IMPRESA CORRADO PIER MARCELLO - BRINDISI, CORSO ROMA 101

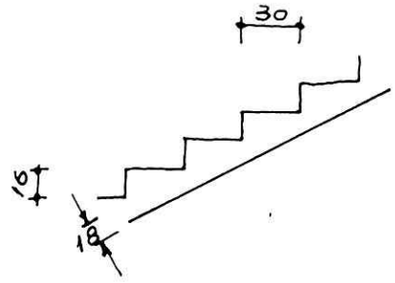
COSTRUZIONE CASE PER CONTADINI IN TORRE S. SUSANNA

CALCOLI STATICI DELLE STRUTTURE IN C.A.

IL CALCOLATORE
(DOTT. ING. ANTONIO E. CORRADO)

ING. ANTONIO E. CORRADO
albo Profess. Ingegneri n. 92
BRINDISI

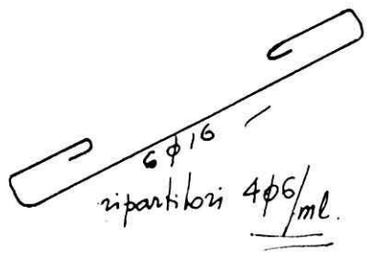
SCALA



Luce in proiez. orizz. m. 4,70.—

Analisi dei carichi:

p. pr. soletta: $1{,}00 \times 1{,}00 \times 0{,}18 \times 2500$	=	450 Kg/ml
p. pr. gradini riport.: $3{,}1 \times \frac{0{,}3 \times 0{,}17}{2} \times 1 \times 2200$	=	173 "
p. rivestimento $3{,}1 \times 0{,}3 \times 1{,}00 \times 0{,}003 \times 1600$	=	45 "
$3{,}1 \times 0{,}14 \times 1{,}00 \times 0{,}02 \times 1600$	=	14 "
intonaco intradosso	=	30 "
ringhiera	=	14 "
sovraccarico accidentale	=	400 "
Carico totale	q =	1126 Kg/ml



Sollecitazioni e verifica:

$M_{max} = \pm \frac{1126 \times 4{,}7^2}{12} = 2073$ Kgm.

$T_{max} = \frac{1126 \times 4{,}7}{2} = 2646$ Kg.

$\tau = 16{,}5 / \sqrt{2073} = 16{,}5 / 45 = 0{,}367$

$\sigma_f = 1200$ Kg/cmq.
$n = 10$
$\sigma_c = 54$ Kg/cmq.
$t = 0{,}00253$

$A_f = 0{,}00253 \times 100 \times 45 = 11{,}38$ cmq. ($6\phi16 = 12{,}06$ cmq.)

$\tau = \frac{2646}{90 \times 16{,}5} = 1{,}78$ Kg/cmq.

BALCONI

Luce dello sbalzo m. 1,50 —
spessore variabile da m. 0,16 a m. 0,12 —

Analisi dei carichi:

peso proprio: $\frac{0{,}16+0{,}12}{2} \times 2500 \times 1{,}50$	=	525 Kg.
carichi permanenti $100 \times 1{,}50$	=	150 "
" accidentali $400 \times 1{,}50$	=	600 "
Carico totale	q =	1275 Kg.

ringhiera . . . . . P = 20 Kg/m

Sollecitazioni e verifica:

$M_{max} = \frac{1275 \times 1{,}5}{2} + 20 \times 1{,}5 = 956 + 30 = 986$ Kgm.

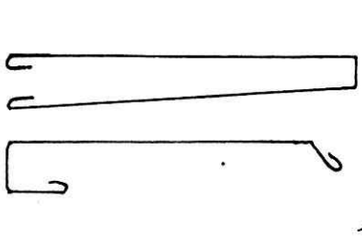
$T_{max} = 1275 + 20 = 1295$ Kg.

$\tau = 14 / \sqrt{986} = 14 / 32 = 0{,}437$

$\sigma_f = 1400$ Kg/cmq.
$n = 10$
$\sigma_c = 46$ Kg/cmq.
$t = 0{,}00178$

$A_f = 0{,}00178 \times 100 \times 32 = 5{,}70$ cmq. ($6\phi14 = 9{,}24$ cmq.)

$\tau = \frac{1295}{90 \times 14} = 1{,}02$ Kg/cmq.



PENSILINA DI CORONAMENTO

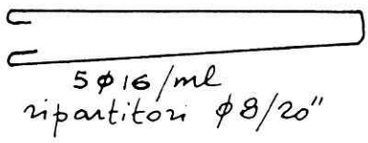
Luce dello sbalzo $L = 2{,}00$ m.
Spessore variabile da m. 0,20 a m. 0,12

Analisi dei carichi:

peso proprio $\frac{0{,}20+0{,}12}{2} \times 2500 \times 2 =$ 800 Kg
carichi perman. $100 \times 2 =$ 200 "
" accid. $100 \times 2 =$ 200 "
carico totale $q =$ 1200 Kg.

Sollecitazioni e verifica:

$M_{max} = 1200 \times 2/2 = 1200$ Kgm.
$T_{max} = 1200$ Kg.



$\tau = 18/\sqrt{1200} = 18/35 = 0{,}514$

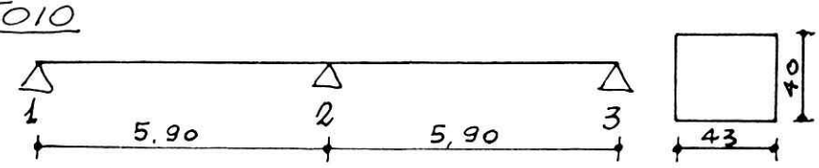
$\sigma_f = 1400$ Kg/cmq.
$n = 10$
$\sigma_c = 38$ Kg/cmq.
$t = 0{,}00149$

$A_f = 0{,}00149 \times 100 \times 35 = 5{,}22$ cmq. (5φ16 = 10,05 cmq.)

$\tau = 1200/90 \times 18 = 0{,}74$ Kg/cmq.

TRAVI PORTANTI IL SOLAIO COPERTURA STENDITOIO

A)



Analisi dei carichi

peso proprio solaio in opera = 175 Kg/m²
Sovraccarico acc. = 150 "
tegole marsigliesi = 90 "
carico tot. q_1 = 415 Kg/m²

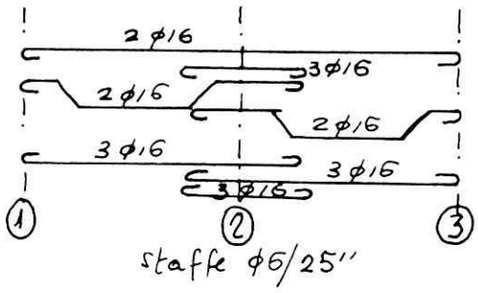
carico a ml. di trave: $415 \times 6/2 = 1245$ Kg/ml
Peso proprio trave: $0{,}43 \times 0{,}4 \times 2500 = 430$ "
carico tot. agente sulla trave $q = 1675$ Kg/ml

Sollecitazioni e verifica:

$M_{1-2} = M_{2-3} = 1675 \times 5{,}9^2/14 = 4165$ Kgm.

$M_2 = -1675 \times 5{,}9^2/8 = -7288$ Kgm.

$T_{max} = 1675 \times 5{,}9/2 = 4941$ Kg.



staffe φ6/25"

$\tau_1 = 37/\sqrt{416500/43} = 37/98 = 0{,}377$

$\sigma_f = 1400$ Kg/cmq.
$n = 10$
$\sigma_c = 55$ Kg/cm²
$t = 0{,}00209$

$A_f = 0{,}00209 \times 43 \times 98 = 8{,}81$ cmq. (5φ16 = 10,05 cmq.)

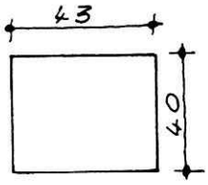
$\tau_2 = 37/\sqrt{728800/43} = 37/130 = 0{,}284$

$\sigma_f = 1400$ Kg/cmq.
$A'_f = A_f$
$\sigma_c = 53$ Kg/cmq.
$t = 0{,}00318$

$A_f = 0{,}00318 \times 43 \times 130 = 17{,}78$ cmq. (9φ16 = 18,10 cmq.)
$A'_f = 17{,}78$ cmq. (9φ16 = 18,10 cmq.)

$\tau = 4941/0{,}9 \times 43 \times 37 = 3{,}45$ Kg/cmq.

B)



Sezione 40×43 cm.
Luce effettiva m. 4,35
Luce teorica: 1,05×4,35 = 4,57 m.

Analisi dei carichi:

scarico solaio 415×6/2 =	1245 Kg/ml
peso proprio 0,43×0,40×2500 =	430 "
carico totale q =	1675 Kg/ml

Sollecitazioni e verifica:

$M_{max} = \frac{1675 \times 4,57^2}{10} = 3498$ Kgm.

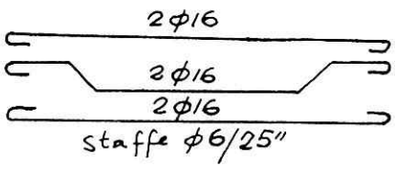
$T_{max} = 1675 \times 4,35/2 = 3643$ Kg.

$\tau = 37/\sqrt{349800/43} = 37/90 = 0,411$

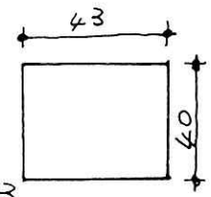
$\sigma_f = 1400$ Kg/cmq.
$n = 10$
$\sigma_c = 50$ Kg/cmq.
$t = 0,00191$

$A_f = 0,00191 \times 43 \times 90 = 7,39$ cm² (4φ16 = 8,04 cm²)

$\tau = 3643/0,9 \times 43 \times 37 = 3643/1432 = 2,54$ Kg/cm²



TRAVE PORTICO



Sezione 43×50 cm.
Luce effettiva m. 4,50
Luce teorica: m. 1,05×4,50 = m. 4,73

Analisi dei carichi

muratura 0,43×4,00×1500	= 2580 Kg/ml
peso proprio 0,43×0,5×2500	= 538 "
carico totale q =	3118 Kg/ml

Sollecitazioni e verifica

$M_{max} = 3118 \times 4,73^2/10 = 6976$ Kgm.

$T_{max} = 3118 \times 4,5/2 = 7016$ Kg.

$\tau = 47/\sqrt{697600/43} = 47/128 = 0,370$

$\sigma_f = 1400$ Kg/cmq.
$A'_f = 0,5 A_f$
$\sigma_c = 51$ Kg/cmq
$t = 0,00210$

$A_f = 0,00210 \times 43 \times 128 = 11,58$ cm² (6φ16 = 12,06 cm²)

$A'_f = 0,5 \times 11,58 = 5,79$ cm² (3φ16 = 6,03 cm²)

$\tau = 7016/0,9 \times 43 \times 47 = 7016/1819 = 3,85$ Kg/cmq.