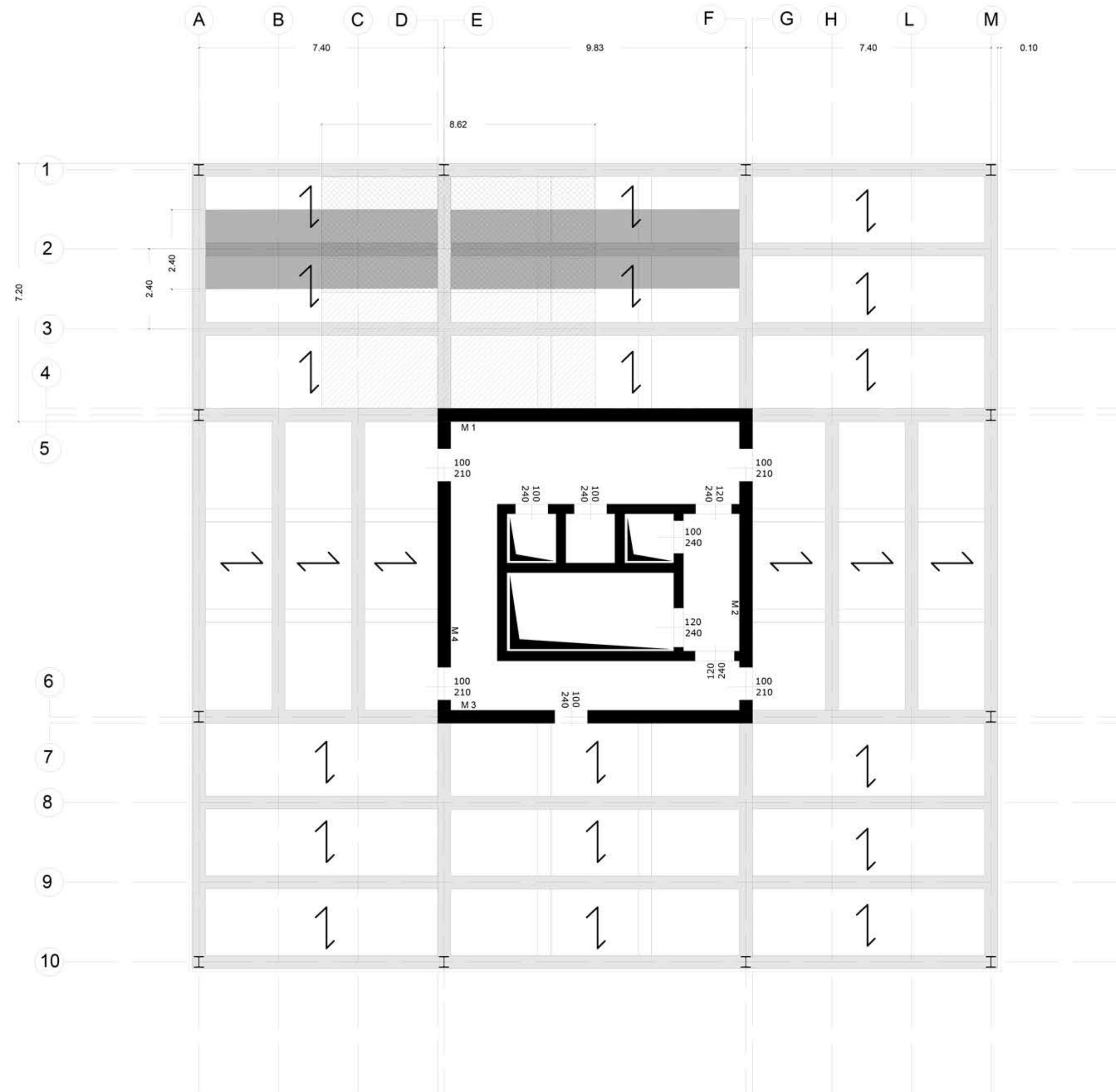
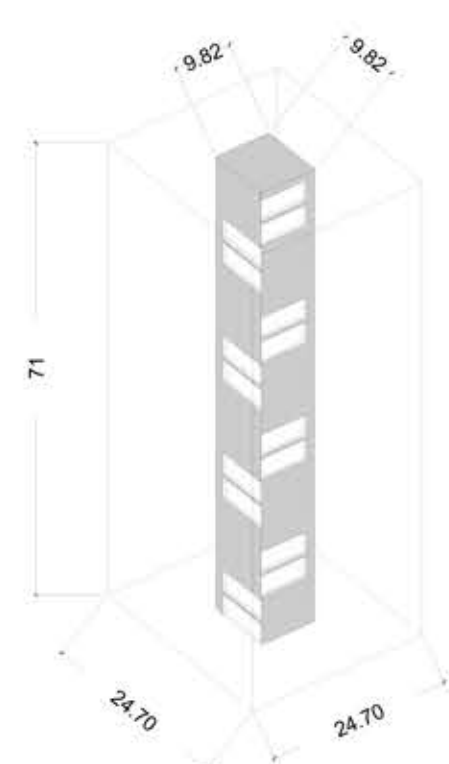


FILI E PICCHETTI SCALA 1:100



elemento	kg/mq
COBERTURA	
STRUTTURALE	240
PERMANENTI	40
CONTROSOFFITTO	50
SOTTOFONDEZIONE	50
PERDENZA	50
IMPIANTI	50
ACCIDENTALI	
ripari	225
manutenzione	50
SOLAI INTERPIANO	
STRUTTURALE	240
PERMANENTI	40
CONTROSOFFITTO	50
SOTTOFONDEZIONE	50
PERDENZA	50
IMPIANTI	50
spavanti	100
ACCIDENTALI	
classe c1 residenza	200
	700



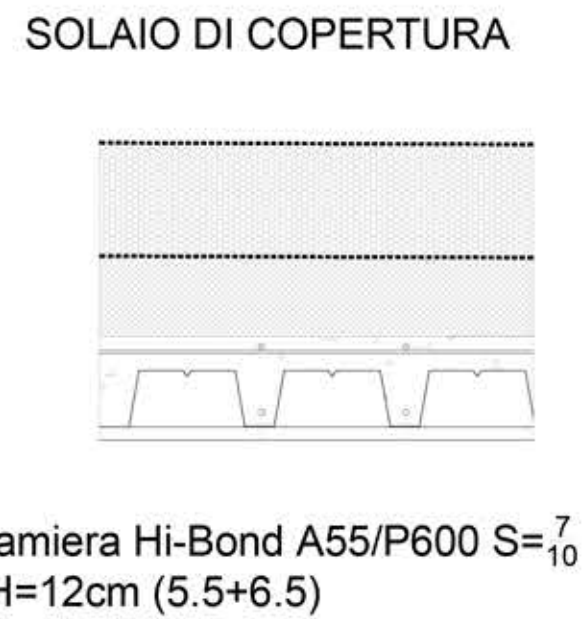
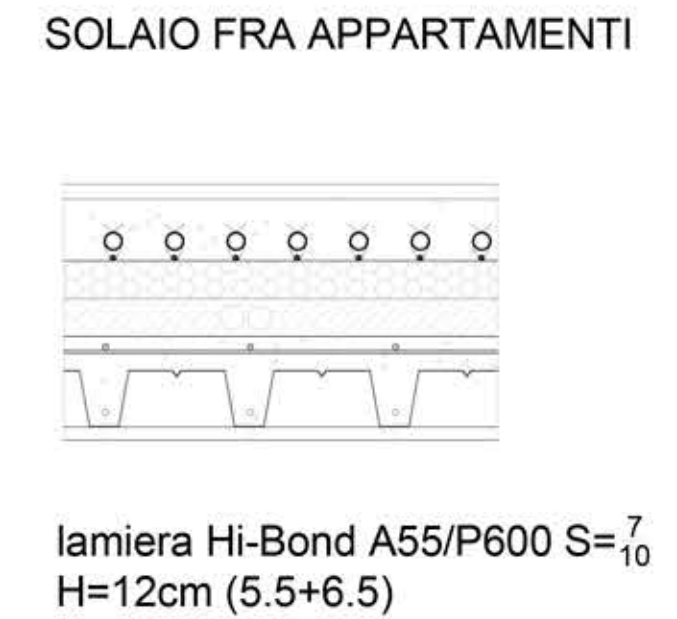
CARATTERISTICHE DEI MATERIALI (DM 14.01.08/tab 11.3.9)

ACCIAIO: S275

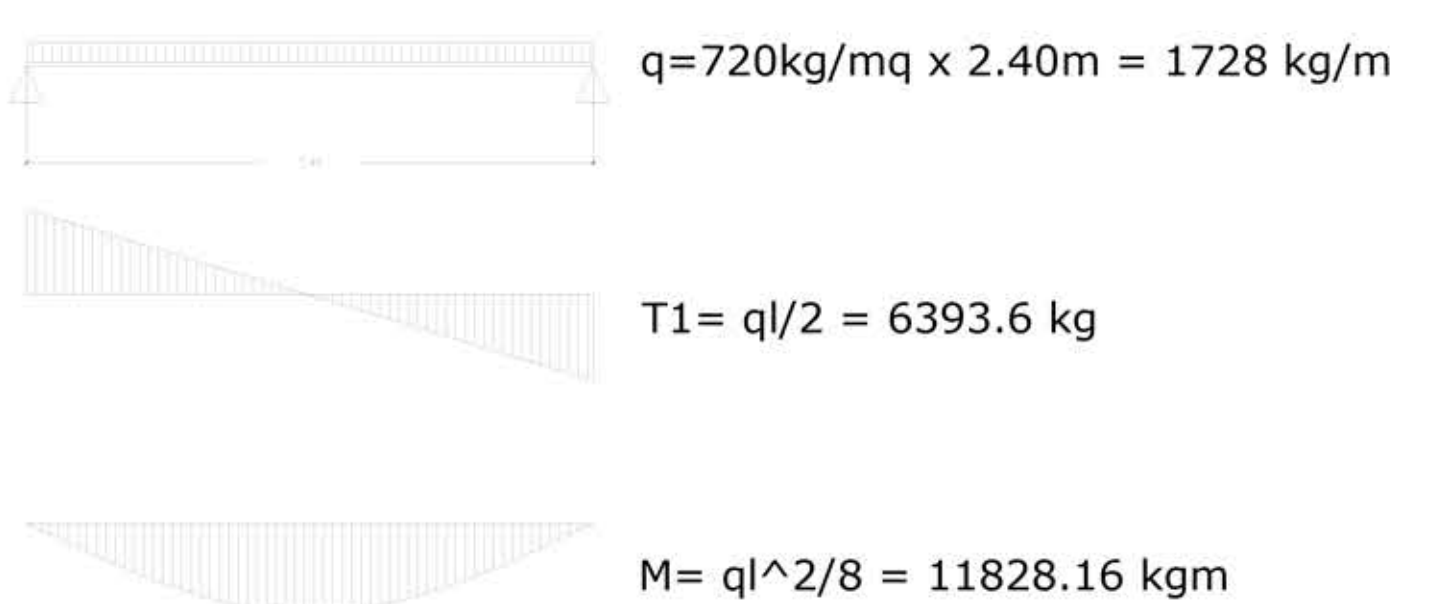
SPessori t<40mm
Fyk = 2350 kg/cmq
Ftk = 4300 kg/cmq

SPessori t>40mm
Fyk = 2550 kg/cmq
Ftk = 4150 kg/cmq

STRATIGRAFIE



TRAVE SECONDARIA A2 - E2



M = ql^2/8 = 11828.16 kgm

Wmin = Mmax/σamm = 492 cmc => IPE 300

VERIFICA ABBASSAMENTO CON IPE 300

δmax < l/500 δmax < 1.48 cm

$\frac{5}{384} \times (q_{tot} \times l^4) / EI = 0.03$ m NON VERIFICATO

RICALCOLO CON IPE 400 δ = 0.0138m < 0.0148 cm VERIFICATO

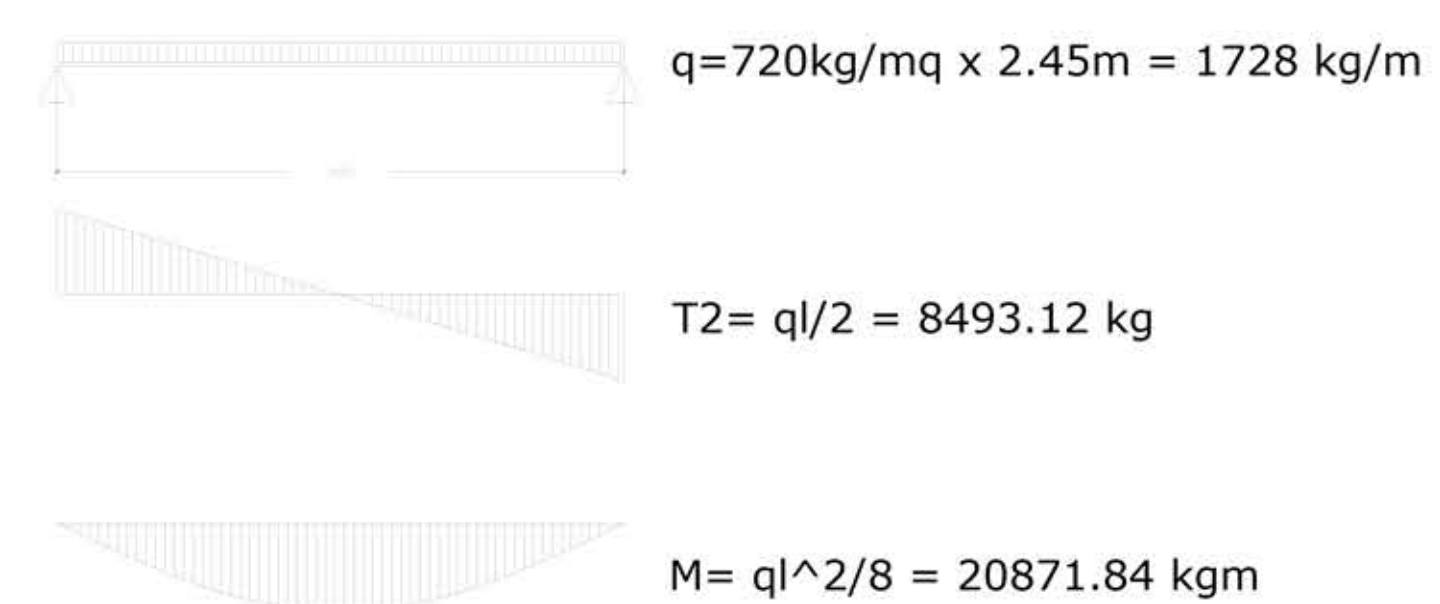
VERIFICA A TAGLIO

t amm = 0.577 x σamm = 1384.8 kg/cmq

T = 6393.6 kg

t = (T * Sx) / (tw * Jx) = 186 kg/cmq VERIFICATO (CON IPE 400)

TRAVE SECONDARIA E2 - F2



M = ql^2/8 = 20871.84 kgm

Wmin = Mmax/σamm = 869 cmc => IPE 360

VERIFICA ABBASSAMENTO CON IPE 360

δmax < l/500 δmax < 2.00 cm

$\frac{5}{384} \times (q_{tot} \times l^4) / EI = 0.06$ m NON VERIFICATO

RICALCOLO CON IPE 500 δ = 0.02m = 0.02m VERIFICATO

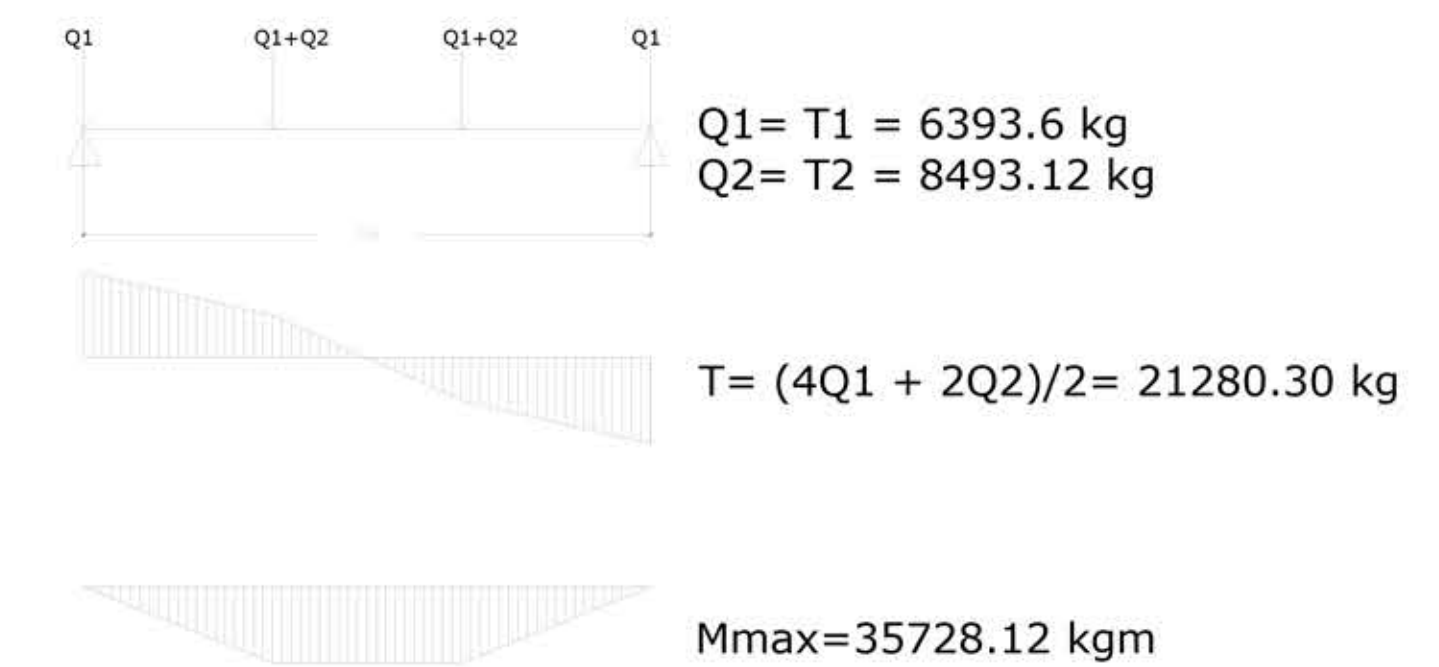
verifica a taglio

t amm = 0.577 x σamm = 1384.8 kg/cmq

T = 8493.12 kg

t = (T * Sx) / (tw * Jx) = 189.5 kg/cmq VERIFICATO (CON IPE 500)

TRAVE PRINCIPALE E1 - E5



Mmax = 35728.12 kgm

Wmin = Mmax/σamm = 1488 cmc => IPE 450

VERIFICA ABBASSAMENTO CON IPE 450

δmax < l/500 δmax < 1.44 cm

$\frac{5}{384} \times (q_{tot} \times l^4) / EI = 0.027$ m NON VERIFICATO

RICALCOLO CON IPE 550 δ = 0.0139m < 0.0144m VERIFICATO

VERIFICA A TAGLIO

t amm = 0.577 x σamm = 1384.8 kg/cmq

T = 21609 kg

t = (T * Sx) / (tw * Jx) = 398 kg/cmq VERIFICATO (CON IPE 550)

PILASTRO E1 FASCIA 1

Ai = 31.87 mq
N1 = (qcop + 4*qsolaio) * Ai = 118715.75 kg

Amin = Ntot/σamm = 84.79 cmq HEB 200 A = 78,1 cmq P=61,3 kg/m

λ = Lo/ix = (325cm * 0.7)/8.54cm = 26.63 cm

ω = 1.06

σ = (Ntot * ω) / A = 1611.25 kg/cmq > 1400kg/mq

uso HEB 220

σ = 1382.84 kg/cmq < 1400 kg/cmq

HEB 220 P=71.5 kg/m

N1 = 118715.75 kg + (71.5kg/m * 3.25m * 5) = 119877.625 kg

Amin = 85.85cm

σ = (Ntot * ω) / A = 1400 kg/cmq

VERIFICATO CON HEB 220

PILASTRO E1 FASCIA 2

Ai = 31.87 mq
N1 = 119877.625 kg
N2 = (5*qsolaio)*Ai = 114732 kg
Ntot1 = 234609.625 kg

Amin = Ntot/σamm = 167.5 cmq HEB 340 A=171cmq P=134 kg/m

λ = Lo/ix = (325cm * 0.7)/14.6 = 15.58 cm

ω = 1.00

σ = (Ntot * ω) / A = 1373.83 kg/cmq > 1400kg/mq

Ntot1 = 234609.625kg + (5*3.25*134) = 236787.125 kg

Amin = Ntot/σamm = 169.1 cmq HEB 340

σ = (Ntot * ω) / A = 1384.72 kg/cmq > 1400kg/mq

VERIFICATO CON HEB 340

PILASTRO E1 FASCIA 3

Ai = 31.87 mq
Ntot1 = 236787.125 kg
N3 = (5*qsolaio)*Ai = 114732 kg
Ntot2 = 351519.125 kg

Amin = Ntot/σamm = 251.08 cmq
HEB 550 A=254 cmq P=199 kg/m

λ = Lo/ix = (325cm * 0.7)/23.2 = 9.80 cm

ω = 1.00

σ = (Ntot * ω) / A = 1383.93 kg/cmq > 1400kg/mq

Ntot2 = 351519.125 kg + (5*3.25*199) = 354752.875 kg

Amin = Ntot/σamm = 253 cmq
HEB 550

σ = (Ntot * ω) / A = 1396.66 kg/cmq > 1400kg/mq

VERIFICATO CON HEB 550

PILASTRO E1 FASCIA 4

Ai = 31.69 mq
Ntot2 = 354752.875kg
N4 = (5*qsolaio)*Ai = 114732kg
Ntot3 = 469484.875 kg

Amin = Ntot/σamm = 335.3 cmq HEB 900 A=371 cmq P=291 kg/m

λ = Lo/ix = (325cm * 0.7)/36.5 = 6.23 cm

ω = 1.00

σ = (Ntot * ω) / A = 1265.45 kg/cmq > 1400kg/mq

Ntot3 = 469484.875 kg + (5*3.25*291) = 474213.625 kg

VERIFICATO CON HEB 900

PILASTRO M1 FASCIA 1

Ai = 13.69 mq
N1 = (qcop + 4*qsolaio) * Ai = 50995.25 kg

Amin = Ntot/σamm = 36.42 cmq
HEB 140 A = 43 cmq P=33.7 kg/m

λ = Lo/ix = (325cm * 0.7)/5.93cm = 38.36 cm

ω = 1.14

σ = (Ntot * ω) / A = 1351.96 kg/cmq < 1400kg/mq

N1 = 50995.25 + (43kg/m * 3.25m * 5) = 51433.35 kg

Amin = Ntot/σamm = 36.73 cmq
HEB 140

σ = (Ntot * ω) / A = 1363.58 kg/cmq < 1400kg/mq

VERIFICATO CON HEB 140

PILASTRO M1 FASCIA 2

Ai = 13.69 mq
N1 = 51433.35 kg
N2 = (5*qsolaio)*Ai = 49584kg
Ntot1 = 100717.35 kg

Amin = Ntot/σamm = 71.94 cmq
HEB 200

A = 78.1cmq P=61.3 kg/m

λ = Lo/ix = (325cm * 0.7)/8.54 = 26.63 cm

ω = 1.06

σ = (Ntot * ω) / A = 1366.97 kg/cmq < 1400kg/mq

Ntot1 = 100717.35 + (5*3.25*61.3) = 101713.475 kg

Amin = Ntot/σamm = 72.65 cmq

σ = (Ntot * ω) / A = 1380.49kg/cmq < 1400kg/mq

VERIFICATO CON HEB 200

PILASTRO M1 FASCIA 3

Ai = 13.69 mq
Ntot1 = 101713.475 kg
N3 = (5*qsolaio)*Ai = 49284 kg
Ntot2 = 150997.475 kg

Amin = Ntot/σamm = 107.85 cmq
HEB 260 A=118 cmq P=93 kg/m

λ = Lo/ix = (325cm * 0.7)/11.2 = 20.31 cm

ω = 1.03

σ = (Ntot * ω) / A = 1318.02 kg/cmq < 1400kg/mq

Ntot2 = 150997.475kg + (5*3.25*93) = 152508.725 kg

Amin = Ntot/σamm = 108.93 cmq

σ = (Ntot * ω) / A = 1331.22 kg/cmq < 1400kg/mq

VERIFICATO CON HEB 260

PILASTRO M1 FASCIA 4

Ai = 13.69 mq
Ntot2 = 152508.725kg
N4 = (5*qsolaio)*Ai = 49284 kg
Ntot3 = 201792.725 kg

Amin = Ntot/σamm = 144.13 cmq
HEB 300 A=149 cmq P=117 kg/m

λ = Lo/ix = (325cm * 0.7)/13 = 17.5cm

ω = 1.01

σ = (Ntot * ω) / A = 1367.85 kg/cmq < 1400kg/mq

Ntot3 = 201792.725 kg + (5*3.25*117) = 203693.975 kg

Amin = Ntot/σamm = 145 cmq

σ = (Ntot * ω) / A = 1380.74 kg/cmq < 1400kg/mq

VERIFICATO CON HEB 300