S = Allowable stress of material at the given temperature.

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

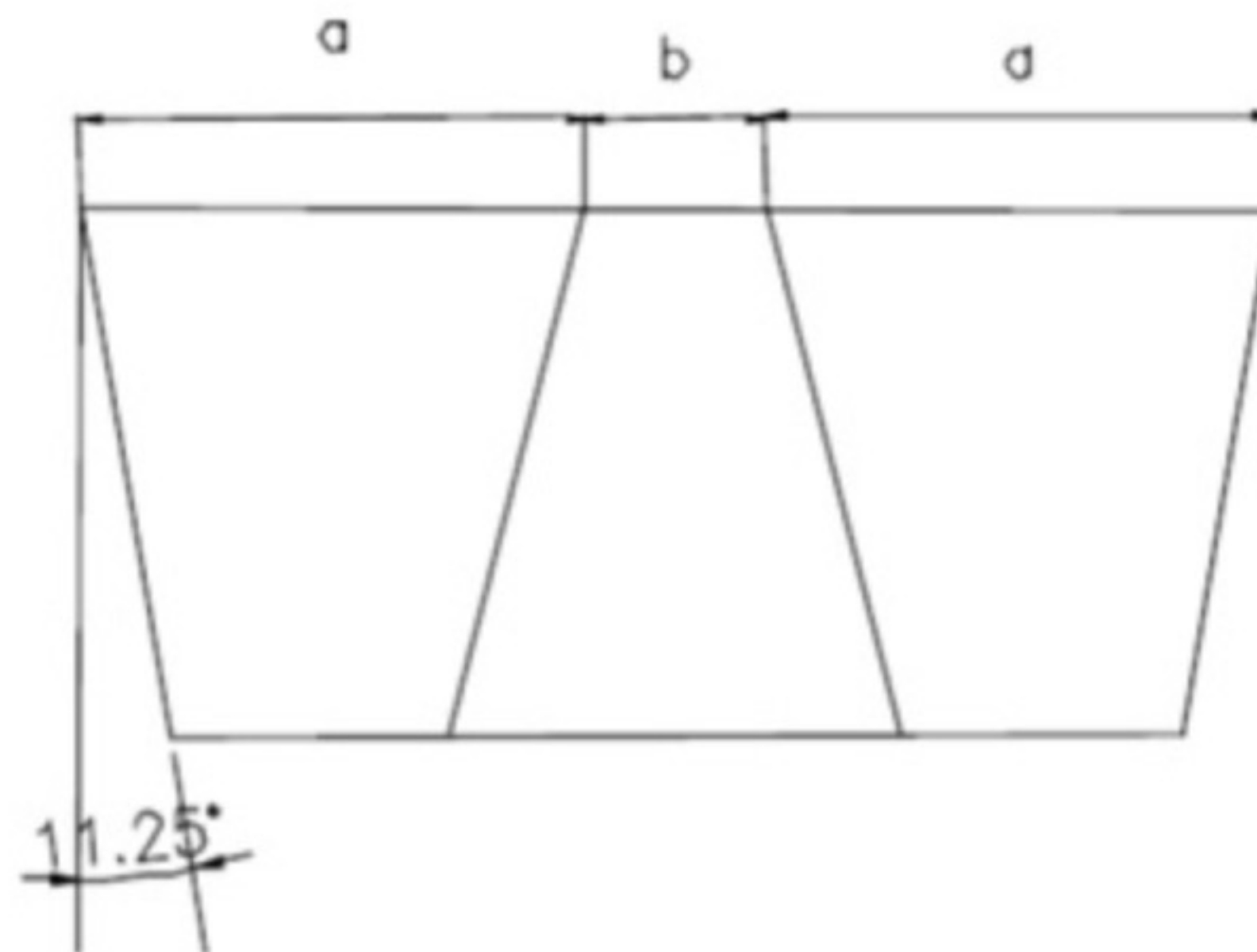θ = Angle of mitre cut or 1/2 the angle of change in direction at mitre joint.

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.

• An angular offset of 3° or less does not require design consideration as a mitre bend.

11.25 = ANGLE OF MITRE CUT

22.5 = ANGLE OF CHANGE IN DIRECTION OF MITRE JOINT

FIG. 8