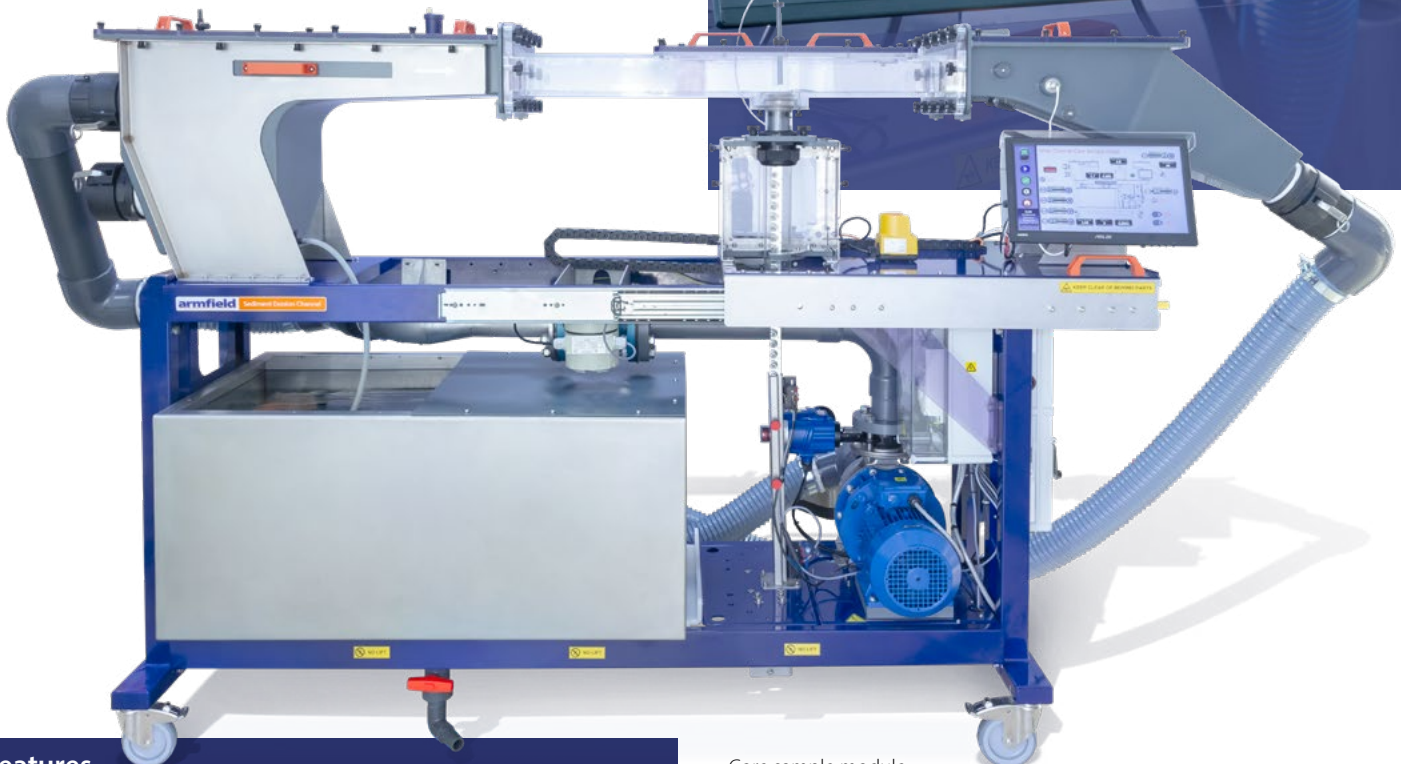
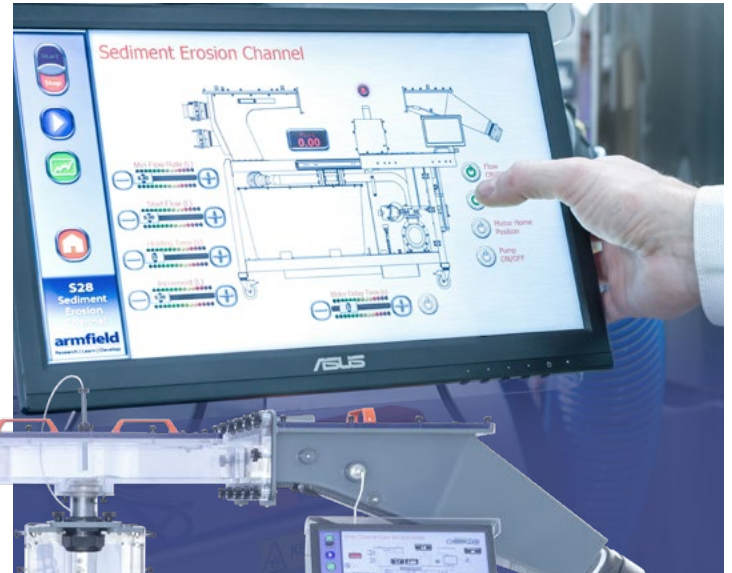


**Armfield S28 Sediment Erosion Flume is a multipurpose research tool developed to enable investigations into the erosion, transportation and sedimentation of cohesive particles in piped networks and natural systems.**

The recirculation-style flume uses a set of interchangeable channel sections that allow a broad range of experimental capabilities. Test medium can be in the form of core samples, general soil or vegetation samples.

The flume has been developed to generate variable flow across a range of shear stresses, fully automated and precisely incremented to accurately determine erosion thresholds for poorly consolidated sediment (e.g. silty mud) through to consolidated heavy clay-like soils.

**A MULTIPURPOSE RESEARCH FLUME THAT ENABLES INVESTIGATIONS INTO EROSION, TRANSPORTATION AND SEDIMENTATION OF COHESIVE PARTICLES IN PIPED NETWORKS AND NATURAL SYSTEMS.**



**Features**

**Core sample mode, low velocity (poorly consolidated material):**

Precise analysis, monitoring and data recording of core sample material, indexed directly into a user-defined flow regime of 0.027-1.3m/s.

**Core sample mode, high velocity (cohesive material):**

Precise analysis, monitoring and data recording of core sample material, indexed directly into a user-defined flow regime of 0.05 – 3.4m/s.

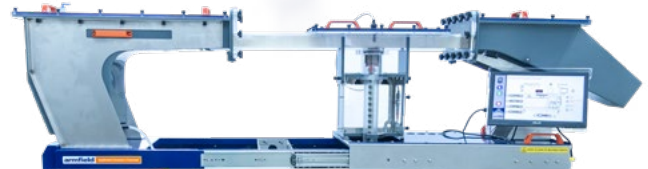
**Erosion studies module wide (300mm wide):**

Enabling experimentations into soil and vegetation, such as cover crop analysis, at variable flow and water depths for velocities ranging between 0.01 – 0.6m/s.

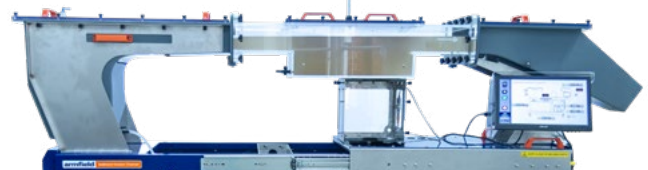
**Erosion studies module narrow (105mm wide):**

Enables test velocities of 0.05-3.4m/s.

Core sample module



Erosion studies module



## Description

A fully automated design, the flume uses controlled systems to regulate flow discharges and velocities, entry conditions based on attributes of the flow (i.e. suspended sediment concentrations or sediment/soil bed, e.g. core surface), and to establish erosion testing routines.

Core sample material is electromechanically indexed directly into the water flow, coupled with sensory feedback.

The flume is capable of being run either partially full of water, recreating shallow water flow over a surface, to completely full of water for sediment erosion testing or for sediment loads / concentrations.

The flume includes all equipment and instrumentation required to generate, monitor and control water flow & suspended sediment concentrations, and for the core test section module, sediment levels in the core tube.

The system is designed to be fully transportable for use in different laboratories and has the capability of being trailer-mounted for use in the field.

To enable a broad range of experimental options, test sections are interchangeable. Specialised test section modules include:

- ▶ Sediment Core Module (150 x 75mm Section) (supplied as standard)
- ▶ Wide Erosion Studies Module (300 x 100mm Section) + Bridge Insert (option)
- ▶ Narrow Erosion Studies Module (150 x 50mm Section) + Bridge Insert (option)
- ▶ Sediment Core Module (105 x 50mm Section) (option)

## Requirements

## Scale



### Electrical supply:

- ▶ 100-240V/1 Phase, 50-60Hz 16A

## Technical specifications

Max Flow Rate:	18l/s
Max core length:	450mm
Standard core OD/ID:	65/55mm

## Overall dimensions of main unit only

(assembled working size approx 5 x 5 x 2m with supply hoses)

Length	2.0m
Width	0.75m
Height	1.65m

## Packed and created shipping specifications (TBC)

Length	2.2m
Width	1.1m
Height	2.0m
Volume	4.84m <sup>3</sup>
Weight	300Kg

## Demonstration / Instructional Capabilities

- ▶ Sediment based Studies
- ▶ Velocity for erosion of core samples and loose material
- ▶ Predicting erosion with varying water depth, of cohesive and poorly consolidated sediment
- ▶ Effect of cover crops for erosion control

## Benefits

- ▶ Multiple test configuration modes
- ▶ Precise control of water flow and depth while monitoring and logging all test variables
- ▶ Automatic monitoring of core sediment levels
- ▶ Variable weir to control depth of water
- ▶ Mobile to enable site studies
- ▶ Can be connected to additional water storage and settling tanks

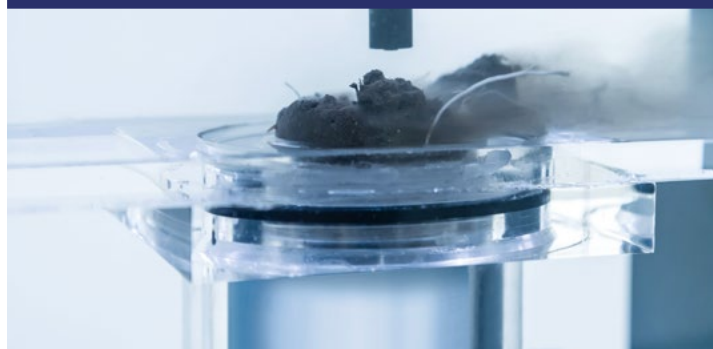


Organics Erosion Module

## Core sample mode



## Core sample erosion



## Knowledge base

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

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