

# LABORATORY EQUIPMENTS

## "BALLY" penetrometer with 6 stations

## **DESCRIPTION:**

### Principle:

The specimen (any boot or shoe upper leather) is flexed in a manner simulating conditions of wear. Measurements are made of the following quantities:

**A)** The duration of flexing which is just sufficient to cause water to penetrate through the sample from one face to the other ;

**B)** The percentage gain of weight of the specimen due to water absorption during one or more specified time intervals from the beginning of flexing ;

**C)** The mass of water which is transmitted through from one face to the other during one or more specified time intervals.

#### The apparatus comprises the following:

. Six pairs of cylinders 30.0 mm diameter, made of inert, rigid material which is an electrical insulator.

. An electric motor which drives the movable cylinder backwards and forwards along its axis with crank motion at 50 cycles per minute.

. Four amplitudes of the crank motion can be selected, such that the length of the trough is reduced by: 5%; 7.5%; 10% or 15% when the cylinders approach one another.

. Ring shaped clamps to clamp the longer edges of the specimen round the adjacent end of the cylinders so that the leather forms a trough whose ends are closed by the cylinders.

. A tank containing distilled water, in which the trough shaped specimen can be immersed.

. An electrically operated device which provides a signal to indicate when penetration of water through the specimen has occurred.

. Partial counters (one for each test station).

. A digital timer.

