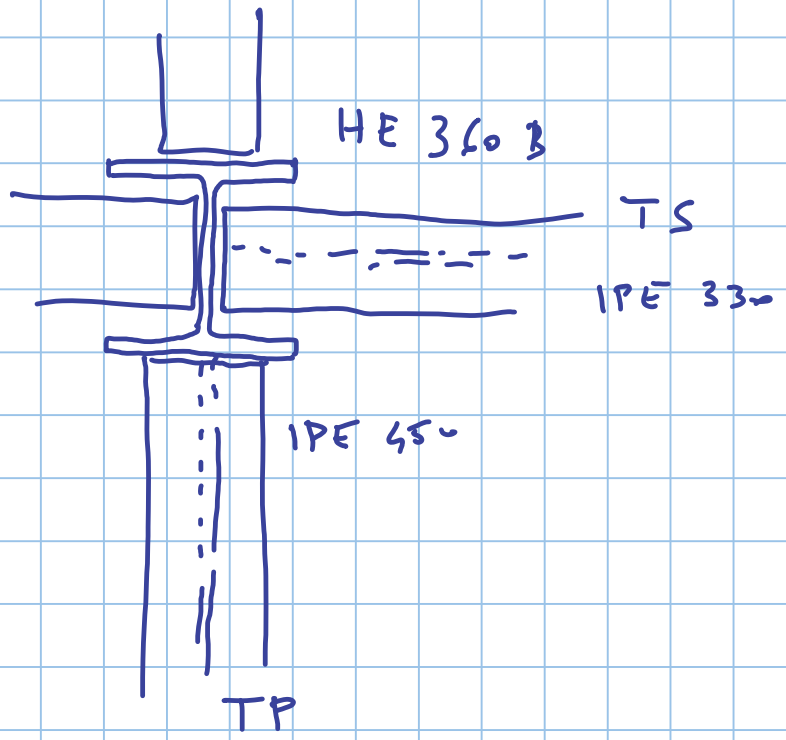
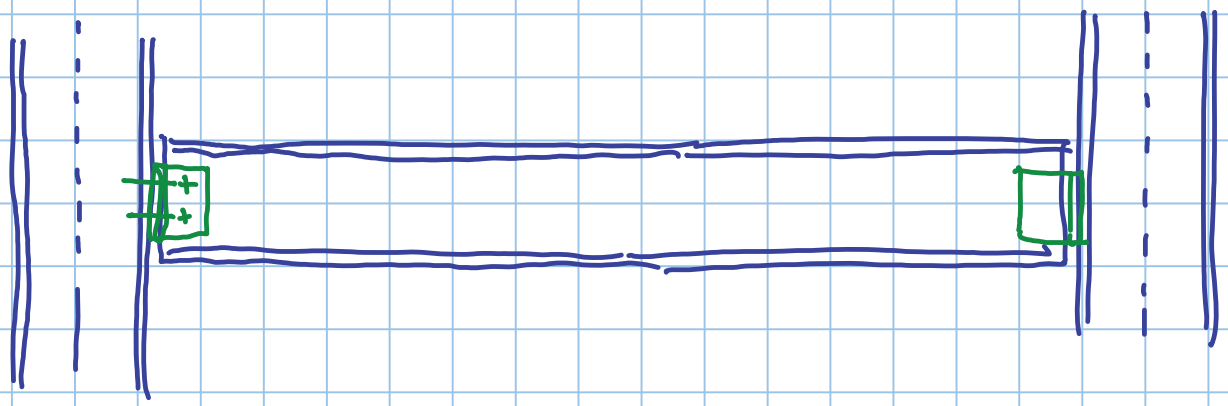
COLLEGAMENTI : TRAVE - COLONNA

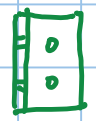
Titolo nota 08/01/2020

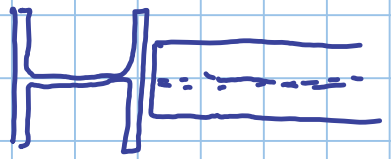


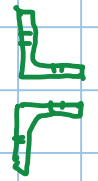
TP $V_{Ed} = 200$ KN

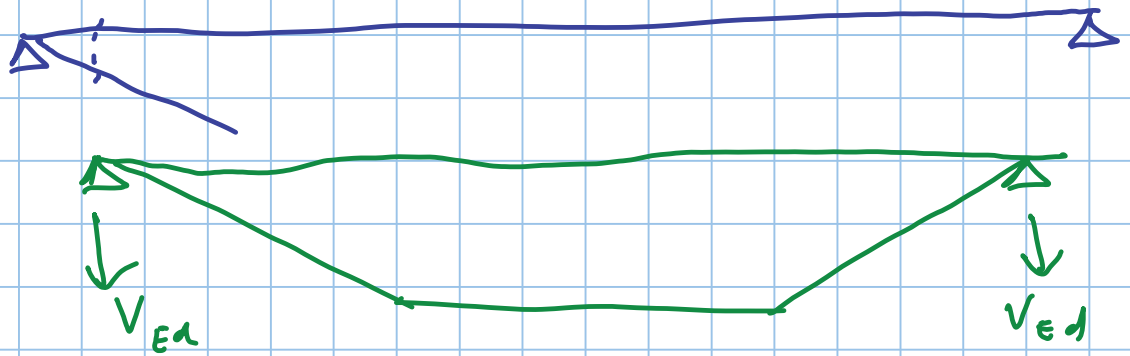
TS $V_{Ed} = 110$ KN

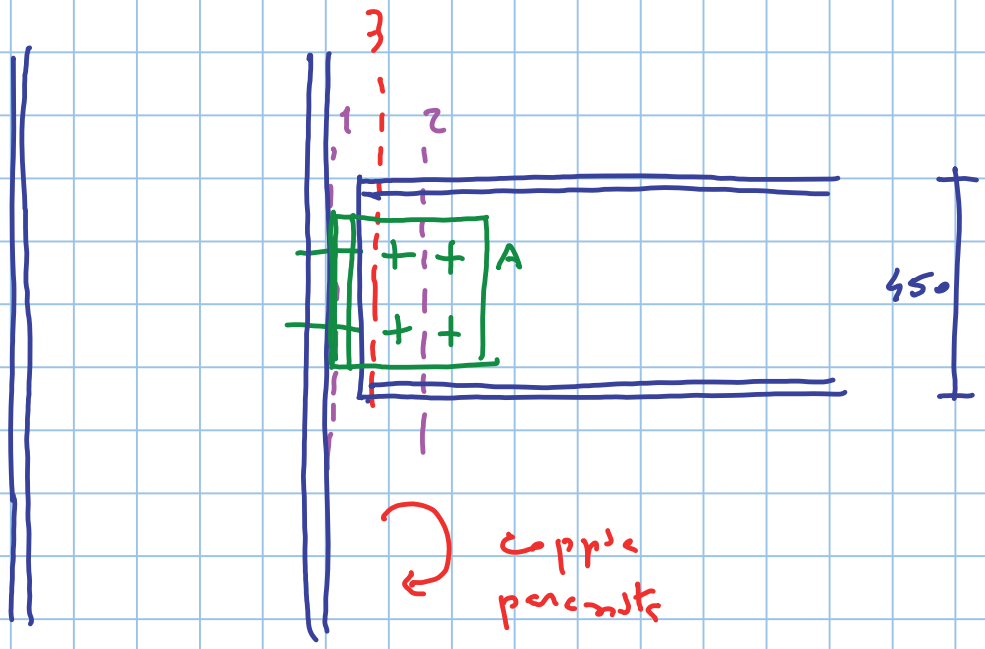








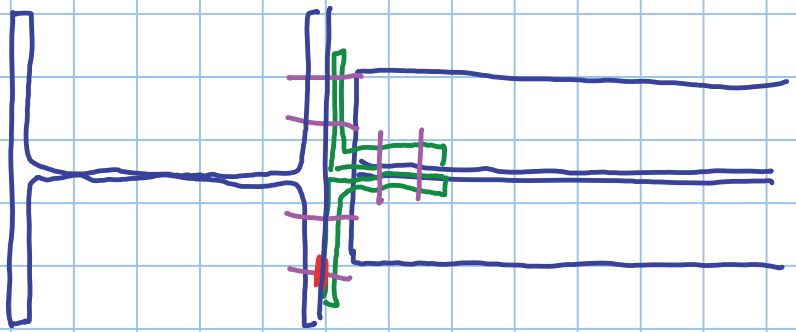

V_{Ed}
V_{Ed}

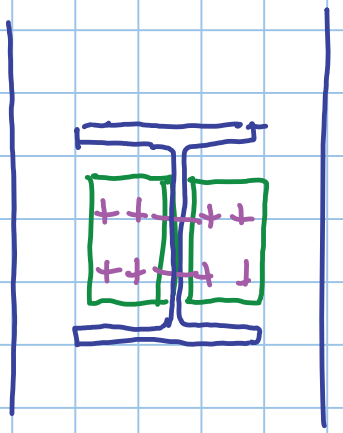


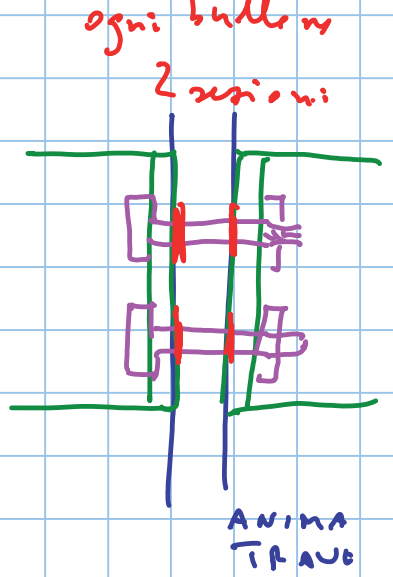
TRAVE - ANGOLARE

ANGOLARE - COLONNA

$V_{Ed} = 200$ KN

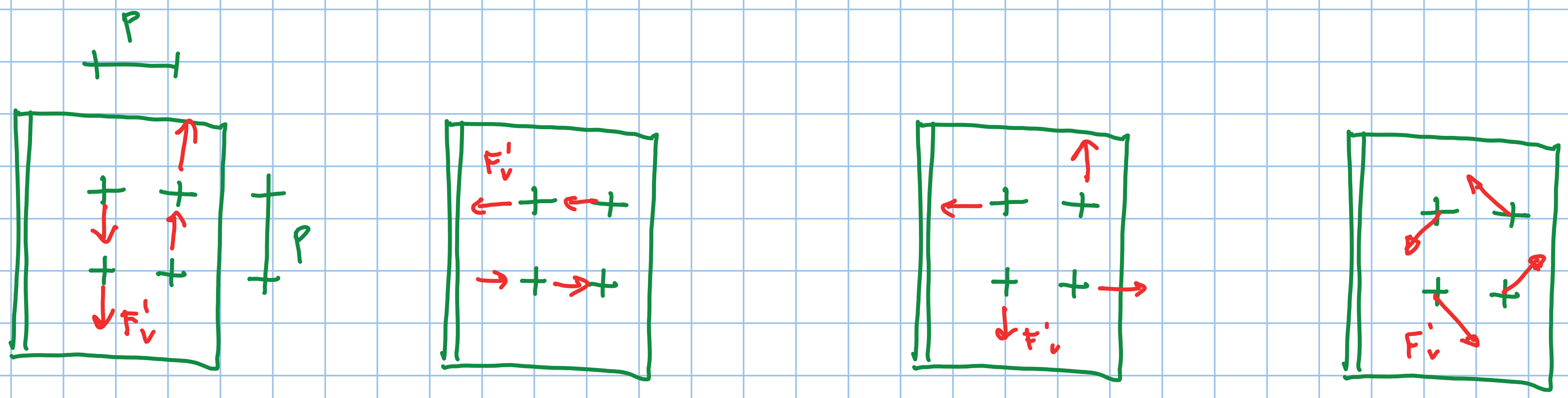






Esempio M16 5.6 filett. non interessata

$$F_{v,Rd} = 0.6\,A\,\frac{f_{ub}}{\gamma_{M2}} = 0.6 \times 201 \times \frac{500}{1.25} \times 10^{-3} = 48.2\ \text{kN}$$



$M = 4\,F'_v\,p$

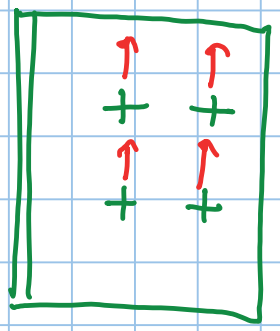
$M = 4\,F'_v\,p$

$M = 4\,F'_v\,p$

$M = 4\,F'_v\,\sqrt{2}\,p$

$$F'_v = \frac{M}{4\sqrt{2}\,p}$$

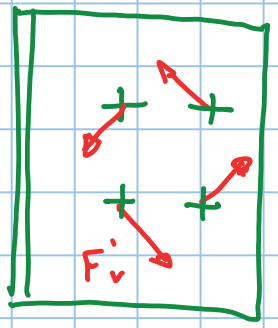
per V_{Ed}



$$F_v = \frac{V_{Ed}}{8}$$

$$\Downarrow$$

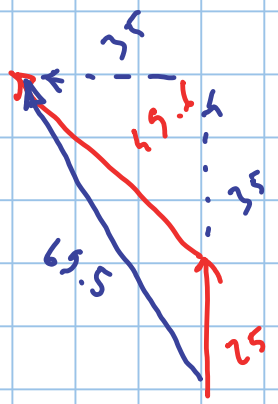
25



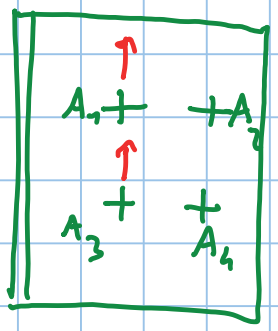
$$F_v' = \frac{V_{Ed} \cdot e}{4\sqrt{2}\, p}$$

$$\Downarrow$$

49.6



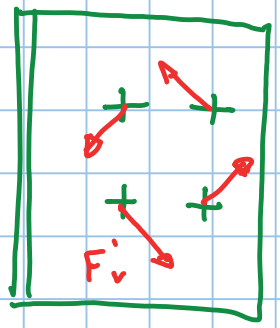
per V_{Ed}



$$F_v = \frac{V_{Ed}}{4}$$

$$\Downarrow$$

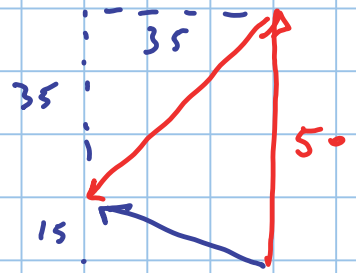
50



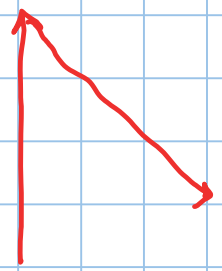
$$F'_v = \frac{V_{Ed} \cdot e}{4\sqrt{2}\ p}$$

$$\Downarrow$$

49.6



38.1 kN

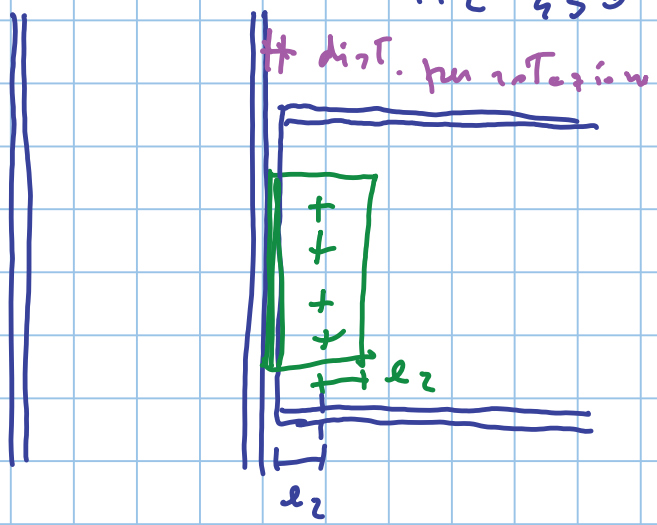


A_2 A_4 49.6 kN

$t_w = 9.4$ mm

IPE 450

l'angolare deve avere $l \geq 60$ mm



$p_2 \geq 3 d_0 = 51$ mm

suggerimento

$e_2 \geq \frac{p_2}{2} = 25.5$ mm

$d = 16$ mm

$d_0 = 17$ mm

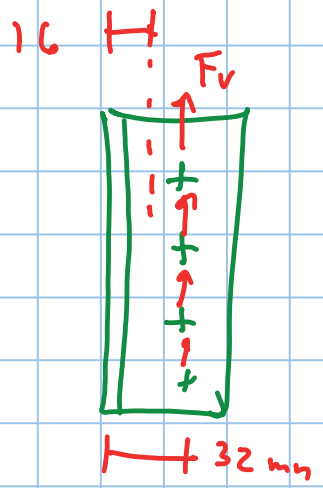
$V_{Ed} = 200 \text{ kN}$

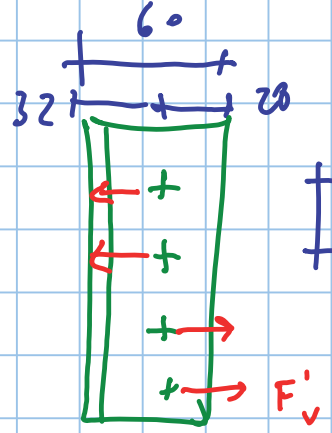
$V_{Rd} = A_v \dfrac{f_y}{\gamma_{M0}}$

$2\ L\ 60 \times 60 \times 5$

$A_v \geq \dfrac{V_{Ed}\,\gamma_{M0}}{f_y} = \dfrac{200 \times 10^3 \times 1.05}{275} =$

$= 763.6 \text{ mm}^2$





$p = 50$ mm
(da controllare)

$M = 200 \times 0.016 = 3.2$ kNm

$$F_v = \frac{V_{Ed}}{8}$$

25 kN

$$M = F'_v \cdot 8p$$

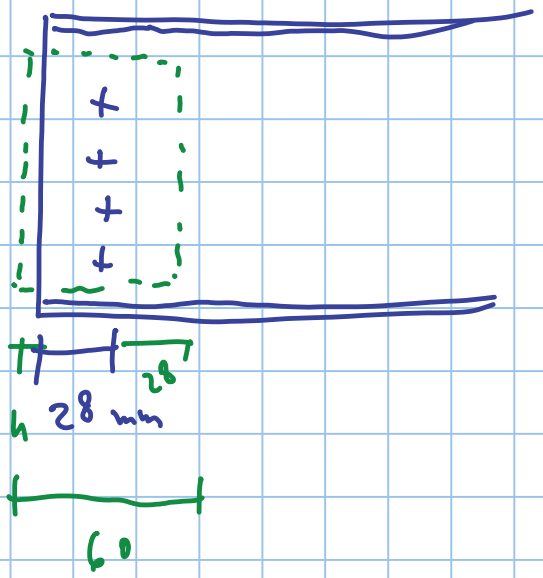
$$F'_v = \frac{M}{8p}$$

8 kN

$$F_{v,Ed} = \sqrt{25^2 + 8^2} = 27.4 \text{ kN} < F_{v,Rd}$$

Rifollamento

$K = 2.5$



2.5 16 9.4 430

$$F_{b,Rd} = k\,\alpha\,d\,t\,\frac{f_u}{\gamma_{M2}} \geq F_{v,Ed} = 27.4\ kN \times 2 = 54.8\ kN$$

$\gamma_{M2} \rightarrow 1.25$

$$F_{v,Rd} = 48.2\ kN$$

$$\alpha \geq \frac{F_{v,Ed}\cdot\gamma_{M2}}{k\,d\,t} = \frac{27.4\times10^{3}\times1.25\times2}{2.5\times16\times9.4\times430} = 0.422$$

$$\frac{p_1}{3d_0} - 0.25 \geq 0.422$$

$$p_1 \geq (0.422+0.25)\,3\,d_0 = 2.02\,d_0$$

$$\geq 2.2\,d_0 = 37.4\ mm$$

$p_1 = 50\ mm \rightarrow \alpha = 0.73$

$$F_{b,Rd} = 2.5\times0.73\times16\times9.4\times\frac{430}{1.25} = 94.4\ kN$$