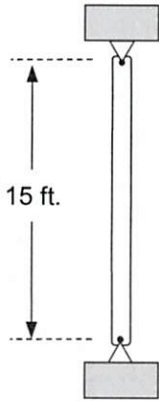


Classroom Problem 4.6-2: Select the lightest **W-shape** that can resist a service dead load of 100 k and a service live load of 250 k. The effective length is 15 ft. Use **A922** steel ($F_y = 50$ ksi).



FACTOR LOAD $P_u = 1.2D + 1.6L = 1.2(100^k) + 1.6(250^k) = 520^k$

FROM TABLE 4-1a $\phi_c P_n > 520^k$ WITH $L_c = 15$ ft

<u>SECTION</u>	<u>$\phi_c P_n$ (k)</u>
W8 x 67	523
W10 x 60	556
W12 x 58	525 ← LIGHTEST SECTION
W14 x 61	543

USE A W12 x 58