

1.103 CIVIL ENGINEERING MATERIALS LABORATORY (1-2-3)

DIRECT SHEAR TESTING AND FRICTIONAL PROPERTIES

DATA SHEET (1 of 1)

DATE 3/15/04 All dimensions in mm Group No. A2

<u>Measurement Device</u>	<u>Shear Force</u>	<u>Vertical Disp.</u>	<u>Shear Disp.</u>
<i>Calibration Factor</i>	<u>7240 kg/(v/v)</u>	<u>2.432 cm/(v/v)</u>	<u>2.094 cm/(v/v)</u>
<i>DAQ Channel</i>	<u>0(G100) & 1</u>	<u>3</u>	<u>2</u>
<i>Input Voltage</i>	<u>5.793</u>	<u>5.493</u>	<u>5.493</u>

Shear Box Measurements

Mass of Top Half of Box 1.420 kg Mass of Top Cap for Glass 1.079 kg
Mass of Top Cap for Sand 0.45 kg Mass of Load Hanger 13.5 lbs
Depth of Empty Box (with plates) 40.07 , 39.66 , 39.64 , 39.72
Plan Dimensions of Box 59.69 , 59.96 By 59.96 , 59.69
Volume of Plate Grooves: Number 15 ; Height 1.53 ; Width 3.32 (opening)

Minimum Density Measurements

Mass of Empty Cup 0.00 Mass of Cup with Distilled Water n/a
Diameter of Cup 41.12 , 41.06 Depth of Cup 72.54 , 72.54
Mass of Cup and Sand 135.34 , 135.34 , 135.34 , 135.34

Test Description Dense Tocino Sand File Name A2dense
Depth at start of shear 17.8 , 18.02 , 16.24 , 15.45
Depth at end of shear 21.12 , 20.8 , 15.81 , 15.58
Zero V-LVDT 0.00 Applied Load 20 kg Preshear V LVDT 0.00
Mass of Bowl 0.00 Mass of Bowl and Sand 149.06 gm

Test Description Loose Tocino Sand File Name A2loose
Depth at start of shear 17.97 , 17.69 , 16.65 , 17.01
Depth at end of shear 19.59 , 18.69 , 17.94 , 17.01
Zero V-LVDT 0.00 Applied Load 40 kg Preshear V LVDT 0.00
Mass of Bowl 0.00 Mass of Bowl and Sand 139.9 gm