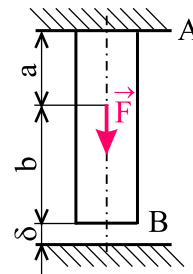

Problem 417

The bar in the figure is produced by δ shorter than is the distance between the two plates of the base (assembly clearance). After the suppression of this clearance by heating the bar, this will be welded to the base on both of its ends and subsequently cooled to the initial temperature. It is loaded by the force \vec{F} . Evaluate the safety factor against the limit state of elasticity. The geometry, loads and material characteristics (yield stress σ_K and Young's modulus E) are known. Gravitational forces can be neglected.



Solutions

simple tension loaded bars

support conditions