

## HIDROSTÁTICA

### Flotación y equilibrio

**PROBLEMA 2.38:** un cubo de lado  $A$  está flotando en agua (figura 2.99) e inmerso una profundidad  $H$ . Encuentre la relación  $H/A$  para que el cubo esté flotando en condiciones estables y determine su densidad relativa.

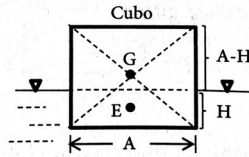
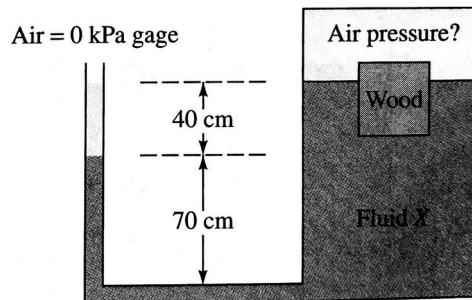


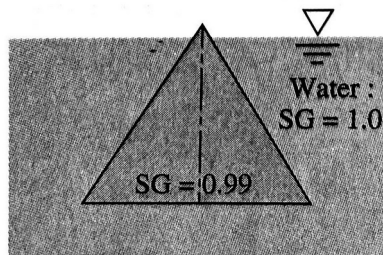
FIGURA 2.99 Cubo flotando

- P2.126** A block of wood ( $SG = 0.6$ ) floats in fluid  $X$  in Fig. P2.126 such that 75 percent of its volume is submerged in fluid  $X$ . Estimate the vacuum pressure of the air in the tank.



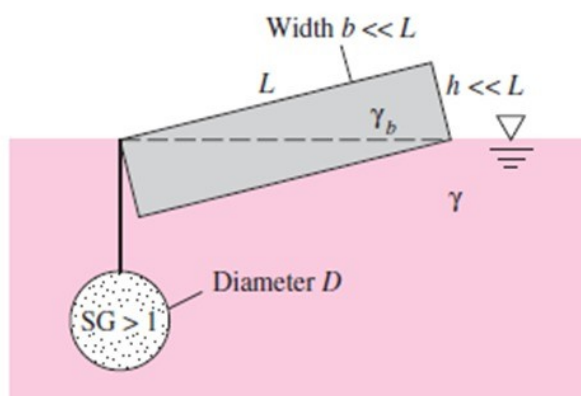
P2.126

- P2.132** A solid right circular cone has  $SG = 0.99$  and floats vertically as in Fig. P2.132. Is this a stable position for the cone?



P2.132

**P2.121** The uniform beam in Fig. P2.121, of size  $L$  by  $h$  by  $b$  and with specific weight  $\gamma_b$ , floats exactly on its diagonal when a heavy uniform sphere is tied to the left corner, as

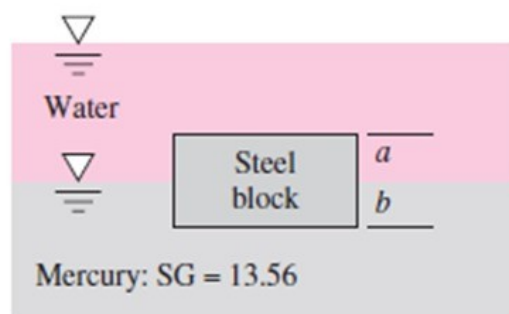


**P2.121**

shown. Show that this can happen only (a) when  $\gamma_b = \gamma/3$  and (b) when the sphere has size

$$D = \left[ \frac{Lhb}{\pi(SG - 1)} \right]^{1/3}$$

**P2.122** A uniform block of steel ( $SG = 7.85$ ) will “float” at a mercury–water interface as in Fig. P2.122. What is the ratio of the distances  $a$  and  $b$  for this condition?



**P2.122**