

REYNOLD'S APPARATUS (EE-1530)

The apparatus consists of a glass tube with one end having bell mouth entrance, connected to a constant head water tank, at the other end a valve is provided to vary the flow rate. The tank is of sufficient capacity to store water. A capillary tube is introduced centrally in the bell mouth for feeding dye from a small container placed at the top of tank, through polythene tubing. By varying the rate of flow, the Reynold's number is changed. This also changed the type of flow. Visual observation of dye (Thread) will indicate the type of flow, which can be confirmed from the Reynold's number computed.

Present setup is self contained water re-circulating unit, provided with a sump tank and a centrifugal pump etc. Flow control valve and by pass valve are fitted in water line. Flow rate of water is measured with the help of measuring cylinder and stop watch.

SCOPE OF EXPERIMENTATIONS:

- To determine the Reynold's number and hence the type of flow either laminar or turbulent.
- To study transition zone.

UTILITIES DETAILS:

- Water Supply.
- Drain.
- Electricity: 0.3 Kw 220 V AC. Single Phase.
- Floor Area 1.5 x 0.75 m.



TECHNICAL DETAILS:

- Tube : Material Borosilicate Glass.
- Dye vessel : Material Stainless Steel, Suitable Capacity
- Capillary Tube : Material Copper/Stainless Steel.
- Constant Head Water Tank : Capacity 40 Ltrs.
- Water Circulation : FHP Pump
- Flow Measurement : Using Measuring Cylinder.
- Sump Tank : Capacity 60 Ltrs.
- Stop Watch : Electronic.
- Control Panel Comprises of :
Standard make On/Off Switch, Main Indicator, etc.
- Tank will be made of Stainless Steel.
- The whole setup is well designed and arranged in a good quality painted structure.