

CEP. BRINDISI
FABBRICATO N.2.

Ing. VITO GORGIO COLAIANNI

1

CALCOLO DEL SOLAIO DI COPERTURA.

Solaio 2000

Consorzio Ravennate
delle Coop. di Produzione e Lavoro

altezza cm 35

interasse cm 80

peso in opera 200 kg/m.

Vedi fab. n° 1. peso permanente

$$1400 \text{ kg/m}^2 = 320 \text{ kg/m} = p'$$

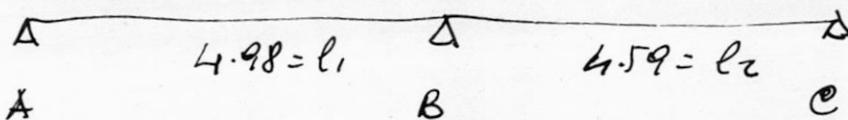
peso accidentale

$$250 \text{ kg/m}^2 = 200 \text{ kg/m} = p''$$

carico complessivo $p = p' + p'' = 520 \text{ kg/m}$.

Cui mette. $l_1 = 4.74$ luce calcolo: 4.98 m.

" " $l_2 = 4.37$ " " $l_2 = 4.59$



con lo stesso procedimento del solaio
del fabb. n° 1.

$$M_2 = \frac{1}{8} 520 \frac{(4.98^3 + 4.59^3)}{4.98 + 4.59} = 2.75 \times 520 = 1430 \text{ kgm}$$

carico permanente sulla 1ª campata:

$$M_2' = \frac{1}{8} 320 \frac{(4.98^3 + 4.59^3)}{4.98 + 4.59} = 320 \times 2.75 = 880 \text{ kgm}$$

$$A' = \text{Reazione in A} = \frac{320 \times 4.98}{2} - \frac{880}{4.98} = 796 - 170 = 626 \text{ kg.}$$

$$C' = \text{reazione in C} = \frac{320 \times 4.59}{2} - \frac{880}{4.59} = 734 - 190 = 544 \text{ kg.}$$

Quindi per $l_1 = 4.98 \text{ m}$

$$\alpha_1 = \frac{A'}{p'} = \frac{626}{320} = 1.95$$

$$M'_{\max} = 626 \times 1.95 - \frac{320 \times 1.95^2}{2} = 1220 - 608 = 612 \text{ kgm}$$

per $l_2 = 4.59$

$$\alpha_2 = \frac{544}{320} = 1.70$$

$$M'_{\max} = 544 \times 1.70 - \frac{320 \times 1.70^2}{2} = 924 - 462 = 462 \text{ kgm.}$$

l'effetto del carico accidentale da: su l_1

$$M_2'' = 200 \times 2.75 = 550 \text{ kgm}$$

$$A'' = 200 \times \frac{4.98}{2} - \frac{550}{4.98} = 498 - 110 = 388 \text{ kg.}$$

$$\alpha_1 = \frac{A''}{p''} = \frac{388}{200} = 1.948 \approx 1.95$$

$$M''_{\max} = 388 \times 1.95 - \frac{200 \times 1.95^2}{2} = 757 - 380 = 377 \text{ kgm}^2$$

e su l_2

$$M_2''' = 550 \text{ kgm}$$

$$C'' = 200 \times \frac{4.59}{2} - \frac{550}{4.59} = 459 - 119 = 340 \text{ kg}$$

$$\alpha_2 = \frac{C''}{p''} = \frac{340}{200} = 1.70$$

$$M'''_{\max} = 340 \times 1.70 - \frac{200 \times 1.70^2}{2} = 578 - 289 = 289 \text{ kgm}$$

Sommando gli effetti si ha:

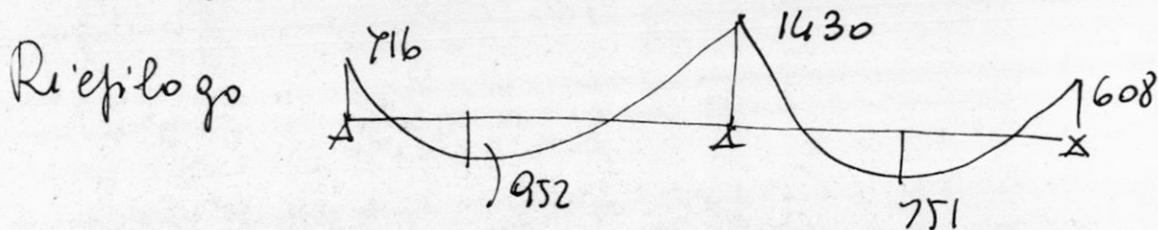
$$M_{e, \max} = 612 + 340 = 952 \text{ kgm}$$

$$M_{e2, \max} = 462 + 289 = 751 \text{ kgm}$$

Supponendo agli estremi un incastro perfetto

$$M_A = \frac{1}{18} p l^2 = \frac{1}{18} 520 \times 4.98^2 = 716 \text{ kgm}$$

$$M_B = \frac{1}{18} 520 \times 4.59^2 = 608 \text{ kgm}$$



Solario A B. luce m. 4.74

incastro B. momento 143000 kgcm

$$b = 80 \quad m/b = 178.0 \quad \sqrt{\quad} = 42$$

$$h = 35 \quad h' = 33 \quad \kappa = 33/42 = 0.785$$

$$\sigma_c < 25 \quad \sigma_f = 1400.$$

$$F_f = 0.00101 \times 80 \times 42 = 3.40 \text{ cm}^2$$

$$\text{Adozione: } 3 \phi 12 = 3.39 \text{ cm}^2.$$

mezzina momento 95200

$$b = 80 \quad m/b = 119.0 \quad \sqrt{\quad} = 35$$

$$h = 35 \quad h' = 33 \quad \kappa = 33/35 = 0.942$$

$$\sigma_c < 25 \quad \sigma_f = 1400$$

$$F_f = 0.00101 \times 35 \times 80 = 2.82 \text{ cm}^2$$

$$\text{Adozione: } 2 \phi 12 + 1 \phi 10 = 3.05$$

Incastro A. momento 71600

$$b=80 \quad m/b=895 \quad \sqrt{r}=30$$

$$h=35 \quad h'=33 \quad \mu = \frac{33}{30} = 1.1 \dots$$

$$\sigma_f = 1400 \quad \sigma_c = 25$$

$$F_f = 0.00101 \times 30 \times 80 = 2.42 \text{ cm}^2$$

Soluzioni $2\phi 12 + 1\phi 6 = 2.56 \text{ cm}^2$

Solario BC.

Incastro B. come precedente

$$3\phi 12 = 3.39 \text{ cm}^2$$

mezz'ora: momento 75100

$$b=80 \quad m/b=930 \quad \sqrt{r}=31$$

$$h=35 \quad h'=33 \quad \mu = 1.1 \dots$$

$$\sigma_f = 1400 \quad \sigma_c = 25$$

$$F_f = 0.00101 \times 31 \times 80 = 2.50 \text{ cm}^2$$

Soluzioni $2\phi 16 + 1\phi 8 = 2.76 \text{ cm}^2$

Incastro C. momento 60800

$$b=80 \quad m/b=760 \quad \sqrt{r}=28$$

$$h=35 \quad h'=33 \quad \mu = 1.1 \dots$$

$$\sigma_f = 1400 \quad \sigma_c = 25$$

$$F_f = 0.00101 \times 28 \times 80 = 2.26$$

Soluzioni $2\phi 12$.

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