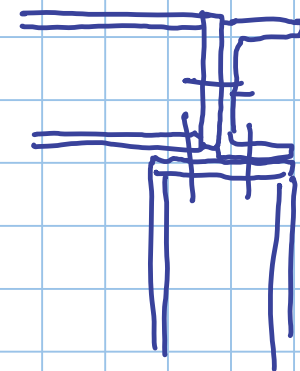
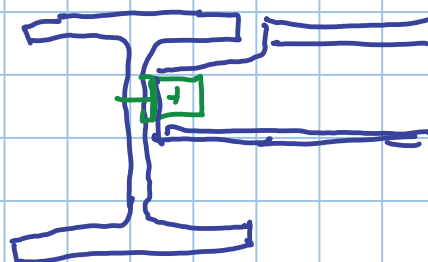
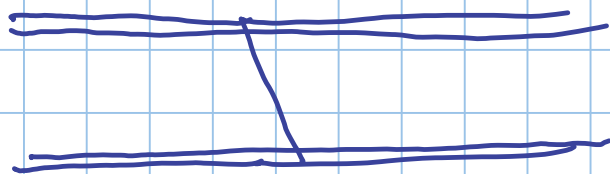
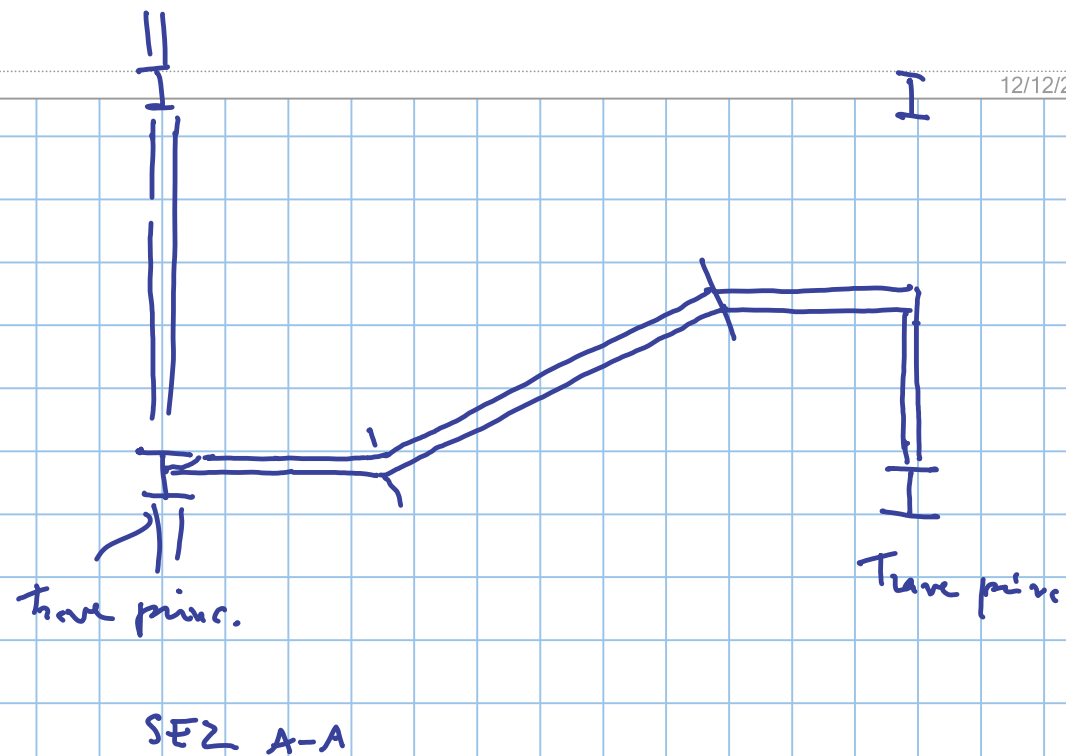
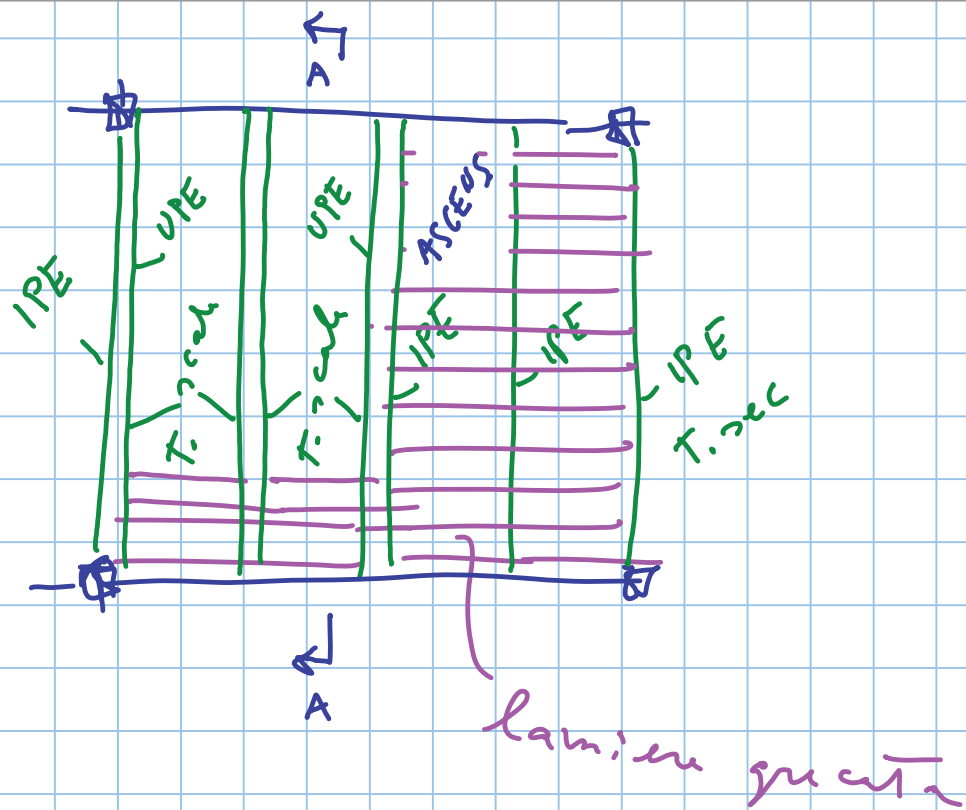
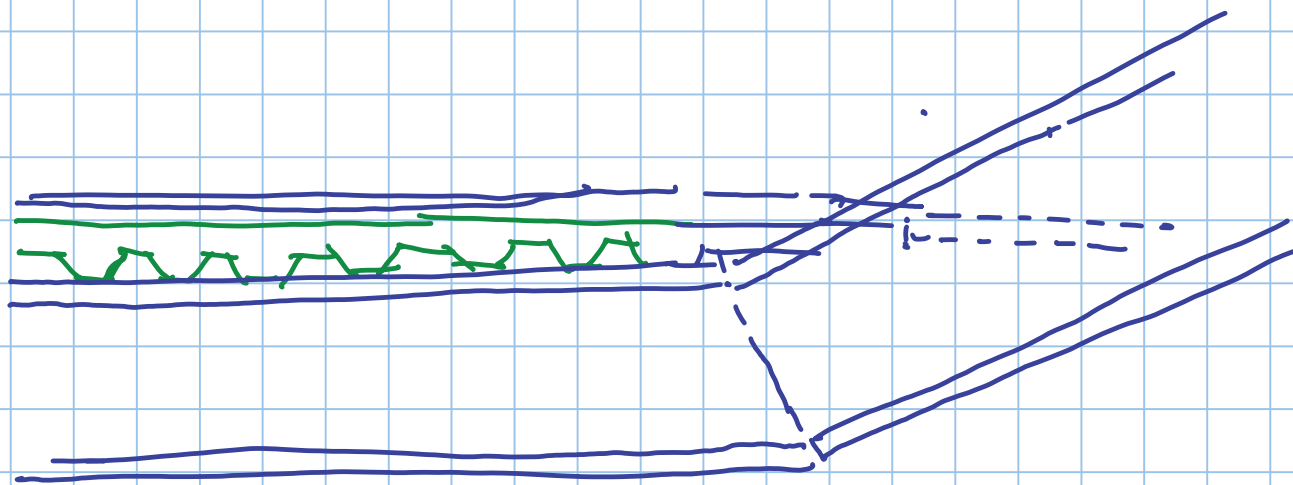


SCALA

Titolo nota

12/12/2017





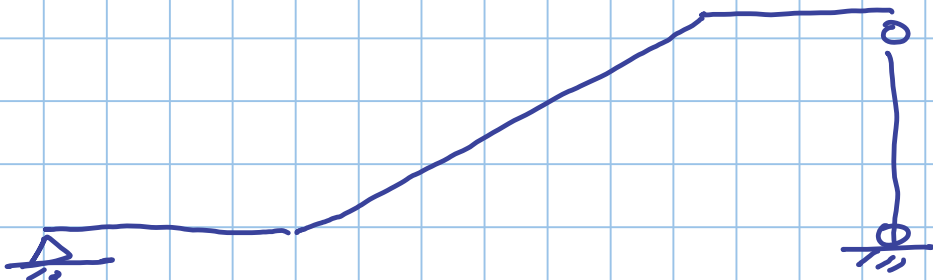
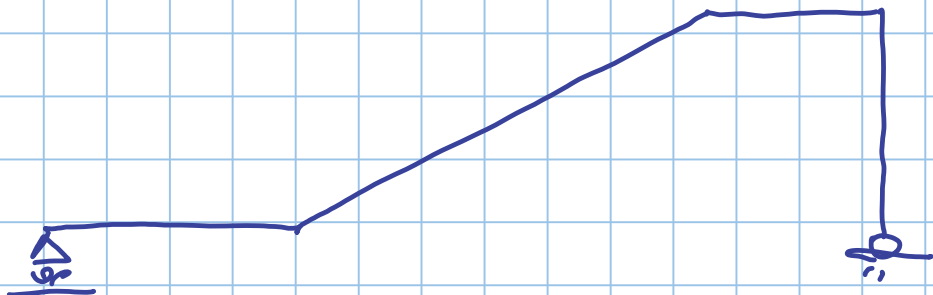


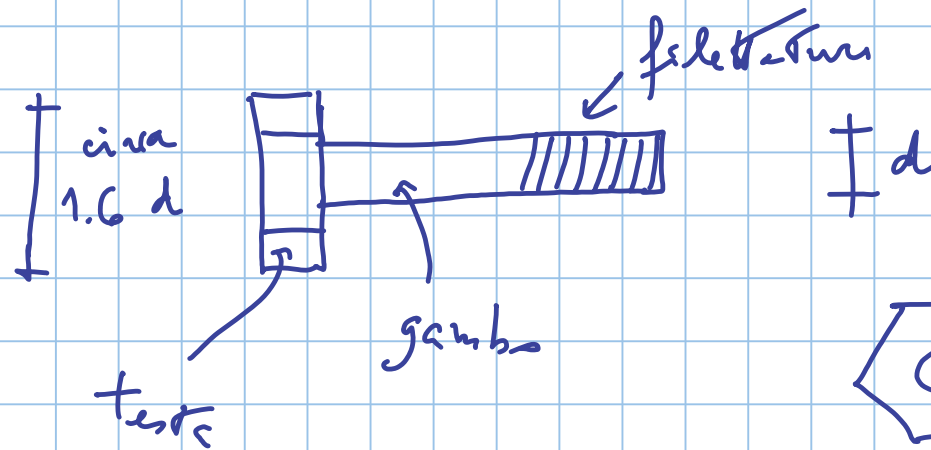
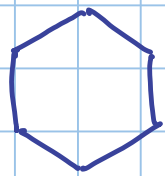
Diagram showing the reaction force at the left support, indicated by a green arrow pointing upwards, labeled $\frac{qL}{2}$.

Diagram showing the reaction force at the right support, indicated by a green arrow pointing upwards, labeled $\frac{qL}{2}$.

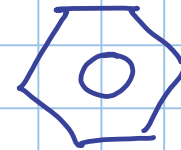
COLLEGAMENTI

BULLONI

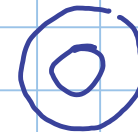
SALDATURE.



diámetro nominal
del gamba



dado

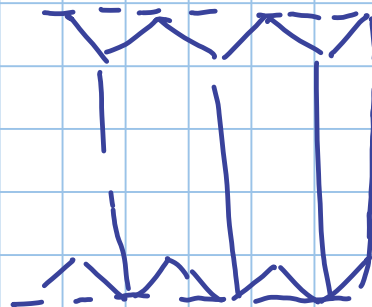


roseta

diámetro

M 12 $\rightarrow d = 12 \text{ mm}$

M 14



clase

8.8

Area nominal

(in assenza di filettature)

Area resistente

(ridotta da filettature)

classe

4.6

5.6

6.8

8.8

10.9

} ad alta resistenza

8.8



$\times 100$

$$f_{ub} = 8 \times 100 = 800 \text{ MPa}$$

$$0.8 \times f_{ub} = f_{yb} = 640 \text{ MPa}$$

diametro dei fori d_o

$$d_o = d + 1 \text{ mm}$$

diametro d	12	14	16	18	20	22	24	27	30
passo p	1.75	2.00	2.00	2.50	2.50	2.50	3.00	3.00	3.50
A	113	154	201	254	314	380	452	573	707
A_{res}	84.3	115	157	192	245	303	353	459	581
A_{res} / A	0.75	0.75	0.78	0.75	0.78	0.80	0.78	0.80	0.82

SERRAGGIO

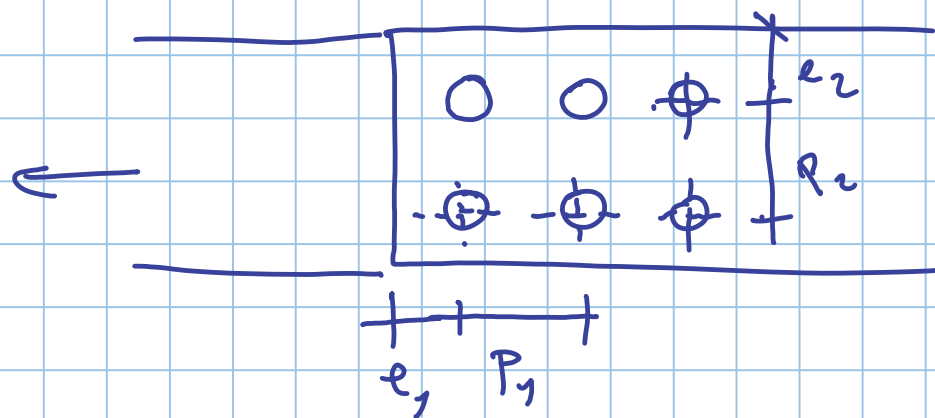
genera

Trazione nel gambo

compressione nei pezzi uniti

$$\text{Tensione di Trazione} = 0.7 \frac{f_{ub}}{\gamma_{nf}}$$

distanze tra i fori



$$p \leq \text{MIN} \left(14t; 200 \right) \text{ mm}$$

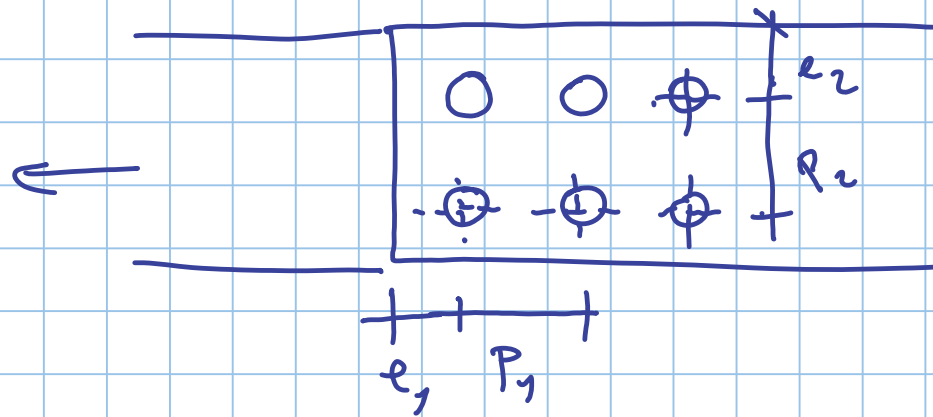
$$e_1 \geq 1.2 d_o$$

$$p_1 \geq 2.2 d_o$$

$$e_2 \geq 1.2 d_o \quad [\text{min.} \geq 1.5 d_o]$$

$$p_2 \geq 2.4 d_o \quad [\text{min.} \geq 3.0 d_o]$$

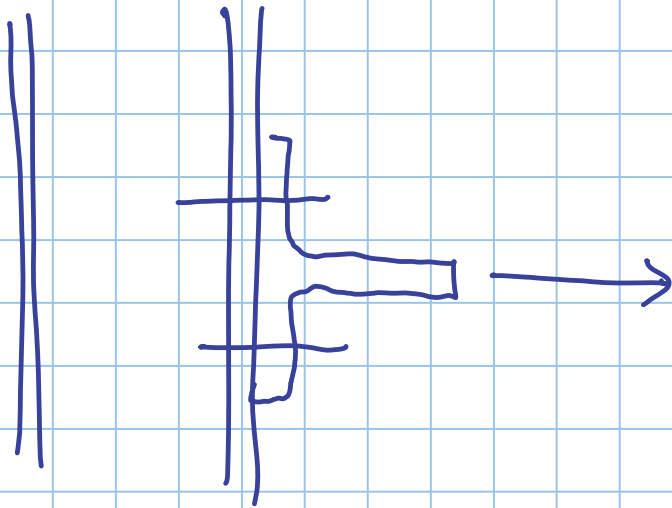
come lavorano i bulloni



→ a TAGLIO

inizialmente il movimento è
bloccato dall'attrito

poi si realizza unione ad ATTRITO



a TRAZIONE