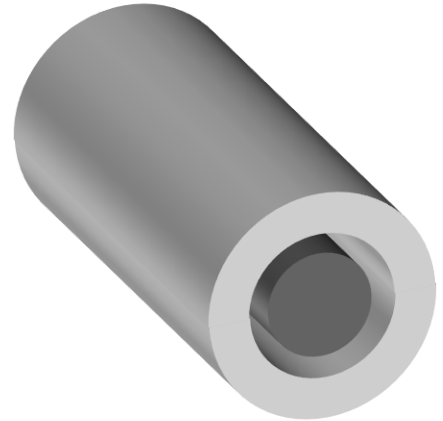
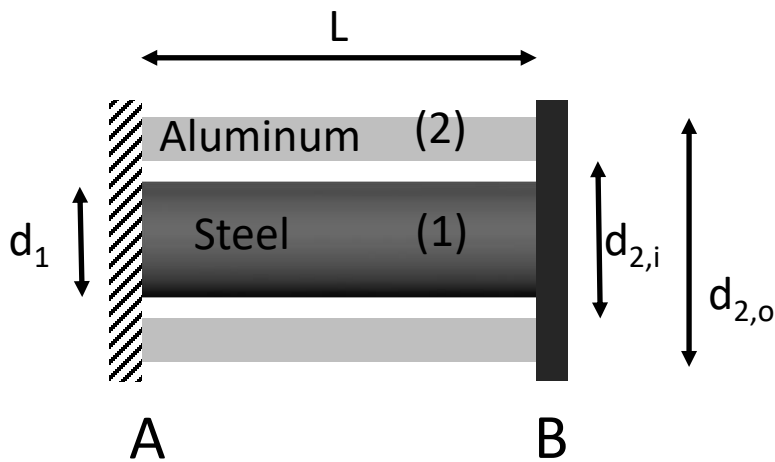


Two concentric axial members are grounded at node A and are connected to a rigid connector at node B. Member (1) is made of steel and member (2) is made of aluminum. The temperature of the assembly is increased by 40 °C (both (1) and (2) are heated uniformly).

- (a) What are the stresses in (1) and (2)?
- (b) What is the displacement of node B?



Variable	Value
L	1 m
d_1	0.08 m
$d_{2,i}$	0.10 m
$d_{2,o}$	0.12 m
α_{Steel}	$15 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$
α_{Al}	$24 \times 10^{-6} \text{ } ^\circ\text{C}^{-1}$
E_{Steel}	240 GPa
E_{Al}	60 GPa