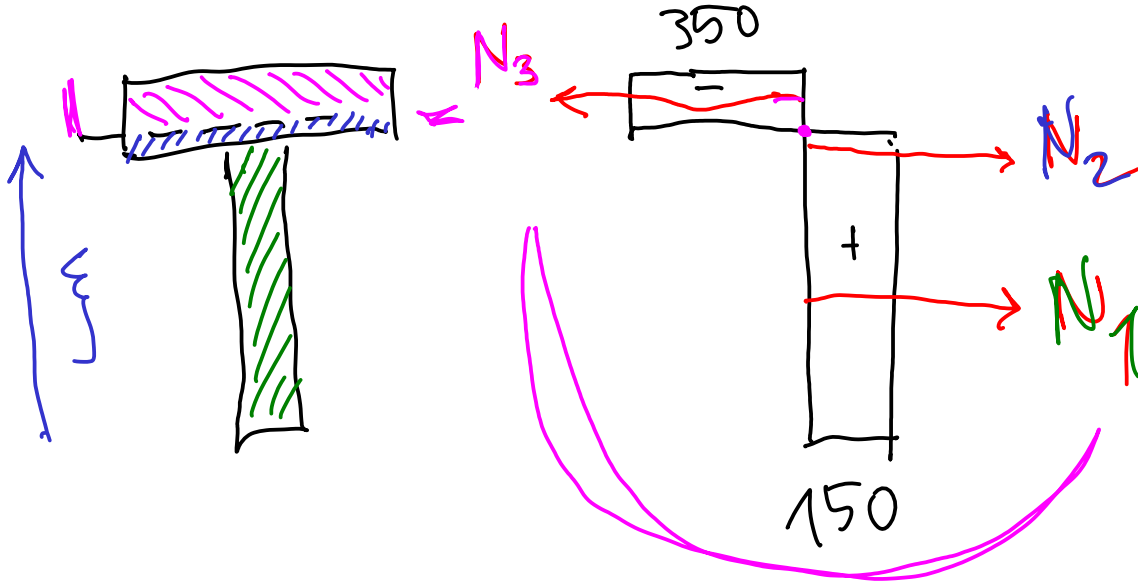


ξ : \rightarrow
 $-N_3 - N_2 + N_1 = 0$
 $- 350 \cdot 0,33 \cdot 0,03 - 350 \cdot 0,03 \cdot (0,5 - \xi)$
 $+ 150 \cdot 0,03 \cdot \xi = 0$
 $\xi = 0,58 > H = 0,53$
 $\xi = 0,51 > h = 0,5$
 $\rightarrow zme\u0161na!$

σ



$$\rightarrow N_1 + N_2 - N_3 = 0$$

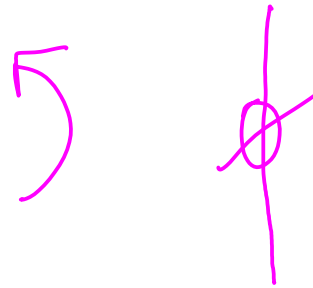
$$N_1 = 150 \cdot 0,03 \cdot 0,5$$

$$N_2 = 150 \cdot (\xi - 0,5) \cdot 0,33$$

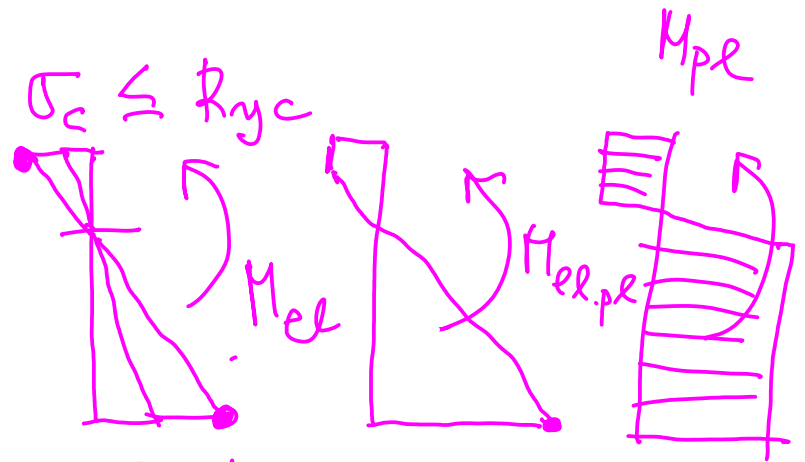
$$N_3 = 350 \cdot 0,33 \cdot (0,03 - \xi + 0,5)$$

ξ_{opr} ✓

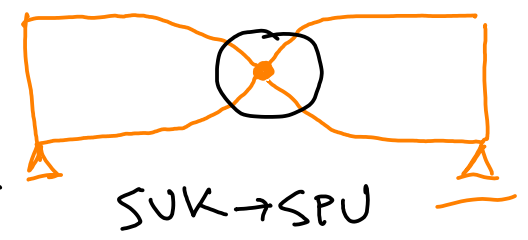
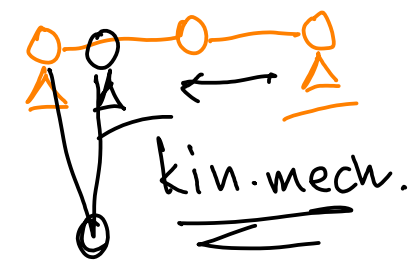
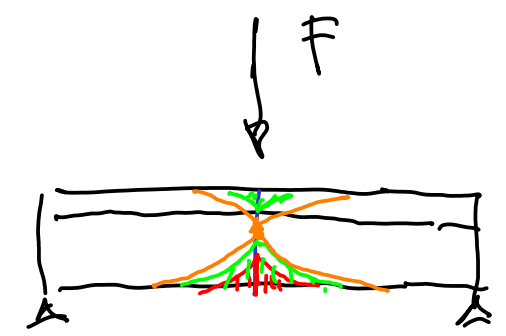
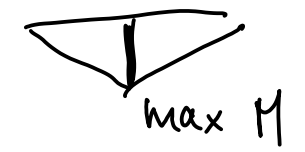
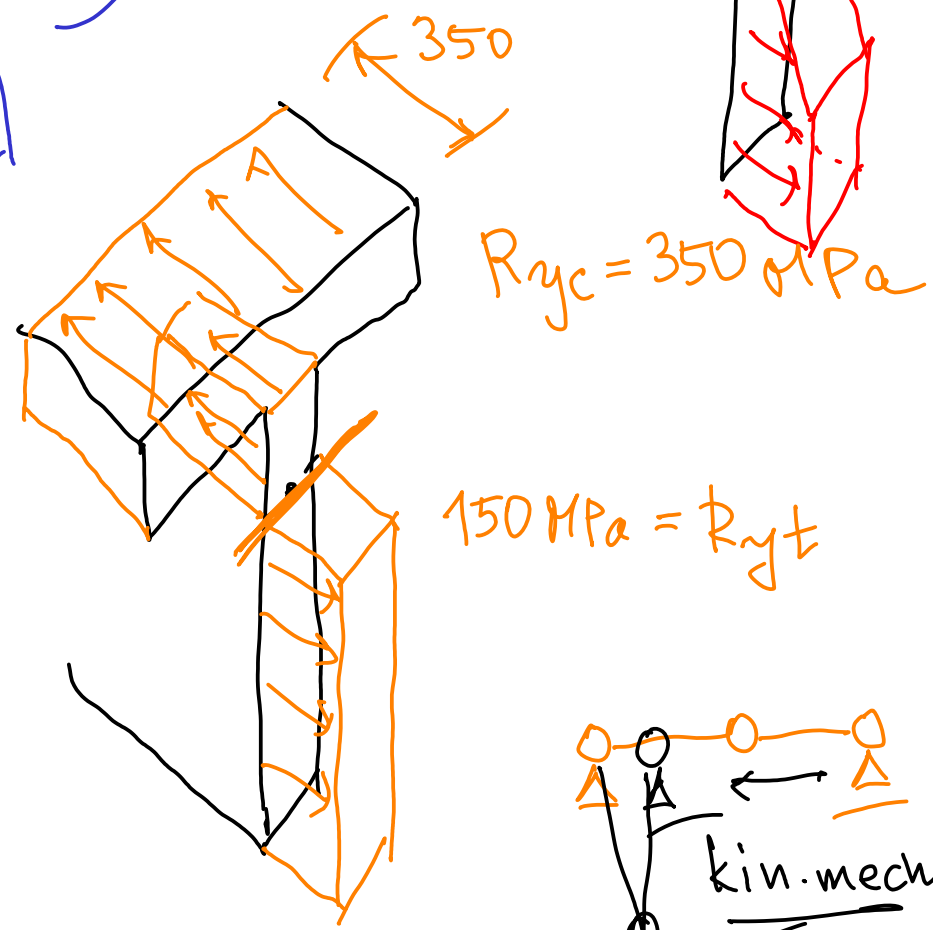
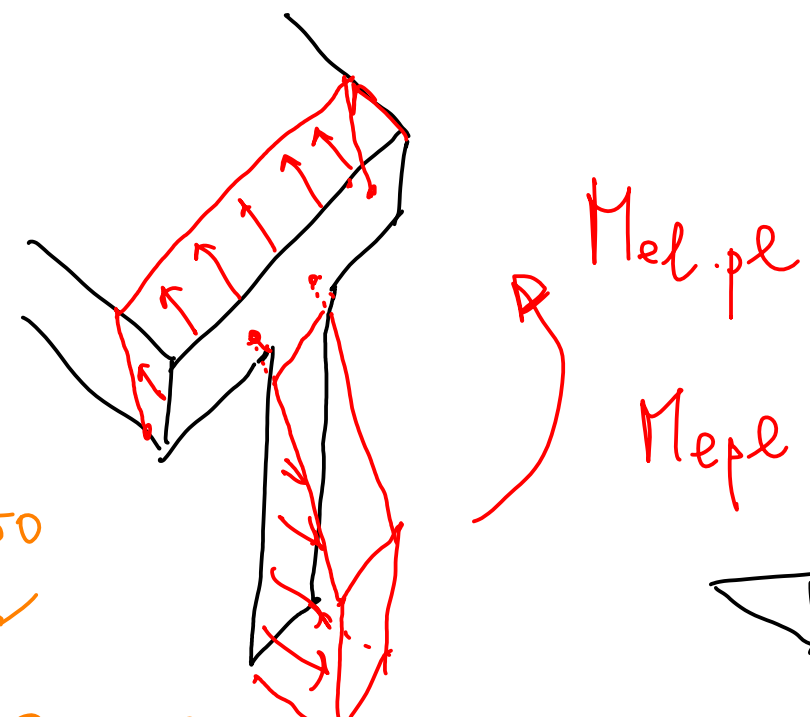
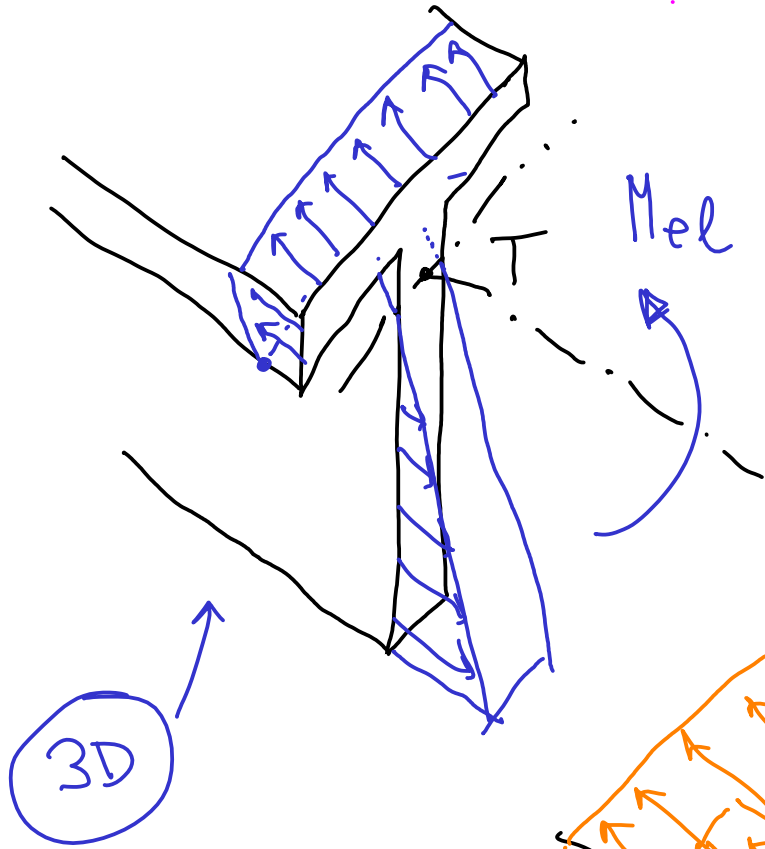
$$M_{pl} = \sum_1^3 M_i$$

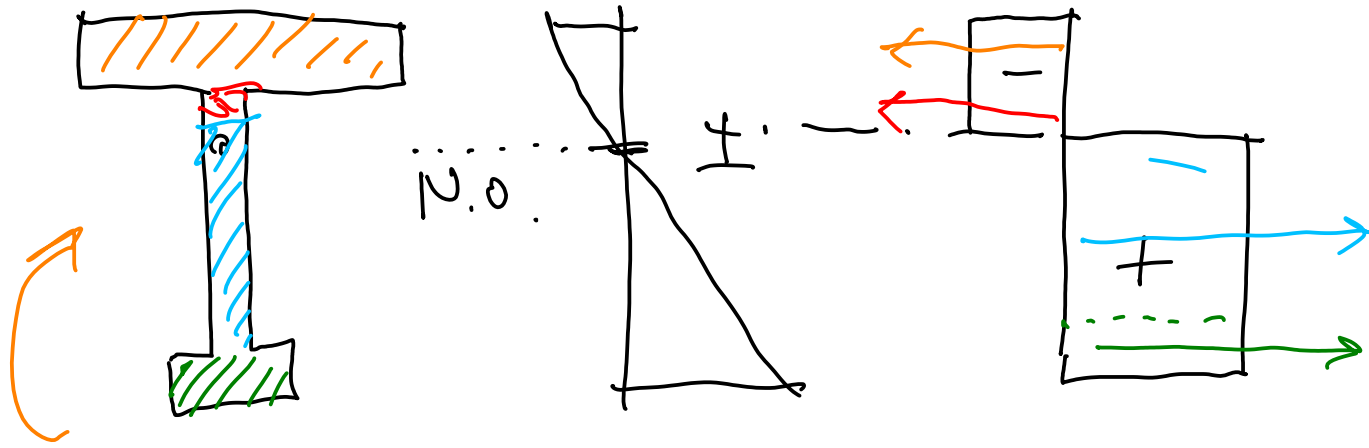


$$R_{yc} \ll R_{yt}$$



$$\sigma_t \leq R_{yt}$$

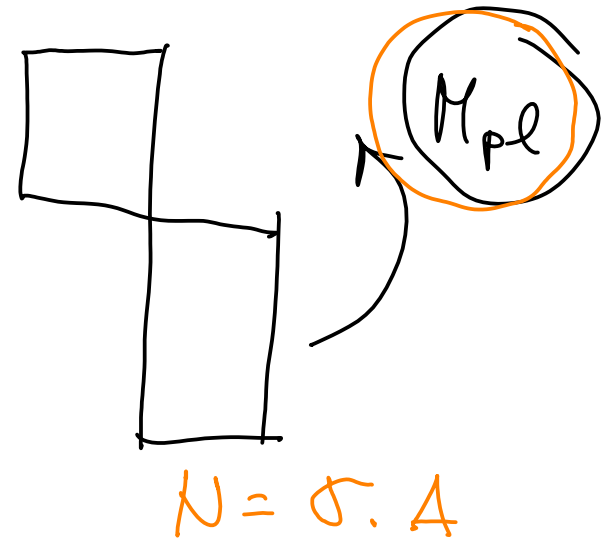
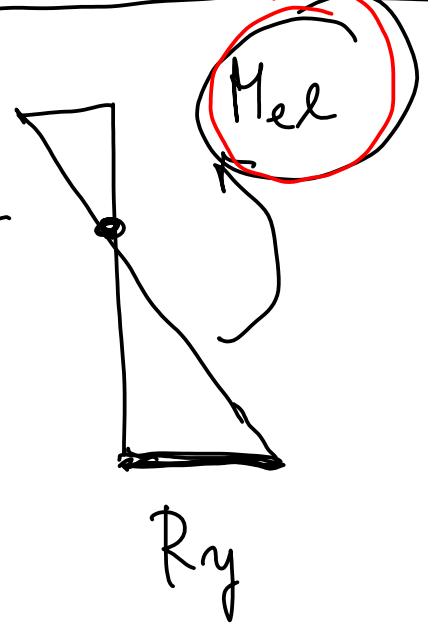
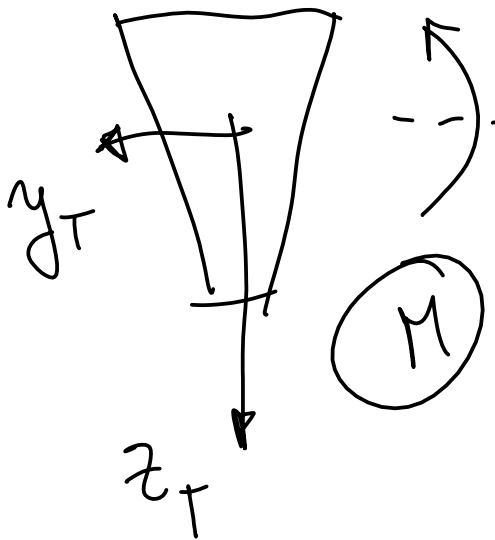




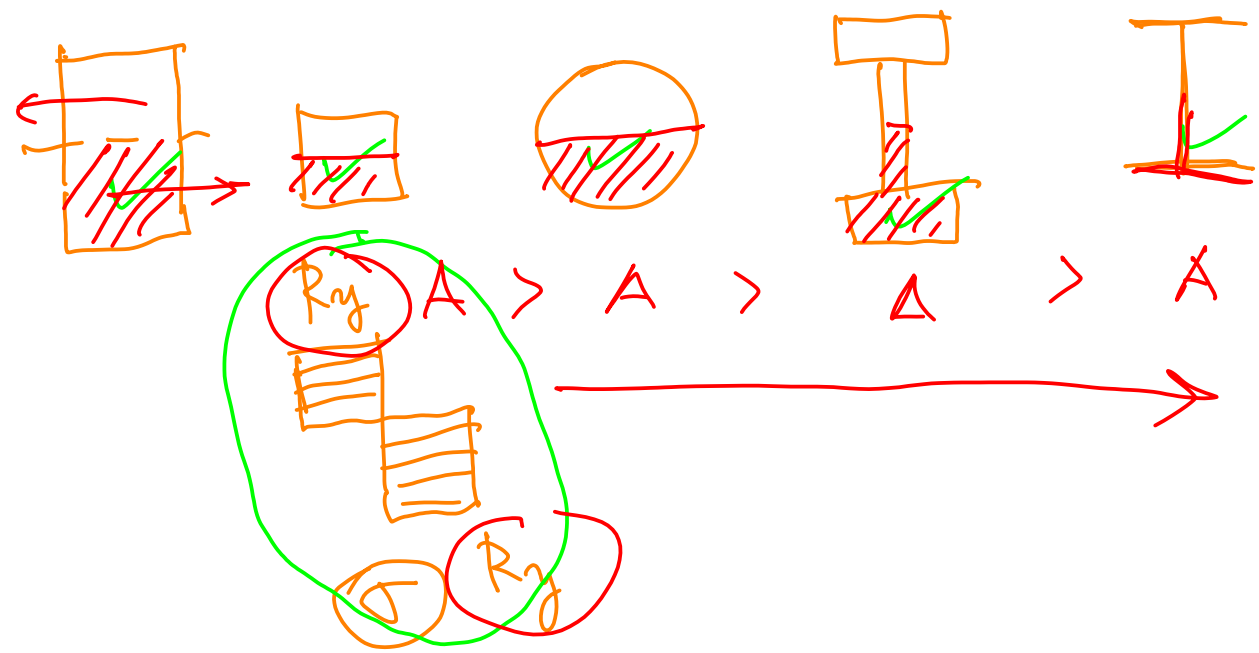
$$N_i = R_{yi} \cdot A_i$$

$$R_{yt} > R_{yc}$$

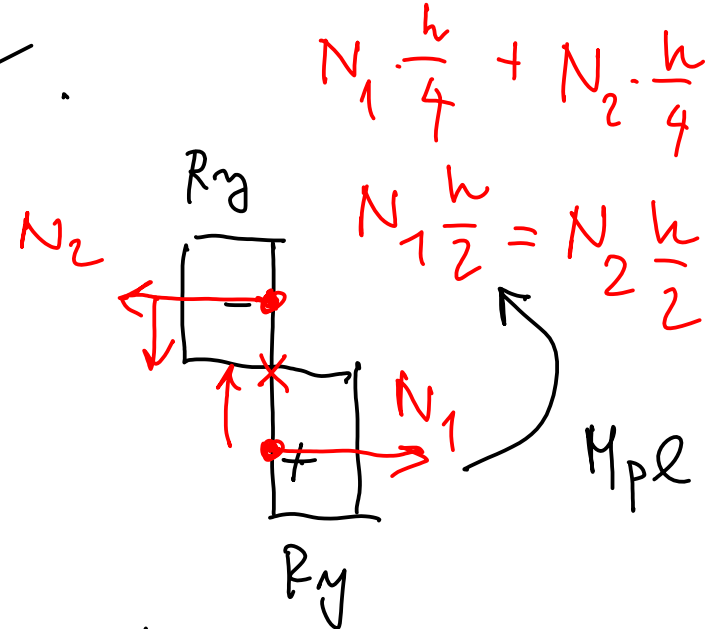
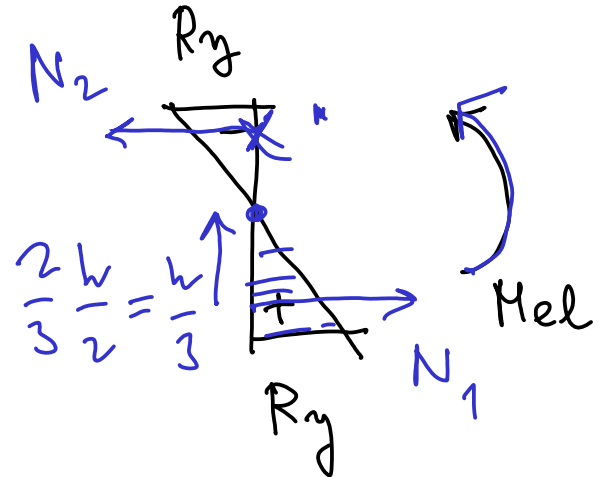
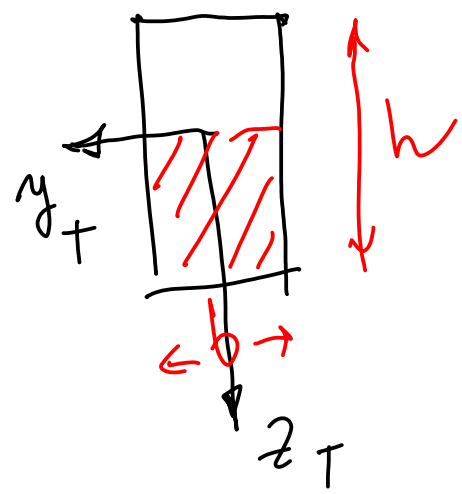
PLASTICKÁ REZERVA PRŮŘEZU



$R_{yc} = R_{yt}$



? Plast. rezerva $\#$.



$$N_1 \cdot \frac{h}{4} + N_2 \cdot \frac{h}{4}$$

$$N_1 \frac{h}{2} = N_2 \frac{h}{2}$$

a) mez. el. stav

b) mez. pl. stav

M_{pl}

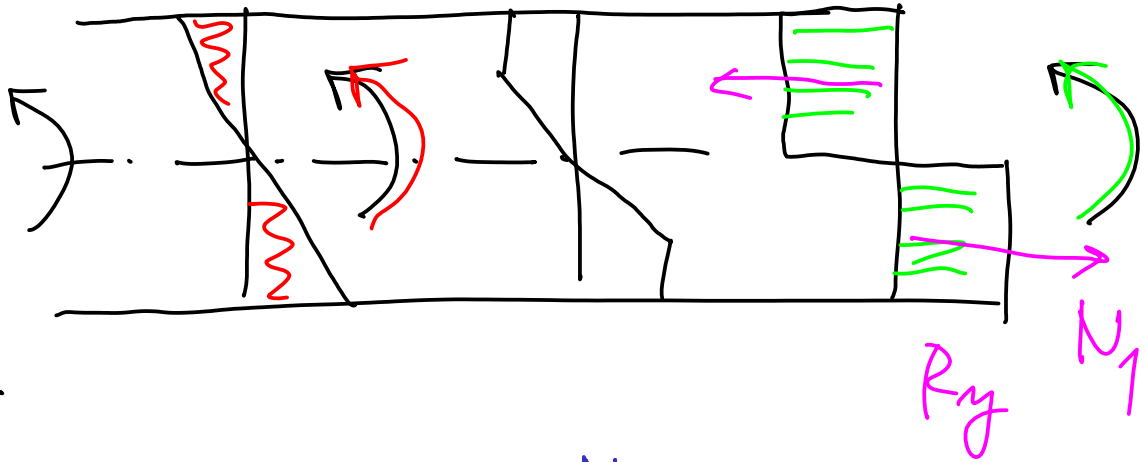
M_{el}

$$R_y \cdot b \cdot \frac{h}{2} \cdot \frac{1}{2} \cdot \frac{2}{3} h$$

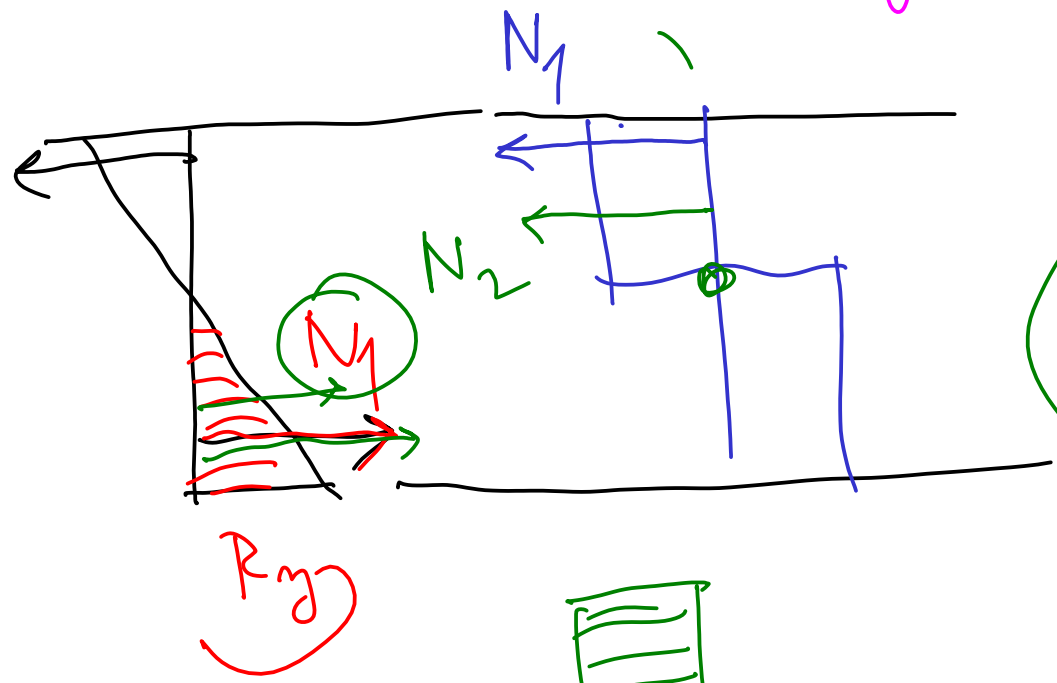
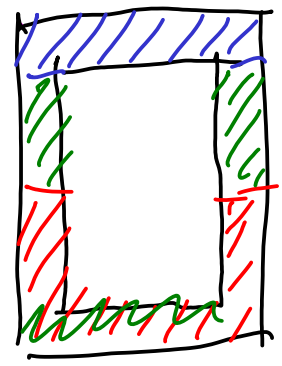
$$\frac{1/4}{1/6} = \frac{6}{4} = \frac{3}{2}$$

$$= 1.5 \quad (150\%)$$

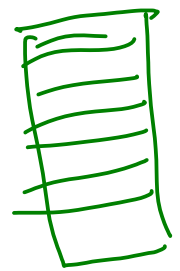
$$(0 \text{ } 50\% \text{ n'c})$$



$$= \frac{M_{pl}}{M_{el}}$$



OKYB ✓

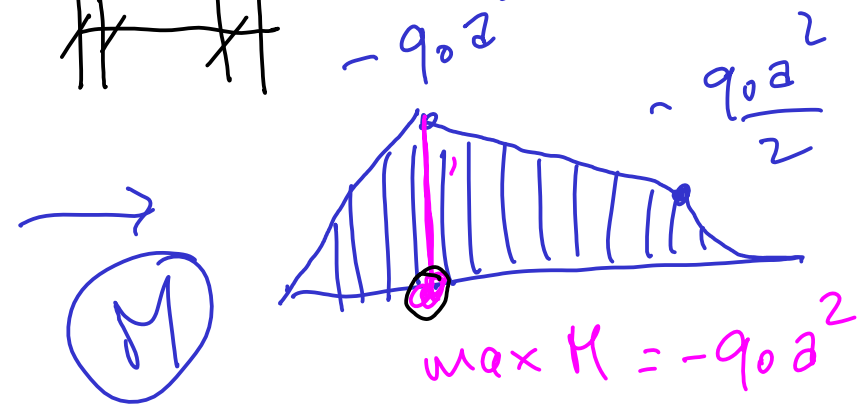
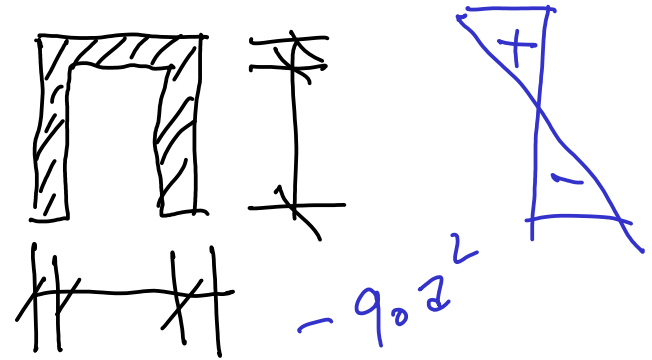
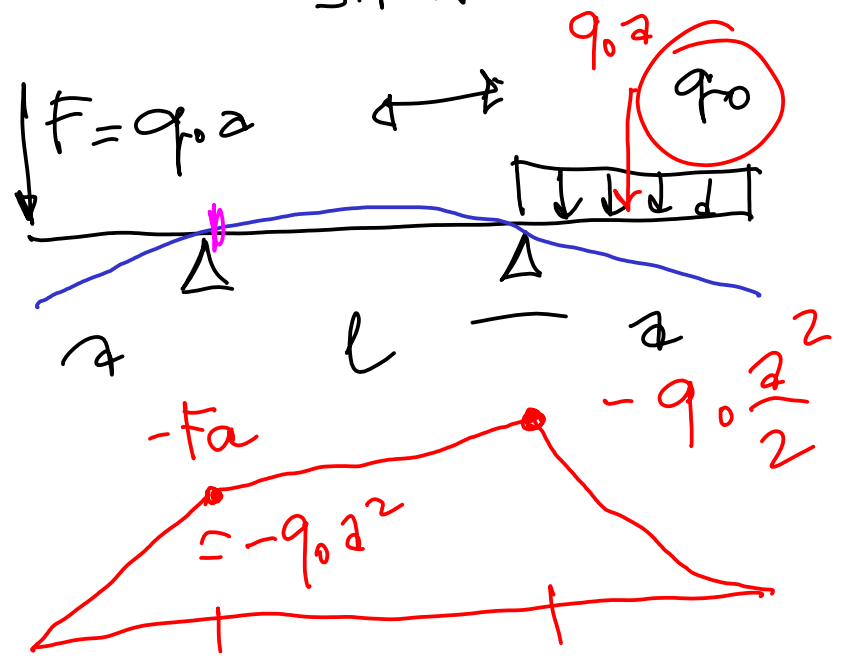


PL. STAV $\bar{\varphi}$ RĚZU ✓
KONSTRUKCE
 S.N.K.

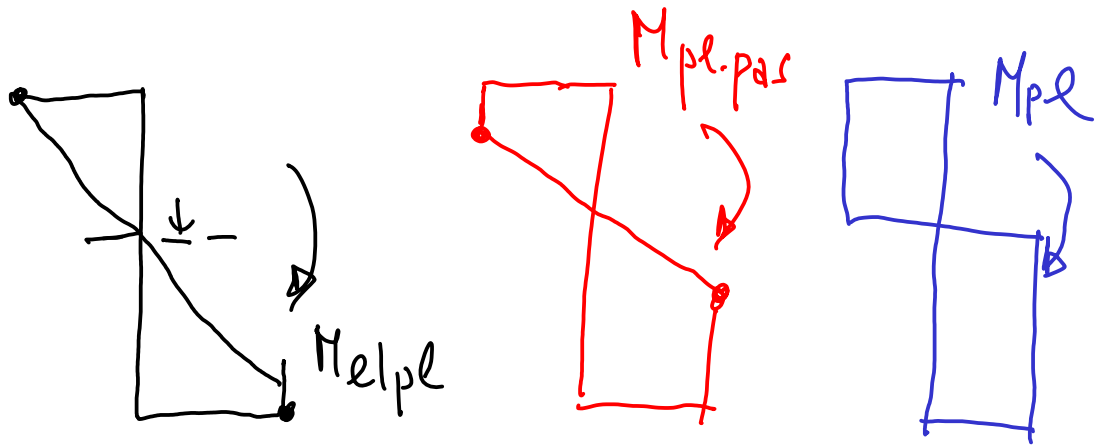
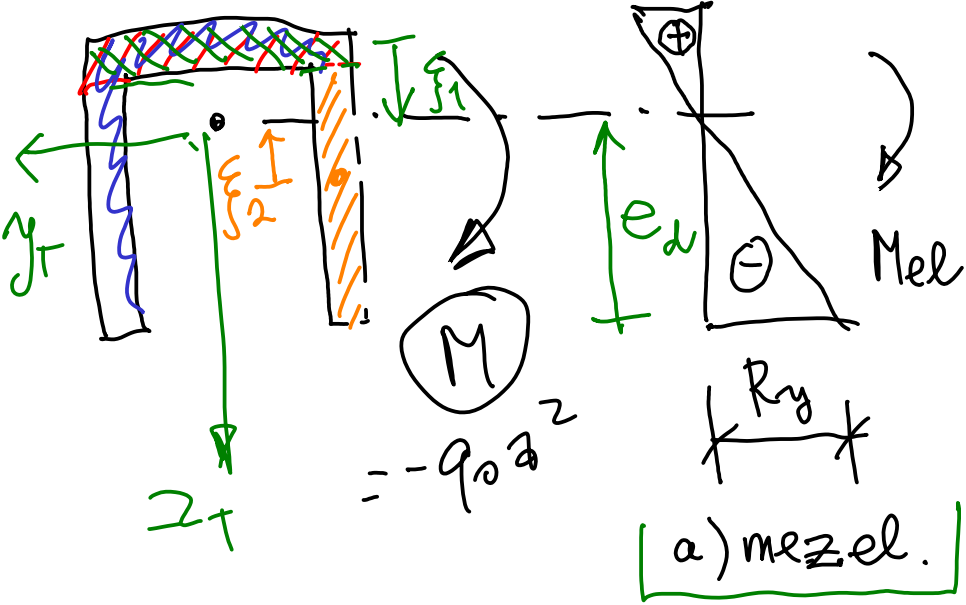
→ $\bar{\varphi}$ RĚZU PŮBY

①

SUK



$$R_{yc} = R_{yt} = R_y$$



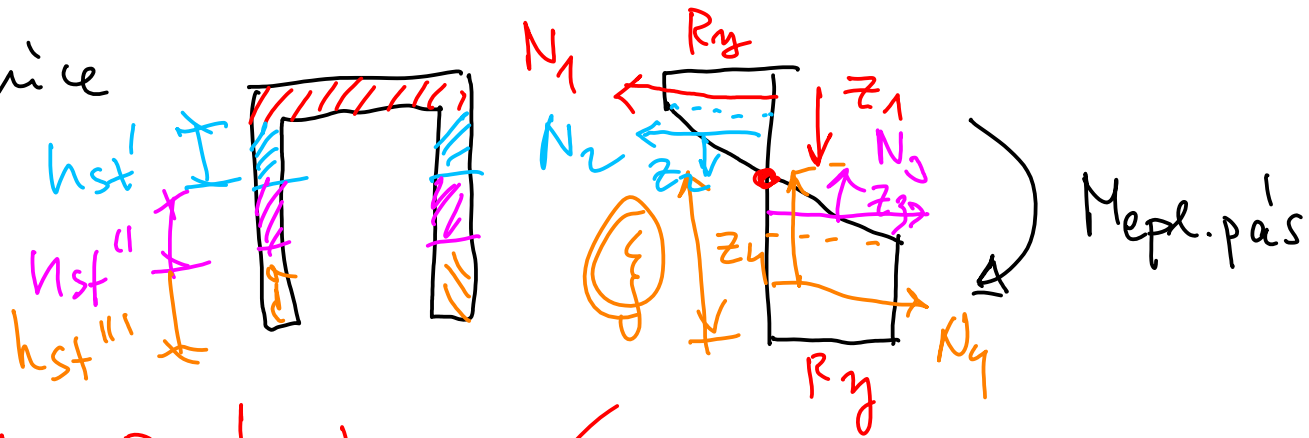
$$a) z_T = \frac{\sum A_j z_j}{\sum A_j} = e_d$$

$$I_y = \frac{1}{12} b_1 h_1^3 + b_1 h_1 \cdot \xi_1^2 + 2 \left(\frac{1}{12} b_2 h_2^3 + b_2 h_2 \cdot \xi_2^2 \right)$$

$$\sigma = \frac{M}{W} = \frac{M_y \cdot z}{I_y}$$

$$M_{el} = \sigma W = R_y \frac{I_y}{z} \quad \checkmark$$

c) párnice



$$N_1 = R_y \cdot b_{\text{pas}} \cdot h_{\text{pas}} \quad \checkmark$$

$$N_2 = R_y \cdot \frac{1}{2} \cdot 2 \cdot b_{\text{st}} \cdot h_{\text{st}}' \quad \checkmark$$

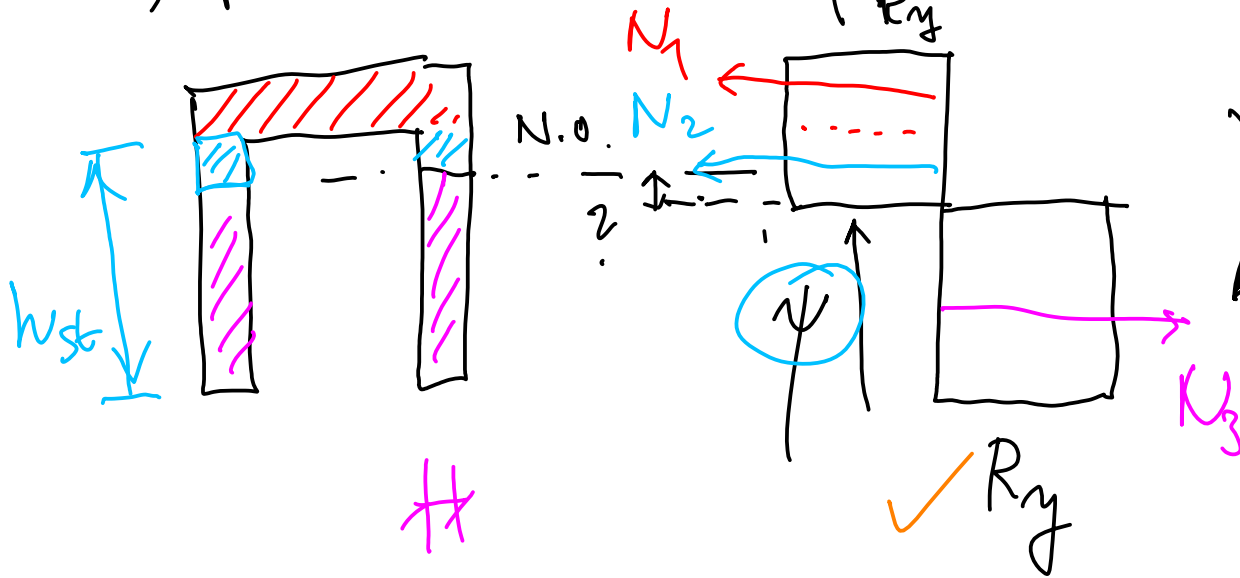
$$N_3 = R_y \cdot \frac{1}{2} \cdot 2 \cdot b_{\text{st}} \cdot h_{\text{st}}''$$

$$N_4 = R_y \cdot 2 \cdot b_{\text{st}} \cdot h_{\text{st}}'''$$

$$M_{\text{epl.pás}} = \sum N_i \cdot z_i$$

$$= N_1 \cdot z_1 + N_2 \cdot z_2 + N_3 \cdot z_3 + N_4 \cdot z_4$$

d) plast. stav celého průřezu - M_{pl}

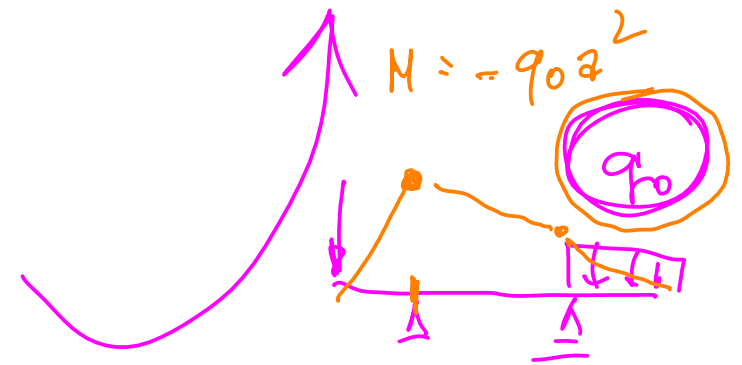


$$M_{pl} = N_1 \psi_1 + N_2 \psi_2 + N_3 \psi_3$$

$$N_1 = R_y \cdot b_{pas} \cdot h_{pas}$$

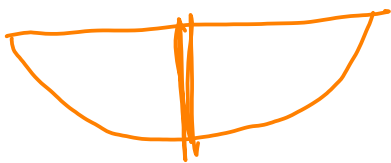
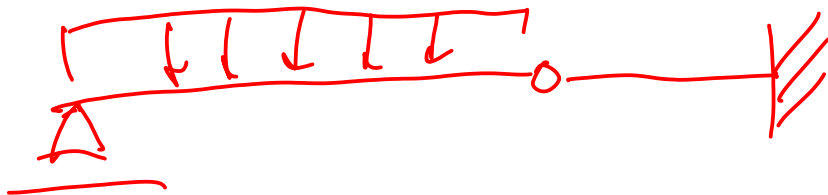
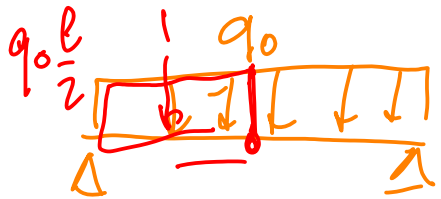
$$N_2 = R_y \cdot 2 \cdot b_{st} \cdot (\psi - h_{st})$$

$$N_3 = R_y \cdot 2 \cdot b_{st} \cdot \psi$$

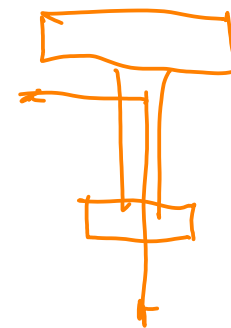
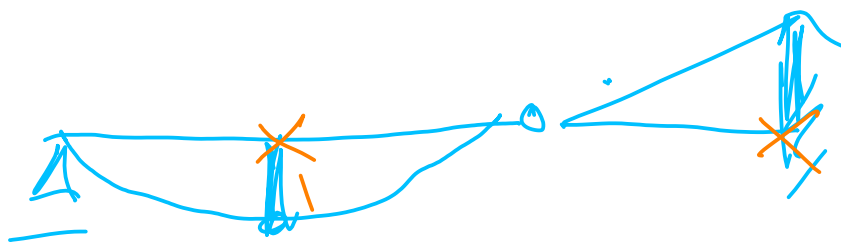


$$M_{pl} = -q_0 a^2$$

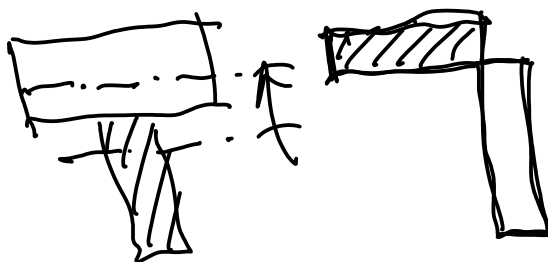
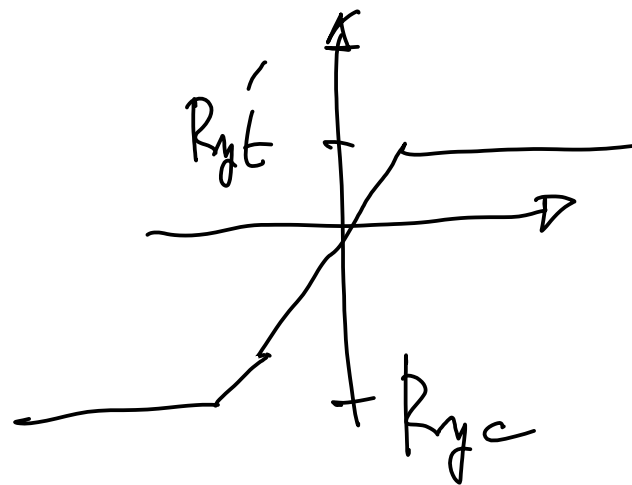
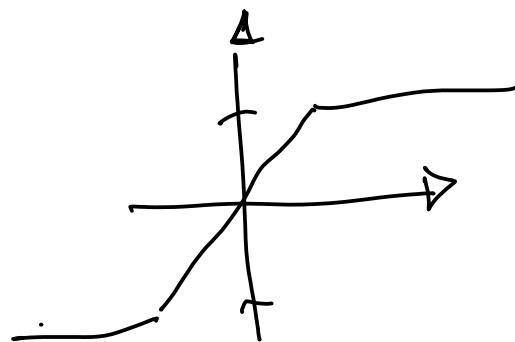
$$\Rightarrow \underline{q_{0,pl}} = -\frac{M_{pl}}{a^2} \checkmark$$



$$M = \frac{1}{8} q_0 l^2$$



el → pl ...



oprava!

PLASTICITA

teorie (✓)


mat. teorii

pruz. plash

prakticke' priklady (✓)

TAY ✓

OHYB ✓

(KRUH) 

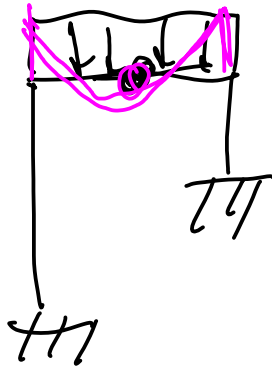
→ Pruz

→ Pruhy

SUK

→ Pruhy

SUK



kloub

→ M=0 ✓

