Step 4: Determine Q as a function of requirements and material properties – strength basis

Try using strength as the basis for material selection and then check deflection

$$m = \rho bhL = \rho bL\left[\frac{3PLX}{2bS}\right]^{1/2} = \left[\frac{3}{2}PL^3Xb\right]^{1/2}\left[\frac{\rho}{S^{1/2}}\right]$$

$$C = C_m m = \left[\frac{3}{2}PL^3Xb\right]^{1/2}\left[\frac{\rho C_m}{S^{1/2}}\right]$$

f_2