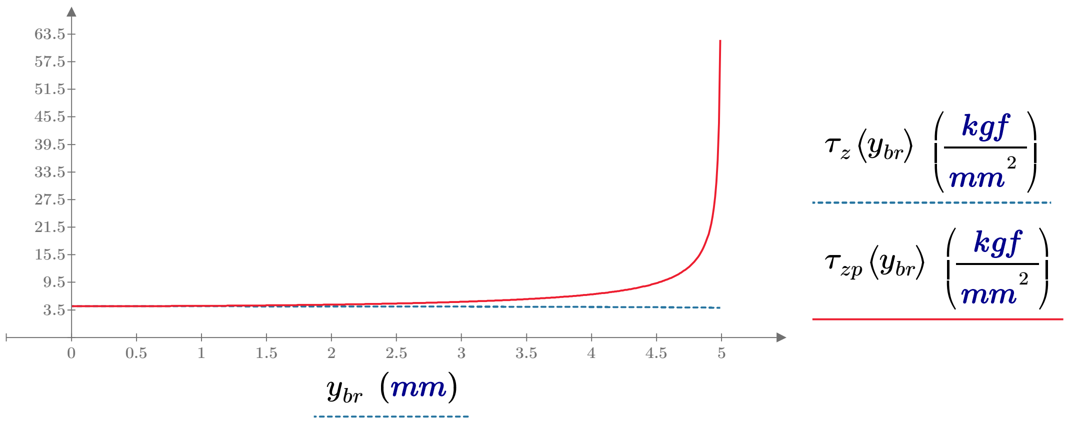
$$\alpha\left(y_{br}\right) := \operatorname{atan}\left(\frac{y_{br}}{\sqrt{R^2 - y_{br}^{\ 2}}}\right) \qquad \alpha_p\left(y_{br}\right) := \operatorname{asin}\left(\frac{y_{br}}{r}\right)$$

$$\tau_z\left(y_{br}\right) := \frac{\dfrac{T_{BB}}{2}}{\dfrac{J_{Bn}}{2}} \cdot \frac{S_{nr1}\left(y_{br}\right)}{b_{r1}\left(y_{br}\right) \cdot \cos\left(\alpha\left(y_{br}\right)\right)} \qquad \tau_{zp}\left(y_{br}\right) := \frac{\dfrac{T_{BB}}{2}}{\dfrac{J_{Bn}}{2}} \cdot \frac{S_{nr1}\left(y_{br}\right)}{b_{r1}\left(y_{br}\right) \cdot \cos\left(\alpha_p\left(y_{br}\right)\right)}$$



$$\tau_z(0\ mm) = 4.297\ \frac{kgf}{mm^2}$$

$$\tau_{zp}(0\ mm) = 4.297\ \frac{kgf}{mm^2}$$

$$\tau_z(r) = 3.927\ \frac{kgf}{mm^2}$$