

IPE 220

 $L = 5.00 \text{ m}$ 

vincl

$$I_y = 2772 \times 10^4 \text{ mm}^4$$

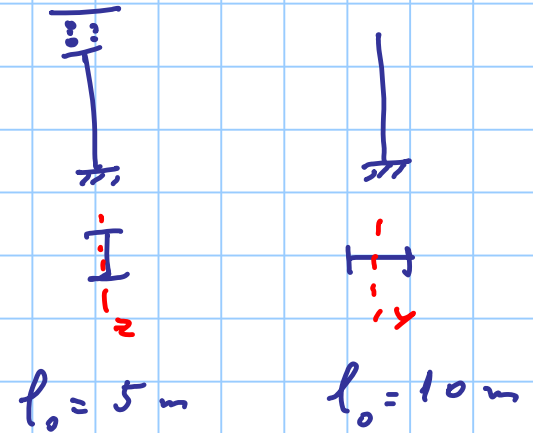
S 275

$$I_z = 204.9 \times 10^4 \text{ mm}^4$$

$$A = 33.4 \times 10^2 \text{ mm}^2$$

$$i_y = 9.11 \times 10 \text{ mm}$$

$$i_z = 2.48 \times 10 \text{ mm}$$



nel piano del telaio

$$l_0 = 5.00 \text{ m} = 5000 \text{ mm}$$

$$i_z = 2.48 \times 10 = 24.8 \text{ mm}$$

$$\lambda_z = \frac{5000}{24.8} = 201.6$$

$$\bar{\lambda}_z = \frac{201.6}{86.8} = 2.32$$

$$\chi = \frac{1}{\varphi + \sqrt{\varphi^2 - \bar{\lambda}^2}} \leq 1$$

$$\varphi = \frac{1}{2} \left[ 1 + \alpha (\bar{\lambda} - 0.2) + \bar{\lambda}^2 \right]$$

$$N_{b, Rd} = \chi A \frac{f_y}{\gamma_{M1} K_{1.05}} =$$

$$= 0.160 \times 33.4 \times 10^2 \times 275 \times 10^{-3} \times \frac{1}{1.05} = 140.0 \text{ kN}$$

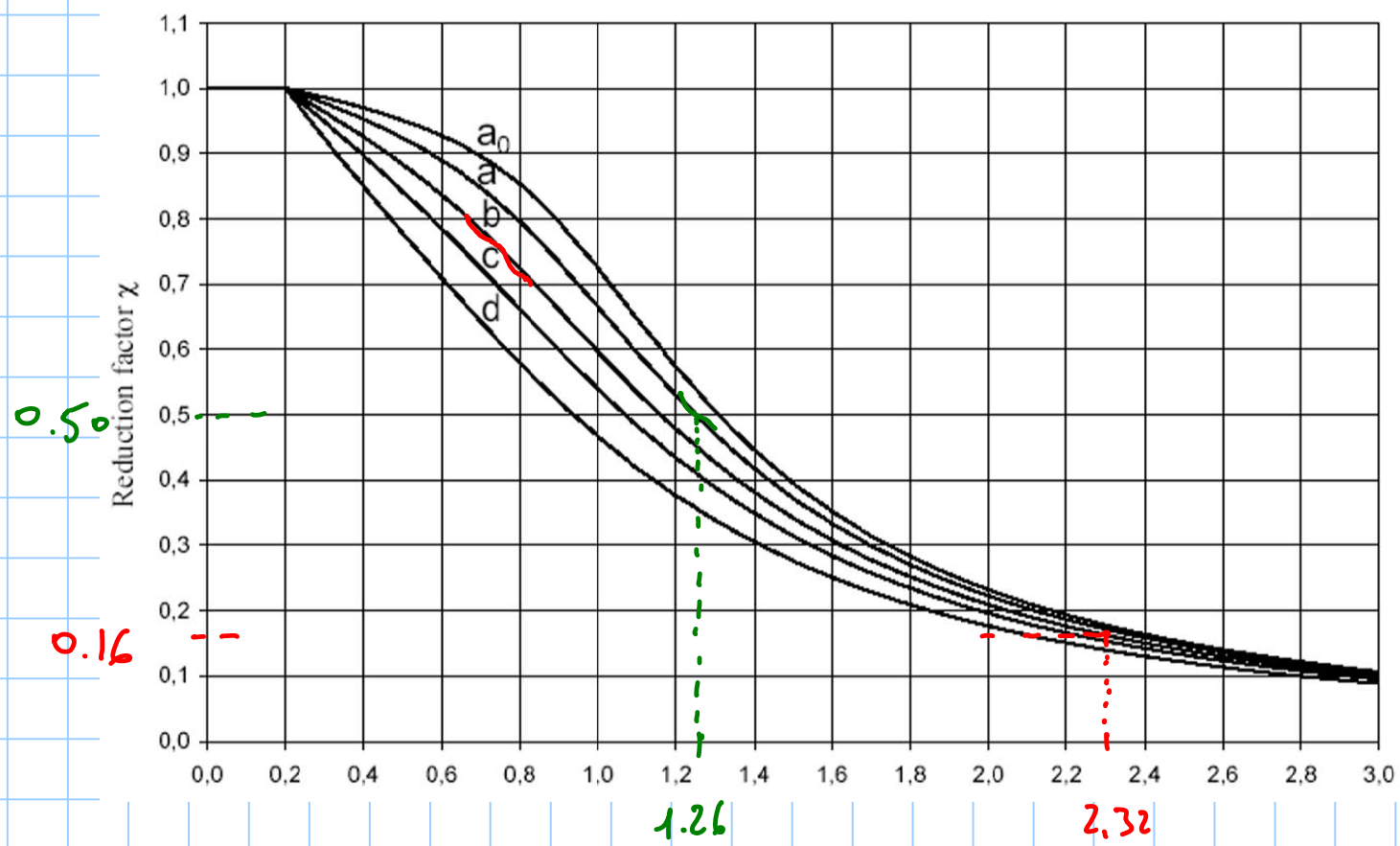
$$\alpha = 0.34$$

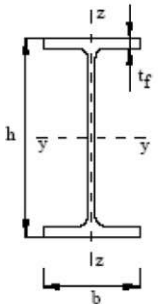
↑

→ curva b →  $\chi \approx 0.16$

$$\chi = \frac{1}{3.55 + \sqrt{3.55^2 - 2.32^2}} = 0.160$$

$$\varphi = \frac{1}{2} \left[ 1 + 0.34 (2.32 - 0.2) + 2.32^2 \right] = 3.55$$



Sezione trasversale	Limiti	Inflessione intorno all'asse	Curva di instabilità	
			S235, S275, S355, S420	S460
	$t_f \leq 40 \text{ mm}$	y-y z-z	a b	a <sub>0</sub> a <sub>0</sub>
	$40 \text{ mm} < t_f \leq 100 \text{ mm}$	y-y z-z	b c	a a
	$t_f \leq 100 \text{ mm}$	y-y z-z	b c	a a
	$t_f > 100 \text{ mm}$	y-y z-z	d d	c c

IPE 220

$$h = 220 \text{ mm}$$

$$b = 110 \text{ mm}$$

$$h/b = 2$$

Nel piano perpendicolare

$$l_0 = 10.00 \text{ m} = 10000 \text{ mm}$$

$$i_y = 9.11 \times 10 = 91.1 \text{ mm}$$

$$\lambda_y = \frac{10000}{91.1} = 109.8$$

$$\bar{\lambda} = \frac{109.8}{86.8} = 1.26$$

$$\chi = \frac{1}{\varphi + \sqrt{\varphi^2 - \bar{\lambda}^2}} \leq 1$$

$$\varphi = \frac{1}{2} \left[ 1 + \alpha (\bar{\lambda} - 0.2) + \bar{\lambda}^2 \right]$$

$$N_{b,RI} = 0.493 \times 33.4 \times 10^2 \times \frac{275}{1.05} \times 10^{-3} =$$

$$= 430.0 \text{ kN}$$

b → BUCKLING

$$\alpha = 0.21$$

↑

→ curva a

$$\rightarrow \chi = 0.50$$

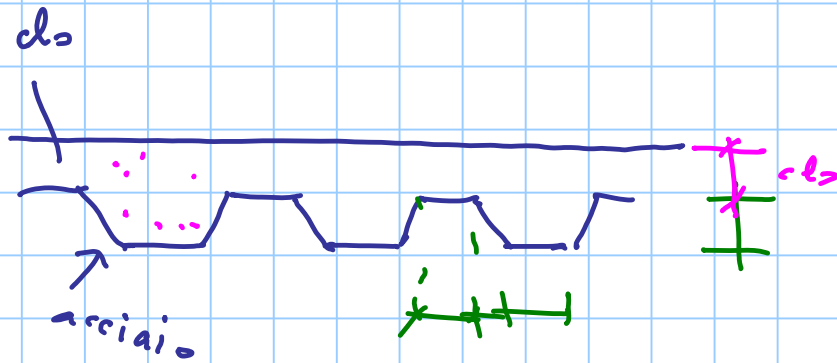
$$\chi = \frac{1}{1.405 + \sqrt{1.405^2 - 1.26^2}} = 0.493$$

$$\varphi = \frac{1}{2} \left[ 1 + 0.21 (1.26 - 0.2) + 1.26^2 \right] = 1.405$$

SOLAI

DELL' EDIFICIO

in opera



piano prefabbricato

