

CE3105 Mechanics of Fluids Laboratory, Department of Civil Engineering, Texas Tech University

Experiment: Forces on Plane Surfaces, Archimedes' Principle - Data Sheet

Date of Experiment:	
Name:	
Temperature of water, T= 19 Celsius	Water density, $\rho =$
R3 = 200 mm , R2 = 200 mm, R1 = 100 mm	

Archimedes' Principle

Object	Water		ΔV	Volume of Object (measured)	Volume Calculated	Mass of Object	Submerged
	V (Initial)	V (Final)					
Asphalt 1	830 ml	860 ml				71.14 g	Yes
Asphalt 2	690 ml	720 ml				71.14 g	Yes
Wood 1	750 ml	760 ml		21.46 cm ³		10.12 g	No
Wood 2	640 ml	650 ml		21.46 cm ³		10.12 g	No
Concrete 1	13.0 * 153.94	14.4 * 153.94		196.35 cm ³		485.3 g	Yes
Concrete 2	13.5 * 153.94	14.8 * 153.94		196.35 cm ³		485.3 g	Yes

Forces on Plane Surfaces -Partially Submerged

Trial	Weight	h	b
Initial	347.5 g	144 mm	138 mm
1	367.5 g	138 mm	142 mm
2	387.5 g	135 mm	149 mm
3	407.5 g	129 mm	154 mm
4	427.5 g	125 mm	160 mm
5	447.5 g	120 mm	169 mm

Forces on Plane Surfaces -Fully Submerged

b= 180 mm

Trial	Weight	h
Initial	647.5 g	81 mm
1	677.5 g	78 mm
2	707.5 g	70 mm
3	737.5 g	66 mm
4	767.5 g	59 mm
5	797.5 g	52 mm