

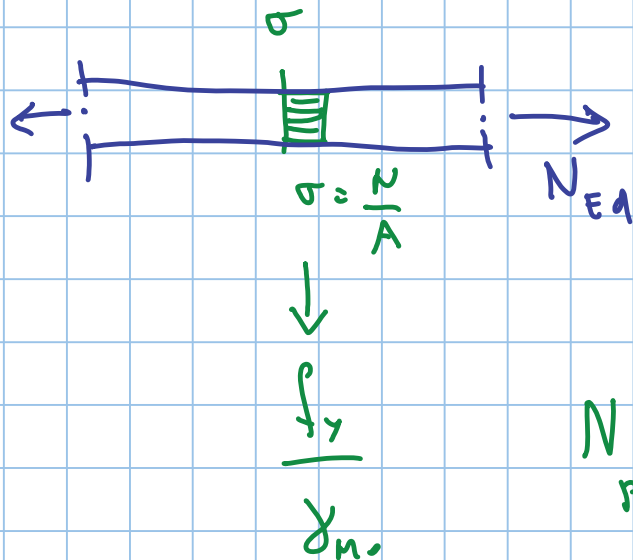
STATO LIMITE ULTIMO

Titolo nota

30/10/2018

N_{Ed}

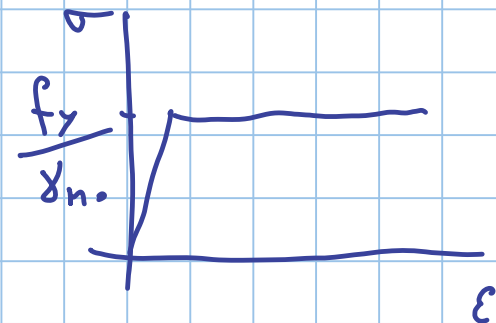
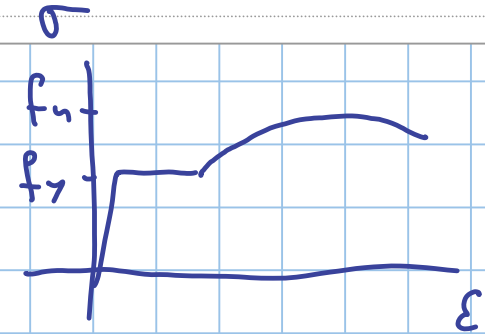
N_{Rd}



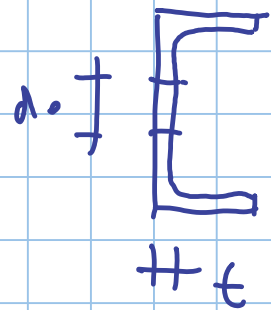
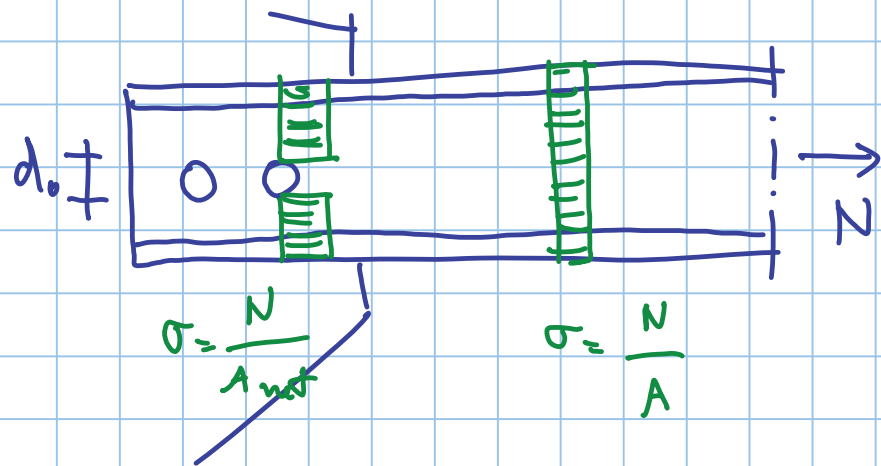
$$N_{pl,Rd} = A \frac{f_y}{\gamma_{M0}}$$



pl = plasticizzazione,
svernamento



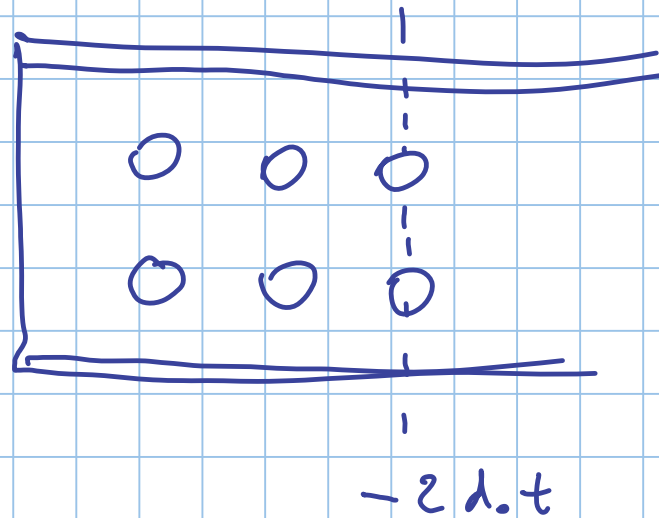
ASTA con fori



$$A_{net} = A - d_o \cdot t$$

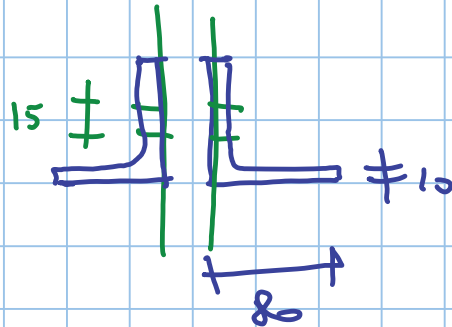
$$N_{u,Rd} = 0.9 A_{net} \frac{f_u}{\gamma_{m2}}$$

\uparrow
 $n = \text{ultimo, di rottura}$



$$N_{Rd} = \min \left(N_{pl,Rd} ; N_{u,Rd} \right)$$

S 275



coppi- L 80 x 80 x 10

$$A = 15.1 \times 10^2 \text{ mm}^2 \quad \text{un L}$$

$$A = 30.2 \times 10^2 \text{ mm}^2$$

$$f_y = 275 \text{ MPa}$$

$$f_u = 430 \text{ MPa}$$

$$N_{Rd} = 30.2 \times 10^2 \times \frac{275}{1.05} \times 10^{-3} = \underline{791,0 \text{ KN}}$$

single profile

$$A = 15.1 \times 10^2 \text{ mm}^2$$

$$A_{\text{net}} = 15.1 \times 10^2 - 15 \times 10 = 13.6 \times 10^2 \text{ mm}^2$$

↓ ↓
d. t

2 pr. fili

$$A_{\text{net}} = 27.2 \times 10^2 \text{ mm}^2$$

$$N_{u,R} = \sqrt[0.9]{27.2 \times 10^2} \times \frac{430}{1.25} \times 10^{-3} = \underline{842.1 \text{ kN}}$$

$$N_{Rd} = \text{MIN}(791.0 ; 842.1) = 791.0 \text{ kN}$$

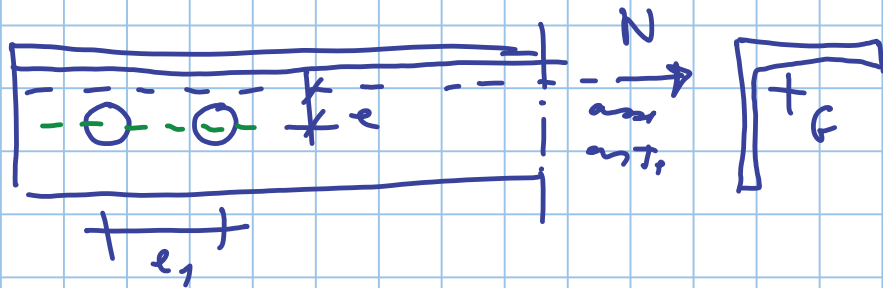
E' bene che sia

$$N_{pl,Rd} < N_{u,Rd}$$

DUTTILE

EC 3 parte 1-8

punto 3.10.3



2 bulloni

$$N_{u,Rd} = \beta_2 A_{net} \frac{f_u}{\gamma_{m2}}$$

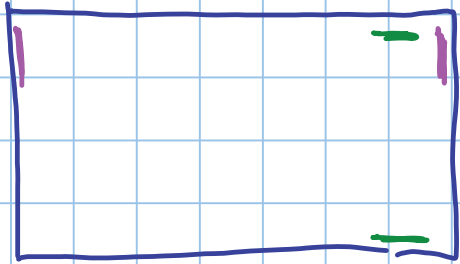
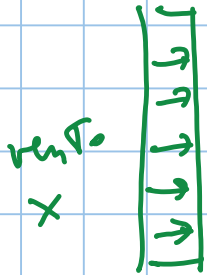
$$\beta_2 = \begin{matrix} e_1 \leq 2.5 d_o & e_1 \geq 5 d_o \\ 0.4 & 0.7 \end{matrix}$$

3 o più bulloni

$$N_{u,Rd} = \beta_3 A_{net} \frac{f_u}{\gamma_{m2}}$$

$$\beta_3 = \begin{matrix} e_1 \leq 2.5 d_o & e_1 \geq 5 d_o \\ 0.5 & 0.7 \end{matrix}$$

35.80

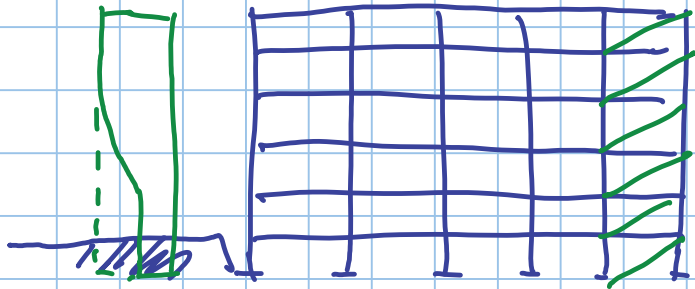


19.40



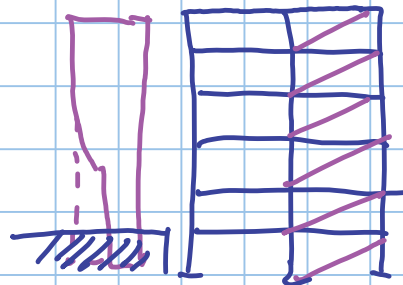
1.41 kN/m²

VENTO Y



2.12 kN/m²

1.56 kN/m²



2.34 kN/m²

valori caratteristici

q_k

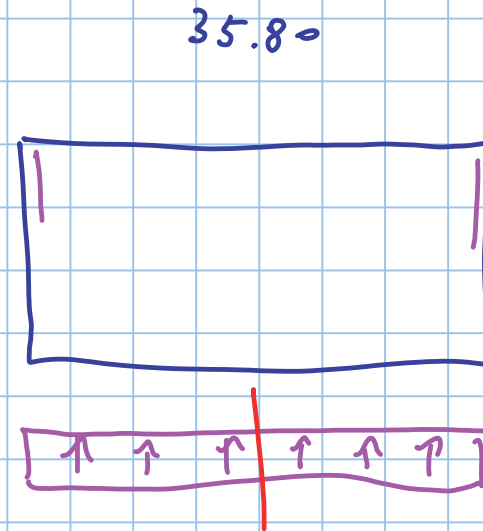
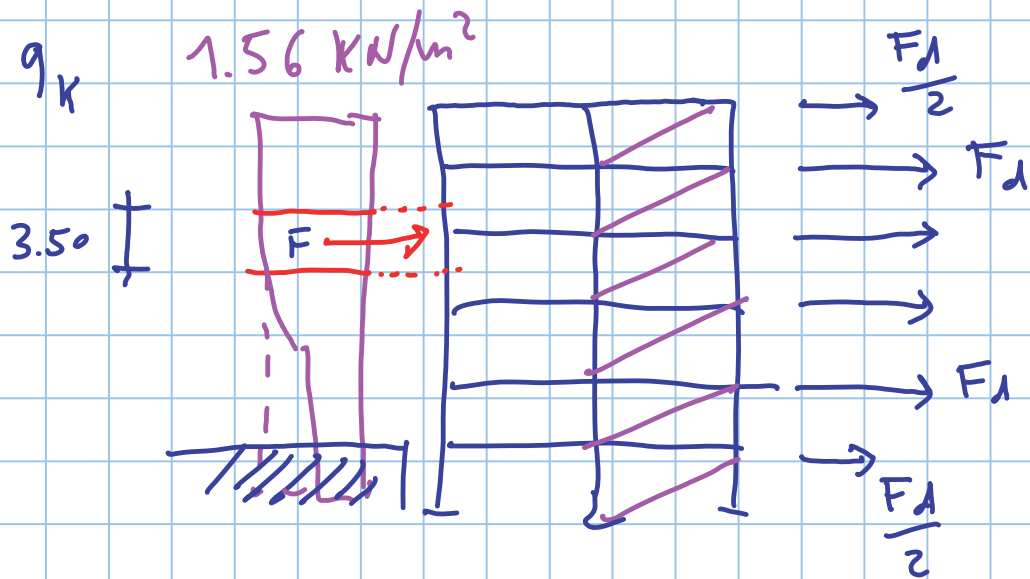
SLE

valori di calcolo

$$q_d = q_k \gamma_1$$

↓
1.5

SLU



q_d 2.34 kN/m^2

$\frac{35.80}{2} = 17.90 \text{ m}$

$F_d = 17.90 \times 3.50 \times 2.34 = 146.6 \text{ kN}$

73.3 →

146.6 →

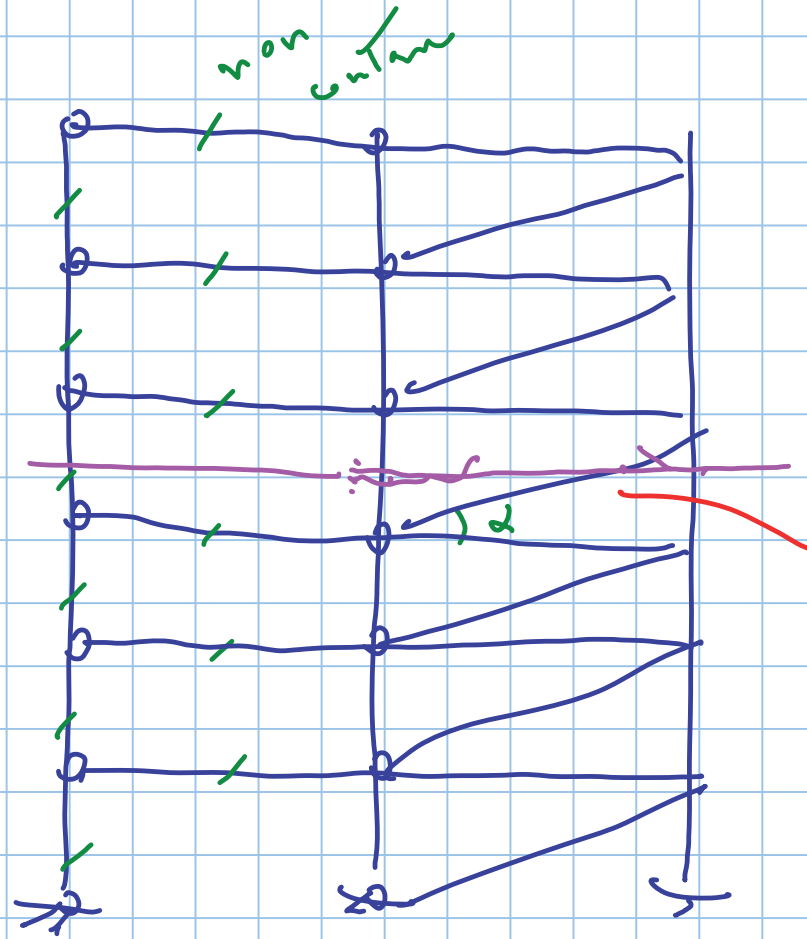
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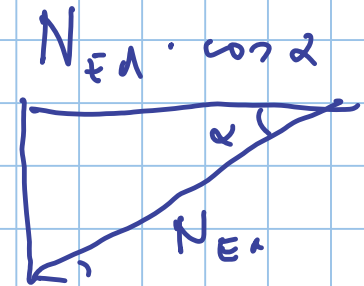
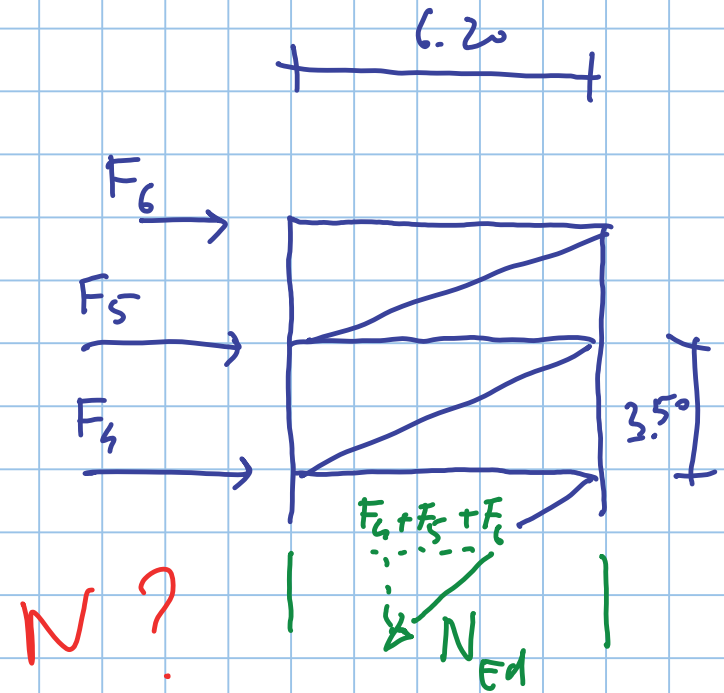
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$$N_{Ed} \cdot \cos \alpha = \sum_{i=4}^6 F_i$$

$$N_{Ed} = \frac{\sum_{i=4}^6 F_i}{\cos \alpha}$$



$$\tan \alpha = \frac{h}{L} = \frac{3.50}{6.20} \Rightarrow \alpha = 29.5^\circ \Rightarrow \cos \alpha = 0.871$$

$$N_{EA} = \frac{73.3 + 146.6 + 146.6}{0.871} = 420.8 \text{ kN}$$

$$f_y = 275 \text{ MPa}$$



$$A = 16.07 \times 10^2 \text{ mm}^2$$

Excel

$$C.O.2 \approx 0.871$$

$$S\ 275 \quad P_7 = 275\ MP_c$$

$p_i \text{ mm}$	F	ΣF	N	A_{mc}
6	73.3	73.3		
5	146.6	219.9		
4	146.6	366.5	420.8	
3	"			
2	"			
1	73.3			