

Measurement device	Shear Force	Vertical disp	Shear Disp
Calibration F	7240 kg/v/v	2.432 cm/v/v	2.094 cm/v/v
DAQ Channel	0 (gain 100) 1 (gain 1)	3 (gain 1)	2 (gain 1)
Input Voltage	5.392 V	5.392 V	5.392 V

#### Minimum density measurements

Mass of cup and sand = 136.7 g

#### Test Loading of 17.5 kg

Weight of sand in box after loading=156.6g

Htp before loading= 13.22mm, 13.51mm, 13.70mm, 13.71mm

Htp after load was applied, but before shearing= 14.49mm, 14.53mm, 13.95mm

Htp after load and shear were applied= 16.86mm, 16.01mm, 14.20mm, 14.23mm

#### Test Loading of 27.5 kg

Weight of sand in box after loading=150.03g

Htp before loading= 14.18mm, 13.01mm, 12.98mm, 13.32mm

Htp after loading, before shearing= 15.46mm, 14.50mm, 13.50mm

Htp after loading, after shearing= 16.34mm, 15.09mm, 13.42mm