

Corso di laurea in Ingegneria civile strutturale e geotecnica

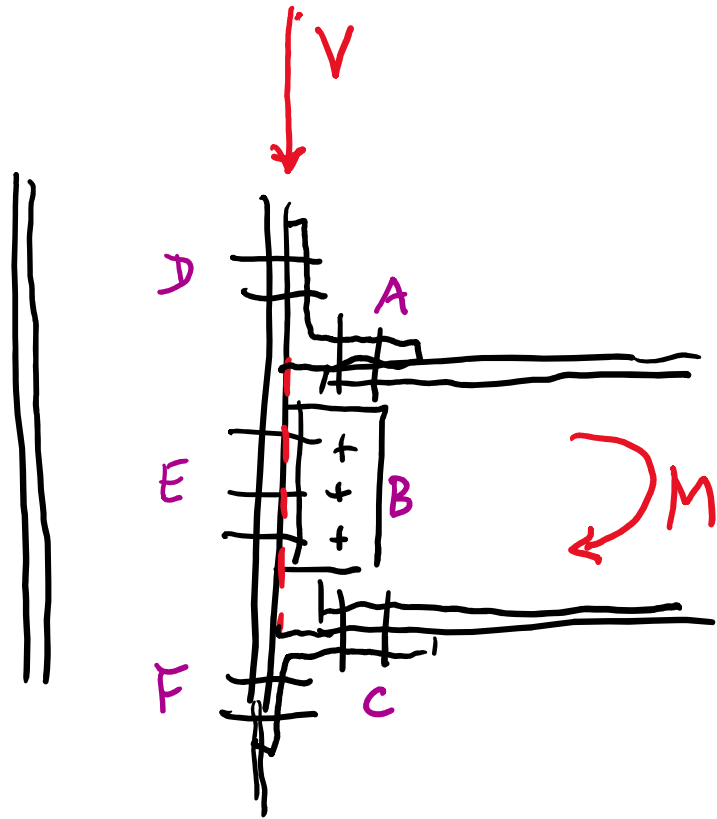
# Tecnica delle costruzioni

## modulo A

### 28 – Esempi di collegamento

Aurelio Gheresi

16/12/2020



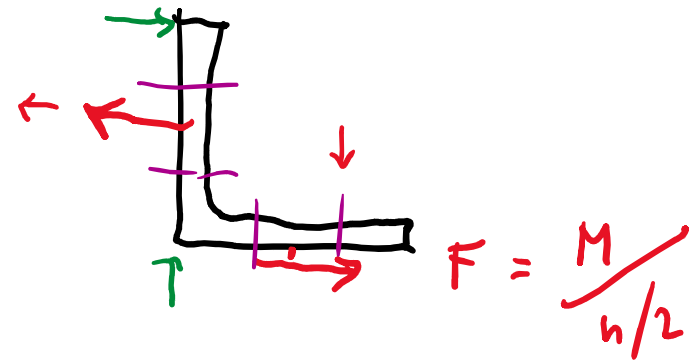
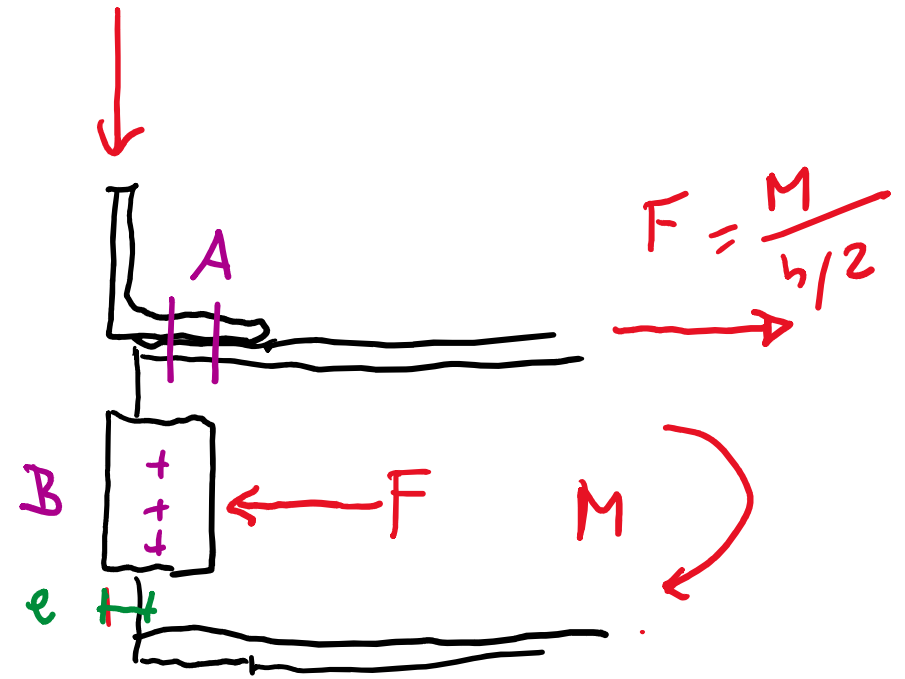
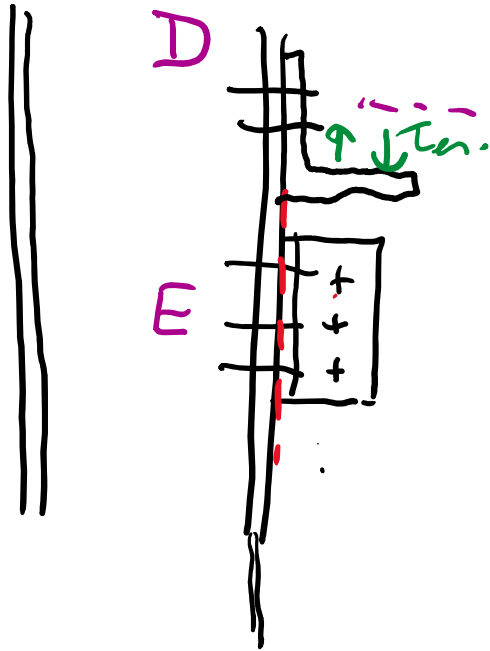
1)  $\propto$  Tolg. ang. lar  
d'ani ne

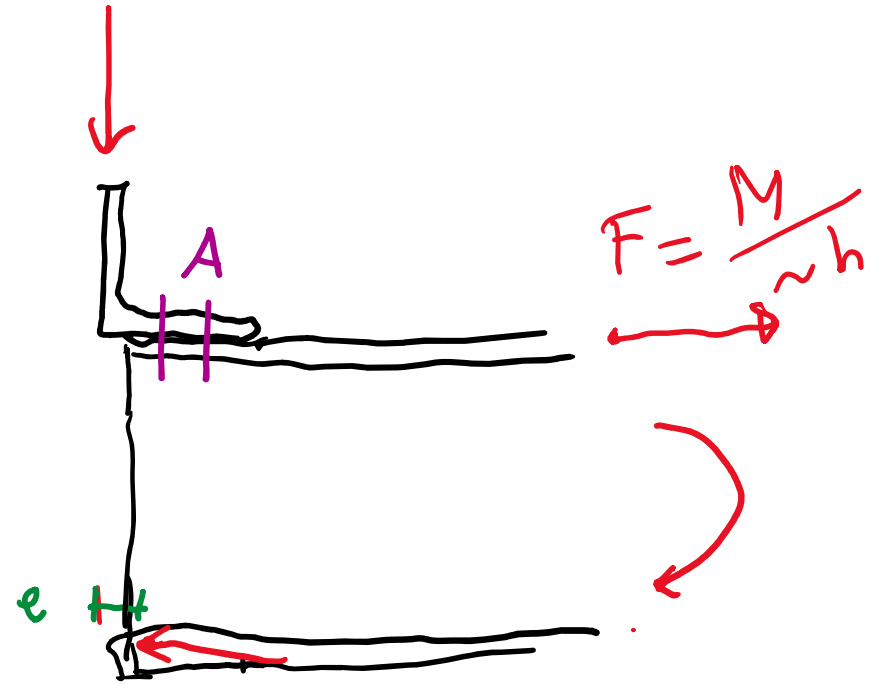
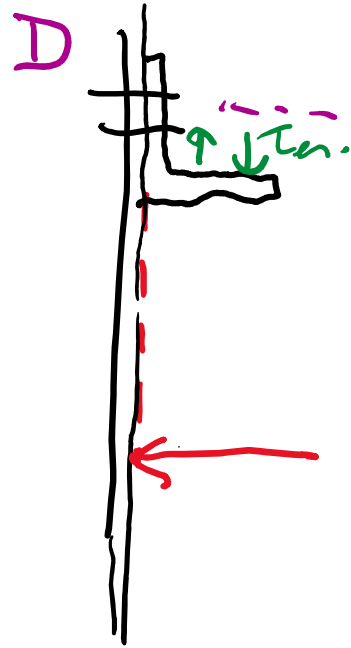
2)  $\propto$  Tolg. ang. lar  
inferior

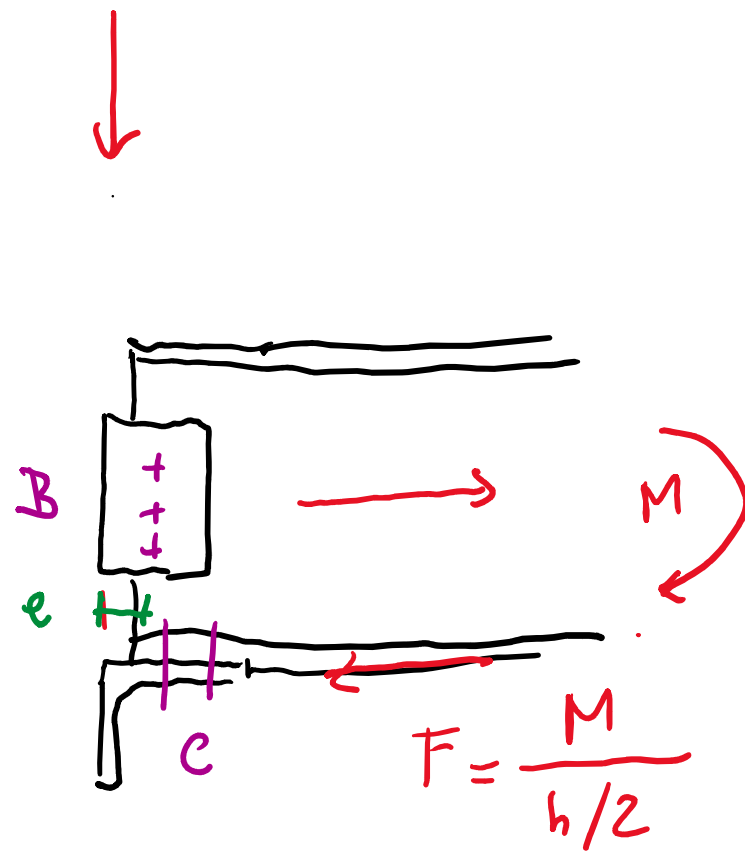
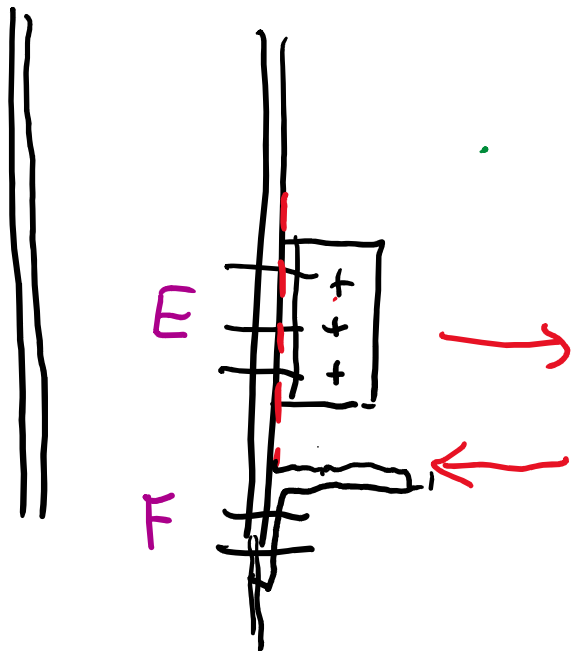
3)  $\propto$  Tolg. 1 + 2

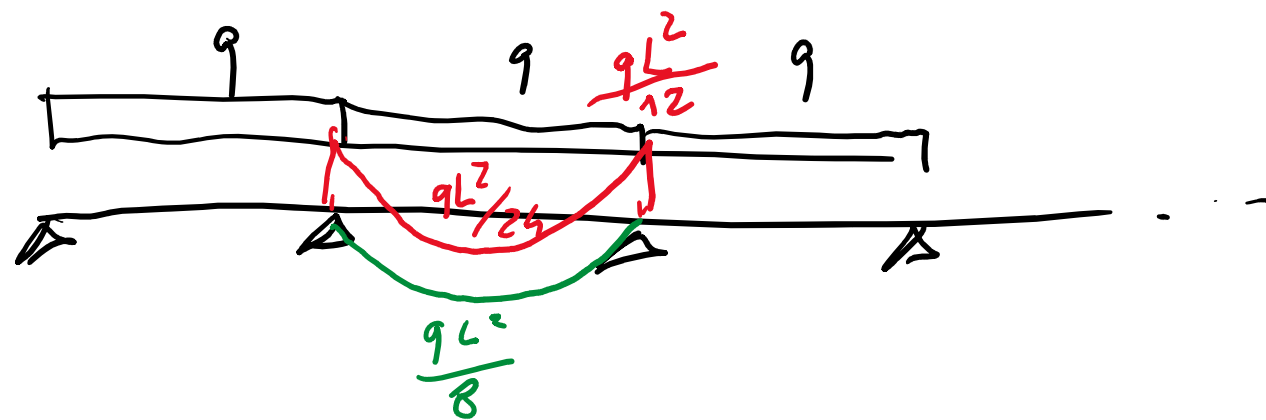
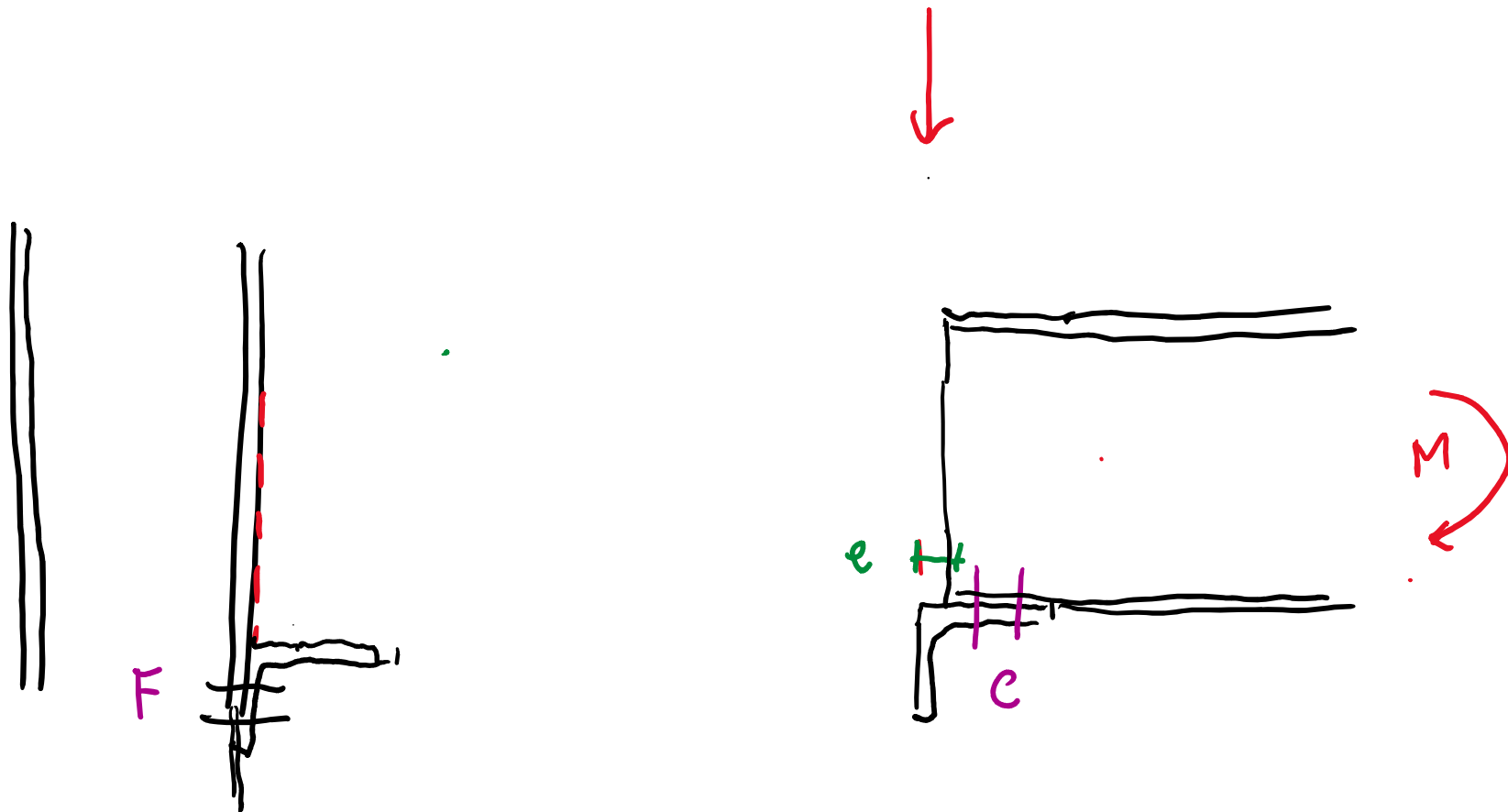
4)  $\propto$  Tolg. ang. lar  
superior

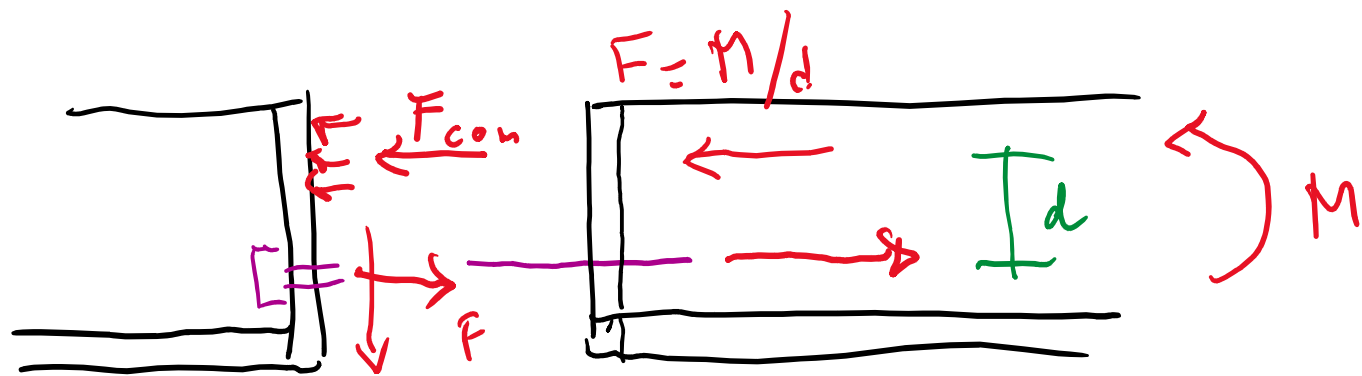
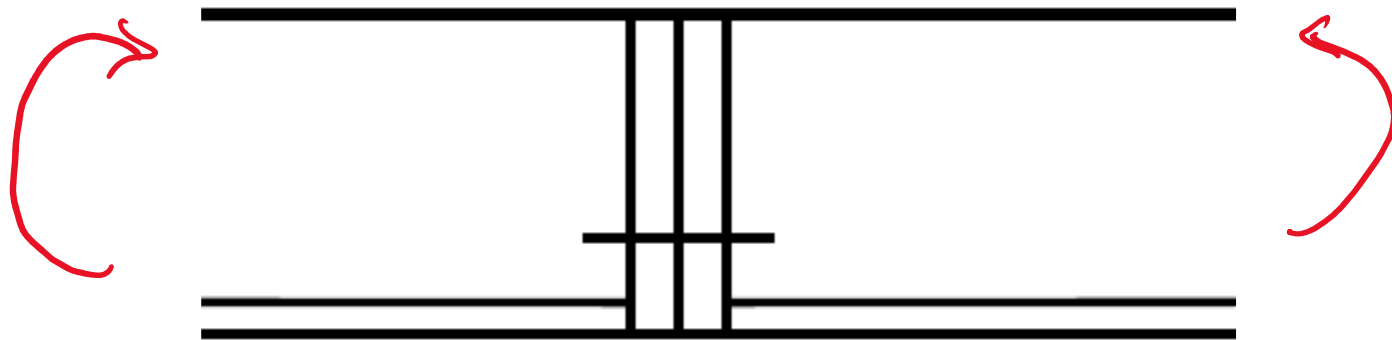
manca angolare inferiore





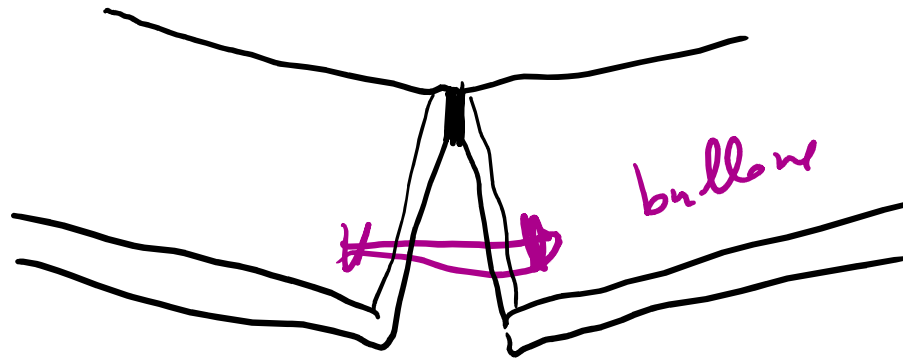






$$F_{con} \geq A_s \frac{f_y}{\gamma_m}$$

$$F = \frac{M}{d}$$



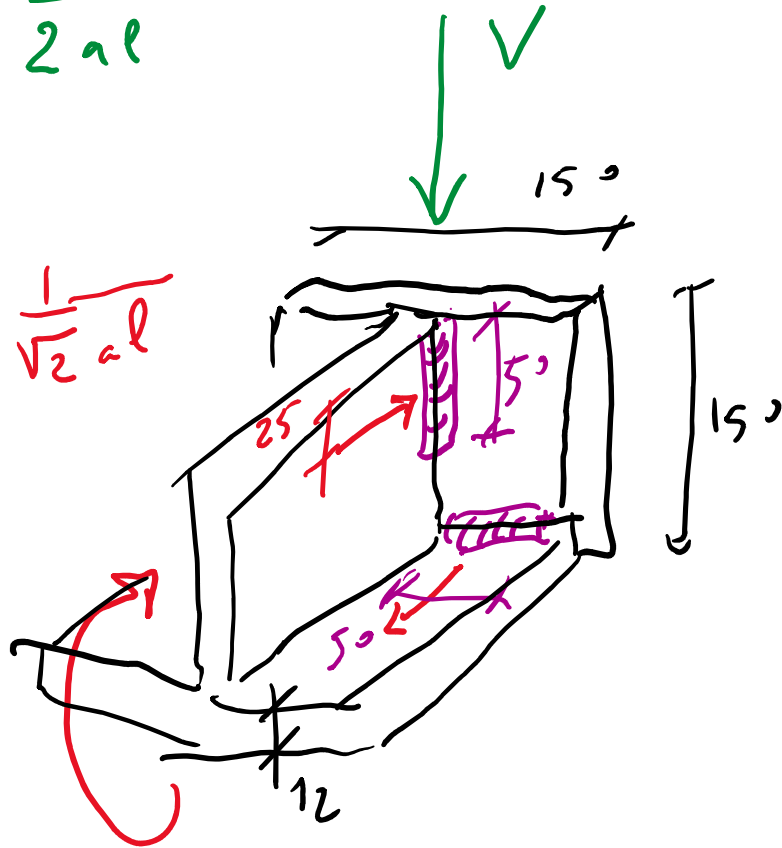
$$\frac{F_{V,Ed}}{F_{V,Rd}} + \frac{F_{t,Ed}}{1.4 F_{t,Rd}} \leq 1$$

$$\frac{F_{t,Ed}}{F_{t,Rd}} \leq 1$$

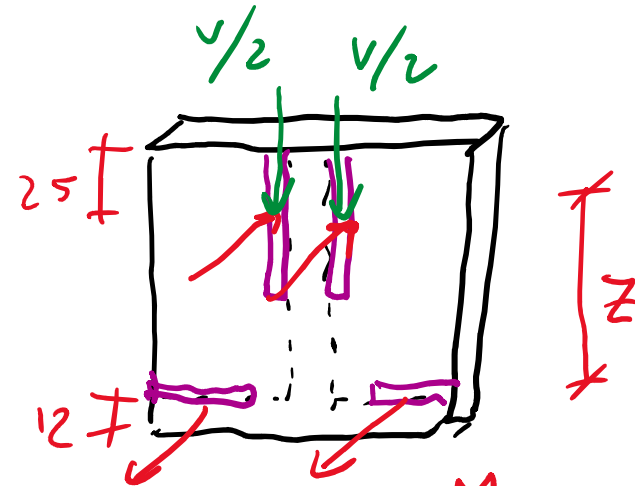


$$\gamma_{\parallel} = \frac{V}{2al}$$

$$\sigma_2 = \sigma_1 = \frac{M}{2z} \cdot \frac{1}{\sqrt{2}al}$$



$$F_{Ed, \max} = \sqrt{\left(\frac{V}{2}\right)^2 + \left(\frac{M}{2z}\right)^2}$$



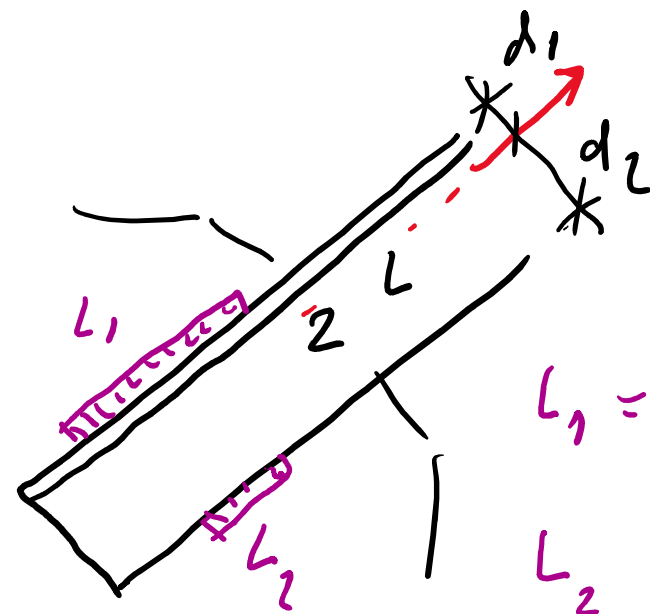
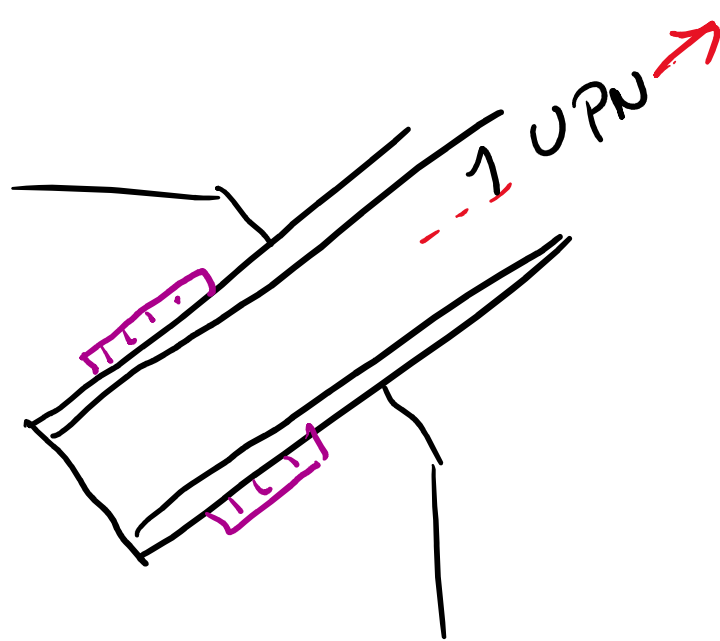
$$F = \frac{M}{z} \cdot \frac{1}{2}$$

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verification  $\frac{F_{w,Ed}}{F_{w,Rd}} \leq 1$

$$F_{w,Ed} = f(M, V)$$

$$\frac{\sqrt{\left(\frac{V}{2}\right)^2 + \left(\frac{M}{2z}\right)^2}}{F_{w,Rd}} \leq 1$$

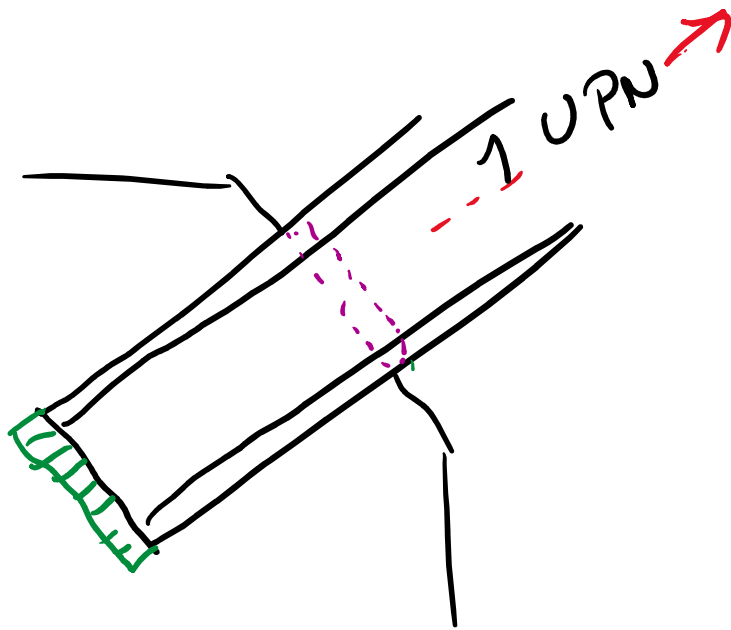


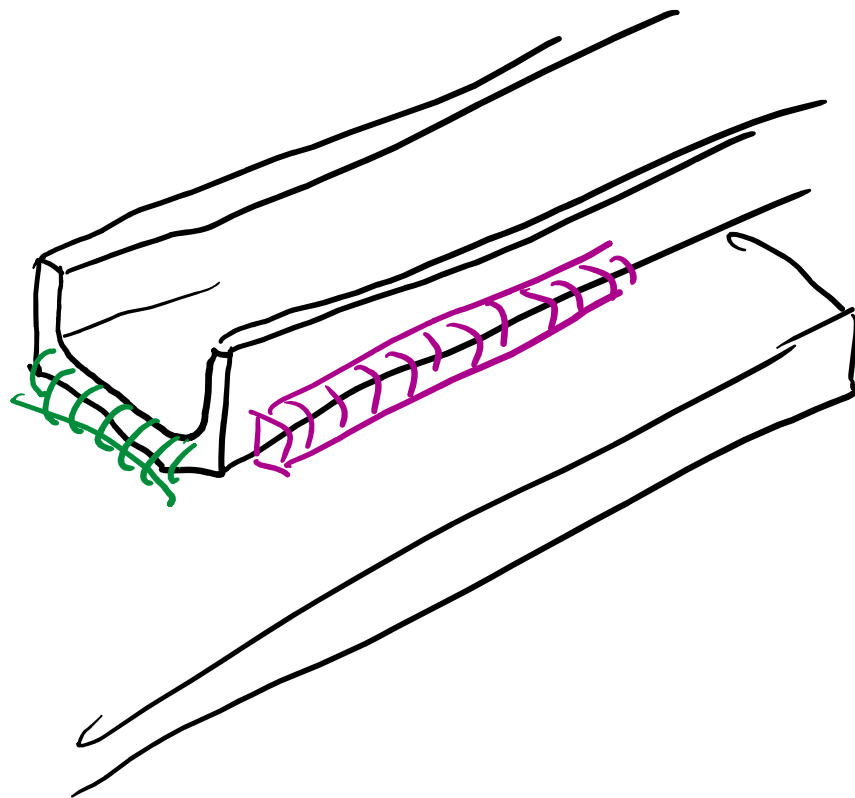
$$L_1 = \frac{L_{tot} d_2}{d_1 + d_2}$$

$$L_2 = L_{tot} \frac{d_1}{d_1 + d_2}$$

$$L_{tot} = \frac{F_{w,ed}}{a f_{v,wd}}$$

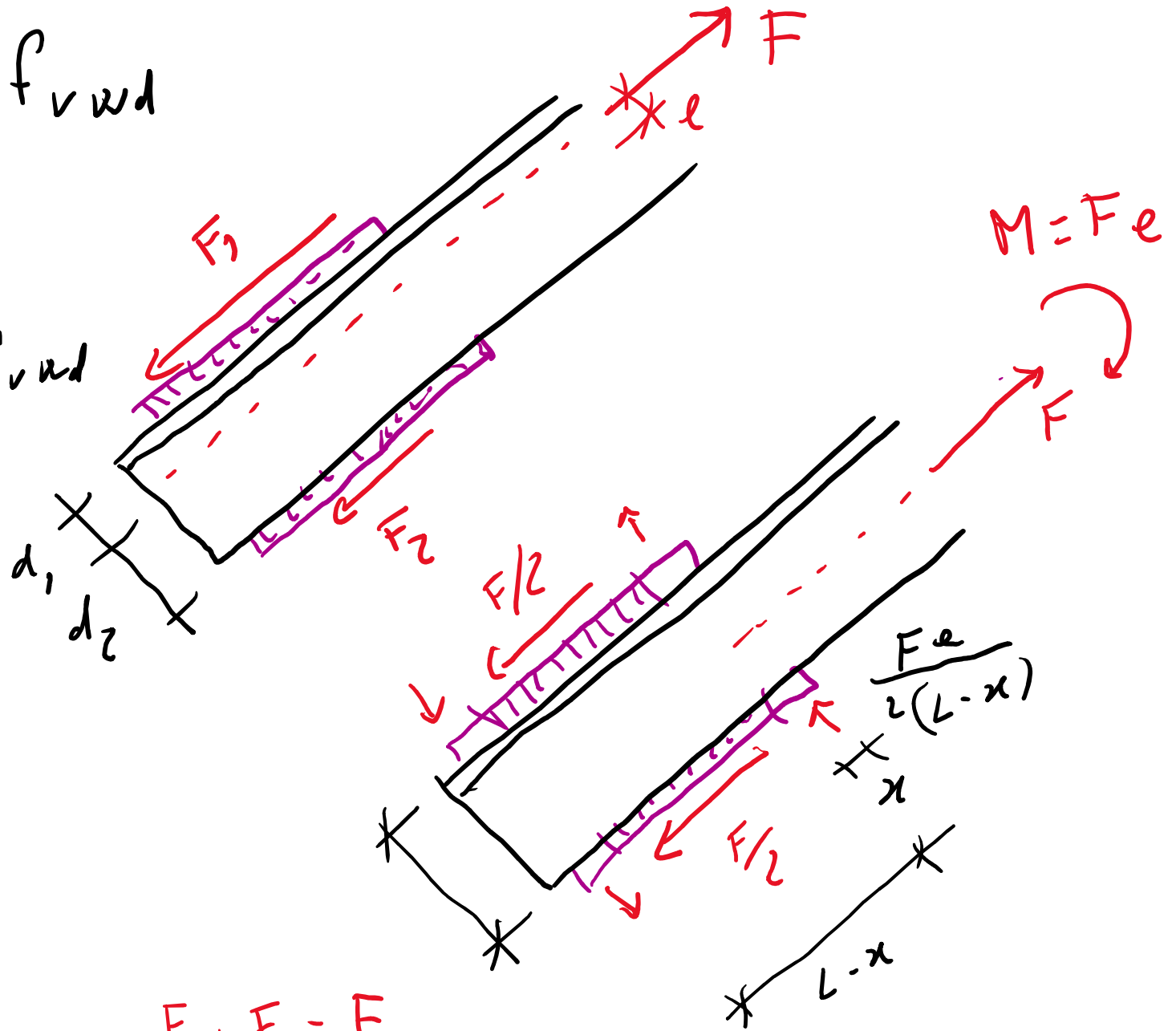
$$F_{w,ed} = a l f_{v,wd}$$





$$\frac{F/2}{a(L-2x)} \leq f_{vwd}$$

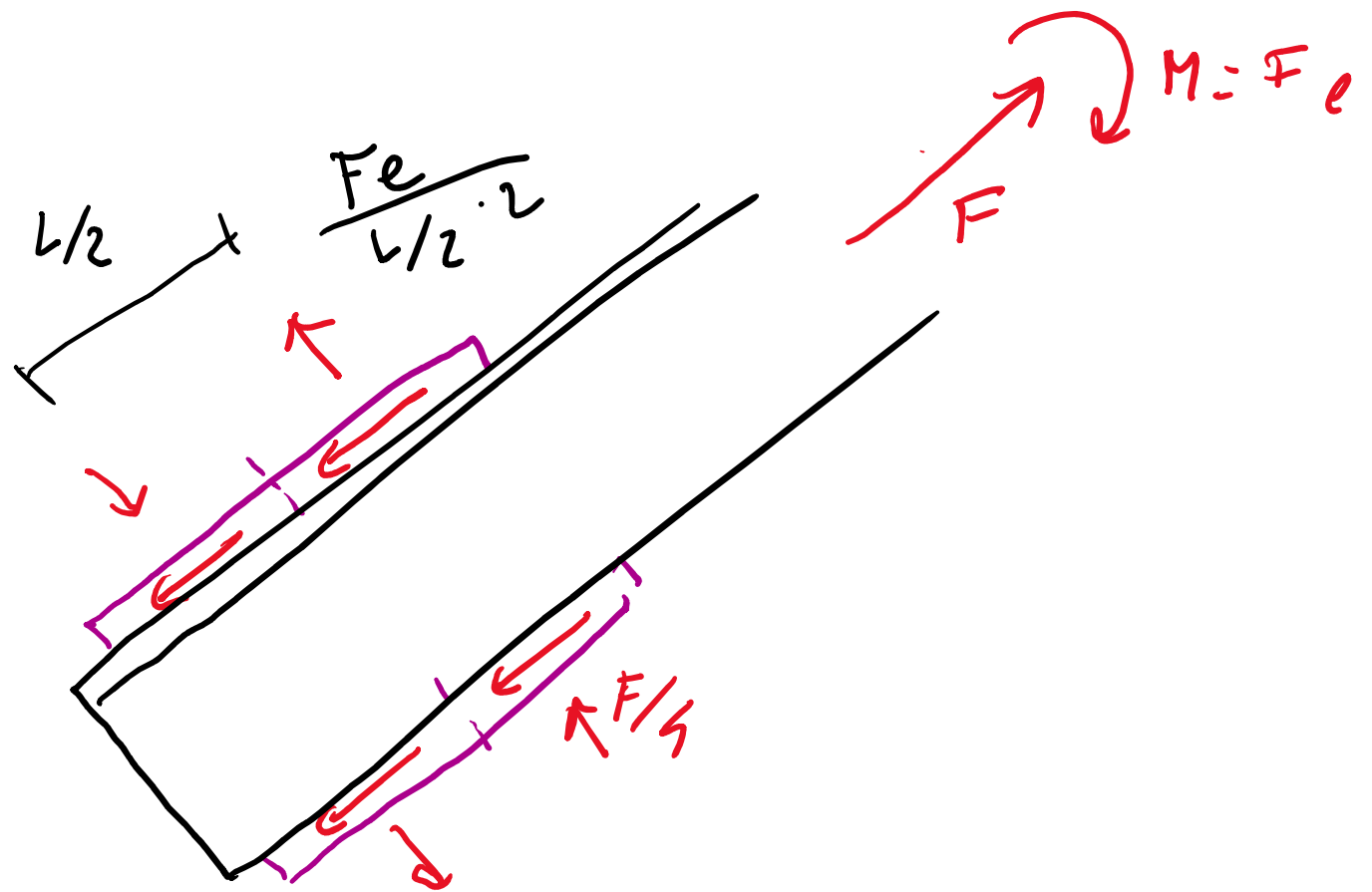
$$\frac{\frac{Fe}{2(L-x)}}{ax} \leq f_{vwd}$$



$$F_1 = F \frac{d_2}{d_1 + d_2}$$

$$F_2 = F \frac{d_1}{d_1 + d_2}$$

$$F_1 + F_2 = F$$



$$\frac{\sqrt{\left(\frac{F}{4}\right)^2 + \left(\frac{F_e}{L}\right)^2}}{\approx \frac{L}{2}} \leq f_{\text{vwd}}$$