

Problem session 6

Choose a material for the cable support bracket shown with loading as indicated. Write an executive summary, in memo format, that summarizes your findings and recommendations for a material. Include all supporting analysis with your summary. You may work in groups or individually.

Your choices for materials are:

Gray Iron

$S_{ut} = 60\,000 \text{ lb/in}^2$

$S_{uc} = 170\,000 \text{ lb/in}^2$

Elongation – 0.2%

Malleable Iron

$S_{ut} = 53\,000 \text{ lb/in}^2$

$S_{uc} = 170\,000 \text{ lb/in}^2$

Shear Strength = $20\,500 \text{ lb/in}^2$

Elongation – 18%

1029 Steel

$S_{ut} = 60\,000 \text{ lb/in}^2$

Elongation – 38%

