

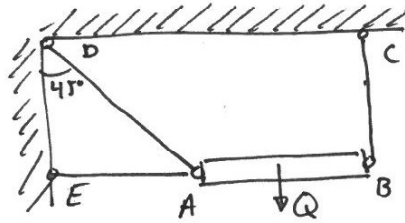
2.2.1

Hängande bom m. länker

x Tyngd Q

x Tvärsnittsarea A

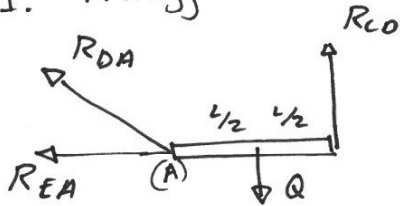
Givet



Sökt σ_{DA}

Lösning

1. Frilägg



2. $\sum m_u$

$$\uparrow: -Q + R_{CB} + \sin 45^\circ \cdot R_{DA} = 0$$

$$\Rightarrow R_{DA} = \sqrt{2} (Q - R_{CB})$$

$$\rightarrow: -R_{EA} - \cos 45^\circ \cdot R_{DA} = 0$$

$$\Rightarrow R_{DA} = -\sqrt{2} R_{EA}$$

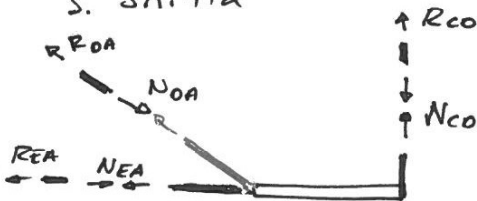
$$\overset{\curvearrowright}{A}: -\frac{L \cdot Q}{2} + L \cdot R_{CB} = 0$$

$$\Rightarrow R_{CB} = \frac{Q}{2}$$

$$\Rightarrow R_{DA} = \sqrt{2} \left(Q - \frac{Q}{2} \right)$$

$$= \frac{\sqrt{2} Q}{2}$$

3. Snitta



4. $\sum m_u$

$$(\dots) R_{CO} = N_{CO}$$

$$R_{OA} = N_{OA}$$

$$R_{EA} = N_{EA}$$

5. Normalspänning

$$\left[\sigma = \frac{N}{A} \right]$$

$$\Rightarrow \sigma_{DA} = \frac{N_{OA}}{A} = \frac{\sqrt{2} Q}{2A}$$