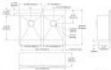


QUESTION 11

Refer to the figure below. The rectangular structure shown is a composite of two materials. The material on the left is steel and the material on the right is aluminum. The structure is subjected to a uniformly distributed load of 100 lb/ft acting vertically downward. The structure is supported by a pin support at the bottom left corner and a roller support at the bottom right corner. The structure is 10 ft long and 10 ft high. The steel portion is 5 ft wide and 10 ft high. The aluminum portion is 5 ft wide and 10 ft high. The modulus of elasticity of steel is $E_s = 29,000$ ksi and the modulus of elasticity of aluminum is $E_a = 10,000$ ksi. The moment of inertia of the steel portion is $I_s = 100$ in⁴ and the moment of inertia of the aluminum portion is $I_a = 100$ in⁴. The structure is subjected to a uniformly distributed load of 100 lb/ft acting vertically downward. The structure is supported by a pin support at the bottom left corner and a roller support at the bottom right corner. The structure is 10 ft long and 10 ft high. The steel portion is 5 ft wide and 10 ft high. The aluminum portion is 5 ft wide and 10 ft high. The modulus of elasticity of steel is $E_s = 29,000$ ksi and the modulus of elasticity of aluminum is $E_a = 10,000$ ksi. The moment of inertia of the steel portion is $I_s = 100$ in⁴ and the moment of inertia of the aluminum portion is $I_a = 100$ in⁴.



ANSWER: 1000 lb