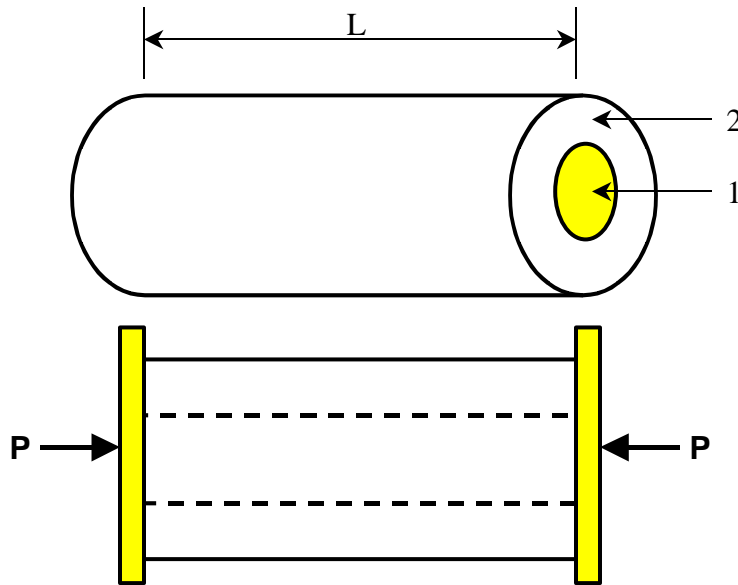


Recall Two Rods in Parallel with Axial Force:

A core made of material 1 is fully bonded to the shell made of material 2.



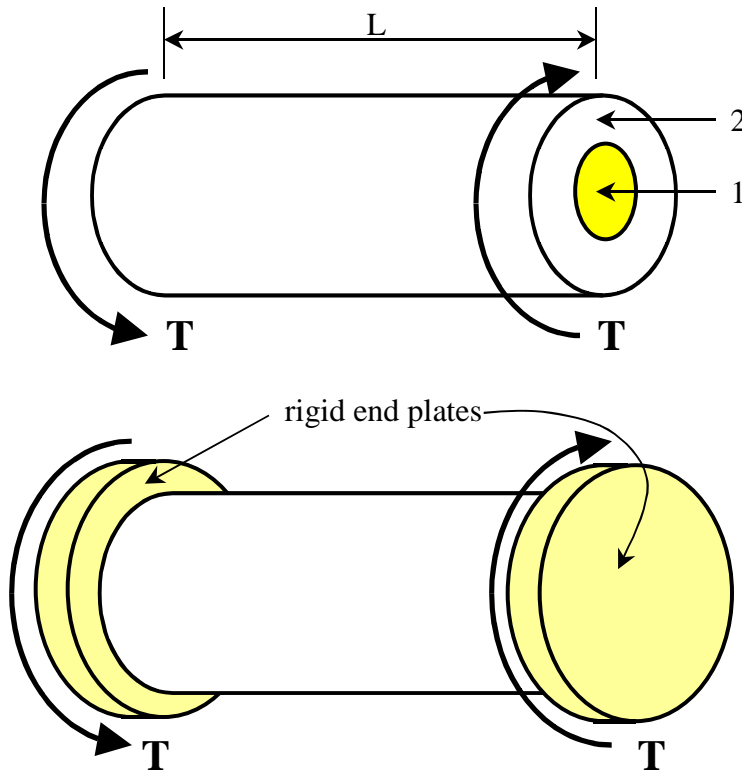
What is the relationship between the deflection of the core and the shell, δ_1 and δ_2 ?

What is the relationship between the deflection of the system, δ , and δ_1 and δ_2 ?

What is the relationship between the applied force P and the internal forces P_1 and P_2 ?

Torsion: Two Rods in Parallel

A core made of material 1 is fully bonded to the shell made of material 2. A torque, T , is applied to the system. (Imagine that the torque is applied to rigid end plates, which are fully bonded to the core and the shell).



What is the relationship between the twists in the core and in the shell, ϕ_1 and ϕ_2 ?

What is relationship between the twist of the system, ϕ , and ϕ_1 and ϕ_2 ?

What is the relationship between the applied torque, T , and the internal torques, T_1 and T_2 .

--Draw free body diagrams of each piece--

