ▶ Preliminary assessment of pre-treatment processes and filter media
- ▶ Calculation of filterability index number from measurements taken
- ▶ Measurement of filterability of a given suspension

Optional accessories

- ▶ Triple beam balance with 0.1g sensitivity (Ordering code: INST059)

Requirements

Scale



- ▶ **Electrical supply:** supplied with a universal mains adaptor suitable for 100-240V / 1ph / 50-60Hz
- ▶ Software requires a computer running Windows XP or above with a USB port (computer not supplied by Armfield)

Technical details

Sample tube I/D	0.038mm
Sample tube length	0.60mm
Pump operating range	0-100 L/hr
Solenoid valves	1
Differential pressure sensor	0-1 psi

Overall dimensions

Length	0.43m
Width	0.38m
Height	0.97m

Packed and created shipping specifications

Volume	1.5m ³
Gross weight	15Kg

Features / benefits

- ▶ Metal framework with transparent test section for observation
- ▶ Electronic control and data logging via PC
- ▶ Self-contained
- ▶ Pump to enable constant flowrate and backwashing
- ▶ Operational manual with teaching exercises
- ▶ Universal single wire interface for control and data logging
- ▶ Digital timer
- ▶ Thermometer
- ▶ 1L glass beaker

Software

The ArmBUS software enables the operator to select the appropriate stage of the process and a mimic diagram with measured variables is displayed. The speed of the pump can be varied to meet the required flow rate.

Results are saved in a log, which can be viewed and manipulated with the ArmBUS results viewer. Results can be printed or exported in a spreadsheet format, which can be opened in a wide range of packages for further analysis.



Ordering specification

- ▶ Equipment consists of a metal framework supporting a 1.5L vessel connected by transparent tubing to a 60mm-high test filter cell
- ▶ Peristaltic pump
- ▶ Electronic Pressure Sensor
- ▶ 1L collecting beaker
- ▶ Digital LCD timer
- ▶ Thermometer
- ▶ Solenoid Valve
- ▶ Software for control and data logging
- ▶ Results viewer software for analysing data
- ▶ Operational manual with teaching exercises

Ordering codes

- ▶ W4-MkII
- ▶ INST059 (optional)

Warranty

Armfield standard warranty applies with this product

Knowledge base

- > 28 years' expertise in research & development technology
- > 50 years' providing engaging engineering teaching equipment

Benefit from our experience, just call or email to discuss your laboratory needs, latest project or application.

An ISO 9001:2015 Company



armfield.co.uk

Aftercare

Installation
Commissioning
Training
Service and maintenance
Support: armfieldassist.com