6.29 Callister. Do parts (a) through (f) PLUS

(g) At a force of 3400 lb, determine the bar diameter.

(h) Determine the % difference between measured and published E.

6.47 Callister. Do parts (a) and (b) PLUS

(c) Approximate the energy required to load the bar to 7500 lb.

(d) Approximate the energy released when the load is removed.

Instructors Additional Problem (Not in Callister)

(a) The microstructure of steel shows a random mix of ferrite grains and pearlite grains. Which hardness test do we pick to see if ferrite and pearlite have similar mechanical strength?

(b) If the Rockwell hardness of a steel knife blade is about 50 HRC, estimate the UTS. What problems do you expect with this estimate?