

**Introduction:-**

- Sedimentation is the separation of a suspension into a clarified fluid and a more concentrated suspension (sludge). This is designed to demonstrate the hydraulic characteristics and settling efficiencies of a model settling basin. Relevant deductions can be made as to how non-uniform flows occur, and how these interact with the settling characteristics of suspensions
- Water is taken from the laboratory mains supply and is fed to the settling tank via a flow meter. For studies of sedimentation, slurry is prepared in a sump tank and pumped via a specially designed flow meter to join the fresh water stream just before entry to the settling tank. Well-mixed slurry of known concentration and flow enters the tank uniformly under the inlet weir. This may be comparatively analysed by using Armfield sedimentation studies apparatus (W2-MKII) or the Imhoff cone technique. The sump tank is continually agitated by a flow sparging device to prevent settling of solids during an experiment. For hydraulic tracer and visualisation studies, an accurate dye injection system is provided. A known volume of dye solution is injected just before the entry to the settling tank

Features:

- Metal framework with clear sedimentation tank
- Flow sparge device in the tank to keep slurry in suspension
- Operational manual with teaching exercises

Scope of learning :

- Measuring flow short circuiting and dead space using a tracer
- Comparison of real flow regimes with idealised flow models
- Effect of flowrate and baffle position on dispersion
- Measuring sediment removal efficiencies and relating these to hydraulic characteristics
- Effect of solid concentration on separation efficiency
- Use of the Imhoff cones for analysis

Note: Specifications are subject to change, Photos shown above are Indicative, Actual Product can Vary.



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Technical Specifications :

- Sedimentation tank : 97L
- Acrylic settling tank : 1.05m x 0.35m x 0.2m
- Feed tank capacity : 120L
- Sediment flowmeter range : 0 – 2 L/min
- Water flowmeter range : 0.5 – 5 L/min
- Pump flow rate : 60 L/min @ 15m head

Utility Required :

- Electrical supply : 220-240V /1 ph / 50Hz
- Calorimeter covering Wavelengths 450mm to 700mm (not supplied) or handheld turbidity meter
- Water supply: 5L/min @ 1 bar

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