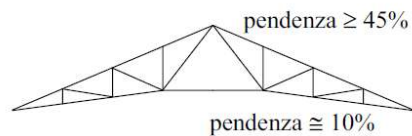


Località: Siracusa (vedi immagine per i dettagli)

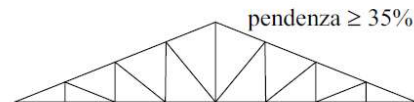
Tipo di trave reticolare tipologia 3

Dati geometrici $L_1 = 5.80 \text{ m}$ $L_2 = 15.00 \text{ m}$

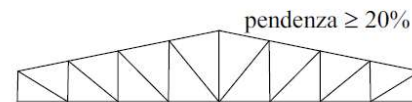
Possibili travature reticolari



tipologia 1



tipologia 2

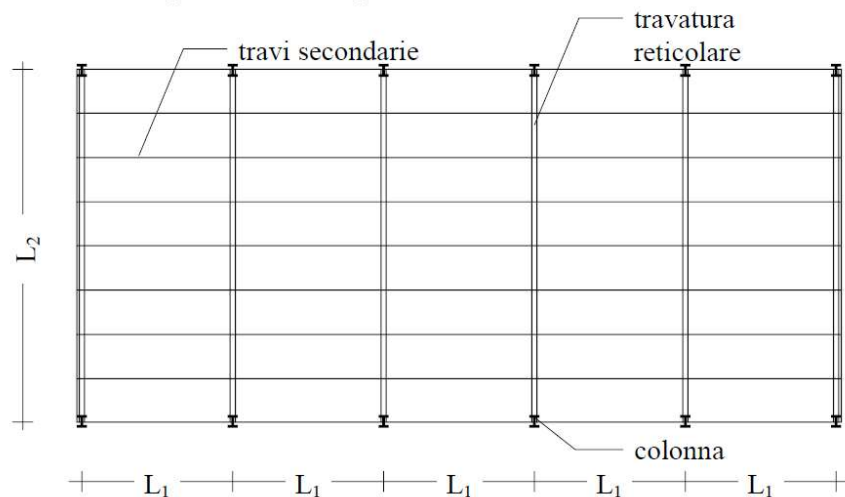


tipologia 3

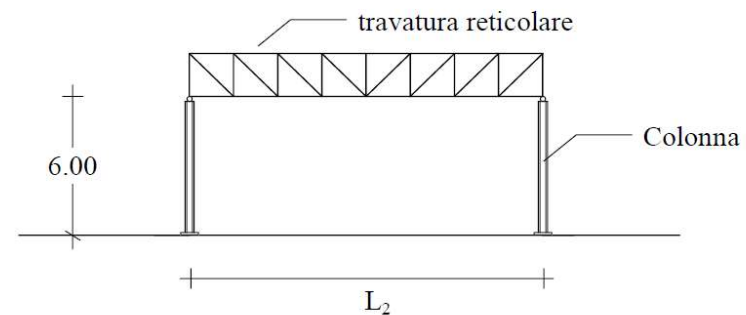


tipologia 4

Carpenteria copertura



Sezione trasversale



Valori caratteristici

$$q_1 \quad 0,13 \text{ KN/m}^2$$

$$G_{Ts} \quad 0,14 \text{ KN/m}$$

$$q \quad 0,50 \text{ KN/m}^2$$

$$q_s \quad 0,48 \text{ KN/m}^2$$

$$p^{\perp, sp, +} \quad 0,44 \text{ KN/m}^2$$

$$p^{\perp, sp, -} \quad - 0,60 \text{ KN/m}^2$$

$$p^{\perp, st} \quad - 0,56 \text{ KN/m}^2$$

$$p^{\parallel, A} \quad - 0,80 \text{ KN/m}^2$$

$$p^{\parallel, B} \quad - 0,47 \text{ KN/m}^2$$

Valori di progetto

$$0,14 \text{ KN/m}^2$$

$$0,22 \text{ KN/m}$$

$$0,75 \text{ KN/m}^2$$

$$0,72 \text{ KN/m}^2$$

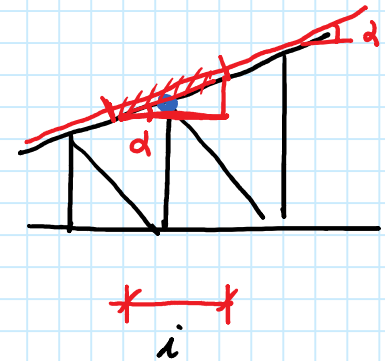
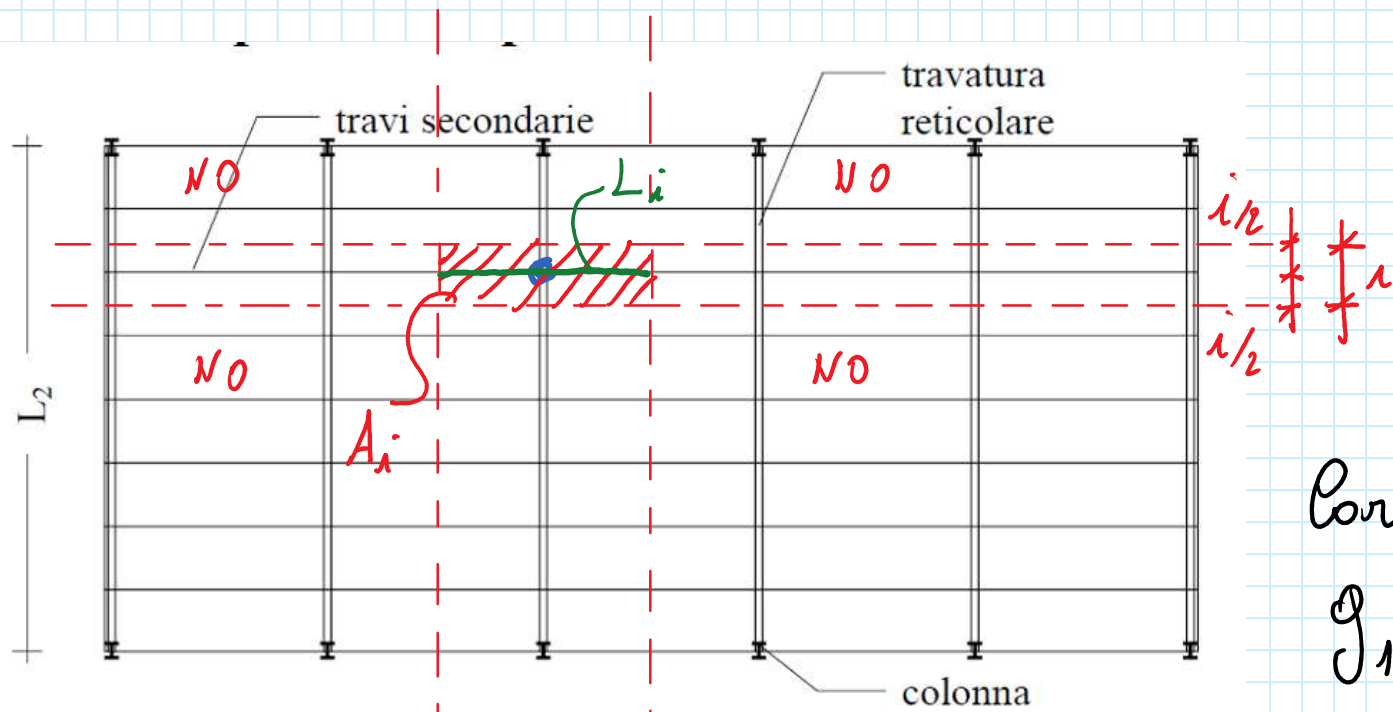
$$0,21 \text{ KN/m}^2$$

$$- 0,90 \text{ KN/m}^2$$

$$- 0,84 \text{ KN/m}^2$$

$$- 1,20 \text{ KN/m}^2$$

$$- 0,70 \text{ KN/m}^2$$



Corris

q_1 e q_v

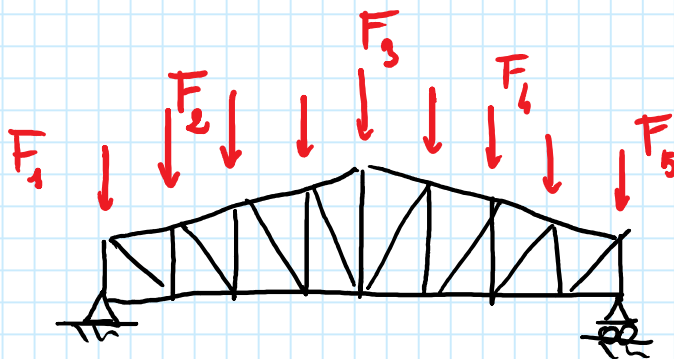
q e q_s

A_i

$L_1 i / \cos \alpha$

$L_1 i$

$A_i = \text{area d'influenza}$



L_1

$L_1/2$ $L_1/2$

$$A_i / L_i$$

$$F_{G_1} \quad L_1 i / \cos \alpha = 5,8 \times \frac{1,5}{\cos 11,31} = 8,87 \text{ m}^2$$

$$F_{G_{TS}} \quad L_i = L_1 = 5,8 \text{ m}$$

$$F_Q \quad L_1 i = 5,8 \times 1,5 = 8,7 \text{ m}^2$$

$$F_{Q_s} \quad 8,7 \text{ m}^2$$

$$F_V$$

$$\perp, sp, + \quad 8,87 \text{ m}^2$$

$$\perp, sp, - \quad =$$

$$\perp, st, - \quad =$$

$$\parallel, A \quad =$$

$$\parallel, B \quad =$$

$$F_k$$

$$A_i g_{1k} = 8,87 \times 0,13 = 1,15 \text{ kN}$$

$$L_i g_{TSk} = 5,8 \times 0,17 = 0,98 \text{ kN}$$

$$8,7 \times 0,5 = 4,35 \text{ kN}$$

$$8,7 \times 0,48 = 4,17 \text{ kN}$$

$$8,87 \times 0,14 = 1,24 \text{ kN}$$

$$8,87 \times (-0,60) = -5,32 \text{ kN}$$

$$8,87 \times (-0,56) = -4,97 \text{ kN}$$

$$8,87 \times (-0,80) = -7,09 \text{ kN}$$

$$8,87 \times (-0,47) = -4,17 \text{ kN}$$

F_K

$1,15 \text{ KN}$

$0,98 \text{ KN}$

$4,35 \text{ KN}$

$4,14 \text{ KN}$

$1,24 \text{ KN}$

$-5,32 \text{ KN}$

$-4,97 \text{ KN}$

$-4,09 \text{ KN}$

$-4,14 \text{ KN}$

$$F_d = \gamma_{(G+Q)} F_K$$

$1,3 \times 1,15 = 1,5 \text{ KN}$

$1,3 \times 0,98 = 1,27 \text{ KN}$

$1,5 \times 4,35 = 6,52 \text{ KN}$

$1,5 \times 4,14 = 6,25 \text{ KN}$

$1,5 \times 1,24 = 1,86 \text{ KN}$

$1,5 \times (-5,32) = -4,98 \text{ KN}$

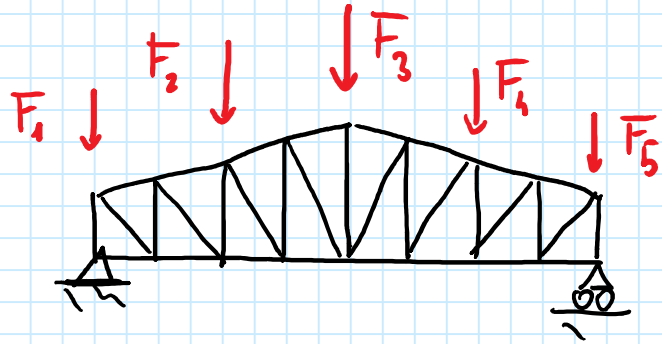
$1,5 \times (-4,97) = -4,45 \text{ KN}$

$1,5 \times (-4,09) = -10,63 \text{ KN}$

$1,5 \times (-4,14) = -6,25 \text{ KN}$

 F_{G_1} $F_{G_{TS}}$ F_Q F_{Q_s} F_V $\perp, SP, +$ $\perp, SP, -$ $\perp, ST, -$ $//, A$ $//, B$

Combinazioni m. 1



$F_{g,d}$

4,50 kN

$F_{gr,d}$

1,25 kN

Cover variabile

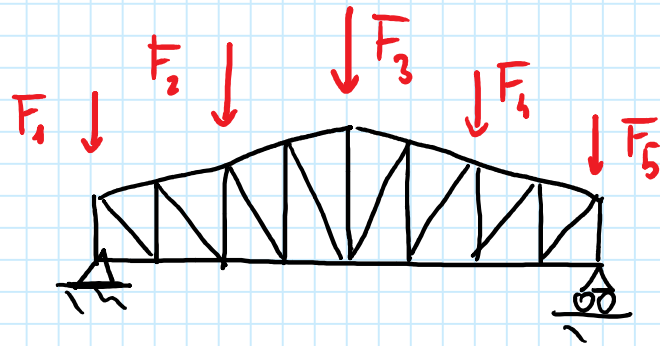
$$1) F_{Qd} + \psi_0 F_{Qsd} \quad 6,52 + 0,5 \times 6,25 \quad 9,65 \text{ kN}$$

~~$$2) \psi_0 F_{Qd} + F_{Qsd} \quad 0 \times 6,52 + 6,25 \quad 6,25 \text{ kN}$$~~

$$F_{2d} = 12,42 \text{ kN}$$

Tab. 2.5.I – Valori dei coefficienti di combinazione

Categoria/Azione variabile	Ψ_{0j}	Ψ_{1j}	Ψ_{2j}
Categoria A - Ambienti ad uso residenziale	0,7	0,5	0,3
Categoria B - Uffici	0,7	0,5	0,3
Categoria C - Ambienti suscettibili di affollamento	0,7	0,7	0,6
Categoria D - Ambienti ad uso commerciale	0,7	0,7	0,6
Categoria E – Aree per immagazzinamento, uso commerciale e uso industriale Biblioteche, archivi, magazzini e ambienti ad uso industriale	1,0	0,9	0,8
Categoria F - Rimesse , parcheggi ed aree per il traffico di veicoli (per autoveicoli di peso ≤ 30 kN)	0,7	0,7	0,6
Categoria G – Rimesse, parcheggi ed aree per il traffico di veicoli (per autoveicoli di peso > 30 kN)	0,7	0,5	0,3
Categoria H - Coperture accessibili per sola manutenzione	0,0	0,0	0,0
Categoria I – Coperture praticabili	da valutarsi caso per caso		
Categoria K – Coperture per usi speciali (impianti, eliporti, ...)			
Vento	0,6	0,2	0,0
Neve (a quota ≤ 1000 m s.l.m.)	0,5	0,2	0,0
Neve (a quota > 1000 m s.l.m.)	0,7	0,5	0,2
Variazioni termiche	0,6	0,5	0,0



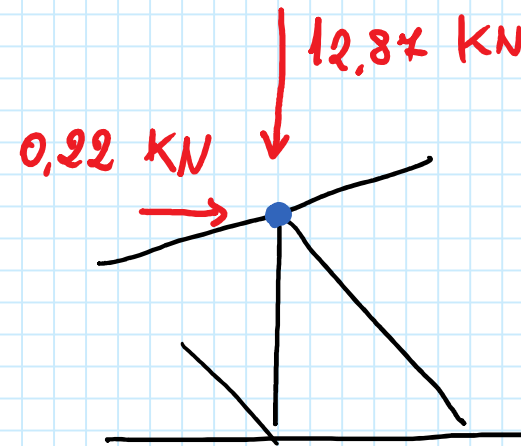
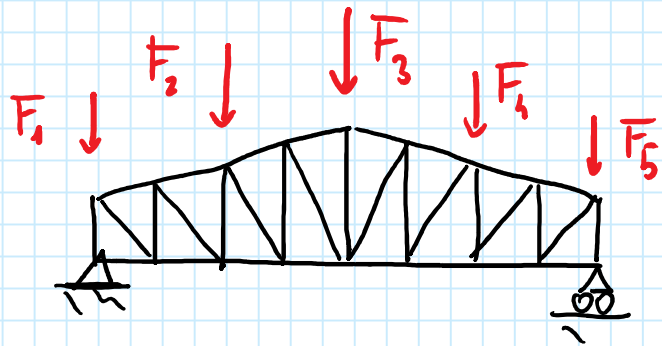
$$F_{1d} = \frac{1}{2} F_{2d} = \frac{1}{2} \times 12,42 = 6,21 \text{ kN}$$

$$F_{4d} = F_{2d} = 12,42 \text{ kN}$$

$$F_{5d} = \frac{1}{2} F_{4d} = 6,21 \text{ kN}$$

$$F_{3d} = \frac{F_{2d} + F_{4d}}{2} = 12,42 \text{ kN}$$

Combination m. 2



F_{g1K}

1,15 kN

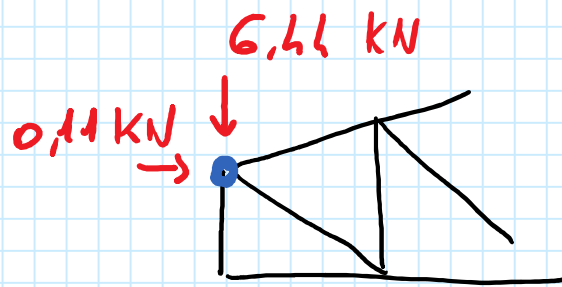
F_{eTK}

0,98 kN

$$F_{Qd} + \psi_0 F_{Qsol} + \psi_0 F_{Qvd,y}^{\perp, SP, +} = 6,52 + 0,5 \times 6,25 + 0,6 \times 1,86 \times \cos 11,3^\circ = 10,74 \text{ kN}$$

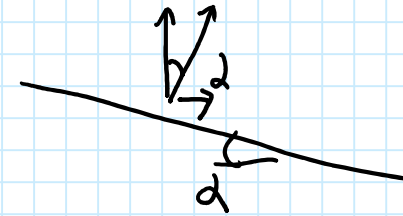
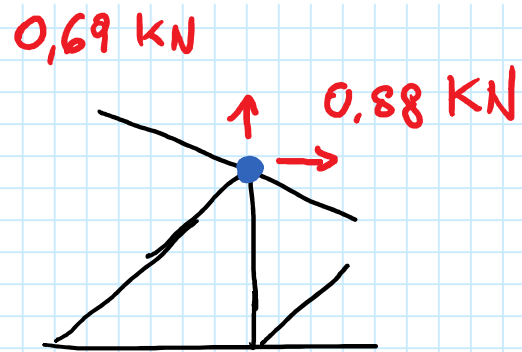
$F_{2d,y}$ 12,84 kN

$$F_{2dx} = \psi_0 F_{Qvd,x}^{\perp, SP, +} = 0,6 \times 1,88 \times \sin 11,3^\circ = 0,22 \text{ kN}$$



$$F_{1dy} = \frac{\overline{F_{2dy}}}{2} = \frac{12,88}{2} = 6,44 \text{ kN}$$

$$F_{1dx} = \frac{\overline{F_{2dx}}}{2} = \frac{0,22}{2} = 0,11 \text{ kN}$$



$$F_{guk} =$$

$$1,15 \text{ kN}$$

$$F_{TSK} =$$

$$0,98 \text{ kN}$$

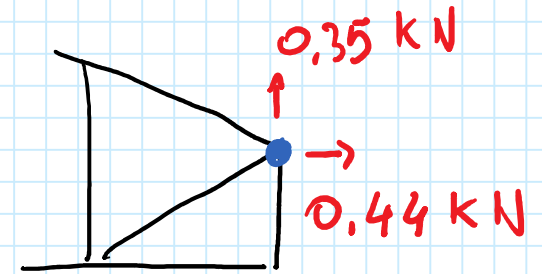
$$0,5 \psi_0 F_{Qsd} + \psi_0 F_{Qvd,y}^{\perp,ST,-} = 0,5 \times 0,5 \times 6,25 - 0,6 \times 7,45 \times \cos 11,3 = -2,82 \text{ kN}$$

$$F_{4d,y} = -0,69 \text{ kN}$$

$$F_{4d,x} = \psi_0 F_{Qvd,x}^{\perp,ST,-} = 0,6 \times 7,45 \times \sin 11,3 = 0,88 \text{ kN}$$

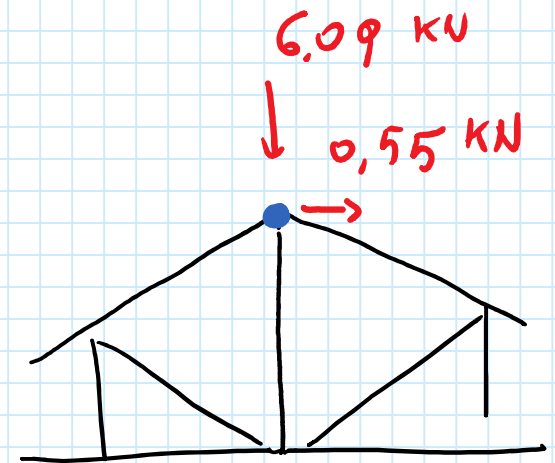
$$F_{5d,y} = \frac{1}{2} F_{hd,y} = \frac{1}{2} \times (-0,69) = -0,35 \text{ kN}$$

$$F_{5d,x} = \frac{1}{2} F_{hd,x} = \frac{1}{2} \times 0,88 = 0,44 \text{ kN}$$

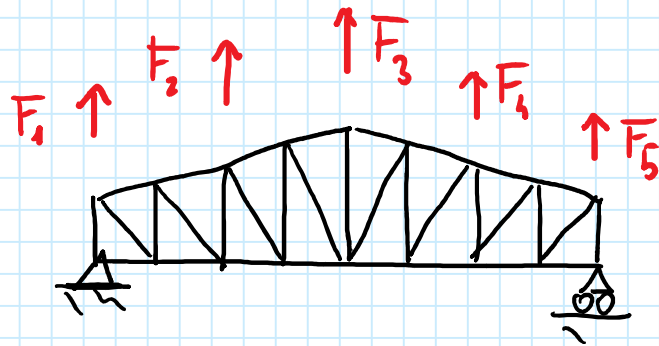


$$F_{3dy} = \frac{F_{2dy} + F_{4dy}}{2} = \frac{12,84 - 0,69}{2} = 6,09 \text{ kN}$$

$$F_{3dx} = \frac{F_{2dx} + F_{4dx}}{2} = \frac{0,22 + 0,88}{2} = 0,55 \text{ kN}$$



Combinat. m. 3



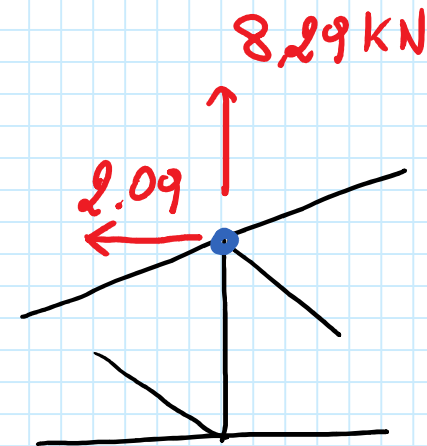
$$F_{g,k} = 1,15 \text{ kN}$$

$$F_{GT,k} = 0,98 \text{ kN}$$

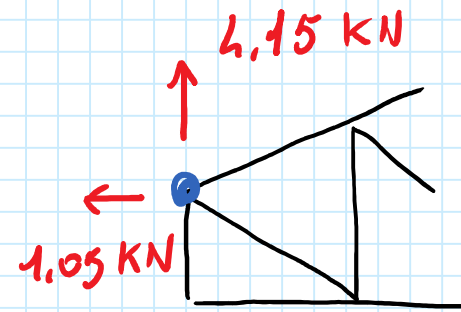
$$F_{Q_{vd,y}}^{II,A} = -10,63 \times \cos 11,3^\circ = -10,42 \text{ kN}$$

$$F_{Ed,y} = -8,29 \text{ kN}$$

$$F_{Q_{vd,x}}^{II,A} = -10,63 \times \sin 11,3^\circ = -2,09 \text{ kN}$$



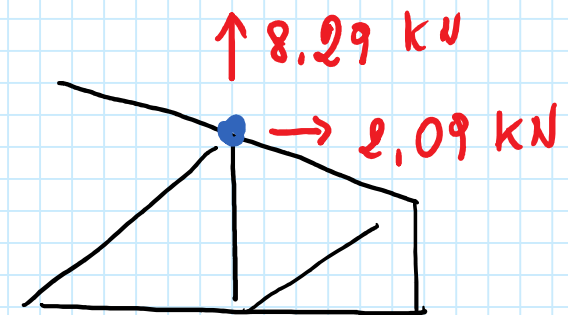
$$F_{1dy} = \frac{F_{2dy}}{2} = -\frac{8,29}{2} = -4,15 \text{ kN}$$



$$F_{1dx} = \frac{F_{2dx}}{2} = -\frac{2,09}{2} = -1,05 \text{ kN}$$

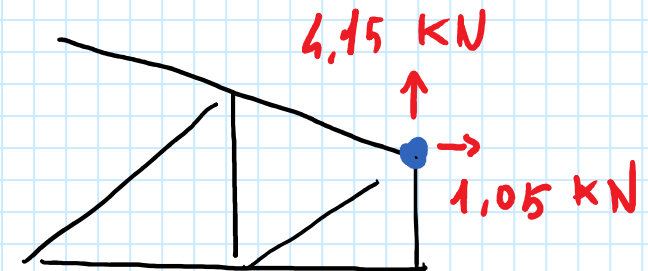
$$F_{4dy} = F_{2dy} = -8,29 \text{ kN}$$

$$F_{4dx} = -F_{2dx} = 2,09 \text{ kN}$$



$$F_{5dy} = \frac{F_{4dy}}{2} = -\frac{8,29}{2} = -4,15 \text{ kN}$$

$$F_{5dx} = \frac{F_{4dx}}{2} = \frac{2,09}{2} = 1,05 \text{ kN}$$



$$F_{3dy} = \frac{F_{2dy} + F_{4dy}}{2} = -8,29 \text{ kN}$$

$$F_{3dx} = \frac{F_{2dx} + F_{4dx}}{2} = 0$$

