

Lab 3

To determine the relationshi between shear load and shear strain  
 $G = (\text{Shear stress})/(\text{Shear Strain})$

Observation	
Least Count (mm)	0.05
Length (L) mm	303
Thickness (t) mm	26.1
Width (W) mm	103.1
Area (L*t)	7908.3

Serial No	Mass (kg)	Load (N)	Shear Deformation			Angle of Distortion= change in width/original width
			Deflection Upon Loading (mm)	Deflection Upon Unloading (mm)	Mean (mm)	
1	0	0	0		0.3	0.15
2	5	49	0.7		0.11	0.405
3	10	98	0.15		0.18	0.165
4	12	117.6	0.19		0.19	0.19

$$\gamma = \left( \frac{\delta l}{\delta w} \right) = \frac{Mean}{Width}$$

$$\tau = \frac{F}{A}$$

$$G = \frac{\tau}{\gamma}$$

Shear stress=(force/Area)	Modulus of Rigidity=Shear Stress/ Angle of Distortion
0	0
3.93E-03	1.577308291
1.60E-03	7.743149794
1.84E-03	8.069177154

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