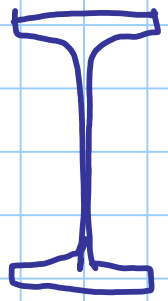
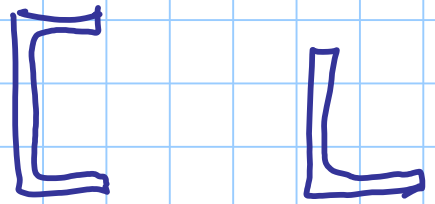
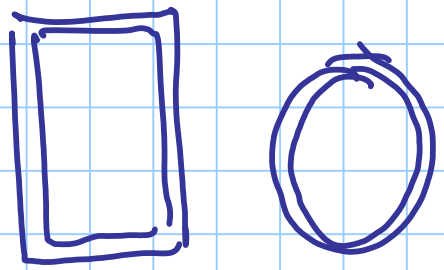
Titolo nota 30/10/2014

profili formati a caldo

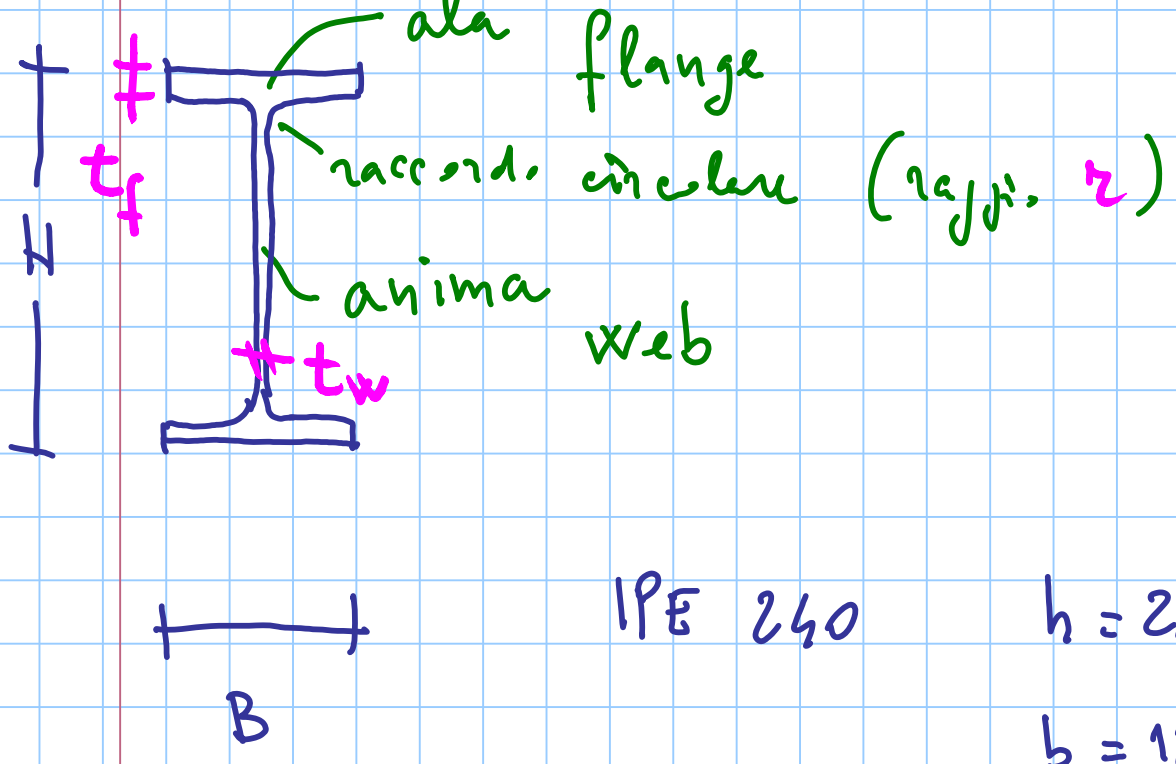




ottimo per M per N per T torsione

le caratteristiche dei profili sono in SAGOMARI

IPE

$B = H/2$

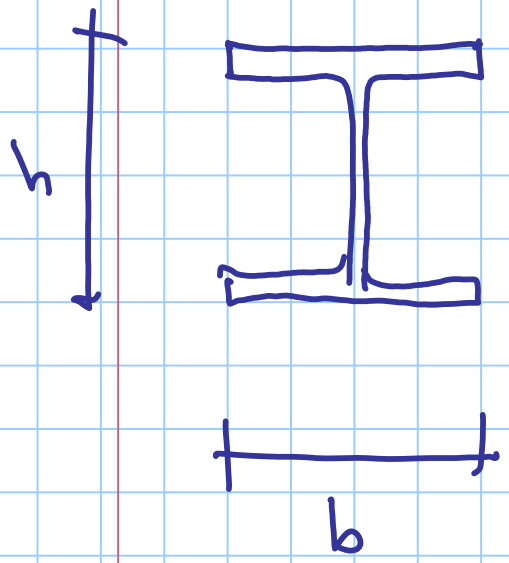


IPE 240

$h = 240$ mm

$b = 120$ mm

HE $b = h$

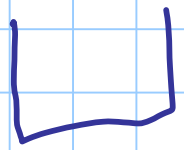


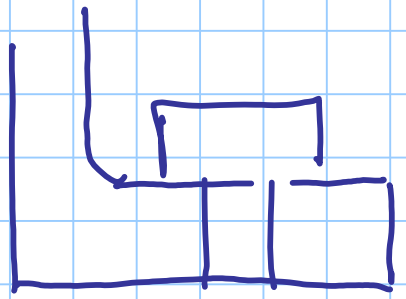
HE 240 B

$h = 240$ mm

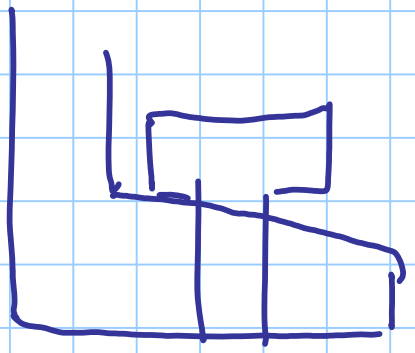
$b = 240$ mm

UPE

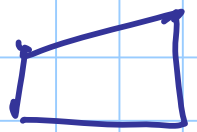




UPE



UPN



UPE 240

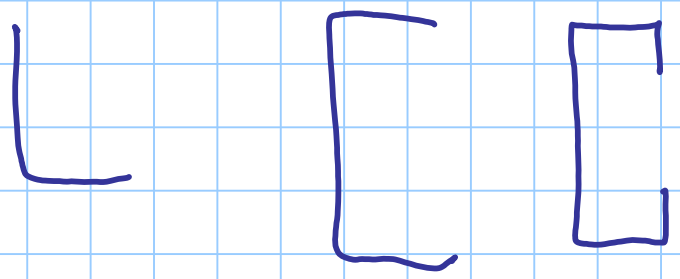
h = 240 mm

b = 90 mm

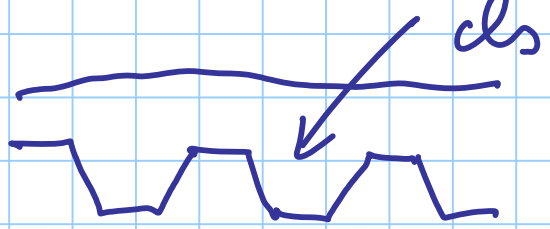
PIATTI

LAMIERE

LAMIERE SOTTILI piegate a freddo

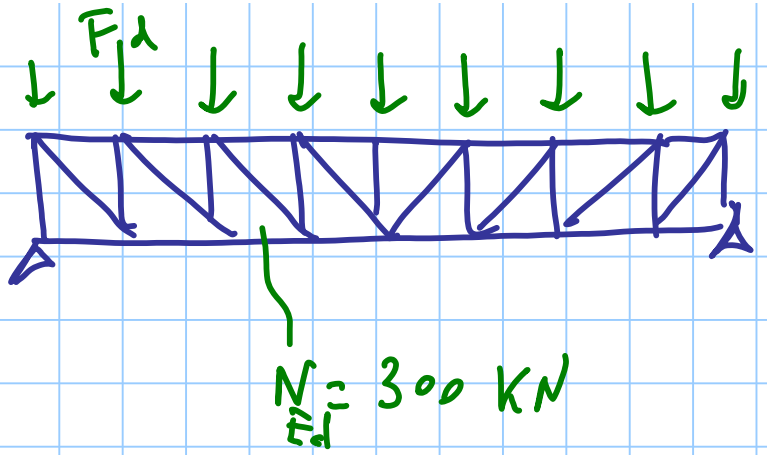


INSTABILITA' LOCALE



lamina grecata

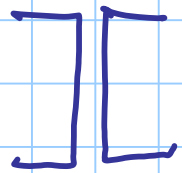
TRAZIONE



$N_{t,Rd}$

asta inferiore

2 UPE 140

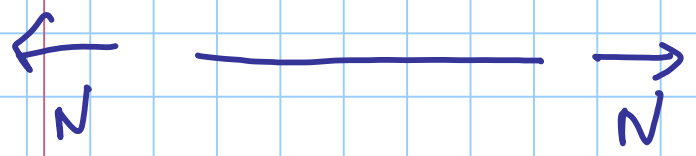


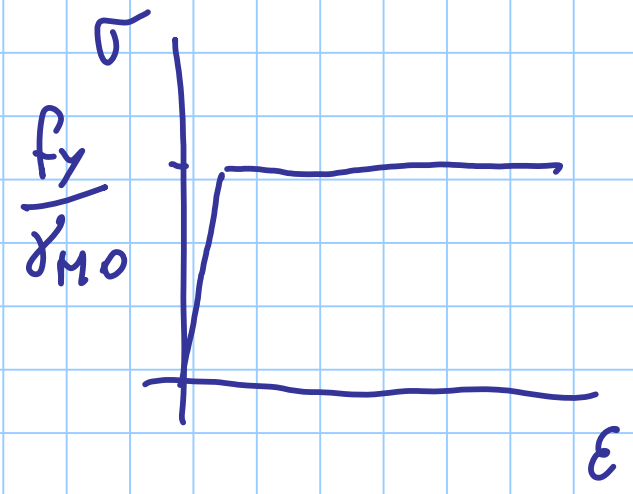
2 UPE ?

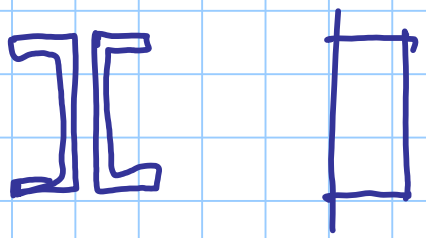
$A_{1,upe} : 18.4 \times 10^2$ mm^2

$A_{T.T} = 36,8 \times 10^2$ mm^2

2 L ? x ?







$$\sigma = \frac{N}{A}$$

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

$A = 36.8 \times 10^2 \, mm^2$ acciaio S 235

$f_y = 235 \, MPa$

$f_u = 360 \, MPa$

$$N_{t,Rd} = 36,8 \times 10^2 \times \frac{235}{1,05} \times 10^{-3} = 823.6 \, KN$$

progetto

$$N_{t,Ed} \leq N_{t,Rd} = A \frac{f_y}{\gamma_{M0}}$$

singolo profilo

$$A \geq \frac{N_{t,Ed}\,\gamma_{M0}}{f_y} =$$

$$A \geq 6{,}70 \times 10^2 \text{ mm}^2$$

$$= 300 \times 10^3 \times \frac{1.05}{235} = 1340{,}4 \frac{\text{N}}{\text{mm}^2}$$

L 60 × 60 × 6

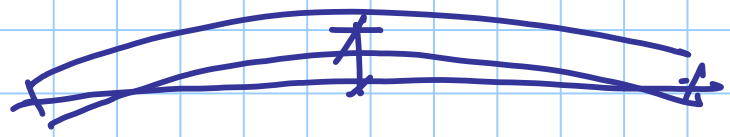
$$A = 6{,}91 \times 10^2 \text{ mm}^2$$

$$= 13{,}40 \times 10^2 \text{ mm}^2$$

IMPERFEZIONI

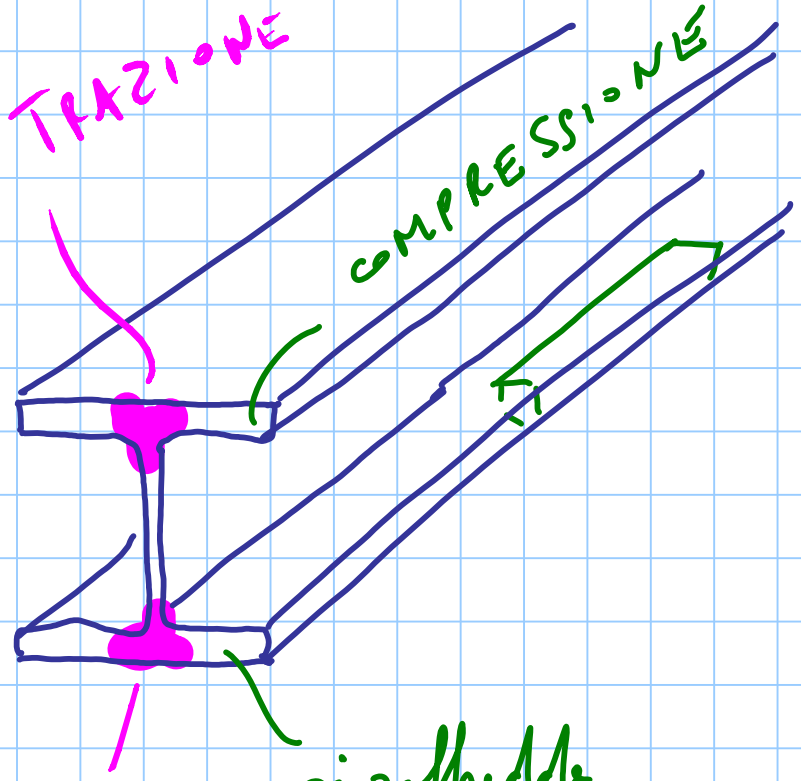
- GEOMETRICHE

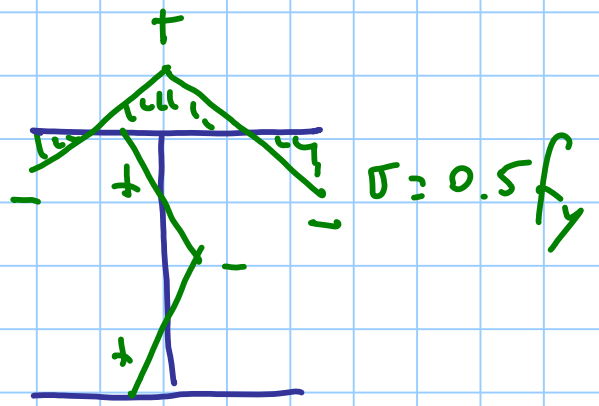
  asse non rettilineo

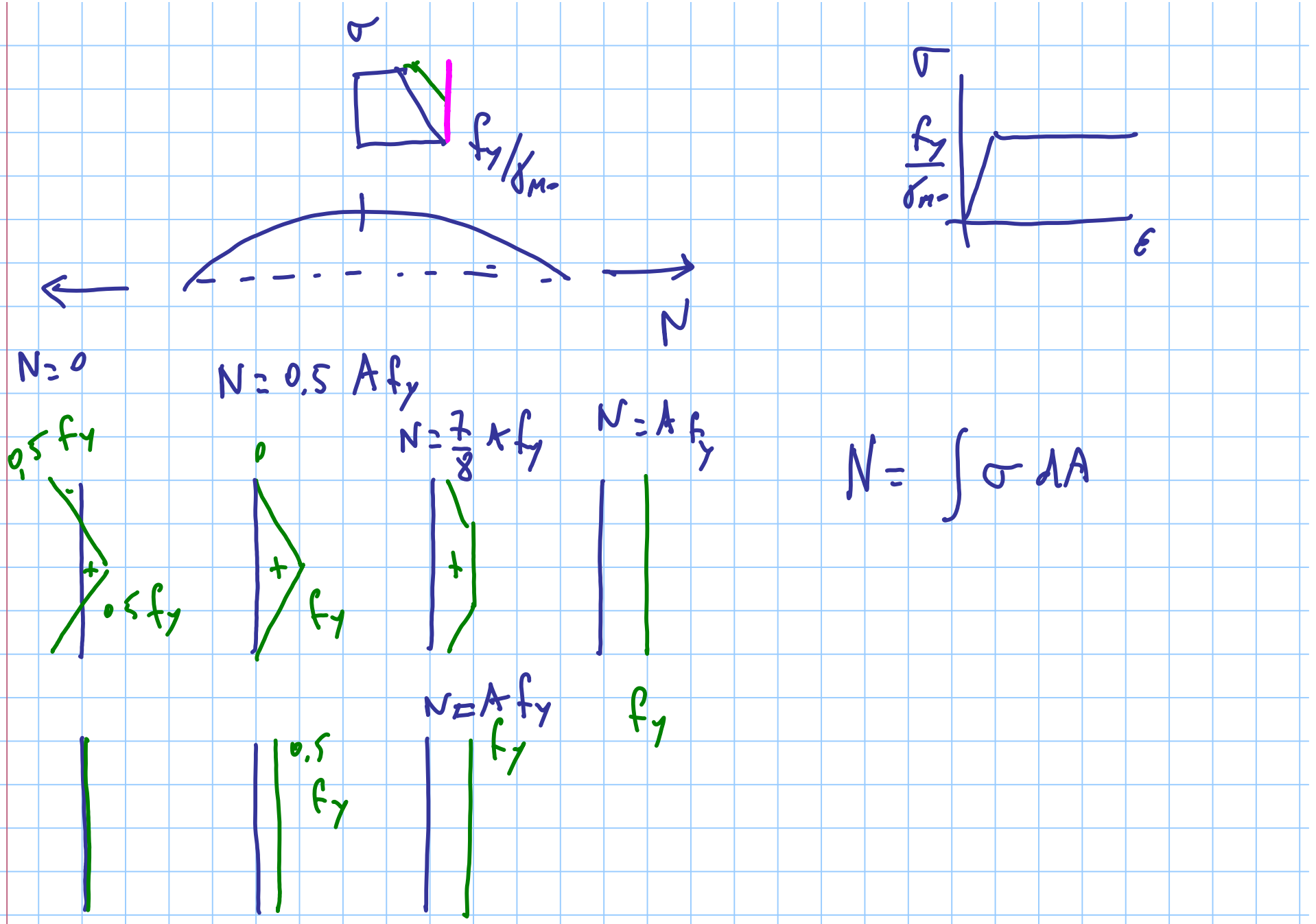


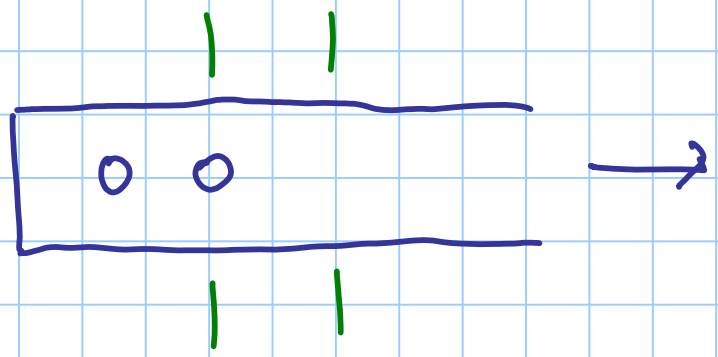
- MECCANICHE

  tensioni residue (o autotensioni)


TRAZIONE
COMPRESSIONE
si raffredda prima
si raffredda dopo


+
+
+
−
−
−
σ = 0.5 f_y


σ
f_y/γ_{M0}
σ
$\frac{f_y}{\gamma_{M0}}$
ε
N
N = 0
N = 0,5 A f_y
N = $\frac{7}{8}$ A f_y
N = A f_y
0,5 f_y
0,5 f_y
0
f_y
+
+
+
$N = \int \sigma \, dA$
N = A f_y
f_y
0,5
f_y
f_y



area A

area $< A$

A_{net}

$$\sigma = \frac{N}{A}$$

$$\sigma = \frac{N}{A_{net}}$$