These equations are not applicable when θ exceeds 22.5°

$$P_m = \frac{SE(T-C)}{r_2}\left(\frac{T-C}{(T-C)+0.643\tan\theta\sqrt{r_2(T-C)}}\right)$$

$$P_m = \frac{SE(T-C)}{r_2}\left(\frac{R_1-r_2}{R_1-0.5\,r_2}\right)$$

Where

Pm = Maximum allowable internal pressure for mitre bend.

T = Minimum Miter Pipe wall thickness.

C = Sum of mechanical & corrosion allowances.

R1 = Effective radius of mitre bend.

r2 = Mean radius of pipe using nominal wall thickness.

S = Allowable stress of material at the given temperature.

E = Quality factor as applicable to pipe used for mitre bend.

θ = Angle of mitre cut or 1/2 the angle of change in direction at mitre joint.

Thickness ‘T’ used in above equations shall extend a distance not less than ‘M’ from the inside crotch of the end mitre welds where,

M = larger of $2.5\,(r2 \times T)^{0.5}$ or $\tan\theta\,(R_1 - r_2)$.

Usually extra thickness is available in pipe used for low pressure services and it is possible to use the same pipe for making mitre bends. However a check is always required