



Corso di Laurea Magistrale di Ingegneria Civile

Tesi di Laurea Magistrale

**Analisi della vulnerabilità sismica e
confronto tra strategie di intervento su
un edificio in muratura**

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1. Verifica travi in cemento armato

Metodo di verifica : stati limite (NTC18). ->
Duttilita' : calcolo completo.
: struttura dissipativa in bassa duttilita'.
: dettagli costruttivi del capitolo 7 attivi.
: dettagli costruttivi del capitolo 4 attivi.
Unita' di misura : cm; daN; daN/m; daNm; daN/cm2; deform. %.
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferrì (assi) : longitudinali= 3 ; staffe= 2

MATERIALI

CLS : Rck =300. ; fck=249. ; fctk= 17.9; fctm= 25.6; Ec= 314472. ;
gc =1.5 ; fcd=141.1; fbd= 26.9; fctd= 11.9; Ecd=.35%
ACCIAIO : B450C; ftk=5175. ; fyk=4500. ; Es=2100000. ;
gs =1.15; fyd=3913. ; ftd(k*fyd)=4500. ; fud=4439.8; Eud=6.75%

TENSIONI E FESSURE MASSIME IN ESERCIZIO

GRUPPO : ordinario.
CLS : Scls(rara)=149.4; Scls(quasi permanente)=112. ; fbd(esercizio)= 26.9
ACCIAIO : Sacc(rara)=3600.; Coeff.Omogeneizzazione= 15
FESSURE : Wdmax(fre.)=.4 ; Wdmax(q.p.)=.3 [4.1.2.2.4.5];
kt=.4 [EN 1992-1 7.3.4].

CASI DI CARICO DA MODELLO 3D

| Nome | Descrizione | Sest |
|------|------------------------|------|
| 1. | SLU SENZA SISMA | 1. |
| 4. | SLU con SISMAX PRINC16 | |
| 5. | SLU con SISMAX PRINC16 | |

| RARE | | | FREQUENTI | | | QUASI PERMANENTI | | |
|------|-------------|------|-----------|-------------|------|------------------|-------------|------|
| Nome | Descrizione | Sest | Nome | Descrizione | Sest | Nome | Descrizione | Sest |
| 8. | Rara | 1. | 9. | Frequente | 1. | 10. | Quasi Perm | 1. |

<-

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 59 - Travata T001 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 40x25; A=960.; Jg=46080.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A442 | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 2.933 | 54.988 |
| 2 | A443 | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 2.93 | 54.934 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|----|-----|----------|-------|------|-----------|-------|-------|-----|-------|-------|
| > 0. | 0. | 3. | 1. | -3624.94 | -.064 | .117 | -6075.31 | -.35 | 1.598 | 3. | .18 | 1.676 |
| 0. | 0. | 3. | 1. | 2511.3 | -.043 | .066 | 7472.4 | -.35 | 1.284 | 3. | .214 | 2.976 |
| 39. | 39. | 3. | 1. | 2548.09 | -.043 | .067 | 7472.4 | -.35 | 1.284 | 3. | .214 | 2.933 |
| 236. | 236. | 3. | 2. | -1993. | -.028 | .033 | -11634.25 | -.35 | .885 | 3. | .283 | 5.838 |
| 236. | 236. | 3. | 2. | 1315.39 | -.018 | .034 | 7535.16 | -.35 | 1.615 | 3. | .178 | 5.728 |
| 283. | 283. | 3. | 3. | 1181.78 | -.013 | .016 | 14563.58 | -.35 | .97 | 3. | .265 | 12.32 |
| 308. | 308. | 3. | 3. | -4536.39 | -.051 | .074 | -11839.41 | -.35 | 1.358 | 3. | .205 | 2.61 |
| 308. | 308. | 3. | 3. | 938.96 | -.011 | .012 | 14563.58 | -.35 | .97 | 3. | .265 | 15.51 |
| > 308. | 0. | 3. | 3. | -4523.16 | -.051 | .074 | -11839.41 | -.35 | 1.358 | 3. | .205 | 2.618 |
| 308. | 0. | 3. | 3. | 1041.43 | -.012 | .014 | 14563.58 | -.35 | .97 | 3. | .265 | 13.98 |
| 341. | 34. | 3. | 2. | -3683.92 | -.052 | .061 | -11634.25 | -.35 | .885 | 3. | .283 | 3.158 |

| | | | | | | | | | | | | | |
|------|------|-----|----|----------|---------|------|----------|-------|-------|----|------|-------|-----|
| 341. | 34. | 13. | 2. | 1318.5 | -0.18 | .034 | 7535.16 | -.35 | 1.615 | 3. | .178 | 5.715 | SI |
| 576. | 268. | 13. | 1. | 2550.6 | ! -0.43 | .067 | 7472.4 | -0.35 | 1.284 | 3. | .214 | 2.93 | SI |
| 615. | 308. | 13. | 1. | -3726.97 | -0.066 | .121 | -6075.31 | -.35 | 1.598 | 3. | .18 | 1.63 | !SI |
| 615. | 308. | 13. | 1. | 2512.62 | -0.043 | .066 | 7472.4 | -0.35 | 1.284 | 3. | .214 | 2.974 | SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|-----|---------|--------|---------|---------|------|------|---------|
| > 0. | 0. | 13. | -3808. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 SI |
| 0. | 0. | 13. | 8474.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 SI |
| 137. | 137. | 13. | -6124. | 6175.! | 18392. | 11617. | 1.01 | 16. | 2.5 SI |
| 308. | 308. | 13. | -8704.! | 4075. | 23971.! | 23792.! | 1.01 | 5. | 1.6 SI |
| 308. | 308. | 13. | 3295. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 SI |
| > 308. | 0. | 13. | -3579. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 SI |
| 308. | 0. | 13. | 8704.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 SI |
| 332. | 24. | 13. | -3758. | 6175.! | 23971. | 23792. | 1.01 | 5. | 1.6 SI |
| 615. | 308. | 13. | -8474.! | 4075. | 23971.! | 23792.! | 1.01 | 5. | 1.6 SI |
| 615. | 308. | 13. | 3524. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|-----|---------|-----------|--------|--------|-------|------|--------|-------|---------|
| > 0. | 0. | 13. | 1. | -1290.69 | -30.8 | 873.7! | 8.04 | 5.58 | .025 | 15.03 | .038!SI |
| 9. | 9. | 13. | 1. | -1040.7 | -24.9 | 704.5 | 8.04 | 5.58 | .0201 | 15.03 | .03 SI |
| 24. | 24. | 13. | 1. | -643.9 | -15.4 | 435.9 | 8.04 | 5.58 | .0125 | 15.03 | .019 SI |
| 137. | 137. | 13. | 1. | 1484.44! | -34.7! | 811.9 | 10.05 | 5.27 | .0252 | 13.18 | .033 SI |
| 308. | 308. | 13. | 3. | -2184.01! | -34.2 | 751.1 | 16.08 | 5.16 | .0263 | 10.97 | .029 SI |
| > 308. | 0. | 13. | 3. | -2114.22! | -33.1 | 727.1 | 16.08 | 5.16 | .0251 | 10.97 | .028 SI |
| 478. | 170. | 13. | 1. | 1485.76! | -34.7! | 812.7 | 10.05 | 5.27 | .0252 | 13.18 | .033 SI |
| 615. | 308. | 13. | 1. | -1290.69 | -30.8 | 873.7! | 8.04 | 5.58 | .025 | 15.03 | .038!SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|-----|---------|-----------|--------|--------|-------|------|--------|-------|---------|
| > 0. | 0. | 13. | 1. | -1146.6 | -27.4 | 776.2! | 8.04 | 5.58 | .0222 | 15.03 | .033!SI |
| 9. | 9. | 13. | 1. | -923.81 | -22.1 | 625.3 | 8.04 | 5.58 | .0179 | 15.03 | .027 SI |
| 24. | 24. | 13. | 1. | -570.17 | -13.6 | 386. | 8.04 | 5.58 | .011 | 15.03 | .017 SI |
| 137. | 137. | 13. | 1. | 1318.08! | -30.8! | 721. | 10.05 | 5.27 | .0209 | 13.18 | .028 SI |
| 308. | 308. | 13. | 3. | -1917.64! | -30.1 | 659.5 | 16.08 | 5.16 | .0219 | 10.97 | .024 SI |
| > 308. | 0. | 13. | 3. | -1854.85! | -29.1 | 637.9 | 16.08 | 5.16 | .0209 | 10.97 | .023 SI |
| 478. | 170. | 13. | 1. | 1317.24! | -30.8! | 720.5 | 10.05 | 5.27 | .0208 | 13.18 | .027 SI |
| 615. | 308. | 13. | 1. | -1146.6 | -27.4 | 776.2! | 8.04 | 5.58 | .0222 | 15.03 | .033!SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|-----|---------|-----------|--------|--------|-------|------|--------|-------|---------|
| > 0. | 0. | 13. | 1. | -1088.96 | -26. | 737.1! | 8.04 | 5.58 | .0211 | 15.03 | .032!SI |
| 9. | 9. | 13. | 1. | -877.25 | -20.9 | 593.8 | 8.04 | 5.58 | .017 | 15.03 | .025 SI |
| 24. | 24. | 13. | 1. | -541.2 | -12.9 | 366.4 | 8.04 | 5.58 | .0105 | 15.03 | .016 SI |
| 137. | 137. | 13. | 1. | 1251.91! | -29.2! | 684.8 | 10.05 | 5.27 | .0196 | 13.18 | .026 SI |
| 308. | 308. | 13. | 3. | -1817.47! | -28.5 | 625.1 | 16.08 | 5.16 | .0203 | 10.97 | .022 SI |
| > 308. | 0. | 13. | 3. | -1757.63! | -27.5 | 604.5 | 16.08 | 5.16 | .0193 | 10.97 | .021 SI |
| 478. | 170. | 13. | 1. | 1250.47! | -29.2! | 684. | 10.05 | 5.27 | .0195 | 13.18 | .026 SI |
| 615. | 308. | 13. | 1. | -1088.96 | -26. | 737.1! | 8.04 | 5.58 | .0211 | 15.03 | .032!SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 18.1 | 1.885 | 8.04 | .838 | 4d16 | 10.05 | 1.047 | 5d16 |
| 2 | 26.14 | 2.723 | 16.08 | 1.676 | 4d16 +4d16 | 10.05 | 1.047 | 5d16 |
| 3 | 36.19 | 3.77 | 16.08 | 1.676 | 4d16 +4d16 | 20.11 | 2.094 | 5d16 +5d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 60 - Travata T002 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 40x25; A=960.; Jg=46080.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|--------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 A444 | | 3 | 3 | 3 | 0 | 308. | 280. | 12.812 | 1.3 | 2.215 | 41.537 |
| 2 A445 | | 3 | 3 | 3 | 0 | 308. | 280. | 12.812 | 1.3 | 1.959 | 36.725 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|----|-----|----------|--------|------|-----------|-------|-------|-----|-------|----------|
| > 0. | 0. | 3. | 1.1 | -3677.87 | -.065 | .119 | -6075.31 | -.35 | 1.598 | 3. | .18 | 1.652 SI |
| 0. | 0. | 3. | 1.1 | 2132.99 | -.036 | .056 | 7472.4 | - .35 | 1.284 | 3. | .214 | 3.503 SI |
| 103. | 103. | 3. | 1.1 | -12.16 | 0. | 0. | -6075.31 | -.35 | 1.598 | 3. | .18 | 499.5 SI |
| 136. | 136. | 3. | 1.1 | 3373.27 | -.058 | .088 | 7472.4 | - .35 | 1.284 | 3. | .214 | 2.215 SI |
| 235. | 235. | 3. | 2.1 | -1818.88 | -.025 | .03 | -11634.25 | -.35 | .885 | 3. | .283 | 6.396 SI |
| 235. | 235. | 3. | 2.1 | 2567.41 | -.036 | .067 | 7535.16 | -.35 | 1.615 | 3. | .178 | 2.935 SI |
| 283. | 283. | 3. | 3.1 | 1876.28 | -.021 | .025 | 14563.58 | -.35 | .97 | 3. | .265 | 7.762 SI |
| 308. | 308. | 3. | 3.1 | -4975.97 | -.056 | .082 | -11839.41 | -.35 | 1.358 | 3. | .205 | 2.379 SI |
| 308. | 308. | 3. | 3.1 | 1229.8 | - .014 | .016 | 14563.58 | -.35 | .97 | 3. | .265 | 11.84 SI |
| > 308. | 0. | 3. | 3.1 | -5228.43 | -.059 | .086 | -11839.41 | -.35 | 1.358 | 3. | .205 | 2.264 SI |
| 308. | 0. | 3. | 3.1 | 1158.3 | - .013 | .015 | 14563.58 | -.35 | .97 | 3. | .265 | 12.57 SI |
| 341. | 34. | 3. | 2.1 | -4082.14 | -.058 | .068 | -11634.25 | -.35 | .885 | 3. | .283 | 2.85 SI |
| 341. | 34. | 3. | 2.1 | 2156.92 | -.03 | .056 | 7535.16 | -.35 | 1.615 | 3. | .178 | 3.493 SI |
| 413. | 105. | 3. | 1.1 | -264.19 | -.004 | .009 | -6075.31 | -.35 | 1.598 | 3. | .18 | 23. SI |
| 479. | 172. | 3. | 1.1 | 3815.29 | -.066 | .1 | 7472.4 | - .35 | 1.284 | 3. | .214 | 1.959 SI |
| 615. | 308. | 3. | 1.1 | -3913.88 | -.069 | .127 | -6075.31 | -.35 | 1.598 | 3. | .18 | 1.552 SI |
| 615. | 308. | 3. | 1.1 | 2107.28 | -.036 | .055 | 7472.4 | - .35 | 1.284 | 3. | .214 | 3.546 SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|-----|----------|--------|---------|---------|------|----------|----|
| > 0. | 0. | 3. | -1691. | 4075. | 23971. | 23792. | 1.01 | 5. 1.6 | SI |
| 0. | 0. | 3. | 9999.! | 4075. | 23971. | 23792. | 1.01 | 5. 1.6 | SI |
| 136. | 136. | 3. | -5404.! | 6175.! | 18392.! | 11617.! | 1.01 | 16. 2.5 | SI |
| 308. | 308. | 3. | -9546.! | 4075.! | 23971.! | 23792.! | 1.01 | 5. 1.6 | SI |
| 308. | 308. | 3. | 1693.! | 4075.! | 23971.! | 23792.! | 1.01 | 5. 1.6 | SI |
| > 308. | 0. | 3. | -1628.! | 4075.! | 23971.! | 23792.! | 1.01 | 5. 1.6 | SI |
| 308. | 0. | 3. | 9992.! | 4075.! | 23971.! | 23792.! | 1.01 | 5. 1.6 | SI |
| 332. | 24. | 3. | -1947.! | 6175.! | 23971.! | 23792.! | 1.01 | 5. 1.6 | SI |
| 615. | 308. | 3. | -10454.! | 4075.! | 23971.! | 23792.! | 1.01 | 5. 1.6 | SI |
| 615. | 308. | 3. | 743.! | 4075.! | 23971.! | 23792.! | 1.01 | 5. 1.6 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------|--------------------|-------|-------|-------|--------|------|-----|
| > 0. | 0. | 3. | 1.1 | -2093.76 | -50. 1417.3 | 8.04 | 5.58 | .0507 | 15.03 | .076 | !SI |
| 9. | 9. | 3. | 1.1 | -1678.85 | -40.1 1136.5 | 8.04 | 5.58 | .0373 | 15.03 | .056 | SI |
| 22. | 22. | 3. | 1.1 | -1130.03 | -27. 764.9 | 8.04 | 5.58 | .0219 | 15.03 | .033 | SI |
| 136. | 136. | 3. | 1.1 | 2387.71 | -55.8 1306. 10.05 | 5.27 | .0487 | 13.18 | .064 | SI | |
| 308. | 308. | 3. | 3.1 | -3219.62 | -50.5 1107.3 | 16.08 | 5.16 | .0432 | 10.97 | .047 | SI |
| > 308. | 0. | 3. | 3.1 | -3491.46 | -54.7 1200.8 | 16.08 | 5.16 | .0477 | 10.97 | .052 | SI |
| 479. | 172. | 3. | 1.1 | 2698.41 | -63. !1476. 10.05 | 5.27 | .0568 | 13.18 | .075 | SI | |
| 615. | 308. | 3. | 1.1 | -2356.53 | -56.3 1595.2 | 8.04 | 5.58 | .0592 | 15.03 | .089 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|----|----|---------|----------|--------------|------|-------|-------|--------|------|-----|
| > 0. | 0. | 3. | 1.1 | -1836.46 | -43.9 1243.2 | 8.04 | 5.58 | .0424 | 15.03 | .064 | !SI |
| 9. | 9. | 3. | 1.1 | -1471.85 | -35.1 996.3 | 8.04 | 5.58 | .0307 | 15.03 | .046 | SI |

| | | | | | | | | | | | | |
|--------|------|-----|----|----------|-------|--------|-------|------|-------|-------|------|----|
| 22. | 22. | 13. | 1. | -989.55 | -23.6 | 669.9 | 8.04 | 5.58 | .0191 | 15.03 | .029 | SI |
| 136. | 136. | 13. | 1. | 2094.04 | -48.9 | 1145.4 | 10.05 | 5.27 | .0411 | 13.18 | .054 | SI |
| 308. | 308. | 13. | 3. | -2801.93 | -43.9 | 963.7 | 16.08 | 5.16 | .0364 | 10.97 | .04 | SI |
| > 308. | 0. | 13. | 3. | -3045.48 | -47.7 | 1047.4 | 16.08 | 5.16 | .0404 | 10.97 | .044 | SI |
| 479. | 172. | 13. | 1. | 2362.64 | -55.2 | 1292.3 | 10.05 | 5.27 | .0481 | 13.18 | .063 | SI |
| 615. | 308. | 13. | 1. | -2064.66 | -49.3 | 1397.6 | 8.04 | 5.58 | .0498 | 15.03 | .075 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|----------|-------|--------|-------|------|--------|-------|------|----|
| > 0. | 0. | 13. | 1. | -1733.54 | -41.4 | 1173.5 | 8.04 | 5.58 | .0391 | 15.03 | .059 | SI |
| 9. | 9. | 13. | 1. | -1389.22 | -33.2 | 940.4 | 8.04 | 5.58 | .028 | 15.03 | .042 | SI |
| 22. | 22. | 13. | 1. | -933.77 | -22.3 | 632.1 | 8.04 | 5.58 | .0181 | 15.03 | .027 | SI |
| 136. | 136. | 13. | 1. | 1976.87 | -46.2 | 1081.3 | 10.05 | 5.27 | .038 | 13.18 | .05 | SI |
| 308. | 308. | 13. | 3. | -2640.41 | -41.4 | 908.1 | 16.08 | 5.16 | .0337 | 10.97 | .037 | SI |
| > 308. | 0. | 13. | 3. | -2871.79 | -45. | 987.7 | 16.08 | 5.16 | .0375 | 10.97 | .041 | SI |
| 479. | 172. | 13. | 1. | 2228.76 | -52.1 | 1219.1 | 10.05 | 5.27 | .0446 | 13.18 | .059 | SI |
| 615. | 308. | 13. | 1. | -1947.91 | -46.5 | 1318.6 | 8.04 | 5.58 | .046 | 15.03 | .069 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 18.1 | 1.885 | 8.04 | .838 | 4d16 | 10.05 | 1.047 | 5d16 |
| 2 | 26.14 | 2.723 | 16.08 | 1.676 | 4d16 +4d16 | 10.05 | 1.047 | 5d16 |
| 3 | 36.19 | 3.77 | 16.08 | 1.676 | 4d16 +4d16 | 20.11 | 2.094 | 5d16 +5d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 61 - Travata T003 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|----|-------|---------|
| 1 | A458 | 3 | 3 | 3 | 0 | 308. | 308. | 12.812 | 1. | 4.25 | 60.965 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE | |
|-------------|------|-----|-----|----------|-------|------|----------|-------|-------|-----|-------|-------|----|
| > 9. | 9. | 13. | 1. | -968.42 | -.022 | .042 | -4558.79 | -.35 | 1.622 | 3. | .177 | 4.707 | SI |
| 9. | 9. | 13. | 1. | 466.66 | -.01 | .015 | 5952.43 | -.35 | 1.214 | 3. | .224 | 12.76 | SI |
| 186. | 186. | 13. | 1. | 1400.63 | -.031 | .046 | 5952.43 | -.35 | 1.214 | 3. | .224 | 4.25 | SI |
| 251. | 251. | 13. | 1. | -123.16 | -.003 | .005 | -4558.79 | -.35 | 1.622 | 3. | .177 | 37.02 | SI |
| 298. | 298. | 13. | 1. | -1142.75 | -.026 | .049 | -4558.79 | -.35 | 1.622 | 3. | .177 | 3.989 | SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve | |
|-------------|------|-----|--------|-------|--------|--------|------|------|-----|----|
| > 0. | 0. | 13. | 2913. | 3056. | 13794. | 11617. | 1.01 | 16. | 2.5 | SI |
| 89. | 89. | 13. | 824. | 4732. | 13794. | 11617. | 1.01 | 16. | 2.5 | SI |
| 308. | 308. | 13. | -3857. | 3056. | 13794. | 12392. | 1.01 | 15. | 2.5 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|---------|-------|-------|-------|------|--------|-------|------|----|
| 9. | 9. | 13. | 1. | -266.01 | -8.3 | 240. | 6.03 | 5.6 | .0069 | 15.06 | .01 | SI |
| 186. | 186. | 13. | 1. | 995.39 | -30.4 | 682.4 | 8.04 | 5.2 | .0198 | 12.75 | .025 | SI |

298.|298.|3.|1.| -517.99! -16.2| 467.4| 6.03| 5.6 | .0134| 15.06| .02 |SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------------|--------|-------|-------|-------|--------|---------|---------|
| 9. | 9. | 3. | 1. | -235.28 | -7.4 | 212.3 | 6.03 | 5.6 | .0061 | 15.06 | .009 SI |
| 186. | 186. | 3. | 1. | 880.38! -26.9! | 603.6! | 8.04 | 5.2 | .0172 | 12.75 | .022!SI | |
| 298. | 298. | 3. | 1. | -454.72! -14.3 | 410.3 | 6.03 | 5.6 | .0117 | 15.06 | .018 SI | |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------------|--------|-------|-------|-------|--------|---------|---------|
| 9. | 9. | 3. | 1. | -222.15 | -7. | 200.4 | 6.03 | 5.6 | .0057 | 15.06 | .009 SI |
| 186. | 186. | 3. | 1. | 834.13! -25.5! | 571.8! | 8.04 | 5.2 | .0163 | 12.75 | .021!SI | |
| 298. | 298. | 3. | 1. | -430.47! -13.5 | 388.4 | 6.03 | 5.6 | .0111 | 15.06 | .017 SI | |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|------|-------|--------|-------|-------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 62 - Travata T004 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 40x25; A=960.; Jg=46080.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A447 | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 3.3 | 61.88 |
| 2 | A448 | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 3.423 | 64.194 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|----|-----|-----------|--------|-------|-----------|-------|-------|-----|-------|----------|
| > 0. | 0. | 3. | 1. | -2867.03 | -.05 ! | .093! | -6075.31 | -.35 | 1.598 | 3. | .18 | 2.119!SI |
| 0. | 0. | 3. | 1. | 2264.3 ! | -.038 | .059 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.3 SI |
| 236. | 236. | 3. | 2. | -1583.7 | -.022 | .026 | -11634.25 | -.35 | .885 | 3. | .283! | 7.346 SI |
| 236. | 236. | 3. | 2. | 1038.44 | -.014 | .027 | 7535.16 | -.35 | 1.615 | 3. | .178! | 7.256 SI |
| 283. | 283. | 3. | 3. | 1108.47 | -.012 | .015 | 14563.58 | -.35 | .97 | 3. | .265 | 13.14 SI |
| 308. | 308. | 3. | 3. | -3315.26 | -.037 | .054 | -11839.41 | -.35 | 1.358 | 3. | .205 | 3.571 SI |
| 308. | 308. | 3. | 3. | 1100.45 | -.012 | .015 | 14563.58 | -.35 | .97 | 3. | .265 | 13.23!SI |
| > 308. | 0. | 3. | 3. | -4070.8 ! | -.046 | .067 | -11839.41 | -.35 | 1.358 | 3. | .205 | 2.908 SI |
| 308. | 0. | 3. | 3. | 679.29 | -.008 | .009 | 14563.58 | -.35 | .97 | 3. | .265 | 21.44!SI |
| 341. | 34. | 3. | 2. | -3278. | -.046 | .054 | -11634.25 | -.35 | .885 | 3. | .283! | 3.549 SI |
| 341. | 34. | 3. | 2. | 1056.55 | -.014 | .027 | 7535.16 | -.35 | 1.615 | 3. | .178! | 7.132 SI |
| 576. | 268. | 3. | 1. | 2182.69 | -.037 | .057 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.423 SI |
| 615. | 308. | 3. | 1. | -3359.09 | -.059! | .109! | -6075.31 | -.35 | 1.598 | 3. | .18 | 1.809!SI |
| 615. | 308. | 3. | 1. | 2036.73 | -.034 | .053 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.669 SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|-----|---------|--------|---------|---------|------|------|---------|
| > 0. | 0. | 3. | -5070. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 SI |
| 0. | 0. | 3. | 7507.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 SI |
| 137. | 137. | 3. | -6738. | 6175.! | 18392. | 11617. | 1.01 | 16. | 2.5 SI |
| 308. | 308. | 3. | -7708.! | 4075. | 23971.! | 23792.! | 1.01 | 5. | 1.6 SI |
| 308. | 308. | 3. | 4691. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 SI |
| > 308. | 0. | 3. | -3532. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 SI |

| | | | | | | | | | | |
|------|------|----|---------|--------|---------|---------|------|----|-----|----|
| 308. | 0. | 3. | 8745.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 332. | 24. | 3. | -3714. | 6175.! | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 615. | 308. | 3. | -8515.! | 4075. | 23971.! | 23792.! | 1.01 | 5. | 1.6 | SI |
| 615. | 308. | 3. | 3472. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|-----------|--------|--------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 3. | -882.21 | -21.1 | 597.2! | 8.04 | 5.58 | .0171 | 15.03 | .026 | SI |
| 9. | 9. | 3. | -751.98 | -18. | 509. | 8.04 | 5.58 | .0145 | 15.03 | .022 | SI |
| 24. | 24. | 3. | -550.08 | -13.1 | 372.4 | 8.04 | 5.58 | .0106 | 15.03 | .016 | SI |
| 137. | 137. | 3. | 1011.66! | -23.6! | 553.4 | 10.05 | 5.27 | .0158 | 13.18 | .021 | SI |
| 308. | 308. | 3. | -1291.56! | -20.2 | 444.2 | 16.08 | 5.16 | .0127 | 10.97 | .014 | SI |
| > 308. | 0. | 3. | -2021.06! | -31.7 | 695.1 | 16.08 | 5.16 | .0236 | 10.97 | .026 | SI |
| 478. | 170. | 3. | 1501.4 ! | -35.1! | 821.2 | 10.05 | 5.27 | .0256 | 13.18 | .034 | SI |
| 615. | 308. | 3. | -1314.73 | -31.4 | 890. ! | 8.04 | 5.58 | .0256 | 15.03 | .038 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|-----------|--------|--------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 3. | -802.98 | -19.2 | 543.6! | 8.04 | 5.58 | .0155 | 15.03 | .023 | SI |
| 9. | 9. | 3. | -681.96 | -16.3 | 461.6 | 8.04 | 5.58 | .0132 | 15.03 | .02 | SI |
| 24. | 24. | 3. | -494.7 | -11.8 | 334.9 | 8.04 | 5.58 | .0096 | 15.03 | .014 | SI |
| 137. | 137. | 3. | 917.3 ! | -21.4! | 501.7 | 10.05 | 5.27 | .0143 | 13.18 | .019 | SI |
| 308. | 308. | 3. | -1163.85! | -18.2 | 400.3 | 16.08 | 5.16 | .0114 | 10.97 | .013 | SI |
| > 308. | 0. | 3. | -1798.99! | -28.2 | 618.7 | 16.08 | 5.16 | .02 | 10.97 | .022 | SI |
| 478. | 170. | 3. | 1331.98! | -31.1! | 728.6 | 10.05 | 5.27 | .0212 | 13.18 | .028 | SI |
| 615. | 308. | 3. | -1167.48 | -27.9 | 790.3! | 8.04 | 5.58 | .0226 | 15.03 | .034 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|-----------|--------|--------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 3. | -771.22 | -18.4 | 522.1! | 8.04 | 5.58 | .0149 | 15.03 | .022 | SI |
| 9. | 9. | 3. | -654.06 | -15.6 | 442.7 | 8.04 | 5.58 | .0126 | 15.03 | .019 | SI |
| 24. | 24. | 3. | -472.91 | -11.3 | 320.1 | 8.04 | 5.58 | .0091 | 15.03 | .014 | SI |
| 137. | 137. | 3. | 879.82! | -20.6! | 481.2 | 10.05 | 5.27 | .0137 | 13.18 | .018 | SI |
| 308. | 308. | 3. | -1116.81! | -17.5 | 384.1 | 16.08 | 5.16 | .011 | 10.97 | .012 | SI |
| > 308. | 0. | 3. | -1714.35! | -26.9 | 589.6 | 16.08 | 5.16 | .0186 | 10.97 | .02 | SI |
| 478. | 170. | 3. | 1264.6 ! | -29.5! | 691.7 | 10.05 | 5.27 | .0198 | 13.18 | .026 | SI |
| 615. | 308. | 3. | -1108.57 | -26.5 | 750.4! | 8.04 | 5.58 | .0214 | 15.03 | .032 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 18.1 | 1.885 | 8.04 | .838 | 4d16 | 10.05 | 1.047 | 5d16 |
| 2 | 26.14 | 2.723 | 16.08 | 1.676 | 4d16 +4d16 | 10.05 | 1.047 | 5d16 |
| 3 | 36.19 | 3.77 | 16.08 | 1.676 | 4d16 +4d16 | 20.11 | 2.094 | 5d16 +5d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 63 - Travata T005 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|--------|-------|---------|
| 1 | A449 | | 3 | 3 | 3 | 0 | 501. | 474. | 20.875 | 1.3 | 3.393 |
| 2 | A451 | | 3 | 3 | 3 | 0 | 512. | 484. | 21.333 | 1.3 | 2.494 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|----|----------|-------|-------|----------|-------|-------|-----|------|-------|----|
| > 0. | 0. | 0. | 2335.83 | -.053 | .101 | -4558.79 | -.35 | 1.622 | 3. | .177 | 1.952 | SI |
| 0. | 0. | 0. | 1754.09 | -.039 | .057 | 5952.43 | -.35 | 1.214 | 3. | .224 | 3.393 | SI |
| 200. | 200. | 0. | -211.9 | -.005 | .009 | -4558.79 | -.35 | 1.622 | 3. | .177 | 21.51 | SI |
| 477. | 477. | 0. | 1220.21 | -.018 | .02 | 11604.02 | -.35 | .895 | 3. | .281 | 9.51 | SI |
| 501. | 501. | 0. | -2687.2 | -.039 | .059 | -8888.1 | -.35 | 1.396 | 3. | .2 | 3.308 | SI |
| 501. | 501. | 0. | 1237.66 | -.018 | .021 | 11604.02 | -.35 | .895 | 3. | .281 | 9.376 | SI |
| > 501. | 0. | 0. | -3476.32 | -.051 | .076 | -8888.1 | -.35 | 1.396 | 3. | .2 | 2.557 | SI |
| 501. | 0. | 0. | 506.58 | -.007 | .008 | 11604.02 | -.35 | .895 | 3. | .281 | 22.91 | SI |
| 876. | 375. | 0. | -32.69 | -.001 | .001 | -4558.79 | -.35 | 1.622 | 3. | .177 | 139.5 | SI |
| 876. | 375. | 0. | 2386.43 | -.054 | .078 | 5952.43 | -.35 | 1.214 | 3. | .224 | 2.494 | SI |
| 1013. | 512. | 0. | -2695.21 | -.062 | .116 | -4558.79 | -.35 | 1.622 | 3. | .177 | 1.691 | SI |
| 1013. | 512. | 0. | 819.9 | -.018 | .027 | 5952.43 | -.35 | 1.214 | 3. | .224 | 7.26 | SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve | |
|-------------|------|-----|--------|-------|--------|--------|------|------|-----|----|
| > 0. | 0. | 0. | -2115. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 0. | 0. | 0. | 3431. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 233. | 233. | 0. | -2732. | 4732. | 13794. | 11617. | 1.01 | 16. | 2.5 | SI |
| 501. | 501. | 0. | -3388. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 501. | 501. | 0. | 2116. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| > 501. | 0. | 0. | -1666. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 501. | 0. | 0. | 3808. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 525. | 24. | 0. | -1693. | 4732. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 1013. | 512. | 0. | -4675. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 1013. | 512. | 0. | 765. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|----------|-------|--------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 0. | -432.62 | -13.6 | 390.4 | 6.03 | 5.6 | .0112 | 15.06 | .017 | SI |
| 9. | 9. | 0. | -381.44 | -12. | 344.2 | 6.03 | 5.6 | .0098 | 15.06 | .015 | SI |
| 12. | 12. | 0. | -364.93 | -11.4 | 329.3 | 6.03 | 5.6 | .0094 | 15.06 | .014 | SI |
| 22. | 22. | 0. | -313.74 | -9.8 | 283.1 | 6.03 | 5.6 | .0081 | 15.06 | .012 | SI |
| 233. | 233. | 0. | 496.13 | -15.2 | 340.1 | 8.04 | 5.2 | .0097 | 12.75 | .012 | SI |
| 501. | 501. | 0. | -742.55 | -15.1 | 340.2 | 12.06 | 5.2 | .0097 | 11. | .011 | SI |
| > 501. | 0. | 0. | -1657.81 | -33.8 | 759.6 | 12.06 | 5.2 | .0266 | 11. | .029 | SI |
| 876. | 375. | 0. | 1601.66 | -48.9 | 1098. | 8.04 | 5.2 | .0396 | 12.75 | .05 | SI |
| 1013. | 512. | 0. | -1398.86 | -43.9 | 1262.2 | 6.03 | 5.6 | .0433 | 15.06 | .065 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|----------|-------|--------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 0. | -432.62 | -13.6 | 390.4 | 6.03 | 5.6 | .0112 | 15.06 | .017 | SI |
| 9. | 9. | 0. | -381.27 | -12. | 344. | 6.03 | 5.6 | .0098 | 15.06 | .015 | SI |
| 12. | 12. | 0. | -364.69 | -11.4 | 329.1 | 6.03 | 5.6 | .0094 | 15.06 | .014 | SI |
| 22. | 22. | 0. | -313.34 | -9.8 | 282.7 | 6.03 | 5.6 | .0081 | 15.06 | .012 | SI |
| 233. | 233. | 0. | 494.98 | -15.1 | 339.3 | 8.04 | 5.2 | .0097 | 12.75 | .012 | SI |
| 501. | 501. | 0. | -733.37 | -15. | 336. | 12.06 | 5.2 | .0096 | 11. | .011 | SI |
| > 501. | 0. | 0. | -1537.14 | -31.4 | 704.3 | 12.06 | 5.2 | .024 | 11. | .026 | SI |
| 876. | 375. | 0. | 1463.42 | -44.7 | 1003.3 | 8.04 | 5.2 | .0351 | 12.75 | .045 | SI |
| 1013. | 512. | 0. | -1274.06 | -39.9 | 1149.6 | 6.03 | 5.6 | .0379 | 15.06 | .057 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|----------|-------|-------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 0. | -432.62 | -13.6 | 390.4 | 6.03 | 5.6 | .0112 | 15.06 | .017 | SI |
| 9. | 9. | 0. | -381.22 | -12. | 344. | 6.03 | 5.6 | .0098 | 15.06 | .015 | SI |
| 12. | 12. | 0. | -364.62 | -11.4 | 329. | 6.03 | 5.6 | .0094 | 15.06 | .014 | SI |
| 22. | 22. | 0. | -313.21 | -9.8 | 282.6 | 6.03 | 5.6 | .0081 | 15.06 | .012 | SI |
| 233. | 233. | 0. | 494.78 | -15.1 | 339.2 | 8.04 | 5.2 | .0097 | 12.75 | .012 | SI |
| 501. | 501. | 0. | -730.63 | -14.9 | 334.8 | 12.06 | 5.2 | .0096 | 11. | .011 | SI |
| > 501. | 0. | 0. | -1490.61 | -30.4 | 683. | 12.06 | 5.2 | .023 | 11. | .025 | SI |

| | | | | | | | | | | | | |
|-------|------|----|----|--|----------|--------|---------|------|-----|-------|-------|---------|
| 876. | 375. | 3. | 1. | | 1398.41! | -42.7! | 958.7 | 8.04 | 5.2 | .033 | 12.75 | .042 SI |
| 1013. | 512. | 3. | 1. | | -1224.14 | -38.4 | 1104.5! | 6.03 | 5.6 | .0358 | 15.06 | .054!SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre | |
|-----|--------|-------|--------|-------|------------|--------|-------|-------|------------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | | 8.04 | 1.117 | 4d16 |
| 2 | 20.11 | 2.793 | 12.06 | 1.676 | 3d16 +3d16 | | 8.04 | 1.117 | 4d16 |
| 3 | 28.15 | 3.91 | 12.06 | 1.676 | 3d16 +3d16 | | 16.08 | 2.234 | 4d16 +4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 64 - Travata T006 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | | Descriz. | | S.ini | | Sez. | | S.fin | | Incl. | | L.assi | | L.net. | | lambda | | K | | r.Ar. | | lam.max | |
|------|------|----------|--|-------|--|------|--|-------|--|-------|--|--------|--|--------|--|--------|--|----|--|-------|--|---------|--|
| 1 | A437 | | | 3 | | 3 | | 3 | | 0 | | 120. | | 120. | | 5. | | 1. | | 5. | | 71.726 | |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | | Mr/Ms | VE |
|-------------|------|----|-----|----------|--------|-------|----------|-------|-------|-----|-------|--------|----|
| > 9. | 9. | 3. | 1. | -229.19 | -.005 | .01 | -4558.79 | -.35 | 1.622 | 3. | .177! | 19.89 | SI |
| 9. | 9. | 3. | 1. | 1104.77 | -.024 | .036 | 5952.43 | -.35 | 1.214 | 3. | .224! | 5.388 | SI |
| 111. | 111. | 3. | 1. | -1557.39 | -.035! | .067! | -4558.79 | -.35 | 1.622 | 3. | .177 | 2.927 | SI |
| 111. | 111. | 3. | 1. | 232.89 | -.005 | .008 | 5952.43 | -.35 | 1.214 | 3. | .224 | 25.56! | SI |

TAGLIO:

| Progressive | Se | Vsd | | VRd | | VRcd | | VRsd | Asw | s | ctgT | Ve |
|-------------|------|-----|---------|--------|---------|---------|------|------|-----|-----|------|----|
| > 0. | 0. | 3. | -1674.! | 3056. | 13794. | 12392. | 1.01 | 15. | | 2.5 | | SI |
| 120. | 120. | 3. | -1955.! | 3056.! | 13794.! | 12392.! | 1.01 | 15. | | 2.5 | | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | Scsls | Sacc | | As | hc,ef | Eps% | Sr,max | Wd | | Ve |
|-------------|------|----|---------|----------|--------|--------|------|-------|-------|--------|-------|----|----|
| > 9. | 9. | 3. | 1. | 549.79! | -16.8 | 376.9 | 8.04 | 5.2 | .0108 | 12.75 | .014 | SI | |
| 9. | 9. | 3. | 1. | 549.79 | -16.8 | 376.9 | 8.04 | 5.2 | .0108 | 12.75 | .014 | SI | |
| 111. | 111. | 3. | 1. | -753.57! | -23.6! | 679.9! | 6.03 | 5.6 | .0194 | 15.06 | .029! | SI | |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | Scsls | Sacc | | As | hc,ef | Eps% | Sr,max | Wd | | Ve |
|-------------|------|----|---------|----------|--------|--------|------|-------|-------|--------|-------|----|----|
| > 9. | 9. | 3. | 1. | 480.86! | -14.7 | 329.7 | 8.04 | 5.2 | .0094 | 12.75 | .012 | SI | |
| 9. | 9. | 3. | 1. | 480.86 | -14.7 | 329.7 | 8.04 | 5.2 | .0094 | 12.75 | .012 | SI | |
| 111. | 111. | 3. | 1. | -671.8 ! | -21.1! | 606.2! | 6.03 | 5.6 | .0173 | 15.06 | .026! | SI | |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | Scsls | Sacc | | As | hc,ef | Eps% | Sr,max | Wd | | Ve |
|-------------|------|----|---------|----------|--------|--------|------|-------|-------|--------|-------|----|----|
| > 9. | 9. | 3. | 1. | 453.89! | -13.9 | 311.2 | 8.04 | 5.2 | .0089 | 12.75 | .011 | SI | |
| 9. | 9. | 3. | 1. | 453.89 | -13.9 | 311.2 | 8.04 | 5.2 | .0089 | 12.75 | .011 | SI | |
| 111. | 111. | 3. | 1. | -638.04! | -20. ! | 575.7! | 6.03 | 5.6 | .0164 | 15.06 | .025! | SI | |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| | | | | | | | | |
|-----|--------|-------|--------|------|-------|--------|-------|-------|
| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 65 - Travata T007 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A452 | 3 | 3 | 3 | 0 | 501. | 476. | 20.875 | 1.3 | 3.348 | 62.43 |
| 2 | A454 | 3 | 3 | 3 | 0 | 512. | 487. | 21.333 | 1.3 | 2.471 | 46.085 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|----|-----|----------|-------|------|----------|-------|-------|-----|-------|-------|
| > 0. | 0. | 3. | 1. | -2031.77 | -.046 | .088 | -4558.79 | -.35 | 1.622 | 3. | .177 | 2.244 |
| 0. | 0. | 3. | 1. | 1778.09 | -.039 | .058 | 5952.43 | -.35 | 1.214 | 3. | .224 | 3.348 |
| 267. | 267. | 3. | 1. | -45.12 | -.001 | .002 | -4558.79 | -.35 | 1.622 | 3. | .177 | 101. |
| 479. | 479. | 3. | 3. | 1192.67 | -.018 | .02 | 11604.02 | -.35 | .895 | 3. | .281 | 9.729 |
| 501. | 501. | 3. | 3. | -2300.87 | -.033 | .05 | -8888.1 | -.35 | 1.396 | 3. | .2 | 3.863 |
| 501. | 501. | 3. | 3. | 1226.29 | -.018 | .02 | 11604.02 | -.35 | .895 | 3. | .281 | 9.463 |
| > 501. | 0. | 3. | 3. | -3101.33 | -.045 | .068 | -8888.1 | -.35 | 1.396 | 3. | .2 | 2.866 |
| 501. | 0. | 3. | 3. | 590.13 | -.009 | .01 | 11604.02 | -.35 | .895 | 3. | .281 | 19.66 |
| 706. | 205. | 3. | 1. | -23.93 | -.001 | .001 | -4558.79 | -.35 | 1.622 | 3. | .177 | 190.5 |
| 875. | 374. | 3. | 1. | 2408.71 | -.054 | .079 | 5952.43 | -.35 | 1.214 | 3. | .224 | 2.471 |
| 1013. | 512. | 3. | 1. | -2967.55 | -.069 | .128 | -4558.79 | -.35 | 1.622 | 3. | .177 | 1.536 |
| 1013. | 512. | 3. | 1. | 743.15 | -.016 | .024 | 5952.43 | -.35 | 1.214 | 3. | .224 | 8.01 |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|-----|--------|-------|--------|--------|------|------|-----|
| > 0. | 0. | 3. | -2356. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 |
| 0. | 0. | 3. | 3332. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 |
| 432. | 432. | 3. | -3110. | 4732. | 13794. | 11617. | 1.01 | 16. | 2.5 |
| 501. | 501. | 3. | -3179. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 |
| 501. | 501. | 3. | 2487. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 |
| > 501. | 0. | 3. | -1910. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 |
| 501. | 0. | 3. | 3703. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 |
| 523. | 22. | 3. | -1927. | 4732. | 19332. | 19331. | 1.01 | 5. | 1.3 |
| 1013. | 512. | 3. | -5035. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 |
| 1013. | 512. | 3. | 556. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------|-------|--------|-------|------|--------|-------|------|
| > 0. | 0. | 3. | 1. | -277.74 | -8.7 | 250.6 | 6.03 | 5.6 | .0072 | 15.06 | .011 |
| 9. | 9. | 3. | 1. | -246.52 | -7.7 | 222.4 | 6.03 | 5.6 | .0064 | 15.06 | .01 |
| 22. | 22. | 3. | 1. | -205.24 | -6.4 | 185.2 | 6.03 | 5.6 | .0053 | 15.06 | .008 |
| 201. | 201. | 3. | 1. | 319.65 | -9.8 | 219.1 | 8.04 | 5.2 | .0063 | 12.75 | .008 |
| 501. | 501. | 3. | 3. | -571.05 | -11.6 | 261.6 | 12.06 | 5.2 | .0075 | 11. | .008 |
| > 501. | 0. | 3. | 3. | -1479.98 | -30.2 | 678.1 | 12.06 | 5.2 | .0227 | 11. | .025 |
| 875. | 374. | 3. | 1. | 1740.64 | -53.2 | 1193.3 | 8.04 | 5.2 | .0441 | 12.75 | .056 |
| 1013. | 512. | 3. | 1. | -1516.48 | -47.5 | 1368.3 | 6.03 | 5.6 | .0483 | 15.06 | .073 |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|----------|-------|--------|-------|------|--------|-------|------|----|
| > 0. | 0. | 13. | 1.1. | -277.74 | -8.7 | 250.6 | 6.03 | 5.6 | .0072 | 15.06 | .011 | SI |
| 9. | 9. | 13. | 1.1. | -246.19 | -7.7 | 222.1 | 6.03 | 5.6 | .0063 | 15.06 | .01 | SI |
| 22. | 22. | 13. | 1.1. | -204.45 | -6.4 | 184.5 | 6.03 | 5.6 | .0053 | 15.06 | .008 | SI |
| 201. | 201. | 13. | 1.1. | 318.25 | -9.7 | 218.2 | 8.04 | 5.2 | .0062 | 12.75 | .008 | SI |
| 501. | 501. | 13. | 1.3. | -553.31 | -11.3 | 253.5 | 12.06 | 5.2 | .0072 | 11. | .008 | SI |
| > 501. | 0. | 13. | 1.3. | -1351.2 | -27.6 | 619.1 | 12.06 | 5.2 | .0199 | 11. | .022 | SI |
| 875. | 374. | 13. | 1.1. | 1564.91 | -47.8 | 1072.8 | 8.04 | 5.2 | .0384 | 12.75 | .049 | SI |
| 1013. | 512. | 13. | 1.1. | -1228.03 | -38.5 | 1108. | 6.03 | 5.6 | .0359 | 15.06 | .054 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|----------|-------|--------|-------|------|--------|-------|------|----|
| > 0. | 0. | 13. | 1.1. | -277.74 | -8.7 | 250.6 | 6.03 | 5.6 | .0072 | 15.06 | .011 | SI |
| 9. | 9. | 13. | 1.1. | -246.07 | -7.7 | 222. | 6.03 | 5.6 | .0063 | 15.06 | .01 | SI |
| 22. | 22. | 13. | 1.1. | -204.18 | -6.4 | 184.2 | 6.03 | 5.6 | .0053 | 15.06 | .008 | SI |
| 234. | 234. | 13. | 1.1. | 318.25 | -9.7 | 218.2 | 8.04 | 5.2 | .0062 | 12.75 | .008 | SI |
| 501. | 501. | 13. | 1.3. | -547.17 | -11.2 | 250.7 | 12.06 | 5.2 | .0072 | 11. | .008 | SI |
| > 501. | 0. | 13. | 1.3. | -1301.84 | -26.6 | 596.5 | 12.06 | 5.2 | .0189 | 11. | .021 | SI |
| 875. | 374. | 13. | 1.1. | 1490. | -45.5 | 1021.5 | 8.04 | 5.2 | .0359 | 12.75 | .046 | SI |
| 1013. | 512. | 13. | 1.1. | -1175.77 | -36.9 | 1060.9 | 6.03 | 5.6 | .0337 | 15.06 | .051 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |
| 2 | 20.11 | 2.793 | 12.06 | 1.676 | 3d16 +3d16 | 8.04 | 1.117 | 4d16 |
| 3 | 28.15 | 3.91 | 12.06 | 1.676 | 3d16 +3d16 | 16.08 | 2.234 | 4d16 +4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 66 - Travata T008 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A455 | 3 | 3 | 3 | 0 | 501. | 474. | 20.875 | 1.3 | 3.221 | 60.064 |
| 2 | A456 | 3 | 3 | 3 | 0 | 512. | 484. | 21.333 | 1.3 | 3.016 | 56.241 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE | |
|-------------|------|-----|------|----------|-------|------|----------|-------|-------|-----|-------|-------|----|
| > 0. | 0. | 13. | 1.1. | -2389.12 | -.055 | .103 | -4558.79 | -.35 | 1.622 | 3. | .177 | 1.908 | SI |
| 0. | 0. | 13. | 1.1. | 1848.11 | -.041 | .061 | 5952.43 | -.35 | 1.214 | 3. | .224 | 3.221 | SI |
| 200. | 200. | 13. | 1.1. | -215.79 | -.005 | .009 | -4558.79 | -.35 | 1.622 | 3. | .177 | 21.13 | SI |
| 477. | 477. | 13. | 1.3. | 1295.4 | -.019 | .022 | 11604.02 | -.35 | .895 | 3. | .281 | 8.958 | SI |
| 501. | 501. | 13. | 1.3. | -2759.43 | -.04 | .06 | -8888.1 | -.35 | 1.396 | 3. | .2 | 3.221 | SI |
| 501. | 501. | 13. | 1.3. | 1316.86 | -.019 | .022 | 11604.02 | -.35 | .895 | 3. | .281 | 8.812 | SI |
| > 501. | 0. | 13. | 1.3. | -2862.96 | -.042 | .063 | -8888.1 | -.35 | 1.396 | 3. | .2 | 3.105 | SI |
| 501. | 0. | 13. | 1.3. | 1043.29 | -.015 | .017 | 11604.02 | -.35 | .895 | 3. | .281 | 11.12 | SI |
| 535. | 34. | 13. | 1.2. | -2592.58 | -.048 | .057 | -8746.74 | -.35 | .93 | 3. | .274 | 3.374 | SI |
| 809. | 308. | 13. | 1.1. | -101.51 | -.002 | .004 | -4558.79 | -.35 | 1.622 | 3. | .177 | 44.91 | SI |
| 1004. | 503. | 13. | 1.1. | 1973.74 | -.044 | .065 | 5952.43 | -.35 | 1.214 | 3. | .224 | 3.016 | SI |
| 1013. | 512. | 13. | 1.1. | -2102.6 | -.048 | .091 | -4558.79 | -.35 | 1.622 | 3. | .177 | 2.168 | SI |
| 1013. | 512. | 13. | 1.1. | 1973.74 | -.044 | .065 | 5952.43 | -.35 | 1.214 | 3. | .224 | 3.016 | SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|--------|-------|--------|--------|------|-----|------|----|
| > 0. | 0. | -2115. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 0. | 0. | 3431. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 233. | 233. | -2732. | 4732. | 13794. | 11617. | 1.01 | 16. | 2.5 | SI |
| 501. | 501. | -3388. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 501. | 501. | 2116. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| > 501. | 0. | -2129. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 501. | 0. | 3345. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 525. | 24. | -2156. | 4732. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 1013. | 512. | -3433. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 1013. | 512. | 2006. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|-------|-------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 1. | -432.62 | -13.6 | 390.4 | 6.03 | 5.6 | .0112 | 15.06 | .017 | SI |
| 9. | 9. | 1. | -381.71 | -12. | 344.4 | 6.03 | 5.6 | .0098 | 15.06 | .015 | SI |
| 12. | 12. | 1. | -365.28 | -11.5 | 329.6 | 6.03 | 5.6 | .0094 | 15.06 | .014 | SI |
| 22. | 22. | 1. | -314.37 | -9.9 | 283.7 | 6.03 | 5.6 | .0081 | 15.06 | .012 | SI |
| 233. | 233. | 1. | 498.09 | -15.2 | 341.5 | 8.04 | 5.2 | .0098 | 12.75 | .012 | SI |
| 501. | 501. | 3. | -756.69 | -15.4 | 346.7 | 12.06 | 5.2 | .0099 | 11. | .011 | SI |
| > 501. | 0. | 3. | -957.32 | -19.5 | 438.6 | 12.06 | 5.2 | .0125 | 11. | .014 | SI |
| 809. | 308. | 1. | 518.69 | -15.8 | 355.6 | 8.04 | 5.2 | .0102 | 12.75 | .013 | SI |
| 1013. | 512. | 1. | -451.79 | -14.2 | 407.6 | 6.03 | 5.6 | .0116 | 15.06 | .018 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|-------|-------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 1. | -432.62 | -13.6 | 390.4 | 6.03 | 5.6 | .0112 | 15.06 | .017 | SI |
| 9. | 9. | 1. | -381.3 | -12. | 344. | 6.03 | 5.6 | .0098 | 15.06 | .015 | SI |
| 12. | 12. | 1. | -364.73 | -11.4 | 329.1 | 6.03 | 5.6 | .0094 | 15.06 | .014 | SI |
| 22. | 22. | 1. | -313.41 | -9.8 | 282.8 | 6.03 | 5.6 | .0081 | 15.06 | .012 | SI |
| 233. | 233. | 1. | 497.21 | -15.2 | 340.9 | 8.04 | 5.2 | .0097 | 12.75 | .012 | SI |
| 501. | 501. | 3. | -734.98 | -15. | 336.8 | 12.06 | 5.2 | .0096 | 11. | .011 | SI |
| > 501. | 0. | 3. | -925.71 | -18.9 | 424.1 | 12.06 | 5.2 | .0121 | 11. | .013 | SI |
| 809. | 308. | 1. | 516.84 | -15.8 | 354.3 | 8.04 | 5.2 | .0101 | 12.75 | .013 | SI |
| 1013. | 512. | 1. | -451.79 | -14.2 | 407.6 | 6.03 | 5.6 | .0116 | 15.06 | .018 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|-------|-------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 1. | -432.62 | -13.6 | 390.4 | 6.03 | 5.6 | .0112 | 15.06 | .017 | SI |
| 9. | 9. | 1. | -381.17 | -12. | 343.9 | 6.03 | 5.6 | .0098 | 15.06 | .015 | SI |
| 12. | 12. | 1. | -364.57 | -11.4 | 328.9 | 6.03 | 5.6 | .0094 | 15.06 | .014 | SI |
| 22. | 22. | 1. | -313.12 | -9.8 | 282.5 | 6.03 | 5.6 | .0081 | 15.06 | .012 | SI |
| 233. | 233. | 1. | 497.29 | -15.2 | 340.9 | 8.04 | 5.2 | .0097 | 12.75 | .012 | SI |
| 501. | 501. | 3. | -728.44 | -14.9 | 333.8 | 12.06 | 5.2 | .0095 | 11. | .01 | SI |
| > 501. | 0. | 3. | -915.03 | -18.7 | 419.3 | 12.06 | 5.2 | .012 | 11. | .013 | SI |
| 809. | 308. | 1. | 516.24 | -15.8 | 353.9 | 8.04 | 5.2 | .0101 | 12.75 | .013 | SI |
| 1013. | 512. | 1. | -451.79 | -14.2 | 407.6 | 6.03 | 5.6 | .0116 | 15.06 | .018 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |
| 2 | 20.11 | 2.793 | 12.06 | 1.676 | 3d16 +3d16 | 8.04 | 1.117 | 4d16 |
| 3 | 28.15 | 3.91 | 12.06 | 1.676 | 3d16 +3d16 | 16.08 | 2.234 | 4d16 +4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 67 - Travata T009 (trave)

SEZIONI UTILIZZATE

3) Rettangolare: 40x25; A=960.; Jg=46080.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max | |
|------|----------|-------|------|-------|-------|--------|--------|--------|--------|-------|---------|--------|
| 1 | A460 | | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 3.362 | 63.037 |
| 2 | A461 | | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 3.434 | 64.392 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE | | | |
|-------------|------|-----|-----|-------|-------|----------|--------|-------|-----------|------|-------|----|------|-------|-----|
| > 0. | 0. | 0. | 3. | 1. | 1. | -3809.67 | -.067 | .123 | -6075.31 | -.35 | 1.598 | 3. | .18 | 1.595 | SI |
| 0. | 0. | 0. | 3. | 1. | 1. | 2110.02 | -.036 | .055 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.541 | SI |
| 39. | 39. | 39. | 3. | 1. | 1. | 2222.74 | -.038 | .058 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.362 | SI |
| 236. | 236. | 3. | 3. | 2. | 2. | -1791.27 | -.025 | .03 | -11634.25 | -.35 | .885 | 3. | .283 | 6.495 | SI |
| 236. | 236. | 3. | 3. | 2. | 2. | 1302.06 | -.018 | .034 | 7535.16 | -.35 | 1.615 | 3. | .178 | 5.787 | SI |
| 283. | 283. | 3. | 3. | 3. | 3. | 1196.01 | -.013 | .016 | 14563.58 | -.35 | .97 | 3. | .265 | 12.18 | SI |
| 308. | 308. | 3. | 3. | 3. | 3. | -4193.3 | !-.047 | .069 | -11839.41 | -.35 | 1.358 | 3. | .205 | 2.823 | SI |
| 308. | 308. | 3. | 3. | 3. | 3. | 971.11 | -.011 | .013 | 14563.58 | -.35 | .97 | 3. | .265 | 15. | !SI |
| > 308. | 308. | 3. | 3. | 3. | 3. | -4160.41 | -.047 | .068 | -11839.41 | -.35 | 1.358 | 3. | .205 | 2.846 | SI |
| 308. | 308. | 3. | 3. | 3. | 3. | 1078.96 | -.012 | .014 | 14563.58 | -.35 | .97 | 3. | .265 | 13.5 | !SI |
| 341. | 341. | 3. | 3. | 2. | 2. | -3369.06 | -.048 | .056 | -11634.25 | -.35 | .885 | 3. | .283 | 3.453 | SI |
| 341. | 341. | 3. | 3. | 2. | 2. | 1327.35 | -.018 | .034 | 7535.16 | -.35 | 1.615 | 3. | .178 | 5.677 | SI |
| 576. | 268. | 3. | 3. | 1. | 1. | 2175.98 | -.037 | .057 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.434 | SI |
| 615. | 308. | 3. | 3. | 1. | 1. | -3935.16 | -.069 | .128 | -6075.31 | -.35 | 1.598 | 3. | .18 | 1.544 | SI |
| 615. | 308. | 3. | 3. | 1. | 1. | 2054.52 | -.035 | .054 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.637 | SI |

TAGLIO:

| Progressive | Se | Ar | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve | | | |
|-------------|------|----|-----|-----|------|--------|-------|--------|--------|------|-----|-----|----|
| > 0. | 0. | 0. | 3. | 1. | 1. | -3808. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 0. | 0. | 0. | 3. | 1. | 1. | 8474. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 137. | 137. | 3. | 3. | 1. | 1. | -6124. | 6175. | 18392. | 11617. | 1.01 | 16. | 2.5 | SI |
| 308. | 308. | 3. | 3. | 1. | 1. | -8704. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 308. | 308. | 3. | 3. | 1. | 1. | 3295. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| > 308. | 308. | 3. | 3. | 1. | 1. | -3579. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 308. | 308. | 3. | 3. | 1. | 1. | 8704. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 332. | 24. | 3. | 3. | 1. | 1. | -3758. | 6175. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 615. | 308. | 3. | 3. | 1. | 1. | -8474. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 615. | 308. | 3. | 3. | 1. | 1. | 3524. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | | | |
|-------------|------|-----|---------|------|------|----------|-------|-------|--------|------|-------|-------|------|----|
| > 0. | 0. | 0. | 3. | 1. | 1. | -1290.69 | -30.8 | 873.7 | 8.04 | 5.58 | .025 | 15.03 | .038 | SI |
| 9. | 9. | 9. | 3. | 1. | 1. | -1033.39 | -24.7 | 699.5 | 8.04 | 5.58 | .02 | 15.03 | .03 | SI |
| 24. | 24. | 24. | 3. | 1. | 1. | -624.98 | -14.9 | 423.1 | 8.04 | 5.58 | .0121 | 15.03 | .018 | SI |
| 137. | 137. | 3. | 3. | 1. | 1. | 1484.85 | -34.7 | 812.2 | 10.05 | 5.27 | .0252 | 13.18 | .033 | SI |
| 308. | 308. | 3. | 3. | 3. | 3. | -1951.96 | -30.6 | 671.3 | 16.08 | 5.16 | .0225 | 10.97 | .025 | SI |
| > 308. | 308. | 3. | 3. | 3. | 3. | -1874.19 | -29.4 | 644.6 | 16.08 | 5.16 | .0212 | 10.97 | .023 | SI |
| 478. | 170. | 3. | 3. | 1. | 1. | 1484.48 | -34.7 | 812. | 10.05 | 5.27 | .0252 | 13.18 | .033 | SI |
| 615. | 308. | 3. | 3. | 1. | 1. | -1085.36 | -25.9 | 734.7 | 8.04 | 5.58 | .021 | 15.03 | .032 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | | | |
|-------------|------|-----|---------|------|------|----------|--------|-------|--------|------|-------|-------|------|----|
| > 0. | 0. | 0. | 3. | 1. | 1. | -1146.6 | -27.4 | 776.2 | 8.04 | 5.58 | .0222 | 15.03 | .033 | SI |
| 9. | 9. | 9. | 3. | 1. | 1. | -917.33 | -21.9 | 621. | 8.04 | 5.58 | .0177 | 15.03 | .027 | SI |
| 24. | 24. | 24. | 3. | 1. | 1. | -553.41 | -13.2 | 374.6 | 8.04 | 5.58 | .0107 | 15.03 | .016 | SI |
| 137. | 137. | 3. | 3. | 1. | 1. | 1316.77 | -30.8 | 720.2 | 10.05 | 5.27 | .0208 | 13.18 | .027 | SI |
| 308. | 308. | 3. | 3. | 3. | 3. | -1712. | !-26.8 | 588.8 | 16.08 | 5.16 | .0185 | 10.97 | .02 | SI |
| > 308. | 308. | 3. | 3. | 3. | 3. | -1636.99 | -25.7 | 563. | 16.08 | 5.16 | .0173 | 10.97 | .019 | SI |
| 478. | 170. | 3. | 3. | 1. | 1. | 1317.84 | -30.8 | 720.8 | 10.05 | 5.27 | .0209 | 13.18 | .027 | SI |

615.|308.|3.|1.| -989.01| -23.6| 669.5| 8.04| 5.58| .0191| 15.03| .029|SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive Se Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------------|-----------|--------|--------|-------|-------|-------|--------|-------|----|
| > 0. 0. 3. 1. | -1088.96 | -26. | 737.1! | 8.04 | 5.58 | .0211 | 15.03 | .032! | SI |
| 9. 9. 3. 1. | -871.08 | -20.8 | 589.7 | 8.04 | 5.58 | .0168 | 15.03 | .025 | SI |
| 24. 24. 3. 1. | -525.24 | -12.5 | 355.5 | 8.04 | 5.58 | .0102 | 15.03 | .015 | SI |
| 137. 137. 3. 1. | 1250.01! | -29.2! | 683.7 | 10.05 | 5.27 | .0195 | 13.18 | .026 | SI |
| 308. 308. 3. 3. | -1621.62! | -25.4 | 557.7 | 16.08 | 5.16 | .0171 | 10.97 | .019 | SI |
| > 308. 0. 3. 3. | -1548.9 ! | -24.3 | 532.7 | 16.08 | 5.16 | .0159 | 10.97 | .017 | SI |
| 478. 170. 3. 1. | 1251.4 ! | -29.2! | 684.5! | 10.05 | 5.27 | .0196 | 13.18 | .026 | SI |
| 615. 308. 3. 1. | -944.46 | -22.6 | 639.3 | 8.04 | 5.58 | .0183 | 15.03 | .027! | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro Totale | % | Super. | % | Barre | Infer. | % | Barre |
|------------|-------|--------|-------|------------|--------|-------|------------|
| 1 18.1 | 1.885 | 8.04 | .838 | 4d16 | 10.05 | 1.047 | 5d16 |
| 2 26.14 | 2.723 | 16.08 | 1.676 | 4d16 +4d16 | 10.05 | 1.047 | 5d16 |
| 3 36.19 | 3.77 | 16.08 | 1.676 | 4d16 +4d16 | 20.11 | 2.094 | 5d16 +5d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 68 - Travata T010 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 40x25; A=960.; Jg=46080.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|--------|-------|---------|
| 1 | A462 | | 3 | 3 | 3 | 0 | 308. | 280. | 12.812 | 1.3 | 2.209 |
| 2 | A463 | | 3 | 3 | 3 | 0 | 308. | 280. | 12.812 | 1.3 | 1.962 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive SE Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------------|-----------|--------|-------|------------|-------|-------|-----|-------|--------|----|
| > 0. 0. 3. 1. | -3903.67 | -.069! | .127! | -6075.31 | -.35 | 1.598 | 3. | .18 | 1.556! | SI |
| 0. 0. 3. 1. | 1885.11 | -.032 | .049 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.964 | SI |
| 103. 103. 3. 1. | -139.95 | -.002 | .005 | -6075.31 | -.35 | 1.598 | 3. | .18 | 43.41! | SI |
| 136. 136. 3. 1. | 3382.53! | -.058 | .089 | 7472.4 | -.35 | 1.284 | 3. | .214 | 2.209 | SI |
| 235. 235. 3. 2. | -1557.92 | -.022 | .026 | -11634.25 | -.35 | .885 | 3. | .283! | 7.468 | SI |
| 235. 235. 3. 2. | 2676.36 | -.037 | .069 | 7535.16 | -.35 | 1.615 | 3. | .178! | 2.815 | SI |
| 283. 283. 3. 3. | 1978.07 | -.022 | .026 | 14563.58! | -.35 | .97 | 3. | .265 | 7.363 | SI |
| 308. 308. 3. 3. | -4532.91! | -.051 | .074 | -11839.41! | -.35 | 1.358 | 3. | .205 | 2.612 | SI |
| 308. 308. 3. 3. | 1336.81 | -.015 | .018 | 14563.58 | -.35 | .97 | 3. | .265 | 10.89 | SI |
| > 308. 0. 3. 3. | -4810.13! | -.054 | .079 | -11839.41! | -.35 | 1.358 | 3. | .205 | 2.461 | SI |
| 308. 0. 3. 3. | 1270.65 | -.014 | .017 | 14563.58! | -.35 | .97 | 3. | .265 | 11.46 | SI |
| 341. 34. 3. 2. | -3719.31 | -.053 | .062 | -11634.25 | -.35 | .885 | 3. | .283! | 3.128 | SI |
| 341. 34. 3. 2. | 2263.17 | -.031 | .059 | 7535.16 | -.35 | 1.615 | 3. | .178! | 3.329 | SI |
| 479. 172. 3. 1. | 3809.31! | -.066 | .1 | 7472.4 | -.35 | 1.284 | 3. | .214 | 1.962 | SI |
| 512. 205. 3. 1. | -50.17 | -.001 | .002 | -6075.31 | -.35 | 1.598 | 3. | .18 | 121.1! | SI |
| 615. 308. 3. 1. | -4141.04 | -.073! | .134! | -6075.31 | -.35 | 1.598 | 3. | .18 | 1.467! | SI |
| 615. 308. 3. 1. | 1859.01 | -.031 | .049 | 7472.4 | -.35 | 1.284 | 3. | .214 | 4.02 | SI |

TAGLIO:

| Progressive Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|----------------|--------|--------|--------|--------|------|-----|------|----|
| > 0. 0. 3. | -1691. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 0. 0. 3. | 9999.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 136. 136. 3. | -5404. | 6175.! | 18392. | 11617. | 1.01 | 16. | 2.5 | SI |

| | | | | | | | | | | |
|--------|------|-----|----------|--------|---------|---------|------|----|-----|----|
| 308. | 308. | 13. | -9546.! | 4075. | 23971.! | 23792.! | 1.01 | 5. | 1.6 | SI |
| 308. | 308. | 13. | 1693. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| > 308. | 0. | 13. | -1628. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 308. | 0. | 13. | 9992.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 332. | 24. | 13. | -1947. | 6175.! | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 615. | 308. | 13. | -10454.! | 4075. | 23971.! | 23792.! | 1.01 | 5. | 1.6 | SI |
| 615. | 308. | 13. | 743. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|----------|-------|--------|-------|------|--------|-------|------|----|
| > 0. | 0. | 13. | 1. | -2093.76 | -50. | 1417.3 | 8.04 | 5.58 | .0507 | 15.03 | .076 | SI |
| 9. | 9. | 13. | 1. | -1668.09 | -39.8 | 1129.2 | 8.04 | 5.58 | .037 | 15.03 | .056 | SI |
| 22. | 22. | 13. | 1. | -1105.03 | -26.4 | 748. | 8.04 | 5.58 | .0214 | 15.03 | .032 | SI |
| 136. | 136. | 13. | 1. | 2393.31 | -55.9 | 1309.1 | 10.05 | 5.27 | .0489 | 13.18 | .064 | SI |
| 308. | 308. | 13. | 13. | -2877.96 | -45.1 | 989.8 | 16.08 | 5.16 | .0376 | 10.97 | .041 | SI |
| > 308. | 0. | 13. | 13. | -3200.93 | -50.2 | 1100.9 | 16.08 | 5.16 | .0429 | 10.97 | .047 | SI |
| 479. | 172. | 13. | 1. | 2693.98 | -62.9 | 1473.5 | 10.05 | 5.27 | .0567 | 13.18 | .075 | SI |
| 615. | 308. | 13. | 1. | -2064.42 | -49.3 | 1397.5 | 8.04 | 5.58 | .0498 | 15.03 | .075 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|----------|-------|--------|-------|------|--------|-------|------|----|
| 9. | 9. | 13. | 1. | -1467.74 | -35. | 993.6 | 8.04 | 5.58 | .0305 | 15.03 | .046 | SI |
| 22. | 22. | 13. | 1. | -986.87 | -23.6 | 668. | 8.04 | 5.58 | .0191 | 15.03 | .029 | SI |
| 136. | 136. | 13. | 1. | 2096.78 | -49. | 1146.9 | 10.05 | 5.27 | .0411 | 13.18 | .054 | SI |
| 308. | 308. | 13. | 13. | -2502.65 | -39.2 | 860.7 | 16.08 | 5.16 | .0315 | 10.97 | .035 | SI |
| > 308. | 0. | 13. | 13. | -2780.58 | -43.6 | 956.3 | 16.08 | 5.16 | .036 | 10.97 | .04 | SI |
| 479. | 172. | 13. | 1. | 2359.52 | -55.1 | 1290.6 | 10.05 | 5.27 | .048 | 13.18 | .063 | SI |
| 615. | 308. | 13. | 1. | -1829.71 | -43.7 | 1238.6 | 8.04 | 5.58 | .0422 | 15.03 | .063 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|----------|-------|--------|-------|------|--------|-------|------|----|
| 9. | 9. | 13. | 1. | -1390.67 | -33.2 | 941.4 | 8.04 | 5.58 | .0281 | 15.03 | .042 | SI |
| 22. | 22. | 13. | 1. | -936.33 | -22.4 | 633.8 | 8.04 | 5.58 | .0181 | 15.03 | .027 | SI |
| 136. | 136. | 13. | 1. | 1978.71 | -46.2 | 1082.3 | 10.05 | 5.27 | .0381 | 13.18 | .05 | SI |
| 308. | 308. | 13. | 13. | -2357.57 | -36.9 | 810.8 | 16.08 | 5.16 | .0291 | 10.97 | .032 | SI |
| > 308. | 0. | 13. | 13. | -2617.95 | -41. | 900.4 | 16.08 | 5.16 | .0334 | 10.97 | .037 | SI |
| 479. | 172. | 13. | 1. | 2225.89 | -52. | 1217.5 | 10.05 | 5.27 | .0445 | 13.18 | .059 | SI |
| 615. | 308. | 13. | 1. | -1731.05 | -41.3 | 1171.8 | 8.04 | 5.58 | .039 | 15.03 | .059 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 18.1 | 1.885 | 8.04 | .838 | 4d16 | 10.05 | 1.047 | 5d16 |
| 2 | 26.14 | 2.723 | 16.08 | 1.676 | 4d16 +4d16 | 10.05 | 1.047 | 5d16 |
| 3 | 36.19 | 3.77 | 16.08 | 1.676 | 4d16 +4d16 | 20.11 | 2.094 | 5d16 +5d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 69 - Travata T011 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|----|-------|---------|
| 1 | A476 | 3 | 3 | 3 | 0 | 308. | 308. | 12.812 | 1. | 4.292 | 61.565 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE | |
|-------------|------|-----|-----|----------|-------|------|----------|-------|-------|-----|-------|-------|----|
| > 9. | 9. | 13. | 11. | -1024.04 | -.023 | .044 | -4558.79 | -.35 | 1.622 | 3. | .177 | 4.452 | SI |
| 9. | 9. | 13. | 11. | 376.31 | -.008 | .012 | 5952.43 | -.35 | 1.214 | 3. | .224 | 15.82 | SI |
| 186. | 186. | 13. | 11. | 1386.98 | -.03 | .045 | 5952.43 | -.35 | 1.214 | 3. | .224 | 4.292 | SI |
| 251. | 251. | 13. | 11. | -67.38 | -.001 | .003 | -4558.79 | -.35 | 1.622 | 3. | .177 | 67.66 | SI |
| 298. | 298. | 13. | 11. | -1058.19 | -.024 | .046 | -4558.79 | -.35 | 1.622 | 3. | .177 | 4.308 | SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve | |
|-------------|------|-----|--------|-------|--------|--------|------|------|-----|----|
| > 0. | 0. | 13. | 2938. | 3056. | 13794. | 11617. | 1.01 | 16. | 2.5 | SI |
| 89. | 89. | 13. | 849. | 4732. | 13794. | 11617. | 1.01 | 16. | 2.5 | SI |
| 308. | 308. | 13. | -3766. | 3056. | 13794. | 12392. | 1.01 | 15. | 2.5 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|---------|-------|-------|-------|------|--------|-------|------|----|
| 9. | 9. | 13. | 11. | -352.2 | -11. | 317.8 | 6.03 | 5.6 | .0091 | 15.06 | .014 | SI |
| 186. | 186. | 13. | 11. | 985.09 | -30.1 | 675.3 | 8.04 | 5.2 | .0195 | 12.75 | .025 | SI |
| 298. | 298. | 13. | 11. | -455.79 | -14.3 | 411.3 | 6.03 | 5.6 | .0118 | 15.06 | .018 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|---------|-------|-------|-------|------|--------|-------|------|----|
| 9. | 9. | 13. | 11. | -312.72 | -9.8 | 282.2 | 6.03 | 5.6 | .0081 | 15.06 | .012 | SI |
| 186. | 186. | 13. | 11. | 870.3 | -26.6 | 596.6 | 8.04 | 5.2 | .017 | 12.75 | .022 | SI |
| 298. | 298. | 13. | 11. | -400.67 | -12.6 | 361.5 | 6.03 | 5.6 | .0103 | 15.06 | .016 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|---------|-------|-------|-------|------|--------|-------|------|----|
| 9. | 9. | 13. | 11. | -296.18 | -9.3 | 267.2 | 6.03 | 5.6 | .0076 | 15.06 | .011 | SI |
| 186. | 186. | 13. | 11. | 824.15 | -25.2 | 565. | 8.04 | 5.2 | .0161 | 12.75 | .021 | SI |
| 298. | 298. | 13. | 11. | -379.34 | -11.9 | 342.3 | 6.03 | 5.6 | .0098 | 15.06 | .015 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|------|-------|--------|-------|-------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 70 - Travata T012 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 40x25; A=960.; Jg=46080.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A465 | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 4.059 | 76.116 |
| 2 | A466 | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 3.505 | 65.723 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE | | | |
|-------------|------|----|-----|-----------|--------|------|-------|-----------|-----|-----|-------|----|------|-------|-----|
| > 0. | 0. | 3. | 1. | -3080.97! | -.054! | .1 | ! | -6075.31 | -. | .35 | 1.598 | 3. | .18 | 1.972 | !SI |
| 0. | 0. | 3. | 1. | 1840.82! | -.031 | .048 | | 7472.4 | -. | .35 | 1.284 | 3. | .214 | 4.059 | !SI |
| 236. | 236. | 3. | 2. | -1377.48 | -. | .019 | | -11634.25 | -. | .35 | .885 | 3. | .283 | 8.446 | !SI |
| 236. | 236. | 3. | 2. | 1057.78 | -. | .015 | | 7535.16 | -. | .35 | 1.615 | 3. | .178 | 7.124 | !SI |
| 283. | 283. | 3. | 3. | 1155.83 | -. | .013 | | 14563.58 | -. | .35 | .97 | 3. | .265 | 12.6 | !SI |
| 308. | 308. | 3. | 3. | -2969.64 | -. | .033 | | 11839.41 | -. | .35 | 1.358 | 3. | .205 | 3.987 | !SI |
| 308. | 308. | 3. | 3. | 1156.44 | -. | .013 | | 14563.58 | -. | .35 | .97 | 3. | .265 | 12.59 | !SI |
| > 308. | 0. | 3. | 3. | -3756.83 | -. | .042 | | 11839.41 | -. | .35 | 1.358 | 3. | .205 | 3.151 | !SI |
| 308. | 0. | 3. | 3. | 1083.58 | -. | .012 | | 14563.58 | -. | .35 | .97 | 3. | .265 | 13.44 | !SI |
| 341. | 34. | 3. | 2. | -3006.1 | -. | .042 | | -11634.25 | -. | .35 | .885 | 3. | .283 | 3.87 | !SI |
| 341. | 34. | 3. | 2. | 1422.94 | -. | .02 | | 7535.16 | -. | .35 | 1.615 | 3. | .178 | 5.295 | !SI |
| 412. | 105. | 3. | 1. | -441.91 | -. | .007 | | -6075.31 | -. | .35 | 1.598 | 3. | .18 | 13.75 | !SI |
| 543. | 236. | 3. | 1. | 2131.89 | -. | .036 | | 7472.4 | -. | .35 | 1.284 | 3. | .214 | 3.505 | !SI |
| 615. | 308. | 3. | 1. | -3530.12 | -. | .062 | | -6075.31 | -. | .35 | 1.598 | 3. | .18 | 1.721 | !SI |
| 615. | 308. | 3. | 1. | 1880.84 | -. | .032 | | 7472.4 | -. | .35 | 1.284 | 3. | .214 | 3.973 | !SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve | | |
|-------------|------|-----|-----|--------|-------|--------|--------|------|-----|-----|-----|
| > 0. | 0. | 3. | 1. | -5039. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | !SI |
| 0. | 0. | 3. | 1. | 7537. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | !SI |
| 137. | 137. | 3. | 1. | -6751. | 6175. | 18392. | 11617. | 1.01 | 16. | 2.5 | !SI |
| 308. | 308. | 3. | 1. | -7721. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | !SI |
| 308. | 308. | 3. | 1. | 4678. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | !SI |
| > 308. | 0. | 3. | 1. | -3532. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | !SI |
| 308. | 0. | 3. | 1. | 8745. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | !SI |
| 332. | 24. | 3. | 1. | -3714. | 6175. | 18392. | 11617. | 1.01 | 5. | 1.6 | !SI |
| 615. | 308. | 3. | 1. | -8515. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | !SI |
| 615. | 308. | 3. | 1. | 3472. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | !SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|----|---------|----------|-------|-------|-------|------|--------|-------|------|-----|
| > 0. | 0. | 3. | 1. | -895.24 | -21.4 | 606. | 8.04 | 5.58 | .0173 | 15.03 | .026 | !SI |
| 9. | 9. | 3. | 1. | -753.52 | -18. | 510.1 | 8.04 | 5.58 | .0146 | 15.03 | .022 | !SI |
| 24. | 24. | 3. | 1. | -533.4 | -12.7 | 361.1 | 8.04 | 5.58 | .0103 | 15.03 | .016 | !SI |
| 137. | 137. | 3. | 1. | 1026.86 | -24. | 561.7 | 10.05 | 5.27 | .016 | 13.18 | .021 | !SI |
| 308. | 308. | 3. | 3. | -1045.61 | -16.4 | 359.6 | 16.08 | 5.16 | .0103 | 10.97 | .011 | !SI |
| > 308. | 0. | 3. | 3. | -1817.13 | -28.5 | 625. | 16.08 | 5.16 | .0203 | 10.97 | .022 | !SI |
| 478. | 170. | 3. | 1. | 1511.63 | -35.3 | 826.8 | 10.05 | 5.27 | .0259 | 13.18 | .034 | !SI |
| 615. | 308. | 3. | 1. | -1134.93 | -27.1 | 768.3 | 8.04 | 5.58 | .022 | 15.03 | .033 | !SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|----|---------|----------|-------|-------|-------|------|--------|-------|------|-----|
| > 0. | 0. | 3. | 1. | -814.58 | -19.5 | 551.4 | 8.04 | 5.58 | .0158 | 15.03 | .024 | !SI |
| 9. | 9. | 3. | 1. | -683.27 | -16.3 | 462.5 | 8.04 | 5.58 | .0132 | 15.03 | .02 | !SI |
| 24. | 24. | 3. | 1. | -479.67 | -11.5 | 324.7 | 8.04 | 5.58 | .0093 | 15.03 | .014 | !SI |
| 137. | 137. | 3. | 1. | 929.83 | -21.7 | 508.6 | 10.05 | 5.27 | .0145 | 13.18 | .019 | !SI |
| 308. | 308. | 3. | 3. | -944.34 | -14.8 | 324.8 | 16.08 | 5.16 | .0093 | 10.97 | .01 | !SI |
| > 308. | 0. | 3. | 3. | -1613.01 | -25.3 | 554.8 | 16.08 | 5.16 | .0169 | 10.97 | .019 | !SI |
| 478. | 170. | 3. | 1. | 1341.4 | -31.3 | 733.7 | 10.05 | 5.27 | .0215 | 13.18 | .028 | !SI |
| 615. | 308. | 3. | 1. | -1010.76 | -24.1 | 684.2 | 8.04 | 5.58 | .0195 | 15.03 | .029 | !SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|----|---------|----------|-------|-------|-------|------|--------|-------|------|-----|
| > 0. | 0. | 3. | 1. | -782.37 | -18.7 | 529.6 | 8.04 | 5.58 | .0151 | 15.03 | .023 | !SI |
| 9. | 9. | 3. | 1. | -655.39 | -15.7 | 443.6 | 8.04 | 5.58 | .0127 | 15.03 | .019 | !SI |
| 24. | 24. | 3. | 1. | -458.64 | -11. | 310.5 | 8.04 | 5.58 | .0089 | 15.03 | .013 | !SI |
| 137. | 137. | 3. | 1. | 900.17 | -21. | 492.4 | 10.05 | 5.27 | .0141 | 13.18 | .019 | !SI |
| 308. | 308. | 3. | 3. | -907.91 | -14.2 | 312.3 | 16.08 | 5.16 | .0089 | 10.97 | .01 | !SI |
| > 308. | 0. | 3. | 3. | -1535.26 | -24.1 | 528. | 16.08 | 5.16 | .0156 | 10.97 | .017 | !SI |
| 478. | 170. | 3. | 1. | 1273.41 | -29.7 | 696.5 | 10.05 | 5.27 | .0199 | 13.18 | .026 | !SI |
| 615. | 308. | 3. | 1. | -957.69 | -22.9 | 648.3 | 8.04 | 5.58 | .0185 | 15.03 | .028 | !SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 18.1 | 1.885 | 8.04 | .838 | 4d16 | 10.05 | 1.047 | 5d16 |
| 2 | 26.14 | 2.723 | 16.08 | 1.676 | 4d16 +4d16 | 10.05 | 1.047 | 5d16 |
| 3 | 36.19 | 3.77 | 16.08 | 1.676 | 4d16 +4d16 | 20.11 | 2.094 | 5d16 +5d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 71 - Travata T013 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A467 | 3 | 3 | 3 | 0 | 501. | 474. | 20.875 | 1.3 | 5. | 93.244 |
| 2 | A469 | 3 | 3 | 3 | 0 | 512. | 484. | 21.333 | 1.3 | 2.652 | 49.461 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|----|-----|----------|--------|------|----------|-------|-------|-----|-------|-------|
| > 0. | 0. | 3. | 1. | -2648.78 | !-.061 | .114 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 1.721 |
| 0. | 0. | 3. | 1. | 1439.58 | !-.032 | .047 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 4.135 |
| 233. | 233. | 3. | 1. | -10.82 | 0. | 0. | -4558.79 | !-.35 | 1.622 | 3. | .177 | 421.4 |
| 477. | 477. | 3. | 3. | 1432.11 | !-.021 | .024 | 11604.02 | !-.35 | .895 | 3. | .281 | 8.103 |
| 492. | 492. | 3. | 3. | 1465.97 | !-.022 | .024 | 11604.02 | !-.35 | .895 | 3. | .281 | 7.916 |
| 501. | 501. | 3. | 3. | -2444.83 | !-.035 | .053 | -8888.1 | !-.35 | 1.396 | 3. | .2 | 3.635 |
| 501. | 501. | 3. | 3. | 1465.97 | !-.022 | .024 | 11604.02 | !-.35 | .895 | 3. | .281 | 7.916 |
| > 501. | 0. | 3. | 3. | -3419.77 | !-.05 | .075 | -8888.1 | !-.35 | 1.396 | 3. | .2 | 2.599 |
| 501. | 0. | 3. | 3. | 544.96 | !-.008 | .009 | 11604.02 | !-.35 | .895 | 3. | .281 | 21.29 |
| 708. | 207. | 3. | 1. | -42.77 | !-.001 | .002 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 106.6 |
| 876. | 375. | 3. | 1. | 2244.29 | !-.05 | .074 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 2.652 |
| 1013. | 512. | 3. | 1. | -2925.09 | !-.068 | .126 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 1.559 |
| 1013. | 512. | 3. | 1. | 640.42 | !-.014 | .021 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 9.295 |

TAGLIO:

| Progressive | Se | Ar | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|----|--------|-------|--------|--------|------|-----|------|----|
| > 0. | 0. | 3. | -2115. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 0. | 0. | 3. | 3431. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 266. | 266. | 3. | -2824. | 4732. | 13794. | 11617. | 1.01 | 16. | 2.5 | SI |
| 501. | 501. | 3. | -3388. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 501. | 501. | 3. | 2116. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| > 501. | 0. | 3. | -1668. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 501. | 0. | 3. | 3806. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 525. | 24. | 3. | -1695. | 4732. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 1013. | 512. | 3. | -4691. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 1013. | 512. | 3. | 748. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | Scsls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|--------|-------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 3. | -677.02 | !-21.2 | 610.9 | 6.03 | 5.6 | .0175 | 15.06 | .026 | SI |
| 9. | 9. | 3. | -653.47 | !-20.5 | 589.6 | 6.03 | 5.6 | .0168 | 15.06 | .025 | SI |
| 12. | 12. | 3. | -635.81 | !-19.9 | 573.7 | 6.03 | 5.6 | .0164 | 15.06 | .025 | SI |
| 22. | 22. | 3. | -573.51 | !-18. | 517.5 | 6.03 | 5.6 | .0148 | 15.06 | .022 | SI |
| 266. | 266. | 3. | 494.96 | !-15.1 | 339.3 | 8.04 | 5.2 | .0097 | 12.75 | .012 | SI |
| 501. | 501. | 3. | -447.42 | !-9.1 | 205. | 12.06 | 5.2 | .0059 | 11. | .006 | SI |

| | | | | | | | | | | | | | | | |
|---|-------|------|----|----|-----------|-------|--------|-------|-----|--|-------|-------|--|------|----|
| > | 501. | 0. | 3. | 3. | -1600.78! | -32.7 | 733.4 | 12.06 | 5.2 | | .0254 | 11. | | .028 | SI |
| | 876. | 375. | 3. | 1. | 1589.76! | -48.6 | 1089.9 | 8.04 | 5.2 | | .0392 | 12.75 | | .05 | SI |
| | 1013. | 512. | 3. | 1. | -1315.47 | -41.2 | 1186.9 | 6.03 | 5.6 | | .0397 | 15.06 | | .06 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | | | | |
|-------------|-------|------|---------|------|-----------|-------|--------|-------|--------|----|-------|-------|--|------|----|
| > | 0. | 0. | 3. | 1. | -626.17! | -19.6 | 565. | 6.03 | 5.6 | | .0161 | 15.06 | | .024 | SI |
| | 9. | 9. | 3. | 1. | -603.28 | -18.9 | 544.3 | 6.03 | 5.6 | | .0156 | 15.06 | | .023 | SI |
| | 12. | 12. | 3. | 1. | -586.11 | -18.4 | 528.8 | 6.03 | 5.6 | | .0151 | 15.06 | | .023 | SI |
| | 22. | 22. | 3. | 1. | -525.54 | -16.5 | 474.2 | 6.03 | 5.6 | | .0135 | 15.06 | | .02 | SI |
| | 266. | 266. | 3. | 1. | 497.02! | -15.2 | 340.7 | 8.04 | 5.2 | | .0097 | 12.75 | | .012 | SI |
| | 501. | 501. | 3. | 3. | -485.84 | -9.9 | 222.6 | 12.06 | 5.2 | | .0064 | 11. | | .007 | SI |
| > | 501. | 0. | 3. | 3. | -1485.17! | -30.3 | 680.5 | 12.06 | 5.2 | | .0229 | 11. | | .025 | SI |
| | 876. | 375. | 3. | 1. | 1451.45! | -44.3 | 995.1 | 8.04 | 5.2 | | .0347 | 12.75 | | .044 | SI |
| | 1013. | 512. | 3. | 1. | -1205.02 | -37.8 | 1087.3 | 6.03 | 5.6 | | .0349 | 15.06 | | .053 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | | | | |
|-------------|-------|------|---------|------|-----------|-------|--------|-------|--------|----|-------|-------|--|------|----|
| > | 0. | 0. | 3. | 1. | -610.31! | -19.1 | 550.7 | 6.03 | 5.6 | | .0157 | 15.06 | | .024 | SI |
| | 9. | 9. | 3. | 1. | -587.62 | -18.4 | 530.2 | 6.03 | 5.6 | | .0151 | 15.06 | | .023 | SI |
| | 12. | 12. | 3. | 1. | -570.61 | -17.9 | 514.9 | 6.03 | 5.6 | | .0147 | 15.06 | | .022 | SI |
| | 22. | 22. | 3. | 1. | -510.58 | -16. | 460.7 | 6.03 | 5.6 | | .0132 | 15.06 | | .02 | SI |
| | 266. | 266. | 3. | 1. | 497.65! | -15.2 | 341.2 | 8.04 | 5.2 | | .0097 | 12.75 | | .012 | SI |
| | 501. | 501. | 3. | 3. | -497.89 | -10.2 | 228.1 | 12.06 | 5.2 | | .0065 | 11. | | .007 | SI |
| > | 501. | 0. | 3. | 3. | -1440.38! | -29.4 | 660. | 12.06 | 5.2 | | .0219 | 11. | | .024 | SI |
| | 876. | 375. | 3. | 1. | 1402.89! | -42.8 | 961.8 | 8.04 | 5.2 | | .0331 | 12.75 | | .042 | SI |
| | 1013. | 512. | 3. | 1. | -1161.18 | -36.4 | 1047.7 | 6.03 | 5.6 | | .0331 | 15.06 | | .05 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |
| 2 | 20.11 | 2.793 | 12.06 | 1.676 | 3d16 +3d16 | 8.04 | 1.117 | 4d16 |
| 3 | 28.15 | 3.91 | 12.06 | 1.676 | 3d16 +3d16 | 16.08 | 2.234 | 4d16 +4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 72 - Travata T014 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|----|-------|---------|
| 1 | A459 | 3 | 3 | 3 | 0 | 120. | 120. | 5. | 1. | 5. | 71.726 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE | |
|-------------|------|------|-----|-------|----------|-------|-------|----------|------|-------|-------|------|-------|
| > | 9. | 9. | 3. | 1. | -287.19 | -.006 | .012 | -4558.79 | -.35 | 1.622 | 3. | .177 | 15.87 |
| | 9. | 9. | 3. | 1. | 1054.85 | -.023 | .034 | 5952.43 | -.35 | 1.214 | 3. | .224 | 5.643 |
| | 111. | 111. | 3. | 1. | -1664.68 | -.038 | .072 | -4558.79 | -.35 | 1.622 | 3. | .177 | 2.739 |
| | 111. | 111. | 3. | 1. | 150.5 | -.003 | .005 | 5952.43 | -.35 | 1.214 | 3. | .224 | 39.55 |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|----|-----|-----|--------|-------|--------|--------|------|-----|
| > | 0. | 0. | 3. | -1739. | 3056. | 13794. | 12392. | 1.01 | 15. |

120.|120.|3.| -2020.! 3056.! 13794.! 12392.! 1.01|15. |2.5 |SI|

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | Scsls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------|--------|--------|-------|------|--------|-------|---------|
| > 9. | 9. | 3. | 1. | 482.43! | -14.7 | 330.7 | 8.04 | 5.2 | .0094 | 12.75 | .012 SI |
| 9. | 9. | 3. | 1. | 482.43 | -14.7 | 330.7 | 8.04 | 5.2 | .0094 | 12.75 | .012 SI |
| 111. | 111. | 3. | 1. | -868.63! | -27.2! | 783.8! | 6.03 | 5.6 | .0224 | 15.06 | .034!SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | Scsls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------|--------|--------|-------|------|--------|-------|---------|
| > 9. | 9. | 3. | 1. | 423.89! | -12.9 | 290.6 | 8.04 | 5.2 | .0083 | 12.75 | .011 SI |
| 9. | 9. | 3. | 1. | 423.89 | -12.9 | 290.6 | 8.04 | 5.2 | .0083 | 12.75 | .011 SI |
| 111. | 111. | 3. | 1. | -771.44! | -24.2! | 696.1! | 6.03 | 5.6 | .0199 | 15.06 | .03 !SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | Scsls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------|--------|--------|-------|------|--------|-------|---------|
| > 9. | 9. | 3. | 1. | 400.29! | -12.2 | 274.4 | 8.04 | 5.2 | .0078 | 12.75 | .01 SI |
| 9. | 9. | 3. | 1. | 400.29 | -12.2 | 274.4 | 8.04 | 5.2 | .0078 | 12.75 | .01 SI |
| 111. | 111. | 3. | 1. | -732.48! | -23. ! | 660.9! | 6.03 | 5.6 | .0189 | 15.06 | .028!SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|------|-------|--------|-------|-------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 73 - Travata T015 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A470 | 3 | 3 | 3 | 0 | 501. | 476. | 20.875 | 1.3 | 3.913 | 72.969 |
| 2 | A472 | 3 | 3 | 3 | 0 | 512. | 487. | 21.333 | 1.3 | 2.522 | 47.033 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|----|-----|-----------|--------|-------|-----------|-------|-------|-----|-------|----------|
| > 0. | 0. | 3. | 1. | -2282.06! | -.052! | .098! | -4558.79 | -.35 | 1.622 | 3. | .177! | 1.998!SI |
| 0. | 0. | 3. | 1. | 1521.27! | -.034 | .05 | 5952.43 | -.35 | 1.214 | 3. | .224 | 3.913 SI |
| 267. | 267. | 3. | 1. | -45.78 | -.001 | .002 | -4558.79 | -.35 | 1.622 | 3. | .177 | 99.57!SI |
| 479. | 479. | 3. | 3. | 1367.62 | -.02 | .023 | 11604.02! | -.35 | .895 | 3. | .281! | 8.485 SI |
| 501. | 501. | 3. | 3. | -2075.99 | -.03 | .045 | -8888.1 ! | -.35 | 1.396 | 3. | .2 | 4.281 SI |
| 501. | 501. | 3. | 3. | 1412.26 | -.021 | .023 | 11604.02 | -.35 | .895 | 3. | .281 | 8.217 SI |
| > 501. | 0. | 3. | 3. | -3005.67 | -.044 | .066 | -8888.1 ! | -.35 | 1.396 | 3. | .2 | 2.957 SI |
| 501. | 0. | 3. | 3. | 716.66 | -.011 | .012 | 11604.02! | -.35 | .895 | 3. | .281! | 16.19 SI |
| 706. | 205. | 3. | 1. | -55.21 | -.001 | .002 | -4558.79 | -.35 | 1.622 | 3. | .177 | 82.57!SI |
| 875. | 374. | 3. | 1. | 2360.15! | -.053 | .077 | 5952.43 | -.35 | 1.214 | 3. | .224 | 2.522 SI |
| 1013. | 512. | 3. | 1. | -3107.04! | -.072! | .134! | -4558.79 | -.35 | 1.622 | 3. | .177! | 1.467!SI |
| 1013. | 512. | 3. | 1. | 694.72 | -.015 | .023 | 5952.43 | -.35 | 1.214 | 3. | .224 | 8.568 SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|-----|---------|--------|---------|---------|------|------|---------|
| > 0. | 0. | 3. | -2356. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| 0. | 0. | 3. | 3332.! | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| 432. | 432. | 3. | -3110. | 4732.! | 13794. | 11617. | 1.01 | 16. | 2.5 SI |
| 501. | 501. | 3. | -3179.! | 3056. | 19332.! | 19331.! | 1.01 | 5. | 1.3 SI |
| 501. | 501. | 3. | 2487. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| > 501. | 0. | 3. | -1928. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| 501. | 0. | 3. | 3685.! | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| 523. | 22. | 3. | -1945. | 4732.! | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| 1013. | 512. | 3. | -4998.! | 3056. | 19332.! | 19331.! | 1.01 | 5. | 1.3 SI |
| 1013. | 512. | 3. | 593. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|-----------|--------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 3. | 1. | -420.21! | -13.2! | 379.2! | 6.03 | 5.6 | .0108 | 15.06 | .016!SI |
| 9. | 9. | 3. | 1. | -405.36 | -12.7 | 365.8 | 6.03 | 5.6 | .0105 | 15.06 | .016 SI |
| 22. | 22. | 3. | 1. | -354.93 | -11.1 | 320.3 | 6.03 | 5.6 | .0092 | 15.06 | .014 SI |
| 267. | 267. | 3. | 1. | 317.89! | -9.7 | 217.9 | 8.04 | 5.2 | .0062 | 12.75 | .008 SI |
| 501. | 501. | 3. | 3. | -316.42 | -6.5 | 145. | 12.06 | 5.2 | .0041 | 11. | .005 SI |
| > 501. | 0. | 3. | 3. | -1477.02 | -30.1 | 676.7 | 12.06 | 5.2 | .0227 | 11. | .025 SI |
| 875. | 374. | 3. | 1. | 1684.62! | -51.5! | 1154.9 | 8.04 | 5.2 | .0423 | 12.75 | .054 SI |
| 1013. | 512. | 3. | 1. | -1532.32! | -48. | 1382.6! | 6.03 | 5.6 | .049 | 15.06 | .074!SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|-----------|--------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 3. | 1. | -397.92! | -12.5! | 359.! | 6.03 | 5.6 | .0103 | 15.06 | .015!SI |
| 9. | 9. | 3. | 1. | -383.38 | -12. | 345.9 | 6.03 | 5.6 | .0099 | 15.06 | .015 SI |
| 22. | 22. | 3. | 1. | -334.01 | -10.5 | 301.4 | 6.03 | 5.6 | .0086 | 15.06 | .013 SI |
| 267. | 267. | 3. | 1. | 317.67! | -9.7 | 217.8 | 8.04 | 5.2 | .0062 | 12.75 | .008 SI |
| 501. | 501. | 3. | 3. | -336.56 | -6.9 | 154.2 | 12.06 | 5.2 | .0044 | 11. | .005 SI |
| > 501. | 0. | 3. | 3. | -1275.16 | -26. | 584.3 | 12.06 | 5.2 | .0183 | 11. | .02 SI |
| 875. | 374. | 3. | 1. | 1522.34! | -46.5! | 1043.7 | 8.04 | 5.2 | .037 | 12.75 | .047 SI |
| 1013. | 512. | 3. | 1. | -1382.16! | -43.3 | 1247.1! | 6.03 | 5.6 | .0426 | 15.06 | .064!SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|-----------|--------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 3. | 1. | -390.94! | -12.3! | 352.7! | 6.03 | 5.6 | .0101 | 15.06 | .015!SI |
| 9. | 9. | 3. | 1. | -376.5 | -11.8 | 339.7 | 6.03 | 5.6 | .0097 | 15.06 | .015 SI |
| 22. | 22. | 3. | 1. | -327.46 | -10.3 | 295.5 | 6.03 | 5.6 | .0084 | 15.06 | .013 SI |
| 267. | 267. | 3. | 1. | 317.56! | -9.7 | 217.7 | 8.04 | 5.2 | .0062 | 12.75 | .008 SI |
| 501. | 501. | 3. | 3. | -343.02 | -7. | 157.2 | 12.06 | 5.2 | .0045 | 11. | .005 SI |
| > 501. | 0. | 3. | 3. | -1227.93 | -25. | 562.6 | 12.06 | 5.2 | .0172 | 11. | .019 SI |
| 875. | 374. | 3. | 1. | 1451.03! | -44.3! | 994.8 | 8.04 | 5.2 | .0347 | 12.75 | .044 SI |
| 1013. | 512. | 3. | 1. | -1321.73! | -41.4 | 1192.6! | 6.03 | 5.6 | .04 | 15.06 | .06 !SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |
| 2 | 20.11 | 2.793 | 12.06 | 1.676 | 3d16 +3d16 | 8.04 | 1.117 | 4d16 |
| 3 | 28.15 | 3.91 | 12.06 | 1.676 | 3d16 +3d16 | 16.08 | 2.234 | 4d16 +4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 74 - Travata T016 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A473 | 3 | 3 | 3 | 0 | 501. | 474. | 20.875 | 1.3 | 2.34 | 43.646 |
| 2 | A528 | 3 | 3 | 3 | 0 | 512. | 484. | 21.333 | 1.3 | 3.303 | 61.603 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|----|-----|-----------|--------|-------|-----------|-------|-------|-----|-------|----------|
| > 0. | 0. | 3. | 1. | -3375.42! | -.079! | .146! | -4558.79 | -.35 | 1.622 | 3. | .177! | 1.351!SI |
| 0. | 0. | 3. | 1. | 1788.61 | -.04 | .059 | 5952.43 | -.35 | 1.214 | 3. | .224 | 3.328SI |
| 266. | 266. | 3. | 1. | 2543.32! | -.057 | .083 | 5952.43 | -.35 | 1.214 | 3. | .224 | 2.34SI |
| 331. | 331. | 3. | 1. | -241.15 | -.005 | .01 | -4558.79 | -.35 | 1.622 | 3. | .177 | 18.9!SI |
| 477. | 477. | 3. | 3. | 1839.93 | -.027 | .031 | 11604.02! | -.35 | .895 | 3. | .281 | 6.307SI |
| 501. | 501. | 3. | 3. | -3315.76 | -.048 | .072 | -8888.1 | !-.35 | 1.396 | 3. | .2 | 2.681SI |
| 501. | 501. | 3. | 3. | 1669.83 | -.025 | .028 | 11604.02 | -.35 | .895 | 3. | .281 | 6.949SI |
| > 501. | 0. | 3. | 3. | -3029.87! | -.044 | .066 | -8888.1 | !-.35 | 1.396 | 3. | .2 | 2.933SI |
| 501. | 0. | 3. | 3. | 870.04 | -.013 | .014 | 11604.02! | -.35 | .895 | 3. | .281 | 13.34SI |
| 809. | 308. | 3. | 1. | -215.53 | -.005 | .009 | -4558.79 | -.35 | 1.622 | 3. | .177 | 21.15!SI |
| 1004. | 503. | 3. | 1. | 1801.96! | -.04 | .059 | 5952.43 | -.35 | 1.214 | 3. | .224 | 3.303SI |
| 1013. | 512. | 3. | 1. | -2289.57 | -.052! | .099! | -4558.79 | -.35 | 1.622 | 3. | .177 | 1.991!SI |
| 1013. | 512. | 3. | 1. | 1801.96 | -.04 | .059 | 5952.43 | -.35 | 1.214 | 3. | .224 | 3.303SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|-----|---------|--------|---------|---------|------|------|-------|
| > 0. | 0. | 3. | -1116. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3SI |
| 0. | 0. | 3. | 4410.! | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3SI |
| 200. | 200. | 3. | -2430. | 4732.! | 13794. | 11617. | 1.01 | 16. | 2.5SI |
| 501. | 501. | 3. | -4298.! | 3056. | 19332.! | 19331.! | 1.01 | 5. | 1.3SI |
| 501. | 501. | 3. | 1122. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3SI |
| > 501. | 0. | 3. | -1817. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3SI |
| 501. | 0. | 3. | 3578.! | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3SI |
| 525. | 24. | 3. | -1883. | 4732.! | 19332. | 19331. | 1.01 | 5. | 1.3SI |
| 1013. | 512. | 3. | -3473.! | 3056. | 19332.! | 19331.! | 1.01 | 5. | 1.3SI |
| 1013. | 512. | 3. | 1966. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|-----------|-------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 3. | 1. | -1785.76! | -56. | 1611.3! | 6.03 | 5.6 | .0599 | 15.06 | .09!SI |
| 9. | 9. | 3. | 1. | -1709.15 | -53.6 | 1542.1 | 6.03 | 5.6 | .0566 | 15.06 | .085SI |
| 22. | 22. | 3. | 1. | -1449.04 | -45.4 | 1307.5 | 6.03 | 5.6 | .0454 | 15.06 | .068SI |
| 266. | 266. | 3. | 1. | 1736.14! | -53. | 1190.2 | 8.04 | 5.2 | .044 | 12.75 | .056SI |
| 501. | 501. | 3. | 3. | -1775.25 | -36.2 | 813.4 | 12.06 | 5.2 | .0292 | 11. | .032SI |
| > 501. | 0. | 3. | 3. | -1276.07! | -26. | 584.7! | 12.06 | 5.2 | .0183 | 11. | .02SI |
| 775. | 274. | 3. | 1. | 623.42! | -19. | 427.4 | 8.04 | 5.2 | .0122 | 12.75 | .016SI |
| 1013. | 512. | 3. | 1. | -544.44 | -17.1 | 491.2 | 6.03 | 5.6 | .014 | 15.06 | .021!SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|-----------|--------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 3. | 1. | -1411.54 | -44.3! | 1273.6! | 6.03 | 5.6 | .0438 | 15.06 | .066!SI |
| 9. | 9. | 3. | 1. | -1350.81 | -42.4 | 1218.8 | 6.03 | 5.6 | .0412 | 15.06 | .062SI |
| 22. | 22. | 3. | 1. | -1144.6 | -35.9 | 1032.8 | 6.03 | 5.6 | .0323 | 15.06 | .049SI |
| 266. | 266. | 3. | 1. | 1376.73! | -42.1 | 943.8 | 8.04 | 5.2 | .0322 | 12.75 | .041SI |
| 501. | 501. | 3. | 3. | -1435.83! | -29.3 | 657.9 | 12.06 | 5.2 | .0218 | 11. | .024SI |
| > 501. | 0. | 3. | 3. | -1141.51! | -23.3! | 523. | 12.06 | 5.2 | .0154 | 11. | .017SI |
| 775. | 274. | 3. | 1. | 591.85! | -18.1 | 405.8 | 8.04 | 5.2 | .0116 | 12.75 | .015SI |
| 1013. | 512. | 3. | 1. | -518.45 | -16.3 | 467.8 | 6.03 | 5.6 | .0134 | 15.06 | .02!SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|----|----|---------|----------|--------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 3. | 1. | -1267.48 | -39.7! | 1143.6! | 6.03 | 5.6 | .0376 | 15.06 | .057!SI |

| | | | | | | | | | | | | |
|--------|------|-----|----|----------|-------|--------|-------|-----|-------|-------|------|----|
| 9. | 9. | 13. | 1. | -1213.03 | -38. | 1094.5 | 6.03 | 5.6 | .0353 | 15.06 | .053 | SI |
| 22. | 22. | 13. | 1. | -1028.14 | -32.2 | 927.7 | 6.03 | 5.6 | .0273 | 15.06 | .041 | SI |
| 266. | 266. | 13. | 1. | 1246.46 | -38.1 | 854.5 | 8.04 | 5.2 | .028 | 12.75 | .036 | SI |
| 501. | 501. | 13. | 1. | -1296.24 | -26.4 | 593.9 | 12.06 | 5.2 | .0187 | 11. | .021 | SI |
| > 501. | 0. | 13. | 1. | -1087.89 | -22.2 | 498.5 | 12.06 | 5.2 | .0142 | 11. | .016 | SI |
| 775. | 274. | 13. | 1. | 580.57 | -17.7 | 398. | 8.04 | 5.2 | .0114 | 12.75 | .015 | SI |
| 1013. | 512. | 13. | 1. | -508.05 | -15.9 | 458.4 | 6.03 | 5.6 | .0131 | 15.06 | .02 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |
| 2 | 20.11 | 2.793 | 12.06 | 1.676 | 3d16 +3d16 | 8.04 | 1.117 | 4d16 |
| 3 | 28.15 | 3.91 | 12.06 | 1.676 | 3d16 +3d16 | 16.08 | 2.234 | 4d16 +4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 75 - Travata T017 (trave)

SEZIONI UTILIZZATE

3) Rettangolare: 40x25; A=960.; Jg=46080.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A478 | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 3.571 | 66.955 |
| 2 | A479 | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 3.563 | 66.806 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|-----|----------|-------|-------|-----------|-------|-------|-----|------|-------|----|
| > 0. | 0. | 13. | -2122.5 | -.036 | .069 | -6075.31 | -.35 | 1.598 | 3. | .18 | 2.862 | SI |
| 0. | 0. | 13. | 1307.78 | -.022 | .034 | 7472.4 | -.35 | 1.284 | 3. | .214 | 5.714 | SI |
| 137. | 137. | 13. | 2092.66 | -.035 | .055 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.571 | SI |
| 203. | 203. | 13. | -211.71 | -.004 | .007 | -6075.31 | -.35 | 1.598 | 3. | .18 | 28.7 | SI |
| 236. | 236. | 13. | -1104.97 | -.015 | .018 | -11634.25 | -.35 | .885 | 3. | .283 | 10.53 | SI |
| 236. | 236. | 13. | 1535.25 | -.021 | .04 | 7535.16 | -.35 | 1.615 | 3. | .178 | 4.908 | SI |
| 283. | 283. | 13. | 1059.32 | -.012 | .014 | 14563.58 | -.35 | .97 | 3. | .265 | 13.75 | SI |
| 308. | 308. | 13. | -3064.13 | -.034 | .05 | -11839.41 | -.35 | 1.358 | 3. | .205 | 3.864 | SI |
| 308. | 308. | 13. | 628.99 | -.007 | .008 | 14563.58 | -.35 | .97 | 3. | .265 | 23.15 | SI |
| > 308. | 0. | 13. | -2994.14 | -.033 | .049 | -11839.41 | -.35 | 1.358 | 3. | .205 | 3.954 | SI |
| 308. | 0. | 13. | 654.76 | -.007 | .009 | 14563.58 | -.35 | .97 | 3. | .265 | 22.24 | SI |
| 341. | 34. | 13. | -2340.22 | -.033 | .039 | -11634.25 | -.35 | .885 | 3. | .283 | 4.971 | SI |
| 341. | 34. | 13. | 1202.73 | -.017 | .031 | 7535.16 | -.35 | 1.615 | 3. | .178 | 6.265 | SI |
| 412. | 105. | 13. | -169.66 | -.003 | .005 | -6075.31 | -.35 | 1.598 | 3. | .18 | 35.81 | SI |
| 478. | 170. | 13. | 2097.36 | -.035 | .055 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.563 | SI |
| 615. | 308. | 13. | -2225.17 | -.038 | .072 | -6075.31 | -.35 | 1.598 | 3. | .18 | 2.73 | SI |
| 615. | 308. | 13. | 1301.45 | -.022 | .034 | 7472.4 | -.35 | 1.284 | 3. | .214 | 5.742 | SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve | |
|-------------|------|-----|--------|-------|--------|--------|------|------|-----|----|
| > 0. | 0. | 13. | -3808. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 0. | 0. | 13. | 8474. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 105. | 105. | 13. | -5504. | 6175. | 18392. | 11617. | 1.01 | 16. | 2.5 | SI |
| 308. | 308. | 13. | -8704. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 308. | 308. | 13. | 3295. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| > 308. | 0. | 13. | -3579. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 308. | 0. | 13. | 8704. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 332. | 24. | 13. | -3758. | 6175. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 615. | 308. | 13. | -8474. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |

615.|308.|3.| 3524.| 4075.| 23971.| 23792.| 1.01| 5. |1.6 |SI|

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|----|---------|----------|-------|-------|-------|------|--------|-------|------|----|
| > 0. | 0. | 3. | 1. | -1290.69 | -30.8 | 873.7 | 8.04 | 5.58 | .025 | 15.03 | .038 | SI |
| 9. | 9. | 3. | 1. | -1037.59 | -24.8 | 702.4 | 8.04 | 5.58 | .0201 | 15.03 | .03 | SI |
| 24. | 24. | 3. | 1. | -635.84 | -15.2 | 430.4 | 8.04 | 5.58 | .0123 | 15.03 | .018 | SI |
| 137. | 137. | 3. | 1. | 1484.47 | -34.7 | 812. | 10.05 | 5.27 | .0252 | 13.18 | .033 | SI |
| 308. | 308. | 3. | 3. | -2085.22 | -32.7 | 717.2 | 16.08 | 5.16 | .0246 | 10.97 | .027 | SI |
| > 308. | 0. | 3. | 3. | -1929.64 | -30.2 | 663.7 | 16.08 | 5.16 | .0221 | 10.97 | .024 | SI |
| 478. | 170. | 3. | 1. | 1486.18 | -34.7 | 812.9 | 10.05 | 5.27 | .0252 | 13.18 | .033 | SI |
| 615. | 308. | 3. | 1. | -1290.69 | -30.8 | 873.7 | 8.04 | 5.58 | .025 | 15.03 | .038 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|----|---------|----------|-------|-------|-------|------|--------|-------|------|----|
| > 0. | 0. | 3. | 1. | -1146.6 | -27.4 | 776.2 | 8.04 | 5.58 | .0222 | 15.03 | .033 | SI |
| 9. | 9. | 3. | 1. | -920.98 | -22. | 623.4 | 8.04 | 5.58 | .0178 | 15.03 | .027 | SI |
| 24. | 24. | 3. | 1. | -562.87 | -13.4 | 381. | 8.04 | 5.58 | .0109 | 15.03 | .016 | SI |
| 137. | 137. | 3. | 1. | 1314.63 | -30.7 | 719.1 | 10.05 | 5.27 | .0208 | 13.18 | .027 | SI |
| 308. | 308. | 3. | 3. | -1828. | -28.7 | 628.7 | 16.08 | 5.16 | .0204 | 10.97 | .022 | SI |
| > 308. | 0. | 3. | 3. | -1716.93 | -26.9 | 590.5 | 16.08 | 5.16 | .0186 | 10.97 | .02 | SI |
| 478. | 170. | 3. | 1. | 1308.74 | -30.6 | 715.8 | 10.05 | 5.27 | .0206 | 13.18 | .027 | SI |
| 615. | 308. | 3. | 1. | -1146.6 | -27.4 | 776.2 | 8.04 | 5.58 | .0222 | 15.03 | .033 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|----|---------|----------|-------|-------|-------|------|--------|-------|------|----|
| > 0. | 0. | 3. | 1. | -1088.96 | -26. | 737.1 | 8.04 | 5.58 | .0211 | 15.03 | .032 | SI |
| 9. | 9. | 3. | 1. | -874.52 | -20.9 | 592. | 8.04 | 5.58 | .0169 | 15.03 | .025 | SI |
| 24. | 24. | 3. | 1. | -534.15 | -12.8 | 361.6 | 8.04 | 5.58 | .0103 | 15.03 | .016 | SI |
| 137. | 137. | 3. | 1. | 1250.88 | -29.2 | 684.2 | 10.05 | 5.27 | .0195 | 13.18 | .026 | SI |
| 308. | 308. | 3. | 3. | -1730.92 | -27.1 | 595.3 | 16.08 | 5.16 | .0188 | 10.97 | .021 | SI |
| > 308. | 0. | 3. | 3. | -1632.17 | -25.6 | 561.4 | 16.08 | 5.16 | .0172 | 10.97 | .019 | SI |
| 478. | 170. | 3. | 1. | 1243.39 | -29. | 680.1 | 10.05 | 5.27 | .0194 | 13.18 | .026 | SI |
| 615. | 308. | 3. | 1. | -1088.96 | -26. | 737.1 | 8.04 | 5.58 | .0211 | 15.03 | .032 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 18.1 | 1.885 | 8.04 | .838 | 4d16 | 10.05 | 1.047 | 5d16 |
| 2 | 26.14 | 2.723 | 16.08 | 1.676 | 4d16 +4d16 | 10.05 | 1.047 | 5d16 |
| 3 | 36.19 | 3.77 | 16.08 | 1.676 | 4d16 +4d16 | 20.11 | 2.094 | 5d16 +5d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 76 - Travata T018 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 40x25; A=960.; Jg=46080.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A480 | 3 | 3 | 3 | 0 | 308. | 280. | 12.812 | 1.3 | 2.202 | 41.291 |
| 2 | A481 | 3 | 3 | 3 | 0 | 308. | 280. | 12.812 | 1.3 | 1.958 | 36.72 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE | |
|-------------|------|-----|-----|----------|-----------|-------|-----------|-------|-------|-----|-------|-------|----|
| > 0. | 0. | 13. | 1. | -2958.6 | -0.051 | .096! | -6075.31 | -0.35 | 1.598 | 3. | .18 | 2.053 | SI |
| 0. | 0. | 13. | 1. | 877.67 | -0.015 | .023 | 7472.4 | -0.35 | 1.284 | 3. | .214 | 8.514 | SI |
| 136. | 136. | 13. | 1. | 3393.36 | -0.059! | .089 | 7472.4 | -0.35 | 1.284 | 3. | .214 | 2.202 | SI |
| 235. | 235. | 13. | 2. | -1093.48 | -0.015 | .018 | -11634.25 | -0.35 | .885 | 3. | .283 | 10.64 | SI |
| 235. | 235. | 13. | 2. | 2120.25 | -0.029 | .055 | 7535.16 | -0.35 | 1.615 | 3. | .178 | 3.554 | SI |
| 283. | 283. | 13. | 3. | 970.72 | -0.011 | .013 | 14563.58 | -0.35 | .97 | 3. | .265 | 15. | SI |
| 308. | 308. | 13. | 3. | -4389.7 | ! -0.049 | .072 | -11839.41 | -0.35 | 1.358 | 3. | .205 | 2.697 | SI |
| 308. | 308. | 13. | 3. | 119.15 | -0.001 | .002 | 14563.58 | -0.35 | .97 | 3. | .265 | 122.2 | SI |
| > 308. | 0. | 13. | 3. | -4687.39 | ! -0.053 | .077 | -11839.41 | -0.35 | 1.358 | 3. | .205 | 2.526 | SI |
| 317. | 9. | 13. | 3. | 321.72 | -0.004 | .004 | 14563.58 | -0.35 | .97 | 3. | .265 | 45.27 | SI |
| 341. | 34. | 13. | 2. | -3307.02 | -0.047 | .055 | -11634.25 | -0.35 | .885 | 3. | .283 | 3.518 | SI |
| 341. | 34. | 13. | 2. | 1233.62 | -0.017 | .032 | 7535.16 | -0.35 | 1.615 | 3. | .178 | 6.108 | SI |
| 479. | 172. | 13. | 1. | 3815.79 | ! -0.066! | .1 | 7472.4 | -0.35 | 1.284 | 3. | .214 | 1.958 | SI |
| 615. | 308. | 13. | 1. | -3332.02 | -0.058 | .108 | -6075.31 | -0.35 | 1.598 | 3. | .18 | 1.823 | SI |
| 615. | 308. | 13. | 1. | 823.88 | -0.014 | .021 | 7472.4 | -0.35 | 1.284 | 3. | .214 | 9.07 | SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve | | |
|-------------|------|-----|-----|----------|--------|---------|---------|------|-----|-----|----|
| > 0. | 0. | 13. | 1. | -1315. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 0. | 0. | 13. | 1. | 9999.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 103. | 103. | 13. | 1. | -4407.! | 6175.! | 18392. | 11617.! | 1.01 | 16. | 2.5 | SI |
| 308. | 308. | 13. | 1. | -9546.! | 4075. | 23971.! | 23792.! | 1.01 | 5. | 1.6 | SI |
| 308. | 308. | 13. | 1. | 1693.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| > 308. | 0. | 13. | 1. | -1628.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 308. | 0. | 13. | 1. | 9992.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 332. | 24. | 13. | 1. | -1947.! | 6175.! | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |
| 615. | 308. | 13. | 1. | -10454.! | 4075. | 23971.! | 23792.! | 1.01 | 5. | 1.6 | SI |
| 615. | 308. | 13. | 1. | 743.! | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|----------|-------|--------|-------|------|--------|-------|------|----|
| > 0. | 0. | 13. | 1. | -2093.76 | -50. | 1417.3 | 8.04 | 5.58 | .0507 | 15.03 | .076 | SI |
| 9. | 9. | 13. | 1. | -1675.02 | -40. | 1133.9 | 8.04 | 5.58 | .0372 | 15.03 | .056 | SI |
| 22. | 22. | 13. | 1. | -1121.13 | -26.8 | 758.9 | 8.04 | 5.58 | .0217 | 15.03 | .033 | SI |
| 136. | 136. | 13. | 1. | 2404.53 | -56.2 | 1315.2 | 10.05 | 5.27 | .0492 | 13.18 | .065 | SI |
| 308. | 308. | 13. | 3. | -3098.! | -48.6 | 1065.5 | 16.08 | 5.16 | .0412 | 10.97 | .045 | SI |
| > 308. | 0. | 13. | 3. | -3307.27 | -51.8 | 1137.5 | 16.08 | 5.16 | .0447 | 10.97 | .049 | SI |
| 479. | 172. | 13. | 1. | 2699.29 | -63.1 | 1476.4 | 10.05 | 5.27 | .0568 | 13.18 | .075 | SI |
| 615. | 308. | 13. | 1. | -2356.53 | -56.3 | 1595.2 | 8.04 | 5.58 | .0592 | 15.03 | .089 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|----------|-------|--------|-------|------|--------|-------|------|----|
| > 0. | 0. | 13. | 1. | -1836.46 | -43.9 | 1243.2 | 8.04 | 5.58 | .0424 | 15.03 | .064 | SI |
| 9. | 9. | 13. | 1. | -1468.57 | -35.1 | 994.1 | 8.04 | 5.58 | .0306 | 15.03 | .046 | SI |
| 22. | 22. | 13. | 1. | -981.94 | -23.4 | 664.7 | 8.04 | 5.58 | .019 | 15.03 | .029 | SI |
| 136. | 136. | 13. | 1. | 2101.51 | -49.1 | 1149.5 | 10.05 | 5.27 | .0413 | 13.18 | .054 | SI |
| 308. | 308. | 13. | 3. | -2697.91 | -42.3 | 927.9 | 16.08 | 5.16 | .0347 | 10.97 | .038 | SI |
| > 308. | 0. | 13. | 3. | -2911.02 | -45.6 | 1001.2 | 16.08 | 5.16 | .0382 | 10.97 | .042 | SI |
| 479. | 172. | 13. | 1. | 2370.11 | -55.4 | 1296.4 | 10.05 | 5.27 | .0483 | 13.18 | .064 | SI |
| 615. | 308. | 13. | 1. | -2064.66 | -49.3 | 1397.6 | 8.04 | 5.58 | .0498 | 15.03 | .075 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|----------|-------|--------|-------|------|--------|-------|------|----|
| > 0. | 0. | 13. | 1. | -1733.54 | -41.4 | 1173.5 | 8.04 | 5.58 | .0391 | 15.03 | .059 | SI |
| 9. | 9. | 13. | 1. | -1386.11 | -33.1 | 938.3 | 8.04 | 5.58 | .0279 | 15.03 | .042 | SI |
| 22. | 22. | 13. | 1. | -926.54 | -22.1 | 627.2 | 8.04 | 5.58 | .0179 | 15.03 | .027 | SI |
| 136. | 136. | 13. | 1. | 1987.33 | -46.4 | 1087. | 10.05 | 5.27 | .0383 | 13.18 | .05 | SI |
| 308. | 308. | 13. | 3. | -2541.69 | -39.8 | 874.2 | 16.08 | 5.16 | .0321 | 10.97 | .035 | SI |
| > 308. | 0. | 13. | 3. | -2750.41 | -43.1 | 946. | 16.08 | 5.16 | .0355 | 10.97 | .039 | SI |
| 479. | 172. | 13. | 1. | 2237.14 | -52.3 | 1223.7 | 10.05 | 5.27 | .0448 | 13.18 | .059 | SI |
| 615. | 308. | 13. | 1. | -1947.91 | -46.5 | 1318.6 | 8.04 | 5.58 | .046 | 15.03 | .069 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 18.1 | 1.885 | 8.04 | .838 | 4d16 | 10.05 | 1.047 | 5d16 |
| 2 | 26.14 | 2.723 | 16.08 | 1.676 | 4d16 +4d16 | 10.05 | 1.047 | 5d16 |
| 3 | 36.19 | 3.77 | 16.08 | 1.676 | 4d16 +4d16 | 20.11 | 2.094 | 5d16 +5d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 77 - Travata T019 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|----|-------|---------|
| 1 | A494 | 3 | 3 | 3 | 0 | 308. | 308. | 12.812 | 1. | 4.308 | 61.794 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE | |
|-------------|------|----|-----|----------|-------|------|----------|-------|-------|-----|-------|-------|----|
| > 9. | 9. | 3. | 1. | -616.84 | -.014 | .027 | -4558.79 | -.35 | 1.622 | 3. | .177 | 7.391 | SI |
| 9. | 9. | 3. | 1. | 223.53 | -.005 | .007 | 5952.43 | -.35 | 1.214 | 3. | .224 | 26.63 | SI |
| 186. | 186. | 3. | 1. | 1381.84 | -.03 | .045 | 5952.43 | -.35 | 1.214 | 3. | .224 | 4.308 | SI |
| 284. | 284. | 3. | 1. | 180.03 | -.004 | .006 | 5952.43 | -.35 | 1.214 | 3. | .224 | 33.06 | SI |
| 298. | 298. | 3. | 1. | -1222.78 | -.027 | .053 | -4558.79 | -.35 | 1.622 | 3. | .177 | 3.728 | SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve | |
|-------------|------|-----|--------|-------|--------|--------|------|------|-----|----|
| > 0. | 0. | 13. | 2690. | 3056. | 13794. | 11617. | 1.01 | 16. | 2.5 | SI |
| 56. | 56. | 13. | 1364. | 4732. | 13794. | 11617. | 1.01 | 16. | 2.5 | SI |
| 308. | 308. | 13. | -3976. | 3056. | 13794. | 12392. | 1.01 | 15. | 2.5 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|---------|-------|-------|-------|------|--------|-------|------|----|
| 9. | 9. | 13. | 1. | -207.09 | -6.5 | 186.9 | 6.03 | 5.6 | .0053 | 15.06 | .008 | SI |
| 186. | 186. | 13. | 1. | 984.22 | -30.1 | 674.7 | 8.04 | 5.2 | .0194 | 12.75 | .025 | SI |
| 298. | 298. | 13. | 1. | -620.29 | -19.4 | 559.7 | 6.03 | 5.6 | .016 | 15.06 | .024 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|-----|---------|---------|-------|-------|-------|------|--------|-------|------|----|
| 9. | 9. | 13. | 1. | -187.66 | -5.9 | 169.3 | 6.03 | 5.6 | .0048 | 15.06 | .007 | SI |
| 186. | 186. | 13. | 1. | 880.14 | -26.9 | 603.4 | 8.04 | 5.2 | .0172 | 12.75 | .022 | SI |
| 298. | 298. | 13. | 1. | -519.08 | -16.3 | 468.4 | 6.03 | 5.6 | .0134 | 15.06 | .02 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve | |
|-------------|------|----|---------|----------|--------|--------|-------|------|--------|-------|-------|----|
| 9. | 9. | 3. | 1. | -178.27 | -5.6 | 160.8 | 6.03 | 5.6 | .0046 | 15.06 | .007 | SI |
| 186. | 186. | 3. | 1. | 836.29! | -25.5! | 573.3! | 8.04 | 5.2 | .0164 | 12.75 | .021! | SI |
| 298. | 298. | 3. | 1. | -485.05! | -15.2 | 437.7 | 6.03 | 5.6 | .0125 | 15.06 | .019 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|---|--------|---|-------|--------|---|-------|
|-----|--------|---|--------|---|-------|--------|---|-------|

1|14.07|1.955| 6.03| .838|3d16 | 8.04|1.117|4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 78 - Travata T020 (trave)

SEZIONI UTILIZZATE

3) Rettangolare: 40x25; A=960.; Jg=46080.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A483 | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 5. | 93.755 |
| 2 | A484 | 3 | 3 | 3 | 0 | 308. | 278. | 12.812 | 1.3 | 3.5 | 65.632 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|----|----------|-------|-------|-----------|-------|-------|-----|------|-------|----|
| > 0. | 0. | 3. | -1608.85 | -.027 | .052 | -6075.31 | -.35 | 1.598 | 3. | .18 | 3.776 | SI |
| 0. | 0. | 3. | 924.08 | -.015 | .024 | 7472.4 | -.35 | 1.284 | 3. | .214 | 8.086 | SI |
| 137. | 137. | 3. | 1374.85 | -.023 | .036 | 7472.4 | -.35 | 1.284 | 3. | .214 | 5.435 | SI |
| 236. | 236. | 3. | -821.76 | -.011 | .014 | -11634.25 | -.35 | .885 | 3. | .283 | 14.16 | SI |
| 236. | 236. | 3. | 782.39 | -.011 | .02 | 7535.16 | -.35 | 1.615 | 3. | .178 | 9.631 | SI |
| 283. | 283. | 3. | 566.91 | -.006 | .008 | 14563.58 | -.35 | .97 | 3. | .265 | 25.69 | SI |
| 308. | 308. | 3. | -2021.77 | -.022 | .033 | -11839.41 | -.35 | 1.358 | 3. | .205 | 5.856 | SI |
| 308. | 308. | 3. | 390.66 | -.004 | .005 | 14563.58 | -.35 | .97 | 3. | .265 | 37.28 | SI |
| > 308. | 0. | 3. | -2728.35 | -.03 | .045 | -11839.41 | -.35 | 1.358 | 3. | .205 | 4.339 | SI |
| 308. | 0. | 3. | 390.98 | -.004 | .005 | 14563.58 | -.35 | .97 | 3. | .265 | 37.25 | SI |
| 341. | 34. | 3. | -2096.36 | -.029 | .035 | -11634.25 | -.35 | .885 | 3. | .283 | 5.55 | SI |
| 341. | 34. | 3. | 1008.69 | -.014 | .026 | 7535.16 | -.35 | 1.615 | 3. | .178 | 7.47 | SI |
| 412. | 105. | 3. | -27.24 | 0. | .001 | -6075.31 | -.35 | 1.598 | 3. | .18 | 223. | SI |
| 478. | 170. | 3. | 2134.86 | -.036 | .056 | 7472.4 | -.35 | 1.284 | 3. | .214 | 3.5 | SI |
| 615. | 308. | 3. | -2005.39 | -.034 | .065 | -6075.31 | -.35 | 1.598 | 3. | .18 | 3.029 | SI |
| 615. | 308. | 3. | 1043.96 | -.017 | .027 | 7472.4 | -.35 | 1.284 | 3. | .214 | 7.158 | SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|-----|--------|-------|--------|--------|------|------|-----|
| > 0. | 0. | 3. | -5015. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 |
| 0. | 0. | 3. | 7561. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 |
| 105. | 105. | 3. | -5319. | 6175. | 18392. | 11617. | 1.01 | 16. | 2.5 |
| 308. | 308. | 3. | -7693. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 |
| 308. | 308. | 3. | 4706. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 |
| > 308. | 0. | 3. | -3532. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 |
| 308. | 0. | 3. | 8745. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 |
| 332. | 24. | 3. | -3714. | 6175. | 23971. | 23792. | 1.01 | 5. | 1.6 |
| 615. | 308. | 3. | -8515. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 |
| 615. | 308. | 3. | 3472. | 4075. | 23971. | 23792. | 1.01 | 5. | 1.6 |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|----------|-------|-------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 3. | -863.14 | -20.6 | 584.3 | 8.04 | 5.58 | .0167 | 15.03 | .025 | SI |
| 9. | 9. | 3. | -720.36 | -17.2 | 487.6 | 8.04 | 5.58 | .0139 | 15.03 | .021 | SI |
| 24. | 24. | 3. | -498.56 | -11.9 | 337.5 | 8.04 | 5.58 | .0096 | 15.03 | .014 | SI |
| 137. | 137. | 3. | 989.85 | -23.1 | 541.4 | 10.05 | 5.27 | .0155 | 13.18 | .02 | SI |
| 308. | 308. | 3. | -1156.94 | -18.1 | 397.9 | 16.08 | 5.16 | .0114 | 10.97 | .012 | SI |
| > 308. | 0. | 3. | -1852.12 | -29. | 637. | 16.08 | 5.16 | .0208 | 10.97 | .023 | SI |
| 478. | 170. | 3. | 1511.86 | -35.3 | 826.9 | 10.05 | 5.27 | .0259 | 13.18 | .034 | SI |

615.|308.|3.|1.| -1314.73| -31.4| 890. ! 8.04| 5.58| .0256| 15.03| .038!SI|

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|----------|-------|--------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 3. | -788.9 | -18.8 | 534. ! | 8.04 | 5.58 | .0153 | 15.03 | .023 | SI |
| 9. | 9. | 3. | -658.72 | -15.7 | 445.9 | 8.04 | 5.58 | .0127 | 15.03 | .019 | SI |
| 24. | 24. | 3. | -456.89 | -10.9 | 309.3 | 8.04 | 5.58 | .0088 | 15.03 | .013 | SI |
| 137. | 137. | 3. | 906.23 | -21.2 | 495.7 | 10.05 | 5.27 | .0142 | 13.18 | .019 | SI |
| 308. | 308. | 3. | -1047.97 | -16.4 | 360.4 | 16.08 | 5.16 | .0103 | 10.97 | .011 | SI |
| > 308. | 0. | 3. | -1663.18 | -26.1 | 572. ! | 16.08 | 5.16 | .0177 | 10.97 | .019 | SI |
| 478. | 170. | 3. | 1343.89 | -31.4 | 735.1 | 10.05 | 5.27 | .0215 | 13.18 | .028 | SI |
| 615. | 308. | 3. | -1167.48 | -27.9 | 790.3 | 8.04 | 5.58 | .0226 | 15.03 | .034 | SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|----------|-------|--------|-------|-------|-------|--------|------|----|
| > 0. | 0. | 3. | -758.5 | -18.1 | 513.5 | 8.04 | 5.58 | .0147 | 15.03 | .022 | SI |
| 9. | 9. | 3. | -633.06 | -15.1 | 428.5 | 8.04 | 5.58 | .0122 | 15.03 | .018 | SI |
| 24. | 24. | 3. | -438.77 | -10.5 | 297. ! | 8.04 | 5.58 | .0085 | 15.03 | .013 | SI |
| 137. | 137. | 3. | 865.28 | -20.2 | 473.3 | 10.05 | 5.27 | .0135 | 13.18 | .018 | SI |
| 308. | 308. | 3. | -1006.58 | -15.8 | 346.2 | 16.08 | 5.16 | .0099 | 10.97 | .011 | SI |
| > 308. | 0. | 3. | -1587.9 | -24.9 | 546.1 | 16.08 | 5.16 | .0165 | 10.97 | .018 | SI |
| 478. | 170. | 3. | 1276. ! | -29.8 | 697.9 | 10.05 | 5.27 | .0199 | 13.18 | .026 | SI |
| 615. | 308. | 3. | -1108.57 | -26.5 | 750.4 | 8.04 | 5.58 | .0214 | 15.03 | .032 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 18.1 | 1.885 | 8.04 | .838 | 4d16 | 10.05 | 1.047 | 5d16 |
| 2 | 26.14 | 2.723 | 16.08 | 1.676 | 4d16 +4d16 | 10.05 | 1.047 | 5d16 |
| 3 | 36.19 | 3.77 | 16.08 | 1.676 | 4d16 +4d16 | 20.11 | 2.094 | 5d16 +5d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 79 - Travata T021 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A507 | 3 | 3 | 3 | 0 | 51. | 39. | 2.125 | 1.3 | 5. | 93.244 |
| 2 | A508 | 3 | 3 | 3 | 0 | 133. | 133. | 5.542 | 1.5 | 5. | 107.589 |
| 3 | A509 | 3 | 3 | 3 | 0 | 133. | 133. | 5.542 | 1.5 | 5. | 107.589 |
| 4 | A510 | 3 | 3 | 3 | 0 | 130. | 130. | 5.417 | 1.5 | 5. | 107.589 |
| 5 | A511 | 3 | 3 | 3 | 0 | 54. | 39. | 2.25 | 1.5 | 5. | 107.589 |
| 6 | A512 | 3 | 3 | 3 | 0 | 79. | 64. | 3.292 | 1.5 | 5. | 102.812 |
| 7 | A513 | 3 | 3 | 3 | 0 | 133. | 133. | 5.542 | 1.5 | 3.925 | 84.465 |
| 8 | A514 | 3 | 3 | 3 | 0 | 133. | 133. | 5.542 | 1.5 | 2.303 | 49.552 |
| 9 | A516 | 3 | 3 | 3 | 0 | 133. | 133. | 5.542 | 1.5 | 2.303 | 49.552 |
| 10 | A517 | 3 | 3 | 3 | 0 | 34. | 22. | 1.417 | 1.3 | 5. | 111.643 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|-----|----|----------|-------|-------|----------|-------|-------|-----|------|-------|----|
| > 0. | 0. | 3. | -1858. ! | -.042 | .08 ! | -4558.79 | -.35 | 1.622 | 3. | .177 | 2.454 | SI |
| 0. | 0. | 3. | 416.04 | -.009 | .014 | 5952.43 | -.35 | 1.214 | 3. | .224 | 14.31 | SI |
| 42. | 42. | 3. | 640.39 | -.014 | .021 | 5952.43 | -.35 | 1.214 | 3. | .224 | 9.295 | SI |
| 51. | 51. | 3. | -1338.11 | -.03 | .058 | -4558.79 | -.35 | 1.622 | 3. | .177 | 3.407 | SI |

| | | | | | | | | | | | | | |
|-----|-------|------|----|----------|--------|-------|----------|-------|-------|----|------|-------|----------|
| 51. | 51. | 3. | 1. | 640.39 | -.014 | .021 | 5952.43 | -.35 | 1.214 | 3. | .224 | 9.295 | SI |
| > | 51. | 0. | 3. | -1216.77 | !-.027 | !.052 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 3.747 | SI |
| | 51. | 0. | 3. | 669.73 | !-.015 | .022 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 8.888 | SI |
| | 175. | 124. | 3. | -82.48 | !-.002 | .004 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 55.27 | SI |
| | 175. | 124. | 3. | 945.96 | !-.021 | .031 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 6.292 | SI |
| | 184. | 133. | 3. | 945.96 | !-.021 | .031 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 6.292 | SI |
| > | 184. | 0. | 3. | 951.26 | !-.021 | .031 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 6.257 | SI |
| | 208. | 24. | 3. | 956.55 | !-.021 | !.031 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 6.223 | SI |
| | 317. | 133. | 3. | 859.88 | !-.019 | .028 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 6.922 | SI |
| > | 317. | 0. | 3. | -8.83 | 0. | 0. | -4558.79 | !-.35 | 1.622 | 3. | .177 | 516.5 | SI |
| | 317. | 0. | 3. | 839.45 | !-.018 | .027 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 7.091 | SI |
| | 447. | 130. | 3. | -1304.3 | !-.029 | !.056 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 3.495 | SI |
| | 447. | 130. | 3. | 440.3 | !-.01 | .014 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 13.52 | SI |
| > | 447. | 0. | 3. | -1433.7 | !-.032 | .062 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 3.18 | SI |
| | 447. | 0. | 3. | 403.05 | !-.009 | .013 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 14.77 | SI |
| | 466. | 20. | 3. | -1734.12 | !-.039 | !.075 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 2.629 | SI |
| | 477. | 30. | 3. | 281.74 | !-.005 | .005 | 10648.47 | !-.35 | .289 | 3. | .548 | 37.8 | NO 31 |
| | 486. | 39. | 3. | 222.24 | !-.004 | .004 | 10648.47 | !-.35 | .289 | 3. | .548 | 47.91 | NO 31 |
| | 492. | 45. | 3. | 186.37 | !-.003 | .003 | 10648.47 | !-.35 | .289 | 3. | .548 | 57.14 | NO 31 34 |
| | 501. | 54. | 3. | -2068.6 | !-.038 | !.089 | -4576.58 | !-.35 | 1.833 | 3. | .16 | 2.212 | SI |
| | 501. | 54. | 3. | 124.49 | !-.002 | .002 | 10648.47 | !-.35 | .289 | 3. | .548 | 85.54 | NO 31 34 |
| > | 501. | 0. | 3. | -3578.57 | !-.066 | !.154 | -4576.58 | !-.35 | 1.833 | 3. | .16 | 1.279 | SI |
| | 510. | 9. | 3. | -3578.57 | !-.052 | .078 | -8888.1 | !-.35 | 1.396 | 3. | .2 | 2.484 | SI |
| | 571. | 70. | 3. | 55.6 | !-.001 | .002 | 6009.92 | !-.35 | 1.569 | 3. | .182 | 108.1 | SI |
| | 580. | 79. | 3. | -1602.09 | !-.029 | .035 | -8746.74 | !-.35 | .93 | 3. | .274 | 5.46 | SI |
| | 580. | 79. | 3. | 55.6 | !-.001 | .002 | 6009.92 | !-.35 | 1.569 | 3. | .182 | 108.1 | SI |
| > | 580. | 0. | 3. | -1427.94 | !-.026 | .032 | -8746.74 | !-.35 | .93 | 3. | .274 | 6.125 | SI |
| | 580. | 0. | 3. | 134.56 | !-.002 | .004 | 6009.92 | !-.35 | 1.569 | 3. | .182 | 44.66 | SI |
| | 632. | 52. | 3. | -736.74 | !-.016 | .032 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 6.188 | SI |
| | 704. | 124. | 3. | 1516.41 | !-.033 | !.05 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 3.925 | SI |
| | 713. | 133. | 3. | 1516.41 | !-.033 | !.05 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 3.925 | SI |
| > | 713. | 0. | 3. | 1605.19 | !-.035 | .053 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 3.708 | SI |
| | 837. | 124. | 3. | 2584.82 | !-.058 | !.085 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 2.303 | SI |
| | 846. | 133. | 3. | 2584.82 | !-.058 | !.085 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 2.303 | SI |
| > | 846. | 0. | 3. | 2584.82 | !-.058 | !.085 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 2.303 | SI |
| | 927. | 81. | 3. | -331.46 | !-.007 | .014 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 13.75 | SI |
| | 979. | 133. | 3. | -1261.53 | !-.028 | .054 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 3.614 | SI |
| | 979. | 133. | 3. | 574.12 | !-.012 | .019 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 10.37 | SI |
| > | 979. | 0. | 3. | -1486. | !-.033 | .064 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 3.068 | SI |
| | 979. | 0. | 3. | 427.8 | !-.009 | .014 | 5952.43 | !-.35 | 1.214 | 3. | .224 | 13.91 | SI |
| | 1013. | 34. | 3. | -1977.95 | !-.045 | !.085 | -4558.79 | !-.35 | 1.622 | 3. | .177 | 2.305 | SI |
| | 1013. | 34. | 3. | 6.5 | 0. | 0. | 5952.43 | !-.35 | 1.214 | 3. | .224 | 916.1 | SI |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve | | |
|-------------|------|------|-----|---------|--------|---------|---------|------|-----|-----|----|
| > | 0. | 0. | 3. | 2422.! | 3056. | 13794. | 12392.! | 1.01 | 15. | 2.5 | SI |
| | 51. | 51. | 3. | 2303.! | 4299.! | 20001.! | 0. | *** | ** | ** | SI |
| > | 51. | 0. | 3. | 1345.! | 4299. | 20001. | 0. | *** | ** | ** | SI |
| | 60. | 9. | 3. | 1323. | 4299. | 19332. | 19331.! | 1.01 | 5. | 1.3 | SI |
| | 184. | 133. | 3. | -63.! | 4732.! | 20001.! | 0. | *** | ** | ** | SI |
| | 184. | 133. | 3. | 1033. | 4732. | 20001. | 0. | *** | ** | ** | SI |
| > | 184. | 0. | 3. | -388. | 4732.! | 20001. | 0. | *** | ** | ** | SI |
| | 184. | 0. | 3. | 533.! | 4732. | 20001. | 0. | *** | ** | ** | SI |
| | 193. | 9. | 3. | -405. | 4732. | 19332. | 19331.! | 1.01 | 5. | 1.3 | SI |
| | 317. | 133. | 3. | -627.! | 4299. | 20001.! | 0. | *** | ** | ** | SI |
| | 317. | 133. | 3. | 293. | 4299. | 20001. | 0. | *** | ** | ** | SI |
| > | 317. | 0. | 3. | -1183.! | 4299. | 20001. | 0. | *** | ** | ** | SI |
| | 326. | 9. | 3. | -1205. | 4299. | 19332. | 19331.! | 1.01 | 5. | 1.3 | SI |
| | 447. | 130. | 3. | -1488.! | 4299.! | 20001.! | 0. | *** | ** | ** | SI |
| > | 447. | 0. | 3. | -2435.! | 4299.! | 20001.! | 0. | *** | ** | ** | SI |
| | 501. | 54. | 3. | -2526.! | 3056. | 13794. | 12392.! | 1.01 | 15. | 2.5 | SI |
| > | 501. | 0. | 3. | 3336.! | 4299. | 19332. | 19331.! | 1.01 | 5. | 1.3 | SI |
| | 556. | 55. | 3. | 3242. | 5417.! | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| | 580. | 79. | 3. | 3186.! | 4299. | 20001.! | 0. | *** | ** | ** | SI |
| > | 580. | 0. | 3. | 2228.! | 4299. | 20001.! | 0. | *** | ** | ** | SI |
| | 589. | 9. | 3. | 2206. | 4299. | 19332. | 19331.! | 1.01 | 5. | 1.3 | SI |
| | 689. | 109. | 3. | 1973. | 4732.! | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| | 713. | 133. | 3. | 1917.! | 4732. | 20001. | 0. | *** | ** | ** | SI |
| > | 713. | 0. | 3. | 1090.! | 4732. | 20001. | 0. | *** | ** | ** | SI |

| | | | | | | | | | |
|--------|------|--------|-------|--------|--------|------|-----|-----|-------|
| 722. | 9. | 1073. | 4732. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 846. | 133. | -101. | 4732. | 20001. | 0. | *** | ** | ** | SI |
| 846. | 133. | 851. | 4732. | 20001. | 0. | *** | ** | ** | SI |
| > 846. | 0. | -426. | 4732. | 20001. | 0. | *** | ** | ** | SI |
| 846. | 0. | 526. | 4732. | 20001. | 0. | *** | ** | ** | SI |
| 855. | 9. | -443. | 4732. | 19332. | 19331. | 1.01 | 5. | 1.3 | SI |
| 979. | 133. | -3312. | 3056. | 20001. | 0. | *** | ** | ** | NO 18 |
| > 979. | 0. | -4046. | 3056. | 20001. | 0. | *** | ** | ** | NO 18 |
| 1013. | 34. | -4097. | 3056. | 13794. | 12392. | 1.01 | 15. | 2.5 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|-----|---------|-----------|--------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 13. | 1. | -1167.3 ! | -36.6! | 1053.2! | 6.03 | 5.6 | .0333 | 15.06 | .05 !SI |
| 51. | 51. | 13. | 1. | -438.98! | -13.8 | 396.1 | 6.03 | 5.6 | .0113 | 15.06 | .017!SI |
| > 51. | 0. | 13. | 1. | -438.98! | -13.8 | 396.1 | 6.03 | 5.6 | .0113 | 15.06 | .017!SI |
| 184. | 133. | 13. | 1. | 656.49! | -20.1! | 450.1! | 8.04 | 5.2 | .0129 | 12.75 | .016!SI |
| > 184. | 0. | 13. | 1. | 656.49 | -20.1 | 450.1 | 8.04 | 5.2 | .0129 | 12.75 | .016!SI |
| 208. | 24. | 13. | 1. | 665.3 ! | -20.3! | 456.1! | 8.04 | 5.2 | .013 | 12.75 | .017!SI |
| 317. | 133. | 13. | 1. | 578.25! | -17.7 | 396.4 | 8.04 | 5.2 | .0113 | 12.75 | .014!SI |
| > 317. | 0. | 13. | 1. | 578.25! | -17.7 | 396.4 | 8.04 | 5.2 | .0113 | 12.75 | .014!SI |
| 447. | 130. | 13. | 1. | -633.01! | -19.8! | 571.2! | 6.03 | 5.6 | .0163 | 15.06 | .025!SI |
| > 447. | 0. | 13. | 1. | -633.01! | -19.8 | 571.2 | 6.03 | 5.6 | .0163 | 15.06 | .025!SI |
| 501. | 54. | 13. | 2. | -1436.51! | -36.8! | 1294.1! | 6.03 | 5.91 | .0441 | 15.47 | .068!SI |
| > 501. | 0. | 13. | 2. | -2512.57! | -64.4! | 2263.5! | 6.03 | 5.91 | .0902 | 15.47 | .14 !SI |
| 580. | 79. | 13. | 4. | -879.01! | -22.4 | 407.2 | 12.06 | 4.84 | .0116 | 10.75 | .013!SI |
| > 580. | 0. | 13. | 4. | -879.01! | -22.4 | 407.2 | 12.06 | 4.84 | .0116 | 10.75 | .013!SI |
| 713. | 133. | 13. | 1. | 1058.4 ! | -32.3! | 725.6! | 8.04 | 5.2 | .0219 | 12.75 | .028!SI |
| > 713. | 0. | 13. | 1. | 1058.4 ! | -32.3 | 725.6 | 8.04 | 5.2 | .0219 | 12.75 | .028!SI |
| 846. | 133. | 13. | 1. | 1822.1 ! | -55.7! | 1249.2! | 8.04 | 5.2 | .0468 | 12.75 | .06 !SI |
| > 846. | 0. | 13. | 1. | 1822.1 ! | -55.7! | 1249.2! | 8.04 | 5.2 | .0468 | 12.75 | .06 !SI |
| 979. | 133. | 13. | 1. | -548.41! | -17.2 | 494.8 | 6.03 | 5.6 | .0141 | 15.06 | .021!SI |
| > 979. | 0. | 13. | 1. | -548.41! | -17.2 | 494.8 | 6.03 | 5.6 | .0141 | 15.06 | .021!SI |
| 1013. | 34. | 13. | 1. | -1344.02! | -42.1! | 1212.7! | 6.03 | 5.6 | .0409 | 15.06 | .062!SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|-----|---------|-----------|--------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 13. | 1. | -819.4 ! | -25.7! | 739.3! | 6.03 | 5.6 | .0211 | 15.06 | .032!SI |
| 51. | 51. | 13. | 1. | -314.22! | -9.9 | 283.5 | 6.03 | 5.6 | .0081 | 15.06 | .012!SI |
| > 51. | 0. | 13. | 1. | -314.22! | -9.9 | 283.5 | 6.03 | 5.6 | .0081 | 15.06 | .012!SI |
| 184. | 133. | 13. | 1. | 456.01! | -13.9! | 312.6! | 8.04 | 5.2 | .0089 | 12.75 | .011!SI |
| > 184. | 0. | 13. | 1. | 456.01 | -13.9 | 312.6 | 8.04 | 5.2 | .0089 | 12.75 | .011!SI |
| 236. | 52. | 13. | 1. | 467.9 ! | -14.3! | 320.8! | 8.04 | 5.2 | .0092 | 12.75 | .012!SI |
| 317. | 133. | 13. | 1. | 390.46! | -11.9 | 267.7 | 8.04 | 5.2 | .0076 | 12.75 | .01 !SI |
| > 317. | 0. | 13. | 1. | 390.46! | -11.9 | 267.7 | 8.04 | 5.2 | .0076 | 12.75 | .01 !SI |
| 447. | 130. | 13. | 1. | -481.82! | -15.1! | 434.7! | 6.03 | 5.6 | .0124 | 15.06 | .019!SI |
| > 447. | 0. | 13. | 1. | -481.82! | -15.1 | 434.7 | 6.03 | 5.6 | .0124 | 15.06 | .019!SI |
| 501. | 54. | 13. | 2. | -1047.26! | -26.9! | 943.5! | 6.03 | 5.91 | .0274 | 15.47 | .042!SI |
| > 501. | 0. | 13. | 2. | -1956.5 ! | -50.2! | 1762.6! | 6.03 | 5.91 | .0664 | 15.47 | .103!SI |
| 580. | 79. | 13. | 4. | -725.68! | -18.5 | 336.2 | 12.06 | 4.84 | .0096 | 10.75 | .01 !SI |
| > 580. | 0. | 13. | 4. | -725.68! | -18.5 | 336.2 | 12.06 | 4.84 | .0096 | 10.75 | .01 !SI |
| 713. | 133. | 13. | 1. | 800.52! | -24.5! | 548.8! | 8.04 | 5.2 | .0157 | 12.75 | .02 !SI |
| > 713. | 0. | 13. | 1. | 800.52! | -24.5 | 548.8 | 8.04 | 5.2 | .0157 | 12.75 | .02 !SI |
| 846. | 133. | 13. | 1. | 1490.93! | -45.5! | 1022.1! | 8.04 | 5.2 | .036 | 12.75 | .046!SI |
| > 846. | 0. | 13. | 1. | 1490.93 | -45.5 | 1022.1 | 8.04 | 5.2 | .036 | 12.75 | .046!SI |
| 855. | 9. | 13. | 1. | 1491.04! | -45.5! | 1022.2! | 8.04 | 5.2 | .036 | 12.75 | .046!SI |
| 979. | 133. | 13. | 1. | -442.67! | -13.9 | 399.4 | 6.03 | 5.6 | .0114 | 15.06 | .017!SI |
| > 979. | 0. | 13. | 1. | -442.67! | -13.9 | 399.4 | 6.03 | 5.6 | .0114 | 15.06 | .017!SI |
| 1013. | 34. | 13. | 1. | -1076.81! | -33.8! | 971.6! | 6.03 | 5.6 | .0294 | 15.06 | .044!SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|-----|---------|----------|--------|--------|-------|------|--------|-------|---------|
| > 0. | 0. | 13. | 1. | -730.39! | -22.9! | 659. ! | 6.03 | 5.6 | .0188 | 15.06 | .028!SI |
| 51. | 51. | 13. | 1. | -281.17! | -8.8 | 253.7 | 6.03 | 5.6 | .0072 | 15.06 | .011!SI |
| > 51. | 0. | 13. | 1. | -281.17! | -8.8 | 253.7 | 6.03 | 5.6 | .0072 | 15.06 | .011!SI |
| 184. | 133. | 13. | 1. | 407.23! | -12.4! | 279.2! | 8.04 | 5.2 | .008 | 12.75 | .01 !SI |

| | | | | | | | | | | | | |
|--------|------|-----|----|----------|-------|--------|-------|------|-------|-------|------|----|
| > 184. | 0. | 13. | 1. | 407.23 | -12.4 | 279.2 | 8.04 | 5.2 | .008 | 12.75 | .01 | SI |
| 236. | 52. | 13. | 1. | 420.15 | -12.8 | 288. | 8.04 | 5.2 | .0082 | 12.75 | .01 | SI |
| 317. | 133. | 13. | 1. | 344.32 | -10.5 | 236.1 | 8.04 | 5.2 | .0067 | 12.75 | .009 | SI |
| > 317. | 0. | 13. | 1. | 344.32 | -10.5 | 236.1 | 8.04 | 5.2 | .0067 | 12.75 | .009 | SI |
| 447. | 130. | 13. | 1. | -443.73 | -13.9 | 400.4 | 6.03 | 5.6 | .0114 | 15.06 | .017 | SI |
| > 447. | 0. | 13. | 1. | -443.73 | -13.9 | 400.4 | 6.03 | 5.6 | .0114 | 15.06 | .017 | SI |
| 501. | 54. | 13. | 2. | -949.83 | -24.4 | 855.7 | 6.03 | 5.91 | .0244 | 15.47 | .038 | SI |
| > 501. | 0. | 13. | 2. | -1801.95 | -46.2 | 1623.3 | 6.03 | 5.91 | .0597 | 15.47 | .092 | SI |
| 580. | 79. | 13. | 4. | -679.24 | -17.3 | 314.7 | 12.06 | 4.84 | .009 | 10.75 | .01 | SI |
| > 580. | 0. | 13. | 4. | -679.24 | -17.3 | 314.7 | 12.06 | 4.84 | .009 | 10.75 | .01 | SI |
| 713. | 133. | 13. | 1. | 730.32 | -22.3 | 500.7 | 8.04 | 5.2 | .0143 | 12.75 | .018 | SI |
| > 713. | 0. | 13. | 1. | 730.32 | -22.3 | 500.7 | 8.04 | 5.2 | .0143 | 12.75 | .018 | SI |
| 846. | 133. | 13. | 1. | 1388.59 | -42.4 | 952. | 8.04 | 5.2 | .0326 | 12.75 | .042 | SI |
| > 846. | 0. | 13. | 1. | 1388.59 | -42.4 | 952. | 8.04 | 5.2 | .0326 | 12.75 | .042 | SI |
| 870. | 24. | 13. | 1. | 1395.32 | -42.6 | 956.6 | 8.04 | 5.2 | .0329 | 12.75 | .042 | SI |
| 979. | 133. | 13. | 1. | -411.4 | -12.9 | 371.2 | 6.03 | 5.6 | .0106 | 15.06 | .016 | SI |
| > 979. | 0. | 13. | 1. | -411.4 | -12.9 | 371.2 | 6.03 | 5.6 | .0106 | 15.06 | .016 | SI |
| 1013. | 34. | 13. | 1. | -998.18 | -31.3 | 900.6 | 6.03 | 5.6 | .0261 | 15.06 | .039 | SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |
| 2 | 22.12 | 3.072 | 6.03 | .838 | 3d16 | 16.08 | 2.234 | 4d16 +4d16 |
| 3 | 28.15 | 3.91 | 12.06 | 1.676 | 3d16 +3d16 | 16.08 | 2.234 | 4d16 +4d16 |
| 4 | 20.11 | 2.793 | 12.06 | 1.676 | 3d16 +3d16 | 8.04 | 1.117 | 4d16 |

MESSAGGI

18) Verifica a taglio per elementi senza armature trasversali non soddisfatta - Vsd > VRd [NTC18 4.1.2.3.5.1].
 31) Armatura inferiore tesa eccessiva (Ro>RoComp+3.5/fyk) [NTC18 7.4.6.2.1] (solo per strutt. dissipative).
 34) Armatura superiore compressa insufficiente [NTC18 7.4.6.2.1] (solo per strutt. dissipative).

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 80 - Travata T022 (trave)
 SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|----|-------|---------|
| 1 | A477 | | 3 | 3 | 3 | 0 | 120. | 120. | 5. | 1. | 5. |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|-----|-----|----------|-------|------|----------|-------|-------|-----|-------|-------|
| > 9. | 9. | 13. | 1. | 996.81 | -.022 | .033 | 5952.43 | -.35 | 1.214 | 3. | .224 | 5.972 |
| 24. | 24. | 13. | 1. | -117.72 | -.003 | .005 | -4558.79 | -.35 | 1.622 | 3. | .177 | 38.73 |
| 96. | 96. | 13. | 1. | 35.36 | -.001 | .001 | 5952.43 | -.35 | 1.214 | 3. | .224 | 168.4 |
| 111. | 111. | 13. | 1. | -1304.69 | -.029 | .056 | -4558.79 | -.35 | 1.622 | 3. | .177 | 3.494 |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|-----|--------|-------|--------|--------|------|------|-----|
| > 0. | 0. | 13. | -1778. | 3056. | 13794. | 12392. | 1.01 | 15. | 2.5 |
| 120. | 120. | 13. | -2058. | 3056. | 13794. | 12392. | 1.01 | 15. | 2.5 |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------|--------|--------|-------|------|--------|-------|-------|
| > 9. | 9. | 3. | 1. | 584.96! | -17.9 | 401. | 8.04 | 5.2 | .0115 | 12.75 | .015 |
| 9. | 9. | 3. | 1. | 584.96 | -17.9 | 401. | 8.04 | 5.2 | .0115 | 12.75 | .015 |
| 111. | 111. | 3. | 1. | -789.21! | -24.7! | 712.1! | 6.03 | 5.6 | .0203 | 15.06 | .031! |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------|--------|-------|-------|------|--------|-------|-------|
| > 9. | 9. | 3. | 1. | 506.71! | -15.5 | 347.4 | 8.04 | 5.2 | .0099 | 12.75 | .013 |
| 9. | 9. | 3. | 1. | 506.71 | -15.5 | 347.4 | 8.04 | 5.2 | .0099 | 12.75 | .013 |
| 111. | 111. | 3. | 1. | -691.56! | -21.7! | 624.! | 6.03 | 5.6 | .0178 | 15.06 | .027! |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | Scls | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------|--------|-------|-------|------|--------|-------|-------|
| > 9. | 9. | 3. | 1. | 477.19! | -14.6 | 327.1 | 8.04 | 5.2 | .0093 | 12.75 | .012 |
| 9. | 9. | 3. | 1. | 477.19 | -14.6 | 327.1 | 8.04 | 5.2 | .0093 | 12.75 | .012 |
| 111. | 111. | 3. | 1. | -653.89! | -20.5! | 590.! | 6.03 | 5.6 | .0169 | 15.06 | .025! |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|------|-------|--------|-------|-------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA TRAVATA IN CEMENTO ARMATO

Nome travata : 81 - Travata T023 (trave)
SEZIONI UTILIZZATE

3) Rettangolare: 30x25; A=720.; Jg=34560.; E=314471.6

DESCRIZIONE CAMPATE

| Cam. | Descriz. | S.ini | Sez. | S.fin | Incl. | L.assi | L.net. | lambda | K | r.Ar. | lam.max |
|------|----------|-------|------|-------|-------|--------|--------|--------|-----|-------|---------|
| 1 | A488 | 3 | 3 | 3 | 0 | 501. | 476. | 20.875 | 1.3 | 5. | 93.244 |
| 2 | A490 | 3 | 3 | 3 | 0 | 512. | 487. | 21.333 | 1.3 | 2.314 | 43.156 |

VERIFICHE ALLO STATO LIMITE ULTIMO

FLESSIONE:

| Progressive | SE | Ar | Msd | Epscl | Epsac | Mrd | Epscl | Epsac | Cam | x/d | Mr/Ms | VE |
|-------------|------|----|-----|-----------|--------|-------|-----------|-------|-------|-----|-------|--------|
| > 0. | 0. | 3. | 1. | -1559.79! | -.035! | .067! | -4558.79 | -.35 | 1.622 | 3. | .177! | 2.923! |
| 0. | 0. | 3. | 1. | 591.47 | -.013 | .019 | 5952.43 | -.35 | 1.214 | 3. | .224 | 10.06 |
| 234. | 234. | 3. | 1. | -16.27 | 0. | .001 | -4558.79 | -.35 | 1.622 | 3. | .177 | 280.2! |
| 479. | 479. | 3. | 3. | 713.84 | -.01 | .012 | 11604.02! | -.35 | .895 | 3. | .281 | 16.26 |
| 492. | 492. | 3. | 3. | 722.81! | -.011 | .012 | 11604.02 | -.35 | .895 | 3. | .281 | 16.05 |
| 501. | 501. | 3. | 3. | -1285.52 | -.018 | .028 | -8888.1 | !-.35 | 1.396 | 3. | .2 | 6.914 |
| 501. | 501. | 3. | 3. | 722.81 | -.011 | .012 | 11604.02 | -.35 | .895 | 3. | .281 | 16.05 |
| > 501. | 0. | 3. | 3. | -2415.52! | -.035 | .053 | -8888.1 | !-.35 | 1.396 | 3. | .2 | 3.68 |
| 523. | 22. | 3. | 3. | 38.61 | -.001 | .001 | 11604.02! | -.35 | .895 | 3. | .281! | 300.6 |
| 875. | 374. | 3. | 1. | 2572.18! | -.058! | .084 | 5952.43 | -.35 | 1.214 | 3. | .224 | 2.314 |
| 909. | 408. | 3. | 1. | -13.7 | 0. | .001 | -4558.79 | -.35 | 1.622 | 3. | .177 | 332.7! |
| 1013. | 512. | 3. | 1. | -2221.38 | -.051 | .096! | -4558.79 | -.35 | 1.622 | 3. | .177! | 2.052! |
| 1013. | 512. | 3. | 1. | 89.26 | -.002 | .003 | 5952.43 | -.35 | 1.214 | 3. | .224 | 66.69 |

TAGLIO:

| Progressive | Se | Vsd | VRd | VRcd | VRsd | Asw | s | ctgT | Ve |
|-------------|------|-----|---------|--------|---------|---------|------|------|---------|
| > 0. | 0. | 3. | -2356. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| 0. | 0. | 3. | 3332.! | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| 267. | 267. | 3. | -2814. | 4732.! | 13794. | 11617. | 1.01 | 16. | 2.5 SI |
| 501. | 501. | 3. | -3179.! | 3056. | 19332.! | 19331.! | 1.01 | 5. | 1.3 SI |
| 501. | 501. | 3. | 2487. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| > 501. | 0. | 3. | -1882. | 5417.! | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| 501. | 0. | 3. | 3731.! | 5417. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |
| 1013. | 512. | 3. | -5057.! | 3056. | 19332.! | 19331.! | 1.01 | 5. | 1.3 SI |
| 1013. | 512. | 3. | 534. | 3056. | 19332. | 19331. | 1.01 | 5. | 1.3 SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

TENSIONI DI ESERCIZIO E FESSURAZIONE - RARE:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|-----------|--------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 3. | 1.1. | -607.39! | -19.! | 548.! | 6.03 | 5.6 | .0157 | 15.06 | .024!SI |
| 9. | 9. | 3. | 1.1. | -590.74 | -18.5 | 533. | 6.03 | 5.6 | .0152 | 15.06 | .023 SI |
| 12. | 12. | 3. | 1.1. | -578.26 | -18.1 | 521.8 | 6.03 | 5.6 | .0149 | 15.06 | .022 SI |
| 22. | 22. | 3. | 1.1. | -534.2 | -16.7 | 482. | 6.03 | 5.6 | .0138 | 15.06 | .021 SI |
| 267. | 267. | 3. | 1.1. | 317.87! | -9.7 | 217.9 | 8.04 | 5.2 | .0062 | 12.75 | .008 SI |
| 501. | 501. | 3. | 3.3. | -277.74 | -5.7 | 127.3 | 12.06 | 5.2 | .0036 | 11. | .004 SI |
| > 501. | 0. | 3. | 3.3. | -1662.16! | -33.9 | 761.6 | 12.06 | 5.2 | .0267 | 11. | .029 SI |
| 875. | 374. | 3. | 1.1. | 1842.89! | -56.3! | 1263.4 | 8.04 | 5.2 | .0475 | 12.75 | .061 SI |
| 1013. | 512. | 3. | 1.1. | -1609.74 | -50.5 | 1452.5! | 6.03 | 5.6 | .0523 | 15.06 | .079!SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - FREQUENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|-----------|--------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 3. | 1.1. | -511.4 | -16.! | 461.4! | 6.03 | 5.6 | .0132 | 15.06 | .02!SI |
| 9. | 9. | 3. | 1.1. | -495.5 | -15.5 | 447.1 | 6.03 | 5.6 | .0128 | 15.06 | .019 SI |
| 22. | 22. | 3. | 1.1. | -441.51 | -13.8 | 398.4 | 6.03 | 5.6 | .0114 | 15.06 | .017 SI |
| 267. | 267. | 3. | 1.1. | 317.04! | -9.7 | 217.4 | 8.04 | 5.2 | .0062 | 12.75 | .008 SI |
| 501. | 501. | 3. | 3.3. | -264.19 | -5.4 | 121. | 12.06 | 5.2 | .0035 | 11. | .004 SI |
| > 501. | 0. | 3. | 3.3. | -1451.99! | -29.6 | 665.3 | 12.06 | 5.2 | .0221 | 11. | .024 SI |
| 875. | 374. | 3. | 1.1. | 1630.06! | -49.8! | 1117.5 | 8.04 | 5.2 | .0405 | 12.75 | .052 SI |
| 1013. | 512. | 3. | 1.1. | -1424.48 | -44.7 | 1285.3! | 6.03 | 5.6 | .0444 | 15.06 | .067 SI |

TENSIONI DI ESERCIZIO E FESSURAZIONE - QUASI PERMANENTI:

| Progressive | Se | Ar | Momento | ScIs | Sacc | As | hc,ef | Eps% | Sr,max | Wd | Ve |
|-------------|------|----|---------|----------|--------|---------|-------|------|--------|-------|---------|
| > 0. | 0. | 3. | 1.1. | -484.32! | -15.2! | 437.! | 6.03 | 5.6 | .0125 | 15.06 | .019!SI |
| 9. | 9. | 3. | 1.1. | -468.76 | -14.7 | 423. | 6.03 | 5.6 | .0121 | 15.06 | .018 SI |
| 22. | 22. | 3. | 1.1. | -415.93 | -13. | 375.3 | 6.03 | 5.6 | .0107 | 15.06 | .016 SI |
| 267. | 267. | 3. | 1.1. | 318.38! | -9.7 | 218.3 | 8.04 | 5.2 | .0062 | 12.75 | .008 SI |
| 501. | 501. | 3. | 3.3. | -283.6 | -5.8 | 129.9 | 12.06 | 5.2 | .0037 | 11. | .004 SI |
| > 501. | 0. | 3. | 3.3. | -1383.3 | -28.2 | 633.8 | 12.06 | 5.2 | .0206 | 11. | .023 SI |
| 875. | 374. | 3. | 1.1. | 1552.51! | -47.4! | 1064.3 | 8.04 | 5.2 | .038 | 12.75 | .048 SI |
| 1013. | 512. | 3. | 1.1. | -1355.14 | -42.5 | 1222.7! | 6.03 | 5.6 | .0414 | 15.06 | .062!SI |

ARMATURE LONGITUDINALI (%=100*Af/Acls - Acls=area intera sezione)

| Nro | Totale | % | Super. | % | Barre | Infer. | % | Barre |
|-----|--------|-------|--------|-------|------------|--------|-------|------------|
| 1 | 14.07 | 1.955 | 6.03 | .838 | 3d16 | 8.04 | 1.117 | 4d16 |
| 2 | 20.11 | 2.793 | 12.06 | 1.676 | 3d16 +3d16 | 8.04 | 1.117 | 4d16 |
| 3 | 28.15 | 3.91 | 12.06 | 1.676 | 3d16 +3d16 | 16.08 | 2.234 | 4d16 +4d16 |

2. Verifica Pilastri in cemento armato

Informazioni generali - Tipologia pilastro 1

Metodo di verifica : stati limite - NTC18 (q=1.5 ; muphi=2.4) ->
Duttilita' : calcolo completo.
: struttura dissipativa in bassa duttilita'.
: dettagli costruttivi del capito 7 attivi.
: dettagli costruttivi del capito 4 attivi.
Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferrì (assi) : longitudinali= 4.1 ; staffe= 2.9
Imperfezioni : M minimo = N * e0 ; M aggiunto = N * ei
Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3
Duttilita'richiesta: verifica attiva (7.4.29) - coefficiente multipl. = 1

MATERIALI

CLS : C25/30; Rck=300; fck=249; fctk=17.91; fctm=25.58; Ecm=314472;
gc=1.5; fcd=141.1; fbd=26.86; fctd=11.94; Ec2=0.2%; Ecu=0.35%
ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
CLS : Scls(rara)=149.4; Scls(quasi permanente)=112; fbd(esercizio)=26.86
ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

| Nome | Descrizione | Tipo | Ses |
|------|----------------------|---------------|-----|
| 1 | SLU SENZA SISMA | SLU (statico) | 1 |
| 4 | SLU con SISMAX PRINC | SLU (sismico) | 16 |
| 5 | SLU con SISMAY PRINC | SLU (sismico) | 16 |
| 8 | Rara | RARA | 1 |
| 9 | Frequente | FREQUENTE | 1 |
| 10 | Quasi Perm | QUASI PERMAN. | 1 |

<-

Informazioni generali - Tipologia pilastro 2

Metodo di verifica : stati limite - NTC18 (q=1.5 ; muphi=3) ->
Duttilita' : calcolo completo.
: struttura dissipativa in bassa duttilita'.
: dettagli costruttivi del capito 7 attivi.
: dettagli costruttivi del capito 4 attivi.
Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferrì (assi) : longitudinali= 4.1 ; staffe= 2.9
Imperfezioni : M minimo = N * e0 ; M aggiunto = N * ei
Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3
Duttilita'richiesta: verifica attiva (7.4.29) - coefficiente multipl. = 1

MATERIALI

CLS : C25/30; Rck=300; fck=249; fctk=17.91; fctm=25.58; Ecm=314472;
gc=1.5; fcd=141.1; fbd=26.86; fctd=11.94; Ec2=0.2%; Ecu=0.35%
ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
CLS : Scls(rara)=149.4; Scls(quasi permanente)=112; fbd(esercizio)=26.86
ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

| Nome | Descrizione | Tipo | Ses |
|------|----------------------|---------------|-----|
| 1 | SLU SENZA SISMA | SLU (statico) | 1 |
| 4 | SLU con SISMAL PRINC | SLU (sismico) | 16 |
| 5 | SLU con SISMAL PRINC | SLU (sismico) | 16 |
| 8 | Rara | RARA | 1 |
| 9 | Frequente | FREQUENTE | 1 |
| 10 | Quasi Perm | QUASI PERMAN. | 1 |
| 11 | SLU NEVE | SLU (statico) | 1 |

<-

Informazioni generali - Tipologia pilastro 3

Metodo di verifica : stati limite - NTC18 (q=1.5 ; muphi=2.4) ->
Duttilita' : calcolo completo.
: struttura dissipativa in bassa duttilita'.
: dettagli costruttivi del capito 7 attivi.
: dettagli costruttivi del capito 4 attivi.
Unita' di misura : cm; daN; daN/cm; daNcm; daN/cm2; deform. %; 1/r %(permille)
Unita' particolari : fessure [Wk]:mm - ferri:mm e cm2 - sezioni:cm e derivate.
Copriferr (assi) : longitudinali= 4.1 ; staffe= 2.9
Imperfezioni : M minimo = N * e0 ; M aggiunto = N * ei
Instabilita' : rigidezza nominale [EC2 5.8.7]; fief=3
Duttilita'richiesta: verifica attiva (7.4.29) - coefficiente multipl. = 1

MATERIALI

CLS : C25/30; Rck=300; fck=249; fctk=17.91; fctm=25.58; Ecm=314472;
gc=1.5; fcd=141.1; fbd=26.86; fctd=11.94; Ec2=0.2%; Ecu=0.35%
ACCIAIO: B450C; ftk=5175; fyk=4500; Es=2100000; gs=1.15; fyd=3913;
ftd=4500; fud=4439.8; Eyd=0.1863%; Eud=6.75%

TENSIONI MASSIME IN ESERCIZIO

GRUPPO : ordinario.
CLS : Scls(rara)=149.4; Scls(quasi permanente)=112; fbd(esercizio)=26.86
ACCIAIO: Sacc(rara)=3600; Coeff.Omogeneizzazione=15

CASI DI CARICO

| Nome | Descrizione | Tipo | Ses |
|------|----------------------|---------------|-----|
| 1 | SLU SENZA SISMA | SLU (statico) | 1 |
| 4 | SLU con SISMAL PRINC | SLU (sismico) | 16 |
| 5 | SLU con SISMAL PRINC | SLU (sismico) | 16 |
| 8 | Rara | RARA | 1 |
| 9 | Frequente | FREQUENTE | 1 |
| 10 | Quasi Perm | QUASI PERMAN. | 1 |

<-

L'elemento che segue fa riferimento alla Tipologia 1.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P001 (ID=50)
Aste : 421; 419; 495
SEZIONI UTILIZZATE

1) Rettangolare: base=25; alt.=30; Acls=750; iy=7.22; iz=8.66

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | ei | ei | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm |
|----|----|-----|-----|------|------|-------|------|-------|-------|------|------------|
| 1 | 1 | 2. | 2. | .8 | .8 | 240. | 216. | 45. | 45. | 8.04 | 1.072 4Φ16 |
| 2 | 1 | 2. | 2. | 1.15 | 1.15 | 345. | 321. | 54. | 54. | 8.04 | 1.072 4Φ16 |
| 3 | 1 | 2. | 2. | 1. | 1. | 300. | 268. | 45. | 45. | 8.04 | 1.072 4Φ16 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | Caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min |
|------|------|----------|------|----------|------|----------|------|----------|
| 1 I | 4- 7 | -268760. | 4- 7 | 268755. | 5- 7 | -291730. | 5- 7 | 291730. |
| 1 S | 4- 5 | -348590. | 4- 5 | 348590. | 4- 5 | -441920. | 4- 5 | 441920. |
| 2 I | 4-12 | -284910. | 4-12 | 284915. | 5-10 | -388470. | 5-10 | 388470. |
| 2 S | 4-12 | -289230. | 4-12 | 289225. | 5-10 | -406100. | 5-10 | 406100. |
| 3 I | 4- 5 | -331480. | 4- 5 | 331480. | 4- 7 | -413980. | 4- 7 | 413970. |
| 3 S | 4-10 | -313185. | 4-10 | 313185. | 5-10 | -392860. | 5-10 | 392870. |

TAGLI GERARCHIA:

| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ |
|----|------|------|---------|------|--------|------|---------|------|--------|
| 1 | 216. | 4-16 | -5402.7 | 4-16 | 5402.7 | 5-15 | -4268.7 | 5-15 | 4268.7 |
| 2 | 321. | 4-12 | -3323.7 | 4-12 | 3323.7 | 5-12 | -2562.1 | 5-12 | 2562.1 |
| 3 | 268. | 4-10 | -3551. | 4-10 | 3551. | 5- 9 | -2783.7 | 5- 9 | 2783.7 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NEd | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | |
|------|------|---------|----------|------|----------|------|----------|--------|----------|--------|--------------|----|
| > 1 | 4-10 | -15089. | 236383. | 1.14 | 195074. | 1.12 | -.151 | -132.6 | -.099 | -2087. | .134 2814.8 | SI |
| 1 | 5- 2 | -7563. | 98072. | 1.04 | -71467. | 1.02 | -.053 | -65.2 | -.036 | -752. | .043 899.2 | SI |
| 1 | 4-10 | -14639. | -75345. | 1.3 | -128665. | 1.16 | -.058 | -70.3 | -.044 | -917.1 | .026 541. | SI |
| > 2 | 5-15 | -10064. | -214024. | 1.18 | 170374. | 1.15 | -.134 | -125.8 | -.085 | -1780. | .137 2882.4 | SI |
| 2 | 1- 1 | -13313. | -19466. | 1.16 | 9007. | 1.09 | -.017 | -22.4 | -.015 | -312.3 | -.008 -159.6 | SI |
| 2 | 5-15 | -9417. | 189291. | 1.19 | -158322. | 1.15 | -.119 | -118. | -.076 | -1589. | .12 2528.2 | SI |
| > 3 | 5-15 | -5043. | -89911. | 1.1 | 91771. | 1.08 | -.058 | -70.2 | -.037 | -783.3 | .059 1228.9 | SI |
| 3 | 5-15 | -4762. | 36980. | 1.04 | -22981. | 1.02 | -.017 | -23.4 | -.013 | -269.1 | .007 152. | SI |
| 3 | 5-15 | -4481. | 151413. | 1.07 | -133245. | 1.06 | -.097 | -103.6 | -.058 | -1228. | .115 2425.1 | SI |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|----------|----------|----------|------|
| 1 I | 4-10 | -207246.7 | 240. | 3846.2 | 10.1562 | 207101. | 219172. | 236383. | .143 |
| 2 I | 5-15 | -100232.3 | 345. | 3843.8 | 10.1624 | -180962. | -192535. | -214024. | .095 |
| 3 S | 5-15 | -131500.8 | 300. | 3813.2 | 10.244 | 141124. | 145605. | 151413. | .048 |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|----------|----------|----------|------|
| 1 I | 4-10 | -347488.6 | 240. | 6448.8 | 8.7225 | 174532. | 186603. | 195074. | .143 |
| 2 I | 5-15 | -168087.7 | 345. | 6446. | 8.7263 | 148600. | 160173. | 170374. | .095 |
| 3 S | 5-15 | -221028.2 | 300. | 6409.3 | 8.7763 | -125724. | -130205. | -133245. | .048 |

TAGLIO Y:

| Asta | Caso | VED | VED ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|---------|----------|---------|---------|---------|-----|-----|------|----|
| 1 I | 4-16 | -863.2 | 5402.7 | 16118.7 | 16118.7 | 16258.7 | .57 | 8. | 2.5 | SI |
| 1 C | 4-16 | -863.2 | 5402.7 | 6786.8 | 6786.8 | 16228.6 | .57 | 19. | 2.5 | SI |
| 1 S | 4-16 | -863.2 | 5402.7 | 16118.7 | 16118.7 | 16198.4 | .57 | 8. | 2.5 | SI |
| 2 I | 4-12 | -1715.1 | 3323.7 | 15796.3 | 15796.3 | 15878.6 | .57 | 8. | 2.45 | SI |
| 2 C | 4-12 | -1715.1 | 3323.7 | 6786.8 | 6786.8 | 15606.2 | .57 | 19. | 2.5 | SI |
| 2 S | 4-12 | -1715.1 | 3323.7 | 15790.7 | 15796.3 | 15790.7 | .57 | 8. | 2.45 | SI |
| 3 I | 4-10 | -1248.5 | 3551. | 15299.9 | 15473.9 | 15299.9 | .57 | 8. | 2.4 | SI |
| 3 C | 4-10 | -1248.5 | 3551. | 6786.8 | 6786.8 | 14822.6 | .57 | 19. | 2.5 | SI |
| 3 S | 4-10 | -1248.5 | 3551. | 15222.3 | 15473.9 | 15222.3 | .57 | 8. | 2.4 | SI |

TAGLIO Z:

| Asta | Caso | VED | VED ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|---------|----------|--------|--------|---------|-----|-----|------|----|
| 1 I | 5-15 | -264.2 | 4268.7 | 13007. | 13007. | 15624.1 | .57 | 8. | 2.5 | SI |
| 1 C | 5-15 | -264.2 | 4268.7 | 5476.6 | 5476.6 | 15594.9 | .57 | 19. | 2.5 | SI |
| 1 S | 5-15 | -264.2 | 4268.7 | 13007. | 13007. | 15565.8 | .57 | 8. | 2.5 | SI |
| 2 I | 5-12 | -1088.7 | -2562.1 | 13007. | 13007. | 14987.8 | .57 | 8. | 2.5 | SI |
| 2 C | 5-12 | -1088.7 | -2562.1 | 5476.6 | 5476.6 | 14945.8 | .57 | 19. | 2.5 | SI |
| 2 S | 5-12 | -1088.7 | -2562.1 | 13007. | 13007. | 14903.8 | .57 | 8. | 2.5 | SI |
| 3 I | 5- 9 | -820. | 2783.7 | 13007. | 13007. | 14310.7 | .57 | 8. | 2.5 | SI |
| 3 C | 5- 9 | -820. | 2783.7 | 5476.6 | 5476.6 | 14274.3 | .57 | 19. | 2.5 | SI |
| 3 S | 5- 9 | -820. | 2783.7 | 13007. | 13007. | 14237.8 | .57 | 8. | 2.5 | SI |

Ned LIMITE (Ned < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | Caso | NED | Nmax | Ncls | % Ncls | VE |
|------|------|----------|----------|----------|--------|----|
| 1 | 4-12 | -16227. | -68786.2 | -105825. | 15.33 | SI |
| 2 | 4-12 | -10992.7 | -68786.2 | -105825. | 10.39 | SI |
| 3 | 4-12 | -5347.1 | -68786.2 | -105825. | 5.05 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NED | MEyd | MEzd | Scls | SaccMin | SaccMax | VE |
|------|------|----------|----------|----------|-------|---------|---------|----|
| 1 I | 8- 1 | -13456.6 | 108705.1 | -92154. | -79.1 | -863.4 | 608.6 | SI |
| 1 C | 8- 1 | -13231.6 | 41798.9 | -55100.6 | -38.9 | -476.8 | 21.3 | SI |
| 1 S | 8- 1 | -13006.6 | -25107.4 | -18047.3 | -25.6 | -335.9 | -116.5 | SI |

| | | | | | | | | | |
|---|---|------|---------|----------|----------|-------|--------|-------|----|
| 2 | I | 8- 1 | -9815.9 | -42676.8 | 67904.1 | -41.2 | -478.4 | 179.6 | SI |
| 2 | C | 8- 1 | -9492.5 | -11946.8 | 5964.1 | -15.5 | -211.1 | -119. | SI |
| 2 | S | 8- 1 | -9169. | 18783.3 | -55976. | -28.4 | -348. | 36. | SI |
| 3 | I | 8- 1 | -5660.7 | -41847.9 | 63598.3 | -41.1 | -438.9 | 395.2 | SI |
| 3 | C | 8- 1 | -5379.5 | 12091.7 | -8093.7 | -11.2 | -145. | -42.1 | SI |
| 3 | S | 8- 1 | -5098.2 | 66031.3 | -79785.8 | -60.7 | -603.6 | 822.3 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | Scls | SaccMin | SaccMax | VE | |
|------|------|------|----------|----------|----------|---------|---------|--------|----|
| 1 | I | 9- 1 | -11778.5 | 95586.1 | -77989.7 | -68.5 | -747.9 | 521. | SI |
| 1 | C | 9- 1 | -11553.5 | 37215.5 | -47936. | -34.1 | -418.1 | 20.6 | SI |
| 1 | S | 9- 1 | -11328.5 | -21155.2 | -17882.4 | -22.6 | -295.7 | -98.3 | SI |
| 2 | I | 9- 1 | -8446.1 | -39854.8 | 60414.3 | -37.4 | -430.8 | 183.4 | SI |
| 2 | C | 9- 1 | -8122.6 | -9924. | 5430.3 | -13.2 | -180.6 | -101.9 | SI |
| 2 | S | 9- 1 | -7799.2 | 20006.8 | -49553.6 | -26.1 | -315.1 | 54.1 | SI |
| 3 | I | 9- 1 | -4642.1 | -33736.9 | 58802.9 | -36.1 | -382.4 | 375.2 | SI |
| 3 | C | 9- 1 | -4360.8 | 8349.4 | -8428.2 | -9.1 | -118. | -33.7 | SI |
| 3 | S | 9- 1 | -4079.6 | 50435.8 | -75659.3 | -52.2 | -516. | 738.1 | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | Scls | SaccMin | SaccMax | VE | |
|------|------|-------|----------|----------|----------|---------|---------|-------|----|
| 1 | I | 10- 1 | -11201.9 | 91069.1 | -73512.7 | -65. | -709.7 | 493.2 | SI |
| 1 | C | 10- 1 | -10976.9 | 35669.5 | -45367.3 | -32.5 | -397.7 | 20.2 | SI |
| 1 | S | 10- 1 | -10751.9 | -19730.1 | -17221.9 | -21.4 | -280.3 | -93.6 | SI |
| 2 | I | 10- 1 | -7997.4 | -38717.2 | 57381.1 | -35.9 | -412.5 | 180.6 | SI |
| 2 | C | 10- 1 | -7674. | -9324.6 | 5208. | -12.5 | -170.7 | -96.2 | SI |
| 2 | S | 10- 1 | -7350.5 | 20067.9 | -46965.1 | -25.1 | -302. | 57.2 | SI |
| 3 | I | 10- 1 | -4336.1 | -31512.3 | 56311.8 | -34.3 | -362.3 | 362.6 | SI |
| 3 | C | 10- 1 | -4054.8 | 7417.7 | -8293.3 | -8.5 | -109.9 | -31.2 | SI |
| 3 | S | 10- 1 | -3773.6 | 46347.7 | -72898.3 | -49.3 | -486.2 | 707.1 | SI |

L'elemento che segue fa riferimento alla Tipologia 2.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P002 (ID=4)
Aste : 159

SEZIONI UTILIZZATE

1) Rettangolare: base=25; alt.=30; Acls=750; iy=7.22; iz=8.66

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | ieiz | ieiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm | | | | | | | |
|----|----|------|-----|------|------|-------|------|-------|-------|-----|-------|-----|--|-------|--|-------|--|------|
| 1 | | 1 2. | 2. | | .78 | .78 | 234. | 206. | | 45. | | 45. | | 12.06 | | 1.608 | | 6Φ16 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min | | | | | | | | | |
|------|------|----------|------|----------|----------|----------|------|----------|---------|--|------|--|----------|--|------|--|---------|
| 1 | I | | 4-13 | | -297225. | | 4-13 | | 297225. | | 5-10 | | -422240. | | 5-10 | | 422240. |
| 1 | S | | 4-12 | | -453275. | | 4-12 | | 453275. | | 4-12 | | -560690. | | 4-12 | | 560690. |

TAGLI GERARCHIA:

| As | Ip | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ | | | | | | | | | |
|----|----|------|-------|------|-------|---------|-------|------|-------|-------|--|------|--|---------|--|------|--|--------|
| 1 | | 206. | | 4- 8 | | -5949.1 | | 4- 8 | | 5949. | | 5- 3 | | -4866.4 | | 5- 3 | | 4866.4 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NEd | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | | | | | | | | | | | | | | | |
|------|------|-------|------|--------|-------|--------|----------|-------|----------|---------|----|------|--|-------|--|--------|--|-------|--|--------|--|-------|--|--------|--|----|
| > 1 | | 4-15 | | -2485. | | 87608. | | 1.03 | | 402276. | | 1.01 | | -.153 | | -133.5 | | -.093 | | -1963. | | .21 | | 3914.9 | | SI |
| 1 | | 4-15 | | -2260. | | 42827. | | 1.01 | | 203144. | | 1.01 | | -.069 | | -80.4 | | -.042 | | -886.5 | | .093 | | 1950.7 | | SI |
| 1 | | 11- 1 | | -4443. | | 12546. | | .999. | | 12525. | | 4.12 | | -.008 | | -10.6 | | -.006 | | -133.7 | | -.001 | | -11.5 | | SI |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu | | | | | | | | | | |
|------|------|----|------|----|-----------|------|------|-----|--------|--|-------|--|--------|--|--------|--|--------|--|------|
| 1 | I | | 4-15 | | -322716.6 | | 234. | | 5693.4 | | 6.861 | | 84995. | | 86933. | | 87608. | | .023 |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu | | | | | | | | | | |
|------|------|----|------|----|-----------|------|------|-----|--------|--|--------|--|---------|--|---------|--|---------|--|------|
| 1 | I | | 4-15 | | -362303.3 | | 234. | | 6391.8 | | 8.8003 | | 397578. | | 399517. | | 402276. | | .023 |

TAGLIO Y:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|---------|----------|---------|---------|---------|------|-----|------|----|
| 1 I | 4- 8 | -1534.8 | -5949.1 | 16091.7 | 16429.1 | 16091.7 | 1.01 | 12. | 2.15 | SI |
| 1 C | 4- 8 | -1534.8 | -5949.1 | 14692.8 | 14977.2 | 14692.8 | 1.01 | 15. | 2.45 | SI |
| 1 S | 4- 8 | -1534.8 | -5949.1 | 16047. | 16047. | 16267. | 1.01 | 12. | 2.1 | SI |

TAGLIO Z:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|--------|----------|---------|---------|---------|------|-----|------|----|
| 1 I | 5- 3 | 1072.3 | -4866.4 | 14490.7 | 14490.7 | 14654.5 | 1.01 | 12. | 2.35 | SI |
| 1 C | 5- 3 | 1072.3 | -4866.4 | 12332.5 | 12332.5 | 13996.3 | 1.01 | 15. | 2.5 | SI |
| 1 S | 5- 3 | 1072.3 | -4866.4 | 14490.7 | 14490.7 | 14593.5 | 1.01 | 12. | 2.35 | SI |

NED LIMITE (Ned < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | Caso | NEd | Nmax | Ncls | % Ncls | VE |
|------|------|---------|----------|----------|--------|----|
| 1 | 4- 5 | -2503.2 | -68786.2 | -105825. | 2.37 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|---------|--------|----------|-------|---------|---------|----|
| 1 I | 8- 1 | -3461.7 | 3733.5 | 125691.8 | -46.2 | -441. | 885.1 | SI |
| 1 C | 8- 1 | -3236.7 | 1866.7 | 63870.4 | -23.6 | -244.7 | 328.6 | SI |
| 1 S | 8- 1 | -3011.7 | 0. | 2049. | -3.7 | -54. | -44.4 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|---------|--------|---------|-------|---------|---------|----|
| 1 I | 9- 1 | -2554.6 | 2634.8 | 78051.1 | -28.9 | -281.5 | 516.7 | SI |
| 1 C | 9- 1 | -2329.6 | 1317.4 | 39642.8 | -14.7 | -156.4 | 180.3 | SI |
| 1 S | 9- 1 | -2104.6 | 0. | 1234.6 | -2.6 | -37.3 | -31.5 | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|-------|---------|--------|--------|-------|---------|---------|----|
| 1 I | 10- 1 | -2327.8 | 2360.1 | 66141. | -24.5 | -241.5 | 424.8 | SI |
| 1 C | 10- 1 | -2102.8 | 1180. | 33586. | -12.5 | -134.2 | 143.5 | SI |
| 1 S | 10- 1 | -1877.8 | 0. | 1031. | -2.3 | -33.1 | -28.2 | SI |

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P002 (ID=51)
Aste : 422; 418; 497

SEZIONI UTILIZZATE

1) Rettangolare: base=25; alt.=30; Acls=750; iy=7.22; iz=8.66

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | eiZ | eiY | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm | |
|----|----|-----|-----|------|------|-------|------|-------|-------|------|-------|------|
| 1 | 1 | 2. | 2. | .8 | .8 | 240. | 216. | 45. | 45. | 8.04 | 1.072 | 4Φ16 |
| 2 | 1 | 2. | 2. | 1.15 | 1.15 | 345. | 321. | 54. | 54. | 8.04 | 1.072 | 4Φ16 |
| 3 | 1 | 2. | 2. | 1. | 1. | 300. | 276. | 46. | 46. | 8.04 | 1.072 | 4Φ16 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min |
|------|------|----------|------|----------|------|----------|------|----------|
| 1 I | 5-10 | -246765. | 5-10 | 246765. | 4- 7 | -393170. | 4- 7 | 393170. |
| 1 S | 5-10 | -415605. | 5-10 | 415605. | 4-15 | -507240. | 4-15 | 507230. |
| 2 I | 5-10 | -263350. | 5-10 | 263350. | 4-12 | -306310. | 4-12 | 306310. |
| 2 S | 5-10 | -267985. | 5-10 | 267990. | 4-12 | -311380. | 4-12 | 311380. |
| 3 I | 5-10 | -336865. | 5-10 | 336865. | 4-15 | -413130. | 4-15 | 413130. |
| 3 S | 5-10 | -276510. | 5-10 | 276510. | 4-15 | -339310. | 4-15 | 339300. |

TAGLI GERARCHIA:

| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ |
|----|------|------|---------|------|--------|------|---------|------|--------|
| 1 | 216. | 5-15 | -5824.4 | 5-15 | 5824.4 | 4-13 | -4923. | 4-13 | 4923. |
| 2 | 321. | 5-13 | -3495.2 | 5-13 | 3495.2 | 4-13 | -2952.7 | 4-13 | 2952.7 |
| 3 | 276. | 4- 8 | -3569.6 | 4- 8 | 3569.6 | 4- 9 | -2957.3 | 4-10 | 2957.3 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NEd | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | | |
|------|------|---------|----------|------|---------|-----|----------|--------|----------|--------|------|--------|----|
| > 1 | 5-10 | -18734. | -118547. | 1.28 | 423250. | 1.1 | -1.18 | -139.7 | -1.22 | -2554. | .167 | 3508.2 | SI |

| | | | | | | | | | | | | | |
|-----|------|---------|----------|------|----------|------|-------|--------|-------|--------|-------|--------|----|
| 1 | 5-10 | -18509. | -62595. | 1.1 | 114130. | 1.06 | -.051 | -62.3 | -.04 | -842. | .01 | 203.7 | SI |
| 1 | 4-15 | -23771. | -192726. | 1.27 | -107541. | 1.33 | -.097 | -103.8 | -.072 | -1504. | .042 | 886.3 | SI |
| > 2 | 5-12 | -14650. | 181266. | 1.31 | 372815. | 1.15 | -.196 | -141. | -.128 | -2694. | .194 | 3913.7 | SI |
| 2 | 1- 1 | -23428. | 8147. | 1.3 | 11818. | 1.16 | -.024 | -31.6 | -.023 | -476.7 | -.018 | -369.5 | SI |
| 2 | 5-12 | -14004. | -172239. | 1.31 | -363046. | 1.15 | -.184 | -140.2 | -.121 | -2540. | .183 | 3838.9 | SI |
| > 3 | 5-12 | -7772. | 142326. | 1.13 | 223858. | 1.08 | -.122 | -119.6 | -.078 | -1632. | .131 | 2749. | SI |
| 3 | 5-12 | -7490. | -16707. | 1.06 | -51842. | 1.04 | -.019 | -25. | -.015 | -313.6 | .003 | 61.8 | SI |
| 3 | 5-12 | -7209. | -174135. | 1.11 | -317699. | 1.06 | -.183 | -140.1 | -.113 | -2363. | .222 | 3915.9 | SI |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | | M0Ed | | MEd | | nu | |
|------|------|-----------|------|--------|---------|----------|--|----------|--|----------|--|------|--|
| 1 I | 5-10 | -207983.7 | 240. | 3859.9 | 10.1202 | -92882. | | -107869. | | -118547. | | .177 | |
| 2 I | 5-12 | -100877.6 | 345. | 3868.6 | 10.0974 | 138093. | | 154941. | | 181266. | | .138 | |
| 3 S | 5-12 | -131942.1 | 300. | 3826. | 10.2098 | -156670. | | -163879. | | -174135. | | .073 | |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | | M0Ed | | MEd | | nu | |
|------|------|-----------|------|--------|---------|----------|--|----------|--|----------|--|------|--|
| 1 I | 5-10 | -348373.1 | 240. | 6465.3 | 8.7003 | 385502. | | 400490. | | 423250. | | .177 | |
| 2 I | 5-12 | -168862. | 345. | 6475.7 | 8.6863 | 323622. | | 340470. | | 372815. | | .138 | |
| 3 S | 5-12 | -221557.8 | 300. | 6424.6 | 8.7554 | -299346. | | -306555. | | -317699. | | .073 | |

TAGLIO Y:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | | Asw | | s | | ctgT | VE |
|------|------|---------|----------|---------|---------|---------|--|-----|--|-----|--|------|----|
| 1 I | 5-15 | -2026.6 | 5824.4 | 16118.7 | 16118.7 | 17030.5 | | .57 | | 8. | | 2.5 | SI |
| 1 C | 5-15 | -2026.6 | 5824.4 | 6786.8 | 6786.8 | 17000.4 | | .57 | | 19. | | 2.5 | SI |
| 1 S | 5-15 | -2026.6 | 5824.4 | 16118.7 | 16118.7 | 16970.2 | | .57 | | 8. | | 2.5 | SI |
| 2 I | 5-13 | -1710.3 | -3495.2 | 15937.2 | 16118.7 | 15937.2 | | .57 | | 8. | | 2.5 | SI |
| 2 C | 5-13 | -1710.3 | -3495.2 | 6786.8 | 6786.8 | 15893.9 | | .57 | | 19. | | 2.5 | SI |
| 2 S | 5-13 | -1710.3 | -3495.2 | 15850.6 | 16118.7 | 15850.6 | | .57 | | 8. | | 2.5 | SI |
| 3 I | 4- 8 | -944.3 | 3569.6 | 15473.9 | 15473.9 | 15507.4 | | .57 | | 8. | | 2.4 | SI |
| 3 C | 4- 8 | -944.3 | 3569.6 | 6786.8 | 6786.8 | 15024.1 | | .57 | | 19. | | 2.5 | SI |
| 3 S | 4- 8 | -944.3 | 3569.6 | 15429.8 | 15473.9 | 15429.8 | | .57 | | 8. | | 2.4 | SI |

TAGLIO Z:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | | Asw | | s | | ctgT | VE |
|------|------|--------|----------|--------|--------|---------|--|-----|--|-----|--|------|----|
| 1 I | 4-13 | 1278.7 | -4923. | 13007. | 13007. | 16863.4 | | .57 | | 8. | | 2.5 | SI |
| 1 C | 4-13 | 1278.7 | -4923. | 5476.6 | 5476.6 | 16834.2 | | .57 | | 19. | | 2.5 | SI |
| 1 S | 4-13 | 1278.7 | -4923. | 13007. | 13007. | 16805.1 | | .57 | | 8. | | 2.5 | SI |
| 2 I | 4-13 | 1475.3 | 2952.7 | 13007. | 13007. | 15848.8 | | .57 | | 8. | | 2.5 | SI |
| 2 C | 4-13 | 1475.3 | 2952.7 | 5476.6 | 5476.6 | 15806.9 | | .57 | | 19. | | 2.5 | SI |
| 2 S | 4-13 | 1475.3 | 2952.7 | 13007. | 13007. | 15764.9 | | .57 | | 8. | | 2.5 | SI |
| 3 I | 4- 9 | 1424.7 | -2957.3 | 13007. | 13007. | 14814.3 | | .57 | | 8. | | 2.5 | SI |
| 3 C | 4- 9 | 1424.7 | -2957.3 | 5476.6 | 5476.6 | 14777.8 | | .57 | | 19. | | 2.5 | SI |
| 3 S | 4- 9 | 1424.7 | -2957.3 | 13007. | 13007. | 14741.3 | | .57 | | 8. | | 2.5 | SI |

NED LIMITE (Ned < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | | Caso | | NEd | | Nmax | | Ncls | | % Ncls | VE |
|------|--|------|--|----------|--|----------|--|----------|--|--------|----|
| 1 | | 4-12 | | -24228.9 | | -68786.2 | | -105825. | | 22.9 | SI |
| 2 | | 4-12 | | -16382.2 | | -68786.2 | | -105825. | | 15.48 | SI |
| 3 | | 4-15 | | -8385.1 | | -68786.2 | | -105825. | | 7.92 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | | MEyd | | MEzd | | ScIs | | SaccMin | SaccMax | VE | |
|------|------|----------|--|-----------|--|-----------|--|--------|--|---------|---------|--------|----|
| 1 I | 8- 1 | -24032.7 | | -45145.8 | | 48145.3 | | -50.2 | | -652. | | -183.8 | SI |
| 1 C | 8- 1 | -23807.7 | | -52156.2 | | 1683.2 | | -41.8 | | -557.8 | | -270.2 | SI |
| 1 S | 8- 1 | -23582.7 | | -59166.6 | | -44779. | | -52.7 | | -673.8 | | -146.3 | SI |
| 2 I | 8- 1 | -17002.4 | | 103736.7 | | 54879.1 | | -63.5 | | -740.9 | | 199.1 | SI |
| 2 C | 8- 1 | -16678.9 | | 4487.3 | | 7159.4 | | -22.1 | | -318.9 | | -261.2 | SI |
| 2 S | 8- 1 | -16355.5 | | -94762.1 | | -40560.3 | | -55.6 | | -657.1 | | 117.1 | SI |
| 3 I | 8- 1 | -9702.7 | | 117023. | | 84366.4 | | -84. | | -854. | | 965.4 | SI |
| 3 C | 8- 1 | -9421.5 | | -10066.2 | | -10511.8 | | -15.9 | | -215.5 | | -112.2 | SI |
| 3 S | 8- 1 | -9140.2 | | -137155.4 | | -105389.9 | | -103.4 | | -1012.1 | | 1407.9 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|----------|-----------|----------|-------|---------|---------|----|
| 1 I | 9- 1 | -21000.2 | -37355.3 | 40640.9 | -43. | -560.7 | -169.6 | SI |
| 1 C | 9- 1 | -20775.2 | -45414.7 | 1025.6 | -36.4 | -485.4 | -237.1 | SI |
| 1 S | 9- 1 | -20550.2 | -53474. | -38589.7 | -46.4 | -591.3 | -123.4 | SI |
| 2 I | 9- 1 | -14641.6 | 91408.1 | 48925.9 | -56.1 | -651.3 | 190.9 | SI |
| 2 C | 9- 1 | -14318.2 | 4099.3 | 5914.4 | -19. | -273.9 | -224.1 | SI |
| 2 S | 9- 1 | -13994.7 | -83209.4 | -37097. | -49.1 | -577.2 | 120.4 | SI |
| 3 I | 9- 1 | -8013.5 | 105181.9 | 71288.3 | -74.4 | -745.7 | 909.8 | SI |
| 3 C | 9- 1 | -7732.3 | -10066.2 | -9361.8 | -13.7 | -183.4 | -85.5 | SI |
| 3 S | 9- 1 | -7451. | -125314.3 | -90012. | -92.8 | -892.4 | 1344.4 | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|-------|----------|-----------|----------|-------|---------|---------|----|
| 1 I | 10- 1 | -19931.3 | -35096.9 | 37864.4 | -40.6 | -529.6 | -163.6 | SI |
| 1 C | 10- 1 | -19706.3 | -42907.7 | 821.9 | -34.4 | -459.6 | -225.7 | SI |
| 1 S | 10- 1 | -19481.3 | -50718.5 | -36220.7 | -43.9 | -559.8 | -117.8 | SI |
| 2 I | 10- 1 | -13843.7 | 86417.6 | 46524.8 | -53.1 | -616.6 | 181.5 | SI |
| 2 C | 10- 1 | -13520.3 | 3924.7 | 5516.1 | -17.9 | -258.6 | -211.6 | SI |
| 2 S | 10- 1 | -13196.8 | -78568.2 | -35492.6 | -46.5 | -546.2 | 116. | SI |
| 3 I | 10- 1 | -7489.2 | 99885.7 | 66807.2 | -70.4 | -703.9 | 870.8 | SI |
| 3 C | 10- 1 | -7208. | -9805.7 | -8881.6 | -12.9 | -172.5 | -78.2 | SI |
| 3 S | 10- 1 | -6926.7 | -119497.1 | -84570.4 | -88.2 | -844.3 | 1293.8 | SI |

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P003 (ID=52)
Aste : 423; 420; 499

SEZIONI UTILIZZATE

1) Rettangolare: base=25; alt.=30; Acls=750; iy=7.22; iz=8.66

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | eiz | eiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm |
|----|----|-----|-----|------|------|-------|------|-------|-------|------|------------|
| 1 | 1 | 2. | 2. | .8 | .8 | 240. | 216. | 45. | 45. | 8.04 | 1.072 4Φ16 |
| 2 | 1 | 2. | 2. | 1.15 | 1.15 | 345. | 321. | 54. | 54. | 8.04 | 1.072 4Φ16 |
| 3 | 1 | 2. | 2. | 1. | 1. | 300. | 276. | 46. | 46. | 8.04 | 1.072 4Φ16 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min |
|------|------|----------|------|----------|------|----------|------|----------|
| 1 I | 4- 2 | -305910. | 4- 2 | 305910. | 5-12 | -300120. | 5-12 | 300120. |
| 1 S | 4- 4 | -343050. | 4- 4 | 343050. | 4- 4 | -431610. | 4- 4 | 431610. |
| 2 I | 4-13 | -298090. | 4-13 | 298090. | 5- 7 | -301110. | 5- 7 | 301110. |
| 2 S | 4-13 | -302015. | 4-13 | 302015. | 5- 7 | -326020. | 5- 7 | 326020. |
| 3 I | 4- 4 | -328160. | 4- 4 | 328160. | 5- 5 | -393700. | 5- 5 | 393700. |
| 3 S | 4-15 | -312270. | 4-15 | 312270. | 5- 7 | -297720. | 5- 7 | 297720. |

TAGLI GERARCHIA:

| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ |
|----|------|------|---------|------|--------|------|---------|------|--------|
| 1 | 216. | 4-13 | -5376.1 | 4-13 | 5376.1 | 5- 4 | -4224.8 | 5- 4 | 4224.8 |
| 2 | 321. | 4-15 | -3260.6 | 4-15 | 3260.6 | 5- 7 | -2536.8 | 5- 7 | 2536.8 |
| 3 | 276. | 5-12 | -3323. | 5-12 | 3323. | 5- 5 | -2671.3 | 5- 5 | 2671.3 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NEd | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | |
|------|------|---------|----------|------|----------|------|----------|--------|----------|--------|--------------|----|
| > 1 | 5-13 | -7032. | -256648. | 1.06 | -132179. | 1.07 | -.14 | -128.3 | -.082 | -1729. | .169 3548.8 | SI |
| 1 | 5-13 | -6807. | -130081. | 1.04 | -56544. | 1.02 | -.062 | -73.8 | -.039 | -812.9 | .062 1301.6 | SI |
| 1 | 4-13 | -15111. | -71873. | 1.32 | -123879. | 1.17 | -.056 | -67.5 | -.042 | -884.4 | .022 457. | SI |
| > 2 | 4-13 | -10394. | 171885. | 1.21 | 314378. | 1.11 | -.167 | -137.2 | -.107 | -2249. | .177 3711.9 | SI |
| 2 | 1- 1 | -11685. | 17540. | 1.14 | 7489. | 1.08 | -.014 | -19.7 | -.013 | -273.3 | -.007 -139.5 | SI |
| 2 | 4-13 | -9747. | -146872. | 1.22 | -305747. | 1.11 | -.151 | -132.8 | -.097 | -2041. | .163 3432.5 | SI |
| > 3 | 1- 1 | -6687. | 174392. | 1.1 | 104564. | 1.1 | -.095 | -102.5 | -.058 | -1220. | .107 2242.3 | SI |
| 3 | 5- 4 | -4283. | -55036. | 1.04 | -19353. | 1.02 | -.023 | -31. | -.016 | -328.1 | .018 368.9 | SI |
| 3 | 1- 1 | -5956. | -285132. | 1.08 | -124235. | 1.08 | -.154 | -133.7 | -.088 | -1843. | .202 3914.3 | SI |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|----------|----------|----------|------|
| 1 I | 5-13 | -205617.2 | 240. | 3815.9 | 10.2367 | -242244. | -247870. | -256648. | .066 |
| 2 I | 4-13 | -100278.8 | 345. | 3845.6 | 10.1577 | 142115. | 154068. | 171885. | .098 |
| 3 S | 1- 1 | -131766.7 | 300. | 3820.9 | 10.2233 | -264705. | -270661. | -285132. | .063 |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|----------|----------|----------|------|
| 1 I | 5-13 | -345533.2 | 240. | 6412.6 | 8.7719 | -123863. | -129489. | -132179. | .066 |
| 2 I | 4-13 | -168143.5 | 345. | 6448.2 | 8.7234 | 282990. | 294943. | 314378. | .098 |
| 3 S | 1- 1 | -221347.3 | 300. | 6418.5 | 8.7637 | -114526. | -120482. | -124235. | .063 |

TAGLIO Y:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|---------|----------|---------|---------|---------|-----|----|------|----|
| 1 I | 4-13 | -1064.3 | 5376.1 | 16118.7 | 16118.7 | 16261.5 | .57 | 8. | 2.5 | SI |

| | | | | | | | | | | | |
|---|---|------|---------|--------|---------|---------|---------|-----|-----|------|----|
| 1 | C | 4-13 | -1064.3 | 5376.1 | 6786.8 | 6786.8 | 16231.4 | .57 | 19. | 2.5 | SI |
| 1 | S | 4-13 | -1064.3 | 5376.1 | 16118.7 | 16118.7 | 16201.2 | .57 | 8. | 2.5 | SI |
| 2 | I | 4-15 | -1592.2 | 3260.6 | 15697.9 | 15796.3 | 15697.9 | .57 | 8. | 2.45 | SI |
| 2 | C | 4-15 | -1592.2 | 3260.6 | 6786.8 | 6786.8 | 15428.1 | .57 | 19. | 2.5 | SI |
| 2 | S | 4-15 | -1592.2 | 3260.6 | 15609.9 | 15796.3 | 15609.9 | .57 | 8. | 2.45 | SI |
| 3 | I | 5-12 | -742.6 | 3323. | 15151.6 | 15151.6 | 15333.1 | .57 | 8. | 2.35 | SI |
| 3 | C | 5-12 | -742.6 | 3323. | 6786.8 | 6786.8 | 14637.4 | .57 | 19. | 2.5 | SI |
| 3 | S | 5-12 | -742.6 | 3323. | 15151.6 | 15151.6 | 15254.4 | .57 | 8. | 2.35 | SI |

TAGLIO Z:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE | |
|------|------|------|----------|--------|--------|--------|---------|-----|------|-----|----|
| 1 | I | 5- 4 | 678.3 | 4224.8 | 13007. | 13007. | 15549.7 | .57 | 8. | 2.5 | SI |
| 1 | C | 5- 4 | 678.3 | 4224.8 | 5476.6 | 5476.6 | 15520.5 | .57 | 19. | 2.5 | SI |
| 1 | S | 5- 4 | 678.3 | 4224.8 | 13007. | 13007. | 15491.3 | .57 | 8. | 2.5 | SI |
| 2 | I | 5- 7 | 1476.3 | 2536.8 | 13007. | 13007. | 14916.2 | .57 | 8. | 2.5 | SI |
| 2 | C | 5- 7 | 1476.3 | 2536.8 | 5476.6 | 5476.6 | 14874.3 | .57 | 19. | 2.5 | SI |
| 2 | S | 5- 7 | 1476.3 | 2536.8 | 13007. | 13007. | 14832.3 | .57 | 8. | 2.5 | SI |
| 3 | I | 5- 5 | 1417.2 | 2671.3 | 13007. | 13007. | 14246.1 | .57 | 8. | 2.5 | SI |
| 3 | C | 5- 5 | 1417.2 | 2671.3 | 5476.6 | 5476.6 | 14209.6 | .57 | 19. | 2.5 | SI |
| 3 | S | 5- 5 | 1417.2 | 2671.3 | 13007. | 13007. | 14173.1 | .57 | 8. | 2.5 | SI |

NED LIMITE (NED < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | Caso | NED | Nmax | Ncls | % Ncls | VE |
|------|------|----------|----------|----------|--------|----|
| 1 | 4-13 | -15560.8 | -68786.2 | -105825. | 14.7 | SI |
| 2 | 4-13 | -10394.2 | -68786.2 | -105825. | 9.82 | SI |
| 3 | 4-13 | -4829. | -68786.2 | -105825. | 4.56 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE | |
|------|------|------|----------|-----------|----------|---------|---------|--------|----|
| 1 | I | 8- 1 | -12211.6 | -102089.6 | -69743.9 | -68.5 | -748.6 | 505.1 | SI |
| 1 | C | 8- 1 | -11986.6 | -80352.5 | -43105.2 | -49.2 | -564.8 | 205.6 | SI |
| 1 | S | 8- 1 | -11761.6 | -58615.4 | -16466.5 | -33.2 | -404.6 | -.1 | SI |
| 2 | I | 8- 1 | -8749.4 | 101025. | 67337.2 | -70. | -718.3 | 762.9 | SI |
| 2 | C | 8- 1 | -8426. | 10999.1 | 5057.8 | -13.8 | -187.9 | -105.2 | SI |
| 2 | S | 8- 1 | -8102.5 | -79026.9 | -57221.5 | -55.3 | -585.1 | 512.3 | SI |
| 3 | I | 8- 1 | -4788. | 113544. | 68039.5 | -80.3 | -731.2 | 1358.4 | SI |
| 3 | C | 8- 1 | -4506.8 | -36715.6 | -7278.2 | -18.7 | -209.5 | 92.2 | SI |
| 3 | S | 8- 1 | -4225.5 | -186975.1 | -82595.9 | -121.6 | -1014.6 | 2499.3 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE | |
|------|------|------|----------|-----------|----------|---------|---------|--------|----|
| 1 | I | 9- 1 | -10973.8 | -90443.3 | -60980.8 | -60.3 | -661.1 | 432.5 | SI |
| 1 | C | 9- 1 | -10748.8 | -71742.4 | -38509.5 | -44. | -504.8 | 181.6 | SI |
| 1 | S | 9- 1 | -10523.8 | -53041.6 | -16038.3 | -30.3 | -367.3 | 6.1 | SI |
| 2 | I | 9- 1 | -7757. | 92103.6 | 60539.6 | -63.7 | -650.4 | 711.3 | SI |
| 2 | C | 9- 1 | -7433.5 | 9332.8 | 4687.6 | -12.1 | -165.3 | -93.2 | SI |
| 2 | S | 9- 1 | -7110.1 | -73438. | -51164.4 | -51. | -534.4 | 499.8 | SI |
| 3 | I | 9- 1 | -4074.9 | 99742.9 | 62806.4 | -71.9 | -653.5 | 1229.4 | SI |
| 3 | C | 9- 1 | -3793.7 | -27497.2 | -7331.4 | -14.6 | -167. | 54.8 | SI |
| 3 | S | 9- 1 | -3512.4 | -154737.3 | -77469.3 | -104.7 | -881.8 | 2125. | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE | |
|------|------|-------|----------|----------|----------|---------|---------|--------|----|
| 1 | I | 10- 1 | -10537.2 | -86419.5 | -58295.3 | -57.6 | -632. | 409.9 | SI |
| 1 | C | 10- 1 | -10312.2 | -68542.7 | -36861.1 | -42. | -482.8 | 171.8 | SI |
| 1 | S | 10- 1 | -10087.2 | -50666. | -15426.8 | -29. | -351.7 | 5.3 | SI |
| 2 | I | 10- 1 | -7422.6 | 88381. | 57773.8 | -61. | -622.7 | 682.6 | SI |
| 2 | C | 10- 1 | -7099.2 | 8798.1 | 4525.5 | -11.5 | -157.7 | -89.2 | SI |
| 2 | S | 10- 1 | -6775.8 | -70784.9 | -48722.9 | -49. | -512.5 | 484.9 | SI |
| 3 | I | 10- 1 | -3855.8 | 94735.3 | 60243.4 | -68.6 | -623. | 1173.4 | SI |
| 3 | C | 10- 1 | -3574.5 | -24925.9 | -7186. | -13.4 | -154.5 | 45.5 | SI |
| 3 | S | 10- 1 | -3293.3 | -144587. | -74615.5 | -98.8 | -834.3 | 1998.8 | SI |

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P004 (ID=53)
Aste : 424; 412; 405; 389; 390
SEZIONI UTILIZZATE

1) Rettangolare: base=25; alt.=30; Acls=750; iy=7.22; iz=8.66

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | ieiz | ieiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm | |
|----|----|-----|-----|------|------|-------|------|-------|-------|------|-------|------|
| 1 | I | 2. | 2. | .8 | .8 | 240. | 216. | 45. | 45. | 8.04 | 1.072 | 4Φ16 |
| 2 | I | 2. | 2. | 1.15 | 1.15 | 345. | 321. | 54. | 54. | 8.04 | 1.072 | 4Φ16 |
| 3 | I | 2. | 2. | 1. | 1. | 300. | 276. | 46. | 46. | 8.04 | 1.072 | 4Φ16 |
| 4 | I | 2. | 2. | .5 | .5 | 150. | 150. | 45. | 45. | 8.04 | 1.072 | 4Φ16 |
| 5 | I | 2. | 2. | .17 | .17 | 50. | 26. | 0. | 0. | 8.04 | 1.072 | 4Φ16 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min | |
|------|---|------|----------|------|----------|------|----------|------|----------|--|
| 1 | I | 4- 5 | -265420. | 4- 5 | 265420. | 5- 4 | -308250. | 5- 4 | 308250. | |
| 1 | S | 4- 5 | -378675. | 4- 5 | 378675. | 5- 1 | -560340. | 5- 2 | 560330. | |
| 2 | I | 4- 5 | -238705. | 4- 5 | 238705. | 5-15 | -405090. | 5-15 | 405090. | |
| 2 | S | 4- 5 | -230840. | 4- 5 | 230840. | 5-15 | -424160. | 5-15 | 424150. | |
| 3 | I | 4- 5 | -347255. | 4- 5 | 347255. | 5- 3 | -463300. | 5- 4 | 463290. | |
| 3 | S | 4- 5 | -327530. | 4- 5 | 327530. | 5- 2 | -447380. | 5- 2 | 447380. | |
| 4 | I | 4- 5 | -314820. | 4- 5 | 314815. | 5- 1 | -390160. | 5- 1 | 390150. | |
| 4 | S | 4- 5 | -314485. | 4- 5 | 314480. | 5- 1 | -394000. | 5- 1 | 394000. | |
| 5 | I | 4- 5 | -312595. | 4- 6 | 312590. | 5- 3 | -391840. | 5- 3 | 391840. | |
| 5 | S | 5- 7 | -312110. | 5- 7 | 312110. | 5- 7 | -391400. | 4-10 | 391400. | |

TAGLI GERARCHIA:

| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ | |
|----|------|------|---------|------|--------|------|---------|------|--------|--|
| 1 | 216. | 4-12 | -6040.9 | 4-12 | 6040.9 | 5-13 | -4947.7 | 5-13 | 4947.7 | |
| 2 | 321. | 4-10 | -3632.2 | 4-10 | 3632.2 | 5-13 | -2968.7 | 5-13 | 2968.7 | |
| 3 | 276. | 4- 7 | -3722.1 | 4- 7 | 3722.1 | 5-13 | -3000.8 | 5-13 | 3000.8 | |
| 4 | 150. | 5-16 | -5794.2 | 5-15 | 5794.1 | 5-16 | -4643. | 5-16 | 4643. | |
| 5 | 26. | 4-10 | -238. | 4- 7 | 352.4 | 5- 2 | -273.4 | 4- 1 | 0. | |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NED | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | |
|------|------|---------|----------|------|----------|------|----------|--------|----------|--------|-------|--------|
| > 1 | 4- 5 | -22026. | 196128. | 1.24 | -416616. | 1.12 | -.218 | -141.1 | -.149 | -3120. | .183 | 3841. |
| 1 | 1- 1 | -38043. | 74938. | 1.22 | -4906. | 1.12 | -.051 | -63.1 | -.046 | -958.4 | -.022 | -468.2 |
| 1 | 4- 7 | -22918. | -72251. | 7.37 | 264230. | 1.16 | -.1 | -105.9 | -.075 | -1568. | .052 | 1081.6 |
| > 2 | 4- 7 | -16053. | -123363. | 1.45 | -411770. | 1.16 | -.178 | -139.4 | -.118 | -2482. | .176 | 3702.1 |
| 2 | 1- 1 | -26292. | -15246. | 1.35 | -36. | 1.19 | -.026 | -34.2 | -.025 | -522.5 | -.021 | -432.8 |
| 2 | 4- 7 | -15406. | 105421. | 1.49 | 418009. | 1.16 | -.171 | -138.2 | -.113 | -2378. | .176 | 3686.9 |
| > 3 | 4- 7 | -8803. | -50549. | 1.32 | -216105. | 1.09 | -.079 | -89.4 | -.052 | -1096. | .081 | 1708.9 |
| 3 | 1- 1 | -14853. | -12173. | 1.13 | -3410. | 1.07 | -.016 | -21.1 | -.015 | -306.3 | -.011 | -221.2 |
| 3 | 4-12 | -8223. | 59574. | 1.26 | -258802. | 1.08 | -.096 | -102.9 | -.062 | -1295. | .11 | 2311.1 |
| > 4 | 1- 1 | -3439. | -142031. | 1.02 | -26371. | 1.07 | -.057 | -68.8 | -.031 | -644. | .08 | 1676.9 |
| 4 | 1- 1 | -3257. | -74378. | 1.01 | -15625. | 1. | -.03 | -38.6 | -.017 | -365.4 | .034 | 711.3 |
| 4 | 1- 1 | -3074. | -10003. | 1.19 | -8148. | 1.24 | -.006 | -8. | -.005 | -99.8 | 0. | -7. |
| > 5 | 4- 5 | -918. | -6938. | 1.02 | -12427. | 1.01 | -.005 | -7.6 | -.004 | -79.8 | .004 | 83.6 |
| 5 | 1- 1 | -2317. | -4202. | 1. | -3413. | 1. | -.003 | -4.5 | -.003 | -59.5 | -.001 | -20.9 |
| 5 | 1- 1 | -2256. | 4891. | 999. | -4890. | 10.3 | -.004 | -5. | -.003 | -63.8 | -.001 | -14.5 |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu | |
|------|------|------|-----------|------|---------|---------|----------|----------|----------|------|
| 1 | I | 4- 5 | -208649.6 | 240. | 3872.2 | 10.0879 | 157802. | 175423. | 196128. | .208 |
| 2 | I | 4- 7 | -101074.9 | 345. | 3876.1 | 10.0777 | -85310. | -103771. | -123363. | .152 |
| 3 | I | 4-12 | -132106.1 | 300. | 3830.8 | 10.1971 | 47390. | 55613. | 59574. | .083 |
| 4 | S | 1- 1 | -523852. | 150. | 3797.6 | 10.2861 | -139379. | -141098. | -142031. | .033 |
| 5 | I | 4- 5 | -4705543. | 50. | 3790.3 | 10.306 | -6783. | -6936. | -6938. | .009 |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu | |
|------|------|------|-----------|------|---------|--------|----------|----------|----------|------|
| 1 | I | 4- 5 | -349172.1 | 240. | 6480.1 | 8.6804 | -372714. | -390335. | -416616. | .208 |
| 2 | I | 4- 7 | -169098.8 | 345. | 6484.8 | 8.6741 | -354220. | -372681. | -411770. | .152 |
| 3 | S | 4-12 | -221754.6 | 300. | 6430.3 | 8.7476 | -240326. | -248549. | -258802. | .083 |
| 4 | I | 1- 1 | -881531.5 | 150. | 6390.6 | 8.802 | -24548. | -26268. | -26371. | .033 |
| 5 | I | 4- 5 | -7922833. | 50. | 6381.7 | 8.8142 | -12272. | -12425. | -12427. | .009 |

TAGLIO Y:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|------|----------|--------|---------|---------|---------|-----|------|------|
| 1 | I | 4-12 | -2447.6 | 6040.9 | 16118.7 | 16118.7 | 17310.9 | .57 | 8. | 2.5 |
| 1 | C | 4-12 | -2447.6 | 6040.9 | 6786.8 | 6786.8 | 17280.7 | .57 | 19. | 2.5 |
| 1 | S | 4-12 | -2447.6 | 6040.9 | 16118.7 | 16118.7 | 17250.6 | .57 | 8. | 2.5 |
| 2 | I | 4-10 | -2026.1 | 3632.2 | 16118.7 | 16118.7 | 16219.4 | .57 | 8. | 2.5 |
| 2 | C | 4-10 | -2026.1 | 3632.2 | 6786.8 | 6786.8 | 16176.1 | .57 | 19. | 2.5 |
| 2 | S | 4-10 | -2026.1 | 3632.2 | 16118.7 | 16118.7 | 16132.8 | .57 | 8. | 2.5 |
| 3 | I | 4- 2 | 1176.4 | 3718.5 | 15536.6 | 15796.3 | 15536.6 | .57 | 8. | 2.45 |

| | | | | | | | | | | |
|-----|------|--------|---------|---------|---------|---------|-----|-----|------|----|
| 3 C | 4- 7 | 1461. | 3722.1 | 6786.8 | 6786.8 | 15318.5 | .57 | 19. | 2.5 | SI |
| 3 S | 4- 2 | 1176.4 | 3718.5 | 15473.9 | 15473.9 | 15688. | .57 | 8. | 2.4 | SI |
| 4 I | 5-16 | 3.8 | -5794.2 | 15021.8 | 15151.6 | 15021.8 | .57 | 8. | 2.35 | SI |
| 4 C | 5-16 | 3.8 | -5794.2 | 6786.8 | 6786.8 | 14358.2 | .57 | 19. | 2.5 | SI |
| 4 S | 5-16 | 3.8 | -5794.2 | 14982.4 | 15151.6 | 14982.4 | .57 | 8. | 2.35 | SI |
| 5 I | 4- 7 | 234.9 | 352.4 | 14941.8 | 15151.6 | 14941.8 | .57 | 8. | 2.35 | SI |
| 5 C | 4- 7 | 234.9 | 352.4 | 14935.2 | 15151.6 | 14935.2 | .57 | 8. | 2.35 | SI |
| 5 S | 4- 7 | 234.9 | 352.4 | 14928.7 | 15151.6 | 14928.7 | .57 | 8. | 2.35 | SI |

TAGLIO Z:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|---------|----------|--------|--------|---------|-----|-----|------|----|
| 1 I | 5-13 | -489.2 | -4947.7 | 13007. | 13007. | 16964.1 | .57 | 8. | 2.5 | SI |
| 1 C | 5-13 | -489.2 | -4947.7 | 5476.6 | 5476.6 | 16934.9 | .57 | 19. | 2.5 | SI |
| 1 S | 5-13 | -489.2 | -4947.7 | 13007. | 13007. | 16905.7 | .57 | 8. | 2.5 | SI |
| 2 I | 5-13 | -1069.1 | 2968.7 | 13007. | 13007. | 15937.3 | .57 | 8. | 2.5 | SI |
| 2 C | 5-13 | -1069.1 | 2968.7 | 5476.6 | 5476.6 | 15895.3 | .57 | 19. | 2.5 | SI |
| 2 S | 5-13 | -1069.1 | 2968.7 | 13007. | 13007. | 15853.4 | .57 | 8. | 2.5 | SI |
| 3 I | 5-13 | -658.7 | 3000.8 | 13007. | 13007. | 14919.3 | .57 | 8. | 2.5 | SI |
| 3 C | 5-13 | -658.7 | 3000.8 | 5476.6 | 5476.6 | 14882.8 | .57 | 19. | 2.5 | SI |
| 3 S | 5-13 | -658.7 | 3000.8 | 13007. | 13007. | 14846.3 | .57 | 8. | 2.5 | SI |
| 4 I | 5-16 | -291.2 | 4643. | 13007. | 13007. | 13921.9 | .57 | 8. | 2.5 | SI |
| 4 C | 5-16 | -291.2 | 4643. | 5476.6 | 5476.6 | 13903.6 | .57 | 19. | 2.5 | SI |
| 4 S | 5-16 | -291.2 | 4643. | 13007. | 13007. | 13885.4 | .57 | 8. | 2.5 | SI |
| 5 I | 5- 2 | -182.3 | -273.4 | 13007. | 13007. | 13846. | .57 | 8. | 2.5 | SI |
| 5 C | 5- 2 | -182.3 | -273.4 | 13007. | 13007. | 13840. | .57 | 8. | 2.5 | SI |
| 5 S | 5- 2 | -182.3 | -273.4 | 13007. | 13007. | 13833.9 | .57 | 8. | 2.5 | SI |

NED LIMITE (NEd < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | Caso | NEd | Nmax | Ncls | % Ncls | VE |
|------|------|----------|----------|----------|--------|----|
| 1 | 5-15 | -24952.3 | -68786.2 | -105825. | 23.58 | SI |
| 2 | 5-15 | -17036.1 | -68786.2 | -105825. | 16.1 | SI |
| 3 | 5-13 | -9182.9 | -68786.2 | -105825. | 8.68 | SI |
| 4 | 5-14 | -1494.8 | -68786.2 | -105825. | 1.41 | SI |
| 5 | 5-10 | -923.5 | -68786.2 | -105825. | .87 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|----------|----------|----------|-------|---------|---------|----|
| 1 I | 8- 1 | -27375.2 | 120485.8 | -8699.2 | -65.7 | -819.6 | -132.2 | SI |
| 1 C | 8- 1 | -27150.2 | 44291.4 | -2985.4 | -43.9 | -597.9 | -346.4 | SI |
| 1 S | 8- 1 | -26925.2 | -31903.1 | 2728.4 | -40.3 | -560.1 | -376.3 | SI |
| 2 I | 8- 1 | -19053.6 | -45389.7 | -4687.5 | -35.2 | -464. | -198.7 | SI |
| 2 C | 8- 1 | -18730.1 | -8207.3 | -34.6 | -23.9 | -347.8 | -303.6 | SI |
| 2 S | 8- 1 | -18406.7 | 28975.2 | 4618.2 | -30. | -408.6 | -231.6 | SI |
| 3 I | 8- 1 | -10811.3 | -24043. | -3844.4 | -19.8 | -261.5 | -114.5 | SI |
| 3 C | 8- 1 | -10530. | -7126.3 | -2100. | -14.6 | -207.1 | -159.1 | SI |
| 3 S | 8- 1 | -10248.8 | 9790.5 | -355.5 | -14.6 | -205.3 | -151.1 | SI |
| 4 I | 8- 1 | -2371.4 | -96391.2 | -16378. | -50.9 | -403.2 | 1109.8 | SI |
| 4 C | 8- 1 | -2230.8 | -51326.6 | -10383.1 | -27.7 | -242.8 | 486.1 | SI |
| 4 S | 8- 1 | -2090.2 | -6261.9 | -4388.2 | -5. | -63.4 | -9.2 | SI |
| 5 I | 8- 1 | -1620.4 | -6261.9 | -4237.9 | -4.5 | -55.3 | -.8 | SI |
| 5 C | 8- 1 | -1573.6 | -3131. | -2276.9 | -3.1 | -41.1 | -13.6 | SI |
| 5 S | 8- 1 | -1526.7 | 0. | -315.9 | -1.8 | -27.3 | -25.8 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|----------|----------|---------|-------|---------|---------|----|
| 1 I | 9- 1 | -23947.4 | 105003.8 | -6877.5 | -57.2 | -714.2 | -118.6 | SI |
| 1 C | 9- 1 | -23722.4 | 39348.6 | -2227.3 | -38.4 | -523.2 | -301.8 | SI |
| 1 S | 9- 1 | -23497.4 | -26306.6 | 2422.9 | -34.8 | -484.8 | -332.4 | SI |
| 2 I | 9- 1 | -16532.4 | -41415.4 | -4220.5 | -31.1 | -408.4 | -166.6 | SI |
| 2 C | 9- 1 | -16209. | -7363.8 | -97.1 | -20.8 | -301.8 | -261.9 | SI |
| 2 S | 9- 1 | -15885.6 | 26687.7 | 4026.4 | -26.4 | -357.2 | -195.3 | SI |
| 3 I | 9- 1 | -9169.6 | -22093.8 | -4137.8 | -17.4 | -228.4 | -90.5 | SI |
| 3 C | 9- 1 | -8888.3 | -4258.4 | -1147.5 | -11.7 | -168.7 | -140.5 | SI |
| 3 S | 9- 1 | -8607.1 | 13577.1 | 1842.8 | -14. | -190.4 | -109. | SI |
| 4 I | 9- 1 | -1629.8 | -67756.9 | -9619.8 | -34.9 | -273.3 | 774.2 | SI |
| 4 C | 9- 1 | -1489.1 | -36797. | -6096.4 | -19.3 | -165.8 | 354. | SI |
| 4 S | 9- 1 | -1348.5 | -5837.1 | -2573. | -3.7 | -45.4 | -1.2 | SI |
| 5 I | 9- 1 | -1054.8 | -5837.1 | -2494.5 | -3.4 | -41. | 5.7 | SI |
| 5 C | 9- 1 | -1007.9 | -2918.5 | -1339.8 | -2.2 | -28.5 | -6.6 | SI |
| 5 S | 9- 1 | -961.1 | 0. | -185.2 | -1.2 | -17.1 | -16.3 | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|-------|----------|----------|---------|-------|---------|---------|----|
| 1 I | 10- 1 | -22710.1 | 99507.8 | -6243. | -54.1 | -676.4 | -113.3 | SI |
| 1 C | 10- 1 | -22485.1 | 37625.6 | -1972.8 | -36.5 | -496.5 | -285.5 | SI |
| 1 S | 10- 1 | -22260.1 | -24256.7 | 2297.4 | -32.8 | -457.5 | -316.7 | SI |

| | | | | | | | | |
|-----|-------|----------|----------|---------|-------|--------|--------|----|
| 2 I | 10- 1 | -15649.6 | -39943.8 | -4025.9 | -29.6 | -388.7 | -155.6 | SI |
| 2 C | 10- 1 | -15326.2 | -7134.6 | -105.6 | -19.7 | -285.9 | -247.1 | SI |
| 2 S | 10- 1 | -15002.8 | 25674.5 | 3814.7 | -25. | -338.7 | -183.1 | SI |
| 3 I | 10- 1 | -8629.7 | -21249.2 | -4097. | -16.5 | -216.6 | -83.5 | SI |
| 3 C | 10- 1 | -8348.4 | -3428.2 | -911.4 | -10.8 | -156.5 | -133.8 | SI |
| 3 S | 10- 1 | -8067.2 | 14392.8 | 2274.1 | -13.7 | -184.2 | -96.4 | SI |
| 4 I | 10- 1 | -1444.1 | -60545.3 | -7928.7 | -30.9 | -240.6 | 689.7 | SI |
| 4 C | 10- 1 | -1303.5 | -33136.3 | -5023.7 | -17.2 | -146.4 | 320.7 | SI |
| 4 S | 10- 1 | -1162.8 | -5727.3 | -2118.8 | -3.4 | -41.1 | 1.2 | SI |
| 5 I | 10- 1 | -913.4 | -5727.3 | -2058.2 | -3.2 | -37.7 | 8.3 | SI |
| 5 C | 10- 1 | -866.5 | -2863.6 | -1105.3 | -2. | -25.3 | -4.8 | SI |
| 5 S | 10- 1 | -819.7 | 0. | -152.4 | -1. | -14.6 | -13.9 | SI |

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P005 (ID=54)
Aste : 425; 417; 404; 383; 384
SEZIONI UTILIZZATE

1) Rettangolare: base=25; alt.=30; Acls=750; iy=7.22; iz=8.66

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | ieiz | ieiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm | |
|----|----|-----|-----|------|------|-------|------|-------|-------|------|-------|------|
| 1 | 1 | 2. | 2. | .8 | .8 | 240. | 216. | 45. | 45. | 8.04 | 1.072 | 4Φ16 |
| 2 | 1 | 2. | 2. | 1.15 | 1.15 | 345. | 321. | 54. | 54. | 8.04 | 1.072 | 4Φ16 |
| 3 | 1 | 2. | 2. | 1. | 1. | 300. | 276. | 46. | 46. | 8.04 | 1.072 | 4Φ16 |
| 4 | 1 | 2. | 2. | .5 | .5 | 150. | 150. | 45. | 45. | 8.04 | 1.072 | 4Φ16 |
| 5 | 1 | 2. | 2. | .17 | .17 | 50. | 26. | 0. | 0. | 8.04 | 1.072 | 4Φ16 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min |
|------|------|----------|------|----------|------|----------|------|----------|
| 1 I | 4- 7 | -322425. | 4- 7 | 322425. | 5-13 | -312690. | 5-13 | 312700. |
| 1 S | 4-10 | -420735. | 4-10 | 420735. | 5-13 | -510440. | 5-13 | 510440. |
| 2 I | 4-10 | -297960. | 4-10 | 297965. | 5-13 | -262340. | 5-13 | 262340. |
| 2 S | 4-10 | -290680. | 4-10 | 290675. | 5-13 | -267930. | 5-13 | 267930. |
| 3 I | 4-10 | -390815. | 4-10 | 390815. | 5-13 | -450960. | 5-13 | 450960. |
| 3 S | 4-10 | -360150. | 4-10 | 360145. | 5-13 | -395080. | 5-13 | 395070. |
| 4 I | 4- 2 | -319385. | 4- 2 | 319385. | 5- 9 | -388960. | 5- 9 | 388960. |
| 4 S | 4- 2 | -319200. | 4- 2 | 319200. | 5- 5 | -397940. | 5- 6 | 397930. |
| 5 I | 5- 5 | -295360. | 5- 5 | 295360. | 5- 7 | -366700. | 5- 7 | 366700. |
| 5 S | 5- 7 | -294600. | 5- 7 | 294600. | 5- 7 | -369120. | 5- 7 | 369120. |

TAGLI GERARCHIA:

| As | Ip | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ |
|----|------|------|---------|------|--------|------|---------|------|--------|
| 1 | 216. | 4-10 | -6199.5 | 4-10 | 6199.5 | 5-12 | -5161.2 | 5-12 | 5161.2 |
| 2 | 321. | 4-10 | -4093.2 | 4-14 | 4093.2 | 5- 5 | -3301.5 | 5- 5 | 3301.5 |
| 3 | 276. | 4- 1 | -4213.6 | 4- 1 | 4213.7 | 5- 9 | -3349.5 | 5- 9 | 3349.5 |
| 4 | 150. | 5- 3 | -5867.5 | 5- 3 | 5867.5 | 5-11 | -4712.1 | 5-11 | 4712.1 |
| 5 | 26. | 4-15 | -298. | 4- 2 | 369.9 | 5- 7 | -1231.7 | 4- 1 | 0. |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NEd | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | |
|------|------|---------|----------|------|----------|------|----------|--------|----------|--------|--------------|----|
| > 1 | 5-10 | -40412. | -398113. | 1.37 | -151031. | 1.49 | -.221 | -141.1 | -.158 | -3323. | .115 2418.2 | SI |
| 1 | 1- 1 | -68433. | 2877. | 1.46 | -7275. | 1.24 | -.068 | -79.4 | -.067 | -1410. | -.064 -1343. | SI |
| 1 | 1- 1 | -68140. | 278578. | 4.85 | -235732. | 32.7 | -.213 | -141.1 | -.17 | -3561. | .026 544.2 | SI |
| > 2 | 5-15 | -27460. | -398682. | 1.53 | 152363. | 1.58 | -.219 | -141.1 | -.146 | -3075. | .169 3542.5 | SI |
| 2 | 1- 1 | -46803. | -11391. | 1.81 | 870. | 1.37 | -.045 | -56.5 | -.044 | -928.8 | -.04 -850.5 | SI |
| 2 | 5-15 | -26813. | 392798. | 1.53 | -153092. | 1.57 | -.216 | -141.1 | -.144 | -3023. | .168 3522.1 | SI |
| > 3 | 5-15 | -14928. | -206622. | 1.23 | 81380. | 1.33 | -.098 | -104.4 | -.065 | -1371. | .077 1621.8 | SI |
| 3 | 1- 1 | -26080. | -2533. | 1.24 | -5580. | 1.13 | -.024 | -31.8 | -.024 | -495.2 | -.022 -451.7 | SI |
| 3 | 5-15 | -14366. | 250665. | 1.2 | -96650. | 1.27 | -.123 | -120. | -.079 | -1649. | .113 2374.3 | SI |
| > 4 | 1- 1 | -5091. | -164563. | 1.03 | -25952. | 1.12 | -.065 | -76.8 | -.036 | -758.3 | .085 1790.3 | SI |
| 4 | 1- 1 | -4908. | -121229. | 1.01 | -14824. | 1.01 | -.046 | -57. | -.026 | -550.3 | .055 1155. | SI |
| 4 | 1- 1 | -4726. | -82852. | 1.04 | -11882. | 1.91 | -.031 | -40.5 | -.019 | -403.6 | .031 644.3 | SI |
| > 5 | 1- 1 | 2678. | -80131. | 1.01 | -6239. | 1.08 | -.026 | -34.8 | -.008 | -160.9 | .07 1471.3 | SI |
| 5 | 1- 1 | 2739. | -39843. | 1. | -3052. | 1. | -.012 | -16. | -.001 | -19.4 | .044 916.8 | SI |
| 5 | 1- 1 | 2800. | 6066. | .999 | -6066. | 19.5 | .006 | 0. | .009 | 189.1 | .024 507.1 | SI |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|----------|----------|----------|------|
| 1 I | 5-10 | -212367.9 | 240. | 3941.2 | 9.9113 | -290027. | -322356. | -398113. | .382 |
| 2 I | 5-15 | -102679.8 | 345. | 3937.7 | 9.9201 | -260482. | -292061. | -398682. | .259 |
| 3 S | 5-15 | -133100. | 300. | 3859.6 | 10.1209 | 208185. | 222551. | 250665. | .141 |
| 4 I | 1- 1 | -524386.5 | 150. | 3801.5 | 10.2756 | -160419. | -162965. | -164563. | .048 |
| 5 I | 1- 1 | -4704652. | 50. | 3789.5 | 10.308 | -79685. | -80131. | -80131. | . |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|----------|----------|----------|------|
| 1 I | 5-10 | -353634.1 | 240. | 6562.9 | 8.5709 | -101443. | -133772. | -151031. | .382 |
| 2 I | 5-15 | -171024.7 | 345. | 6558.7 | 8.5764 | 96320. | 127899. | 152363. | .259 |
| 3 S | 5-15 | -222947.3 | 300. | 6464.9 | 8.7008 | -75813. | -90179. | -96650. | .141 |
| 4 I | 1- 1 | -882172.9 | 150. | 6395.2 | 8.7956 | -23257. | -25802. | -25952. | .048 |
| 5 I | 1- 1 | -7921765. | 50. | 6380.9 | 8.8154 | -5793. | -6239. | -6239. | . |

TAGLIO Y:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|---------|----------|---------|---------|---------|-----|-----|------|----|
| 1 I | 4-10 | -2287.2 | 6199.5 | 17980.5 | 18052.9 | 17980.5 | .57 | 7. | 2.45 | SI |
| 1 C | 4-10 | -2287.2 | 6199.5 | 6786.8 | 6786.8 | 17721.1 | .57 | 19. | 2.5 | SI |
| 1 S | 4-10 | -2287.2 | 6199.5 | 16118.7 | 16118.7 | 17721.1 | .57 | 8. | 2.5 | SI |
| 2 I | 4-10 | -1786.8 | -4093.2 | 16118.7 | 16118.7 | 17721.1 | .57 | 8. | 2.5 | SI |
| 2 C | 4-10 | -1786.8 | -4093.2 | 6786.8 | 6786.8 | 17721.1 | .57 | 19. | 2.5 | SI |
| 2 S | 4-10 | -1786.8 | -4093.2 | 16118.7 | 16118.7 | 17721.1 | .57 | 8. | 2.5 | SI |
| 3 I | 4- 1 | 1182.2 | 4213.7 | 16118.7 | 16118.7 | 16182.8 | .57 | 8. | 2.5 | SI |
| 3 C | 4- 1 | 1182.2 | 4213.7 | 6786.8 | 6786.8 | 16145.1 | .57 | 19. | 2.5 | SI |
| 3 S | 4- 1 | 1182.2 | 4213.7 | 16107.4 | 16118.7 | 16107.4 | .57 | 8. | 2.5 | SI |
| 4 I | 5- 7 | -33.7 | 5867.5 | 15099.2 | 15151.6 | 15099.2 | .57 | 8. | 2.35 | SI |
| 4 C | 5- 3 | -40. | 5867.5 | 6786.8 | 6786.8 | 14433.7 | .57 | 19. | 2.5 | SI |
| 4 S | 5- 7 | -33.7 | 5867.5 | 15059.9 | 15151.6 | 15059.9 | .57 | 8. | 2.35 | SI |
| 5 I | 4- 2 | 246.6 | 369.9 | 14829.2 | 14829.2 | 15033.4 | .57 | 8. | 2.3 | SI |
| 5 C | 4- 2 | 246.6 | 369.9 | 14829.2 | 14829.2 | 15033.4 | .57 | 8. | 2.3 | SI |
| 5 S | 4- 2 | 246.6 | 369.9 | 14829.2 | 14829.2 | 15033.4 | .57 | 8. | 2.3 | SI |

TAGLIO Z:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|---------|----------|---------|---------|---------|-----|-----|------|----|
| 1 I | 5-12 | -1866.2 | 5161.2 | 14865.1 | 14865.1 | 17160.1 | .57 | 7. | 2.5 | SI |
| 1 C | 5-12 | -1866.2 | 5161.2 | 5476.6 | 5476.6 | 17160.1 | .57 | 19. | 2.5 | SI |
| 1 S | 5-12 | -1866.2 | 5161.2 | 13007. | 13007. | 17160.1 | .57 | 8. | 2.5 | SI |
| 2 I | 5- 5 | 1080.7 | 3301.5 | 13007. | 13007. | 17160.1 | .57 | 8. | 2.5 | SI |
| 2 C | 5- 5 | 1080.7 | 3301.5 | 5476.6 | 5476.6 | 17160.1 | .57 | 19. | 2.5 | SI |
| 2 S | 5- 5 | 1080.7 | 3301.5 | 13007. | 13007. | 17160.1 | .57 | 8. | 2.5 | SI |
| 3 I | 5- 9 | -1255.3 | 3349.5 | 13007. | 13007. | 15669.8 | .57 | 8. | 2.5 | SI |
| 3 C | 5- 9 | -1255.3 | 3349.5 | 5476.6 | 5476.6 | 15633.3 | .57 | 19. | 2.5 | SI |
| 3 S | 5- 9 | -1255.3 | 3349.5 | 13007. | 13007. | 15596.8 | .57 | 8. | 2.5 | SI |
| 4 I | 5-11 | -598.7 | 4712.1 | 13007. | 13007. | 13998.5 | .57 | 8. | 2.5 | SI |
| 4 C | 5-11 | -598.7 | 4712.1 | 5476.6 | 5476.6 | 13980.3 | .57 | 19. | 2.5 | SI |
| 4 S | 5-11 | -598.7 | 4712.1 | 13007. | 13007. | 13962. | .57 | 8. | 2.5 | SI |
| 5 I | 1- 1 | -1593.7 | 0. | 13007. | 13007. | 13728.1 | .57 | 8. | 2.5 | SI |
| 5 C | 1- 1 | -1593.7 | 0. | 13007. | 13007. | 13728.1 | .57 | 8. | 2.5 | SI |
| 5 S | 1- 1 | -1593.7 | 0. | 13007. | 13007. | 13728.1 | .57 | 8. | 2.5 | SI |

NEd LIMITE (NEd < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | Caso | NEd | Nmax | Ncls | % Ncls | VE |
|------|------|----------|----------|----------|--------|----|
| 1 | 5- 9 | -40412.1 | -68786.2 | -105825. | 38.19 | SI |
| 2 | 5- 9 | -27489. | -68786.2 | -105825. | 25.98 | SI |
| 3 | 4- 3 | -14984.7 | -68786.2 | -105825. | 14.16 | SI |
| 4 | 4-11 | -2103.3 | -68786.2 | -105825. | 1.99 | SI |
| 5 | 5-10 | 567.3 | -68786.2 | -105825. | -.54 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | MEyd | MEzd | Scls | SaccMin | SaccMax | VE |
|------|------|----------|-----------|----------|-------|---------|---------|----|
| 1 I | 8- 1 | -48890. | -37540.4 | -2744.1 | -67.3 | -957.2 | -743.1 | SI |
| 1 C | 8- 1 | -48665. | 1479.5 | -3990.3 | -57.7 | -859.6 | -832.9 | SI |
| 1 S | 8- 1 | -48440. | 40499.3 | -5236.4 | -68.1 | -963.2 | -721.5 | SI |
| 2 I | 8- 1 | -33557.9 | -46242. | 8634.6 | -53.1 | -727.8 | -439.3 | SI |
| 2 C | 8- 1 | -33234.5 | -4376. | 424. | -39.8 | -590.7 | -565.2 | SI |
| 2 S | 8- 1 | -32911. | 37490. | -7786.7 | -49.8 | -691.1 | -453.5 | SI |
| 3 I | 8- 1 | -18728.8 | -53604.9 | 12887.5 | -38.7 | -499.6 | -151.7 | SI |
| 3 C | 8- 1 | -18447.6 | -1336.5 | -3275.7 | -22.4 | -332.1 | -309.5 | SI |
| 3 S | 8- 1 | -18166.3 | 50931.9 | -19438.9 | -38.8 | -498.1 | -133.7 | SI |
| 4 I | 8- 1 | -3491.8 | -110889.6 | -14960. | -56.8 | -462.6 | 1164.7 | SI |
| 4 C | 8- 1 | -3351.2 | -82767.9 | -9481.5 | -41.6 | -353.5 | 774.4 | SI |
| 4 S | 8- 1 | -3210.5 | -54646.2 | -4003. | -26.4 | -242.6 | 391.7 | SI |
| 5 I | 8- 1 | 1793.9 | -54646.2 | -3725. | -24.5 | -103. | 993.9 | SI |

| | | | | | | | |
|-----|------|--------|----------|---------|-------|-------|----------|
| 5 C | 8- 1 | 1840.8 | -27323.1 | -1962.5 | -11.1 | -13.5 | 622.5 SI |
| 5 S | 8- 1 | 1887.7 | 0. | -200.1 | 0. | 232.4 | 237. SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|----------|----------|----------|-------|---------|-----------|----|
| 1 I | 9- 1 | -42656.6 | -31730. | -828.5 | -58.1 | -828.8 | -654.8 SI | |
| 1 C | 9- 1 | -42431.6 | 1554.1 | -2966.9 | -50.2 | -749. | -726.7 SI | |
| 1 S | 9- 1 | -42206.6 | 34838.2 | -5105.3 | -59.3 | -839.3 | -628.6 SI | |
| 2 I | 9- 1 | -29061.6 | -41132.5 | 7478.7 | -46.2 | -633.2 | -377.5 SI | |
| 2 C | 9- 1 | -28738.1 | -3509.8 | 295.5 | -34.3 | -509.8 | -489.6 SI | |
| 2 S | 9- 1 | -28414.7 | 34112.8 | -6887.7 | -43.5 | -601.7 | -386.5 SI | |
| 3 I | 9- 1 | -15889.8 | -46749.3 | 10563.7 | -33.1 | -426.4 | -126.2 SI | |
| 3 C | 9- 1 | -15608.6 | -378.7 | -2068.7 | -18.6 | -277.3 | -265.6 SI | |
| 3 S | 9- 1 | -15327.3 | 45991.9 | -14701.1 | -33.2 | -424.3 | -108.7 SI | |
| 4 I | 9- 1 | -2340.2 | -82664.4 | -7071. | -40.5 | -319. | 877.8 SI | |
| 4 C | 9- 1 | -2199.6 | -60052.1 | -4484.6 | -29.1 | -240.2 | 576.2 SI | |
| 4 S | 9- 1 | -2059. | -37439.8 | -1898.2 | -17.7 | -159.9 | 279.2 SI | |
| 5 I | 9- 1 | 1060.4 | -37439.8 | -1756.3 | -16.5 | -72. | 653.9 SI | |
| 5 C | 9- 1 | 1107.3 | -18719.9 | -924.8 | -7.6 | -13.2 | 403.1 SI | |
| 5 S | 9- 1 | 1154.1 | 0. | -93.3 | 0. | 142.4 | 144.6 SI | |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|-------|----------|----------|----------|-------|---------|-----------|----|
| 1 I | 10- 1 | -40352.2 | -29570.6 | -270.9 | -54.7 | -781.6 | -621.8 SI | |
| 1 C | 10- 1 | -40127.2 | 1542.8 | -2618.9 | -47.5 | -708.1 | -687.5 SI | |
| 1 S | 10- 1 | -39902.2 | 32656.3 | -4967. | -56. | -793.1 | -594.7 SI | |
| 2 I | 10- 1 | -27443.7 | -39123. | 6989.7 | -43.7 | -598.5 | -355.9 SI | |
| 2 C | 10- 1 | -27120.3 | -3208.6 | 257.5 | -32.3 | -480.8 | -462.4 SI | |
| 2 S | 10- 1 | -26796.9 | 32705.8 | -6474.7 | -41.2 | -568.9 | -363.1 SI | |
| 3 I | 10- 1 | -14928.2 | -44303.8 | 9726.4 | -31.2 | -401.2 | -118. SI | |
| 3 C | 10- 1 | -14646.9 | -223.7 | -1736.6 | -17.4 | -259.4 | -250. SI | |
| 3 S | 10- 1 | -14365.7 | 43856.3 | -13199.5 | -31.2 | -398.4 | -101.3 SI | |
| 4 I | 10- 1 | -2052.5 | -74624.1 | -5101.3 | -35.9 | -280.2 | 792.8 SI | |
| 4 C | 10- 1 | -1911.9 | -53806.6 | -3237.1 | -25.8 | -210.2 | 519.1 SI | |
| 4 S | 10- 1 | -1771.2 | -32989.1 | -1372.8 | -15.5 | -138.8 | 249.2 SI | |
| 5 I | 10- 1 | 879.1 | -32989.1 | -1264.8 | -14.5 | -63.7 | 567.3 SI | |
| 5 C | 10- 1 | 925.9 | -16494.6 | -665.8 | -6.7 | -12.8 | 347.6 SI | |
| 5 S | 10- 1 | 972.8 | 0. | -66.7 | 0. | 120.2 | 121.7 SI | |

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P006 (ID=55)
Aste : 426; 416; 403; 377; 378
SEZIONI UTILIZZATE

1) Rettangolare: base=25; alt.=30; Acls=750; iy=7.22; iz=8.66

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se e0z | e0y | eiz | eiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm |
|----|--------|-----|-----------|------|-------|------|-------|------------|------------|-------|
| 1 | 1 2. | 2. | .8 | .8 | 240. | 216. | 45. | 45. | 8.04 1.072 | 4Φ16 |
| 2 | 1 2. | 2. | 1.15 1.15 | 345. | 321. | 54. | 54. | 8.04 1.072 | 4Φ16 | |
| 3 | 1 2. | 2. | 1. | 1. | 300. | 276. | 46. | 46. | 8.04 1.072 | 4Φ16 |
| 4 | 1 2. | 2. | .5 | .5 | 150. | 150. | 45. | 45. | 8.04 1.072 | 4Φ16 |
| 5 | 1 2. | 2. | .17 | .17 | 50. | 26. | 0. | 0. | 8.04 1.072 | 4Φ16 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min |
|------|------|----------|------|----------|------|----------|------|----------|
| 1 I | 4-13 | -309485. | 4-13 | 309485. | 5-12 | -314490. | 5-12 | 314490. |
| 1 S | 4-15 | -394200. | 4-15 | 394200. | 5- 5 | -565180. | 5- 5 | 565180. |
| 2 I | 4-13 | -269595. | 4-13 | 269595. | 5- 5 | -308250. | 5- 5 | 308250. |
| 2 S | 4-13 | -263660. | 4-13 | 263660. | 5- 5 | -331080. | 5- 5 | 331080. |
| 3 I | 4-15 | -349875. | 4-15 | 349875. | 5- 5 | -442850. | 5- 5 | 442840. |
| 3 S | 4-15 | -332535. | 4-15 | 332540. | 5- 1 | -374860. | 5- 1 | 374860. |
| 4 I | 4- 3 | -313400. | 4- 3 | 313400. | 5-13 | -385550. | 5-13 | 385550. |
| 4 S | 5- 9 | -312390. | 5- 9 | 312390. | 5- 4 | -389440. | 5- 4 | 389440. |
| 5 I | 5- 5 | -300050. | 5- 5 | 300050. | 5- 5 | -372870. | 5- 5 | 372860. |
| 5 S | 5- 5 | -299365. | 5- 5 | 299365. | 5- 5 | -375200. | 5- 5 | 375200. |

TAGLI GERARCHIA:

| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ |
|----|------|------|---------|------|--------|------|---------|------|--------|
| 1 | 216. | 4- 2 | -6032. | 4- 2 | 6032. | 5- 2 | -4986.3 | 5- 2 | 4986.3 |
| 2 | 321. | 4- 4 | -3628.8 | 4- 4 | 3628.8 | 5- 2 | -2994.5 | 5- 2 | 2994.5 |
| 3 | 276. | 5-13 | -3676.9 | 5-13 | 3676.9 | 5- 2 | -3001.3 | 5- 2 | 3001.3 |
| 4 | 150. | 5- 3 | -5724. | 5- 3 | 5724. | 5- 7 | -4610.1 | 5- 7 | 4610.2 |
| 5 | 26. | 4-14 | -149.9 | 4- 3 | 248.6 | 5- 4 | -1198.5 | 4- 1 | 0. |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NEd | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | |
|------|------|---------|----------|------|----------|------|----------|--------|----------|--------|-------|--------|
| > 1 | 4-15 | -21861. | -189835. | 1.25 | 359206. | 1.13 | -.189 | -140.7 | -.13 | -2739. | .15 | 3146. |
| 1 | 1- 1 | -37692. | -141494. | 1.22 | -3960. | 1.12 | -.066 | -77.7 | -.056 | -1168. | -.013 | -269.4 |
| 1 | 4-13 | -22780. | -87467. | 1.47 | -248224. | 1.16 | -.1 | -106.1 | -.075 | -1569. | .05 | 1053.3 |
| > 2 | 4-13 | -15861. | 181772. | 1.35 | 380505. | 1.17 | -.196 | -141.1 | -.13 | -2732. | .188 | 3913.2 |
| 2 | 1- 1 | -25688. | 18151. | 1.34 | 1419. | 1.18 | -.026 | -34.6 | -.025 | -523. | -.019 | -409.4 |
| 2 | 4-13 | -15214. | -162519. | 1.36 | -384485. | 1.16 | -.187 | -140.5 | -.124 | -2600. | .183 | 3848.9 |
| > 3 | 4-13 | -8589. | 109326. | 1.17 | 208206. | 1.09 | -.101 | -106.8 | -.066 | -1391. | .102 | 2146.9 |
| 3 | 1- 1 | -14092. | -29073. | 1.12 | -4953. | 1.07 | -.018 | -24.9 | -.016 | -343.9 | -.007 | -156.8 |
| 3 | 4-13 | -8026. | -151617. | 1.13 | -251356. | 1.08 | -.135 | -126.4 | -.086 | -1808. | .148 | 3103.8 |
| > 4 | 1- 1 | -2727. | 115006. | 1.02 | -21141. | 1.07 | -.046 | -56.9 | -.024 | -511.5 | .065 | 1359.6 |
| 4 | 4- 4 | -1032. | 24877. | 1. | -24747. | 1. | -.016 | -21.2 | -.01 | -202.4 | .018 | 373.1 |
| 4 | 1- 1 | -2361. | -101994. | 1.02 | -6515. | 1.23 | -.036 | -46.2 | -.018 | -386.2 | .054 | 1142.2 |
| > 5 | 1- 1 | 1071. | -100461. | 1. | -5159. | 1.04 | -.034 | -43.6 | -.013 | -270.7 | .073 | 1534.9 |
| 5 | 1- 1 | 1132. | -50141. | 1. | -2674. | 1. | -.016 | -22. | -.005 | -111.1 | .04 | 841.5 |
| 5 | 1- 1 | 1193. | 2585. | .999 | -2585. | .702 | .002 | 0. | .004 | 80.6 | .01 | 216.1 |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | l0 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|----------|----------|----------|------|
| 1 I | 4-15 | -208616.2 | 240. | 3871.6 | 10.0895 | -152453. | -169942. | -189835. | .207 |
| 2 I | 4-13 | -169066.4 | 345. | 3875.1 | 10.0803 | 135000. | 153240. | 181772. | .15 |
| 3 S | 4-13 | -132074.3 | 300. | 3829.8 | 10.1995 | -133732. | -141758. | -151617. | .081 |
| 4 I | 1- 1 | -523621.4 | 150. | 3795.9 | 10.2906 | 113044. | 114407. | 115006. | .026 |
| 5 I | 1- 1 | -4704652. | 50. | 3789.5 | 10.308 | -100282. | -100461. | -100461. | . |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | l0 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|----------|----------|----------|------|
| 1 I | 4-15 | -349132.1 | 240. | 6479.3 | 8.6814 | 319224. | 336714. | 359206. | .207 |
| 2 I | 4-13 | -169066.4 | 345. | 6483.6 | 8.6758 | 326568. | 344808. | 380505. | .15 |
| 3 S | 4-13 | -221716.5 | 300. | 6429.2 | 8.7491 | -233593. | -241619. | -251356. | .081 |
| 4 I | 1- 1 | -881254.7 | 150. | 6388.6 | 8.8048 | -19712. | -21075. | -21141. | .026 |
| 5 I | 1- 1 | -7921765. | 50. | 6380.9 | 8.8154 | -4980. | -5159. | -5159. | . |

TAGLIO Y:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|--------|----------|---------|---------|---------|-----|-----|------|----|
| 1 I | 4- 2 | 2105.1 | 6032. | 16118.7 | 16118.7 | 17424.4 | .57 | 8. | 2.5 | SI |
| 1 C | 4- 2 | 2105.1 | 6032. | 6786.8 | 6786.8 | 17394.3 | .57 | 19. | 2.5 | SI |
| 1 S | 4- 2 | 2105.1 | 6032. | 16118.7 | 16118.7 | 17364.1 | .57 | 8. | 2.5 | SI |
| 2 I | 4- 4 | 1771.2 | -3628.8 | 16118.7 | 16118.7 | 16264.9 | .57 | 8. | 2.5 | SI |
| 2 C | 4- 4 | 1771.2 | -3628.8 | 6786.8 | 6786.8 | 16221.6 | .57 | 19. | 2.5 | SI |
| 2 S | 4- 4 | 1771.2 | -3628.8 | 16118.7 | 16118.7 | 16178.3 | .57 | 8. | 2.5 | SI |
| 3 I | 5-13 | 380.2 | 3676.9 | 15473.9 | 15473.9 | 15694.5 | .57 | 8. | 2.4 | SI |
| 3 C | 5-13 | 380.2 | 3676.9 | 6786.8 | 6786.8 | 15205.9 | .57 | 19. | 2.5 | SI |
| 3 S | 5-13 | 380.2 | 3676.9 | 15473.9 | 15473.9 | 15616.9 | .57 | 8. | 2.4 | SI |
| 4 I | 5- 4 | -17. | 5724. | 14983.3 | 15151.6 | 14983.3 | .57 | 8. | 2.35 | SI |
| 4 C | 5- 3 | 7.5 | 5724. | 6786.8 | 6786.8 | 14321.5 | .57 | 19. | 2.5 | SI |
| 4 S | 5- 4 | -17. | 5724. | 14944. | 15151.6 | 14944. | .57 | 8. | 2.35 | SI |
| 5 I | 4- 3 | 165.7 | 248.6 | 14829.2 | 14829.2 | 15033.4 | .57 | 8. | 2.3 | SI |
| 5 C | 4- 3 | 165.7 | 248.6 | 14829.2 | 14829.2 | 15033.4 | .57 | 8. | 2.3 | SI |
| 5 S | 4- 3 | 165.7 | 248.6 | 14829.2 | 14829.2 | 15033.4 | .57 | 8. | 2.3 | SI |

TAGLIO Z:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|---------|----------|--------|--------|---------|-----|-----|------|----|
| 1 I | 5- 2 | 868.1 | 4986.3 | 13007. | 13007. | 17027.2 | .57 | 8. | 2.5 | SI |
| 1 C | 5- 2 | 868.1 | 4986.3 | 5476.6 | 5476.6 | 16998.1 | .57 | 19. | 2.5 | SI |
| 1 S | 5- 2 | 868.1 | 4986.3 | 13007. | 13007. | 16968.9 | .57 | 8. | 2.5 | SI |
| 2 I | 5- 2 | 1425.9 | 2994.5 | 13007. | 13007. | 15957.9 | .57 | 8. | 2.5 | SI |
| 2 C | 5- 2 | 1425.9 | 2994.5 | 5476.6 | 5476.6 | 15915.9 | .57 | 19. | 2.5 | SI |
| 2 S | 5- 2 | 1425.9 | 2994.5 | 13007. | 13007. | 15874. | .57 | 8. | 2.5 | SI |
| 3 I | 5- 2 | 1191.6 | 3001.3 | 13007. | 13007. | 14904.9 | .57 | 8. | 2.5 | SI |
| 3 C | 5- 2 | 1191.6 | 3001.3 | 5476.6 | 5476.6 | 14868.4 | .57 | 19. | 2.5 | SI |
| 3 S | 5- 2 | 1191.6 | 3001.3 | 13007. | 13007. | 14831.9 | .57 | 8. | 2.5 | SI |
| 4 I | 5- 7 | 806.8 | 4610.2 | 13007. | 13007. | 13886.5 | .57 | 8. | 2.5 | SI |
| 4 C | 5- 7 | 806.8 | 4610.2 | 5476.6 | 5476.6 | 13868.2 | .57 | 19. | 2.5 | SI |
| 4 S | 5- 7 | 806.8 | 4610.2 | 13007. | 13007. | 13850. | .57 | 8. | 2.5 | SI |
| 5 I | 1- 1 | -2005.6 | 0. | 13007. | 13007. | 13728.1 | .57 | 8. | 2.5 | SI |
| 5 C | 1- 1 | -2005.6 | 0. | 13007. | 13007. | 13728.1 | .57 | 8. | 2.5 | SI |
| 5 S | 1- 1 | -2005.6 | 0. | 13007. | 13007. | 13728.1 | .57 | 8. | 2.5 | SI |

NED LIMITE (Ned < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | Caso | NEd | Nmax | Ncls | % Ncls | VE |
|------|------|----------|----------|----------|--------|----|
| 1 | 5- 5 | -25507.5 | -68786.2 | -105825. | 24.1 | SI |
| 2 | 5- 5 | -17232.9 | -68786.2 | -105825. | 16.28 | SI |
| 3 | 5- 5 | -9086.2 | -68786.2 | -105825. | 8.59 | SI |
| 4 | 5- 5 | -1224.2 | -68786.2 | -105825. | 1.16 | SI |
| 5 | 5-12 | -14.7 | -68786.2 | -105825. | .01 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|----------|-----------|----------|-------|---------|---------|----|
| 1 I | 8- 1 | -27254.2 | -110578.7 | 4832. | -62. | -781.7 | -166.2 | SI |
| 1 C | 8- 1 | -27029.2 | -83291.8 | -2279.4 | -54. | -698.6 | -241.4 | SI |
| 1 S | 8- 1 | -26804.2 | -56004.8 | -9390.8 | -48. | -638.3 | -293.9 | SI |
| 2 I | 8- 1 | -18719.3 | 108951.5 | 16098.2 | -55.7 | -668.2 | 38.3 | SI |
| 2 C | 8- 1 | -18395.8 | 9648.9 | 822.1 | -24.1 | -347.7 | -292.1 | SI |
| 2 S | 8- 1 | -18072.4 | -89653.8 | -14454. | -48.3 | -592.2 | -32.3 | SI |
| 3 I | 8- 1 | -10333.4 | 92743.6 | 20626.5 | -48.1 | -526.6 | 305.6 | SI |
| 3 C | 8- 1 | -10052.1 | -17912.7 | -3143.7 | -17.1 | -230.2 | -119.4 | SI |
| 3 S | 8- 1 | -9770.9 | -128568.9 | -26913.9 | -68. | -676.2 | 782.5 | SI |
| 4 I | 8- 1 | -1888.4 | 81068.8 | -13313.2 | -42.6 | -334.4 | 943.7 | SI |
| 4 C | 8- 1 | -1747.8 | 7337.9 | -8450.8 | -6.1 | -72.4 | 14.3 | SI |
| 4 S | 8- 1 | -1607.1 | -66393. | -3588.4 | -31.5 | -239.1 | 726.3 | SI |
| 5 I | 8- 1 | 707.2 | -66393. | -3362.3 | -30.4 | -170. | 1010.4 | SI |
| 5 C | 8- 1 | 754.1 | -33196.5 | -1805.1 | -15. | -72. | 557.3 | SI |
| 5 S | 8- 1 | 800.9 | 0. | -247.9 | 0. | 96.8 | 102.4 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|----------|-----------|----------|-------|---------|---------|----|
| 1 I | 9- 1 | -24187.5 | -97025.4 | 4969.5 | -54.9 | -692.3 | -148.9 | SI |
| 1 C | 9- 1 | -23962.5 | -73975.6 | -1518.8 | -47.8 | -618.5 | -214.8 | SI |
| 1 S | 9- 1 | -23737.5 | -50925.8 | -8007.1 | -42.8 | -568.1 | -257.5 | SI |
| 2 I | 9- 1 | -16518.7 | 98350.7 | 13311.6 | -49.7 | -594.6 | 42.2 | SI |
| 2 C | 9- 1 | -16195.2 | 8289.1 | 668.9 | -21.1 | -305.4 | -257.8 | SI |
| 2 S | 9- 1 | -15871.8 | -81772.5 | -11973.7 | -43.2 | -527.6 | -18.9 | SI |
| 3 I | 9- 1 | -8964. | 84209.4 | 17389.9 | -43.4 | -469.5 | 300.3 | SI |
| 3 C | 9- 1 | -8682.7 | -13102.9 | -2357. | -14.1 | -191.6 | -110.3 | SI |
| 3 S | 9- 1 | -8401.5 | -110415.1 | -22103.8 | -58. | -576.9 | 666.3 | SI |
| 4 I | 9- 1 | -1321.1 | 72748.1 | -8295.1 | -36.5 | -272.7 | 872.1 | SI |
| 4 C | 9- 1 | -1180.5 | 18804.6 | -5263.7 | -10.6 | -101. | 145.8 | SI |
| 4 S | 9- 1 | -1039.9 | -35138.8 | -2232.3 | -16.9 | -132.9 | 363.8 | SI |
| 5 I | 9- 1 | 385.6 | -35138.8 | -2090.4 | -16.2 | -91.4 | 538. | SI |
| 5 C | 9- 1 | 432.4 | -17569.4 | -1121.1 | -8. | -37.9 | 300.3 | SI |
| 5 S | 9- 1 | 479.3 | 0. | -151.7 | 0. | 57.9 | 61.3 | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|-------|----------|----------|----------|-------|---------|---------|----|
| 1 I | 10- 1 | -23051.4 | -92221.5 | 4899.4 | -52.3 | -659.5 | -142.2 | SI |
| 1 C | 10- 1 | -22826.4 | -70491.4 | -1248.5 | -45.5 | -588.8 | -205.1 | SI |
| 1 S | 10- 1 | -22601.4 | -48761.2 | -7396.4 | -40.8 | -541.1 | -245. | SI |
| 2 I | 10- 1 | -15723.8 | 94065.7 | 12186.4 | -47.4 | -566.2 | 41.1 | SI |
| 2 C | 10- 1 | -15400.3 | 7825.8 | 608.3 | -20.1 | -290.2 | -245.4 | SI |
| 2 S | 10- 1 | -15076.9 | -78414.1 | -10969.8 | -41.2 | -502.5 | -16.1 | SI |
| 3 I | 10- 1 | -8496.3 | 80641.6 | 16038. | -41.4 | -446.6 | 291.2 | SI |
| 3 C | 10- 1 | -8215.1 | -11779.7 | -2103.8 | -13.1 | -179.4 | -106.3 | SI |
| 3 S | 10- 1 | -7933.8 | -104201. | -20245.6 | -54.5 | -542.1 | 625.5 | SI |
| 4 I | 10- 1 | -1179.4 | 69422. | -7039.5 | -34.4 | -253.7 | 837.3 | SI |
| 4 C | 10- 1 | -1038.8 | 20873.3 | -4466.2 | -11.3 | -102.2 | 184.1 | SI |
| 4 S | 10- 1 | -898.2 | -27675.4 | -1892.9 | -13.3 | -107.2 | 278. | SI |
| 5 I | 10- 1 | 306.1 | -27675.4 | -1772.2 | -12.9 | -72.6 | 424.8 | SI |
| 5 C | 10- 1 | 352.9 | -13837.7 | -949.9 | -6.3 | -29.8 | 238.5 | SI |
| 5 S | 10- 1 | 399.8 | 0. | -127.6 | 0. | 48.3 | 51.2 | SI |

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P007 (ID=56)
Aste : 427; 413; 501

SEZIONI UTILIZZATE

1) Rettangolare: base=25; alt.=30; Acls=750; iy=7.22; iz=8.66

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | eiz | eiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm | | | | | | | | | | | |
|----|----|-----|-----|-----|-----|-------|------|-------|-------|------|-------|------|--|-----|--|-----|--|------|--|-------|--|------|
| 1 | | 1 | | 2. | | .8 | | .8 | | 240. | | 216. | | 45. | | 45. | | 8.04 | | 1.072 | | 4φ16 |
| 2 | | 1 | | 2. | | 1.15 | | 1.15 | | 345. | | 321. | | 54. | | 54. | | 8.04 | | 1.072 | | 4φ16 |
| 3 | | 1 | | 2. | | 1. | | 1. | | 300. | | 268. | | 45. | | 45. | | 8.04 | | 1.072 | | 4φ16 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| ASTA | | CASE | | MYU- (CASE) | | MYU+ (CASE) | | MZU- (CASE) | | MZU+ (CASE) | | | | | | | |
|------|---|------|--|-------------|--|-------------|--|-------------|--|-------------|--|----------|--|------|--|----------|--|
| Asta | | caso | | Myu- min | | caso | | Myu+ min | | caso | | Mzu- min | | caso | | Mzu+ min | |
| 1 | I | 4-12 | | -269475. | | 4-12 | | 269475. | | 5- 2 | | -255120. | | 5- 2 | | 255120. | |
| 1 | S | 4-10 | | -363995. | | 4-10 | | 363995. | | 4-10 | | -460820. | | 4-10 | | 460820. | |
| 2 | I | 4- 5 | | -279965. | | 4- 5 | | 279965. | | 5-15 | | -368420. | | 5-15 | | 368410. | |
| 2 | S | 4- 5 | | -286500. | | 4- 5 | | 286505. | | 5-15 | | -368210. | | 5-15 | | 368210. | |
| 3 | I | 4-10 | | -338045. | | 4-10 | | 338045. | | 5-15 | | -414950. | | 5-15 | | 414940. | |
| 3 | S | 4- 5 | | -314815. | | 4- 5 | | 314815. | | 5-15 | | -386980. | | 5-15 | | 386980. | |

TAGLI GERARCHIA:

| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ |
|----|------|------|---------|------|--------|------|---------|------|--------|
| 1 | 216. | 4- 4 | -5523.3 | 4- 4 | 5523.3 | 5-10 | -4396.5 | 5-10 | 4396.5 |
| 2 | 321. | 4- 5 | -3438.2 | 4- 5 | 3438.2 | 5-13 | -2658.4 | 5-13 | 2658.4 |
| 3 | 268. | 4- 5 | -3606.3 | 4- 5 | 3606.3 | 5-16 | -2830.2 | 5-16 | 2830.2 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NEd | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | | |
|------|------|---------|----------|------|----------|------|----------|--------|----------|--------|-------|--------|----|
| > 1 | 4- 5 | -17011. | 265388. | 1.15 | -200150. | 1.13 | -.166 | -137.1 | -.11 | -2304. | .145 | 3043.5 | SI |
| 1 | 5- 7 | -9608. | 106393. | 1.05 | 68172. | 1.03 | -.054 | -66.3 | -.038 | -790.5 | .037 | 781.3 | SI |
| 1 | 4- 5 | -16561. | -91286. | 1.29 | 131955. | 1.18 | -.065 | -76.5 | -.049 | -1020. | .027 | 570.4 | SI |
| > 2 | 4- 7 | -12789. | -106180. | 1.36 | -344172. | 1.13 | -.145 | -130.4 | -.095 | -1999. | .149 | 3135.9 | SI |
| 2 | 1- 1 | -17988. | 4543. | 1.22 | -13664. | 1.12 | -.018 | -24.8 | -.018 | -368.2 | -.013 | -274.5 | SI |
| 2 | 4- 7 | -12143. | 98073. | 1.37 | 331401. | 1.13 | -.137 | -126.9 | -.09 | -1883. | .143 | 2994.3 | SI |
| > 3 | 1- 1 | -10029. | -167059. | 1.16 | -117299. | 1.15 | -.095 | -102.2 | -.062 | -1293. | .088 | 1847.2 | SI |
| 3 | 5- 2 | -4719. | -33607. | 1.04 | 25036. | 1.02 | -.017 | -22.5 | -.012 | -261.2 | .007 | 136.6 | SI |
| 3 | 5-10 | -5198. | 178873. | 1.08 | 136318. | 1.07 | -.109 | -111.8 | -.065 | -1373. | .13 | 2725.4 | SI |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|---------|---------|----------|------|
| 1 I | 4- 5 | -207635.2 | 240. | 3853.4 | 10.1372 | 230038. | 243646. | 265388. | .161 |
| 2 I | 4- 7 | -100615.8 | 345. | 3858.5 | 10.1236 | -77976. | -92684. | -106180. | .121 |
| 3 S | 5-10 | -131616.8 | 300. | 3816.6 | 10.235 | 165846. | 171044. | 178873. | .054 |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|----------|----------|----------|------|
| 1 I | 4- 5 | -347954.9 | 240. | 6457.5 | 8.7108 | -176757. | -190366. | -200150. | .161 |
| 2 I | 4- 7 | -168547.9 | 345. | 6463.7 | 8.7025 | -303348. | -318056. | -344172. | .121 |
| 3 S | 5-10 | -221167.4 | 300. | 6413.3 | 8.7708 | 127570. | 132768. | 136318. | .054 |

TAGLIO Y:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|--------|----------|---------|---------|---------|-----|-----|------|----|
| 1 I | 4- 4 | 777.8 | 5523.3 | 16118.7 | 16118.7 | 16485.9 | .57 | 8. | 2.5 | SI |
| 1 C | 4- 4 | 777.8 | 5523.3 | 6786.8 | 6786.8 | 16455.8 | .57 | 19. | 2.5 | SI |
| 1 S | 4- 4 | 777.8 | 5523.3 | 16118.7 | 16118.7 | 16425.7 | .57 | 8. | 2.5 | SI |
| 2 I | 4- 5 | 1755.3 | 3438.2 | 15805.1 | 16118.7 | 15805.1 | .57 | 8. | 2.5 | SI |
| 2 C | 4- 5 | 1755.3 | 3438.2 | 6786.8 | 6786.8 | 15761.8 | .57 | 19. | 2.5 | SI |
| 2 S | 4- 5 | 1755.3 | 3438.2 | 15796.3 | 15796.3 | 15948.6 | .57 | 8. | 2.45 | SI |
| 3 I | 4- 5 | 1307.7 | 3606.3 | 15405.3 | 15473.9 | 15405.3 | .57 | 8. | 2.4 | SI |
| 3 C | 4- 5 | 1307.7 | 3606.3 | 6786.8 | 6786.8 | 14924.9 | .57 | 19. | 2.5 | SI |
| 3 S | 4- 5 | 1307.7 | 3606.3 | 15327.7 | 15473.9 | 15327.7 | .57 | 8. | 2.4 | SI |

TAGLIO Z:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE | |
|------|------|------|----------|---------|--------|--------|---------|-----|------|-----|----|
| 1 | I | 5-10 | -184. | -4396.5 | 13007. | 13007. | 15841. | .57 | 8. | 2.5 | SI |
| 1 | C | 5-10 | -184. | -4396.5 | 5476.6 | 5476.6 | 15811.8 | .57 | 19. | 2.5 | SI |
| 1 | S | 5-10 | -184. | -4396.5 | 13007. | 13007. | 15782.6 | .57 | 8. | 2.5 | SI |
| 2 | I | 5-13 | -1225.4 | 2658.4 | 13007. | 13007. | 15210.7 | .57 | 8. | 2.5 | SI |
| 2 | C | 5-13 | -1225.4 | 2658.4 | 5476.6 | 5476.6 | 15168.7 | .57 | 19. | 2.5 | SI |
| 2 | S | 5-13 | -1225.4 | 2658.4 | 13007. | 13007. | 15126.8 | .57 | 8. | 2.5 | SI |
| 3 | I | 5-16 | -1023.2 | 2830.2 | 13007. | 13007. | 14403.2 | .57 | 8. | 2.5 | SI |
| 3 | C | 5-16 | -1023.2 | 2830.2 | 5476.6 | 5476.6 | 14366.7 | .57 | 19. | 2.5 | SI |
| 3 | S | 5-16 | -1023.2 | 2830.2 | 13007. | 13007. | 14330.2 | .57 | 8. | 2.5 | SI |

NEd LIMITE (NEd < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| | | | | | | |
|------|------|---------|----------|----------|--------|----|
| Asta | Caso | NEd | Nmax | Ncls | % Ncls | VE |
| 1 | 4- 7 | -18036. | -68786.2 | -105825. | 17.04 | SI |

2| 4- 7| -12789.5| -68786.2| -105825. | 12.09|SI|
 3| 4- 7| -6092.9| -68786.2| -105825. | 5.76|SI|

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|----------|----------|----------|-------|---------|---------|----|
| 1 I | 8- 1 | -16630.7 | 141433. | 98153.4 | -95.7 | -1041.2 | 728.2 | SI |
| 1 C | 8- 1 | -16405.7 | 48428.5 | 57144.7 | -44.5 | -551.6 | -17.1 | SI |
| 1 S | 8- 1 | -16180.7 | -44576.1 | 16135.9 | -34.1 | -438.7 | -124. | SI |
| 2 I | 8- 1 | -12956.9 | -58269.6 | -77694.5 | -51.2 | -598.8 | 189.3 | SI |
| 2 C | 8- 1 | -12633.5 | 1705.5 | -8629.4 | -17. | -244.5 | -194.9 | SI |
| 2 S | 8- 1 | -12310. | 61680.7 | 60435.7 | -46.9 | -549.6 | 154.2 | SI |
| 3 I | 8- 1 | -7033.5 | -98888.6 | -72739.9 | -72.8 | -720.1 | 945. | SI |
| 3 C | 8- 1 | -6752.3 | 984. | 10490.6 | -10.3 | -144.7 | -90.1 | SI |
| 3 S | 8- 1 | -6471. | 100856.5 | 93721.2 | -82.9 | -806.5 | 1179.6 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|----------|----------|----------|-------|---------|---------|----|
| 1 I | 9- 1 | -13960.8 | 119007.1 | 80759.6 | -79.9 | -869.4 | 604.9 | SI |
| 1 C | 9- 1 | -13735.8 | 42057. | 48923.4 | -37.9 | -469. | -6.5 | SI |
| 1 S | 9- 1 | -13510.8 | -34893.1 | 17087.1 | -28.6 | -368.6 | -101.3 | SI |
| 2 I | 9- 1 | -10593.2 | -50666. | -68683.4 | -44.8 | -518.6 | 196.9 | SI |
| 2 C | 9- 1 | -10269.7 | -38.1 | -7387.4 | -13.5 | -196. | -161.1 | SI |
| 2 S | 9- 1 | -9946.3 | 50589.7 | 53908.6 | -39.8 | -463.4 | 151.4 | SI |
| 3 I | 9- 1 | -5513.8 | -73422.8 | -66606.8 | -58.7 | -585.6 | 758.2 | SI |
| 3 C | 9- 1 | -5232.5 | -78.2 | 10123.9 | -8.3 | -115. | -67. | SI |
| 3 S | 9- 1 | -4951.3 | 73266.3 | 86854.6 | -67.6 | -659.7 | 978.3 | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|-------|----------|----------|----------|-------|---------|---------|----|
| 1 I | 10- 1 | -13060.1 | 111294.6 | 75279.6 | -74.6 | -812.2 | 564. | SI |
| 1 C | 10- 1 | -12835.1 | 39983.9 | 46031. | -35.7 | -441.2 | -3. | SI |
| 1 S | 10- 1 | -12610.1 | -31326.8 | 16782.5 | -26.6 | -342.7 | -95.9 | SI |
| 2 I | 10- 1 | -9820.4 | -47568. | -65060.6 | -42.2 | -487.9 | 193.2 | SI |
| 2 C | 10- 1 | -9496.9 | -1041.7 | -6935.4 | -12.8 | -184.2 | -146.1 | SI |
| 2 S | 10- 1 | -9173.5 | 45484.5 | 51189.9 | -36.7 | -427.6 | 139.7 | SI |
| 3 I | 10- 1 | -5081. | -64707.6 | -63632.9 | -53.5 | -536.3 | 680.9 | SI |
| 3 C | 10- 1 | -4799.8 | 523.5 | 9792.6 | -7.8 | -107.9 | -59.1 | SI |
| 3 S | 10- 1 | -4518.5 | 65754.7 | 83218.2 | -62.7 | -612.2 | 914.8 | SI |

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P008 (ID=57)
 Aste : 428; 414; 503

SEZIONI UTILIZZATE

1) Rettangolare: base=25; alt.=30; Acls=750; iy=7.22; iz=8.66

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | ieiz | ieiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm |
|----|----|-----|-----|------|------|-------|------|-------|-------|------|------------|
| 1 | 1 | 2. | 2. | .8 | .8 | 240. | 216. | 45. | 45. | 8.04 | 1.072 4Φ16 |
| 2 | 1 | 2. | 2. | 1.15 | 1.15 | 345. | 321. | 54. | 54. | 8.04 | 1.072 4Φ16 |
| 3 | 1 | 2. | 2. | 1. | 1. | 300. | 276. | 46. | 46. | 8.04 | 1.072 4Φ16 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min |
|------|------|----------|------|----------|------|----------|------|----------|
| 1 I | 5-15 | -257880. | 5-15 | 257885. | 4-10 | -399490. | 4-10 | 399490. |
| 1 S | 5-15 | -435925. | 5-15 | 435925. | 4- 7 | -509440. | 4- 7 | 509440. |
| 2 I | 5-15 | -294150. | 5-15 | 294150. | 4- 5 | -295580. | 4- 5 | 295580. |
| 2 S | 5- 2 | -285885. | 5- 2 | 285885. | 4- 5 | -304360. | 4- 5 | 304360. |
| 3 I | 5-15 | -359515. | 5-15 | 359515. | 4- 7 | -415810. | 4- 7 | 415810. |
| 3 S | 5-15 | -321170. | 5-15 | 321165. | 4- 7 | -332970. | 4- 7 | 332970. |

TAGLI GERARCHIA:

| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ |
|----|------|------|---------|------|--------|------|---------|------|--------|
| 1 | 216. | 5- 2 | -5994.2 | 5- 2 | 5994.2 | 4- 2 | -5047.5 | 4- 2 | 5047.5 |
| 2 | 321. | 5- 3 | -3668.7 | 5- 3 | 3668.7 | 4- 7 | -3082.7 | 4- 7 | 3082.7 |
| 3 | 276. | 4-13 | -3661.2 | 4-13 | 3661.2 | 4- 2 | -3030.3 | 4- 2 | 3030.3 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NEd | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | |
|------|------|---------|----------|----------|-------|-------|----------|-------|----------|-------|--------|----|
| > 1 | 5-15 | -21620. | 124006. | 423767. | 1.11 | -183 | -140.1 | -126 | -2642. | .156 | 3268.3 | SI |
| 1 | 1- 1 | -40957. | 101252. | 6059. | 1.13 | -.061 | -72.6 | -.053 | -1111. | -.021 | -442.5 | SI |
| 1 | 1- 1 | -40664. | 158239. | -128884. | 4.26 | -.099 | -104.9 | -.08 | -1678. | .005 | 112.2 | SI |
| > 2 | 5-13 | -17442. | -197226. | 347174. | 1.19 | -.19 | -140.7 | -.127 | -2673. | .169 | 3549.3 | SI |
| 2 | 1- 1 | -30749. | -12554. | 33387. | 1.22 | -.035 | -45.4 | -.033 | -689.2 | -.021 | -439.6 | SI |
| 2 | 4- 5 | -18642. | 340031. | 169880. | 1.32 | -.193 | -140.9 | -.124 | -2610. | .176 | 3700.1 | SI |
| > 3 | 5- 2 | -9014. | -151290. | -161411. | 1.11 | -.104 | -108.5 | -.067 | -1413. | .1 | 2109.8 | SI |
| 3 | 1- 1 | -16625. | 20799. | -33717. | 1.08 | -.024 | -31.5 | -.021 | -439.1 | -.007 | -154.7 | SI |
| 3 | 5-13 | -8411. | 187252. | -264438. | 1.08 | -.157 | -134.5 | -.099 | -2081. | .171 | 3599.9 | SI |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|---------|---------|---------|------|
| 1 I | 5-15 | -208567.4 | 240. | 3870.7 | 10.0919 | 93855. | 111151. | 124006. | .204 |
| 2 S | 4- 5 | -101530.3 | 345. | 3893.6 | 10.0325 | 253991. | 275430. | 340031. | .182 |
| 3 S | 5-13 | -132136.7 | 300. | 3831.6 | 10.1947 | 166123. | 174535. | 187252. | .085 |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|----------|----------|----------|------|
| 1 I | 5-15 | -349073.5 | 240. | 6478.3 | 8.6829 | 380225. | 397521. | 423767. | .204 |
| 2 S | 4- 5 | -169645.2 | 345. | 6505.8 | 8.6462 | 129125. | 150564. | 169880. | .182 |
| 3 S | 5-13 | -221791.3 | 300. | 6431.4 | 8.7461 | -245327. | -253739. | -264438. | .085 |

TAGLIO Y:

| Asta | Caso | VED | VED ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|--------|----------|---------|---------|---------|-----|-----|------|----|
| 1 I | 5- 2 | 1920.8 | 5994.2 | 16118.7 | 16118.7 | 17437.8 | .57 | 8. | 2.5 | SI |
| 1 C | 5- 2 | 1920.8 | 5994.2 | 6786.8 | 6786.8 | 17407.6 | .57 | 19. | 2.5 | SI |
| 1 S | 5- 2 | 1920.8 | 5994.2 | 16118.7 | 16118.7 | 17377.5 | .57 | 8. | 2.5 | SI |
| 2 I | 5- 3 | 1607.9 | 3668.7 | 16118.7 | 16118.7 | 16323.6 | .57 | 8. | 2.5 | SI |
| 2 C | 5- 3 | 1607.9 | 3668.7 | 6786.8 | 6786.8 | 16280.3 | .57 | 19. | 2.5 | SI |
| 2 S | 5- 3 | 1607.9 | 3668.7 | 16118.7 | 16118.7 | 16236.9 | .57 | 8. | 2.5 | SI |
| 3 I | 4-13 | 272.7 | 3661.2 | 15473.9 | 15473.9 | 15671.8 | .57 | 8. | 2.4 | SI |
| 3 C | 4-13 | 272.7 | 3661.2 | 6786.8 | 6786.8 | 15183.8 | .57 | 19. | 2.5 | SI |
| 3 S | 4-13 | 272.7 | 3661.2 | 15473.9 | 15473.9 | 15594.2 | .57 | 8. | 2.4 | SI |

TAGLIO Z:

| Asta | Caso | VED | VED ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|---------|----------|--------|--------|---------|-----|-----|------|----|
| 1 I | 4- 2 | -1271.8 | 5047.5 | 13007. | 13007. | 17160.1 | .57 | 8. | 2.5 | SI |
| 1 C | 4- 2 | -1271.8 | 5047.5 | 5476.6 | 5476.6 | 17160.1 | .57 | 19. | 2.5 | SI |
| 1 S | 4- 2 | -1271.8 | 5047.5 | 13007. | 13007. | 17160.1 | .57 | 8. | 2.5 | SI |
| 2 I | 4- 7 | -1490.7 | 3082.7 | 13007. | 13007. | 16226.8 | .57 | 8. | 2.5 | SI |
| 2 C | 4- 7 | -1490.7 | 3082.7 | 5476.6 | 5476.6 | 16184.9 | .57 | 19. | 2.5 | SI |
| 2 S | 4- 7 | -1490.7 | 3082.7 | 13007. | 13007. | 16142.9 | .57 | 8. | 2.5 | SI |
| 3 I | 4- 2 | -1452.7 | 3030.3 | 13007. | 13007. | 14979.2 | .57 | 8. | 2.5 | SI |
| 3 C | 4- 2 | -1452.7 | 3030.3 | 5476.6 | 5476.6 | 14942.7 | .57 | 19. | 2.5 | SI |
| 3 S | 4- 2 | -1452.7 | 3030.3 | 13007. | 13007. | 14906.2 | .57 | 8. | 2.5 | SI |

NED LIMITE (NEd < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | Caso | NEd | Nmax | Ncls | % Ncls | VE |
|------|------|----------|----------|----------|--------|----|
| 1 | 4- 5 | -27271.1 | -68786.2 | -105825. | 25.77 | SI |
| 2 | 4- 5 | -19289.4 | -68786.2 | -105825. | 18.23 | SI |
| 3 | 4- 5 | -9650.6 | -68786.2 | -105825. | 9.12 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | MEyd | MEzd | Scls | SaccMin | SaccMax | VE |
|------|------|----------|-----------|----------|-------|---------|---------|----|
| 1 I | 8- 1 | -29170.2 | 48656.4 | 28359.9 | -52.9 | -704.3 | -310.2 | SI |
| 1 C | 8- 1 | -28945.2 | 57819.1 | 3870.3 | -49.8 | -667.4 | -339.3 | SI |
| 1 S | 8- 1 | -28720.2 | 66981.9 | -20619.3 | -55.5 | -727.4 | -271.5 | SI |
| 2 I | 8- 1 | -21926. | -112979.1 | 3906.9 | -56.7 | -696.5 | -59.8 | SI |
| 2 C | 8- 1 | -21602.6 | -6197.8 | 18428. | -30.7 | -435.5 | -315.8 | SI |
| 2 S | 8- 1 | -21279.2 | 100583.5 | 32949.2 | -59.2 | -722.9 | -11.4 | SI |
| 3 I | 8- 1 | -11916.3 | -127416.1 | -6341.3 | -59.4 | -620.7 | 495.9 | SI |
| 3 C | 8- 1 | -11635. | 12983.8 | -20796.6 | -21.4 | -286. | -118.7 | SI |
| 3 S | 8- 1 | -11353.8 | 153383.8 | -35252. | -82.5 | -815.4 | 977.4 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | Scls | SaccMin | SaccMax | VE |
|------|------|----------|----------|----------|-------|---------|---------|----|
| 1 I | 9- 1 | -24563.7 | 39730. | 23172.2 | -44. | -588.1 | -266.2 | SI |
| 1 C | 9- 1 | -24338.7 | 49917.8 | 3574.4 | -42.3 | -565.4 | -281. | SI |
| 1 S | 9- 1 | -24113.7 | 60105.6 | -16023.4 | -47.4 | -618.1 | -220.6 | SI |
| 2 I | 9- 1 | -18032.3 | -99120.3 | 7198.2 | -49.6 | -602.4 | -13.5 | SI |
| 2 C | 9- 1 | -17708.8 | -5326.4 | 13453. | -24.8 | -353.8 | -262.1 | SI |

| | | | | | | | | | |
|---|---|------|----------|-----------|----------|-------|--------|-------|----|
| 2 | S | 9- 1 | -17385.4 | 88467.5 | 19707.8 | -48.6 | -591.7 | -6.4 | SI |
| 3 | I | 9- 1 | -9439.9 | -113504.9 | -1268.7 | -51.6 | -520.1 | 520.6 | SI |
| 3 | C | 9- 1 | -9158.7 | 12221.9 | -14879.4 | -17.1 | -227. | -91.6 | SI |
| 3 | S | 9- 1 | -8877.4 | 137948.7 | -28490.2 | -73.6 | -702.5 | 996.4 | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE | |
|------|------|-------|----------|-----------|----------|---------|---------|--------|----|
| 1 | I | 10- 1 | -22980.5 | 37100.7 | 21251.3 | -41.1 | -549. | -250.3 | SI |
| 1 | C | 10- 1 | -22755.5 | 46998.9 | 3499.4 | -39.6 | -529.9 | -261.5 | SI |
| 1 | S | 10- 1 | -22530.5 | 56897. | -14252.5 | -44.3 | -577.8 | -205.8 | SI |
| 2 | I | 10- 1 | -16735.3 | -93549.7 | 8427.4 | -47. | -568.7 | -.8 | SI |
| 2 | C | 10- 1 | -16411.9 | -5000.7 | 11589.2 | -22.9 | -326. | -244.8 | SI |
| 2 | S | 10- 1 | -16088.4 | 83548.3 | 14751.1 | -44.7 | -543.8 | -9.2 | SI |
| 3 | I | 10- 1 | -8716. | -107513.2 | 1578. | -49. | -490.7 | 514.1 | SI |
| 3 | C | 10- 1 | -8434.7 | 11728.1 | -12595.7 | -15.6 | -207.7 | -85.7 | SI |
| 3 | S | 10- 1 | -8153.5 | 130969.3 | -26769.5 | -69.9 | -661.8 | 973. | SI |

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : P009 (ID=58)

Aste : 429; 415; 505

SEZIONI UTILIZZATE

1) Rettangolare: base=25; alt.=30; Acls=750; iy=7.22; iz=8.66

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | leiz | leiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm | | | | | | | | | | | |
|----|----|-----|-----|------|------|-------|------|-------|-------|------|-------|------|--|-----|--|-----|--|------|--|-------|--|------|
| 1 | | 1 | | 2. | | .8 | | .8 | | 240. | | 216. | | 45. | | 45. | | 8.04 | | 1.072 | | 4Φ16 |
| 2 | | 1 | | 2. | | 1.15 | | 1.15 | | 345. | | 321. | | 54. | | 54. | | 8.04 | | 1.072 | | 4Φ16 |
| 3 | | 1 | | 2. | | 1. | | 1. | | 300. | | 276. | | 46. | | 46. | | 8.04 | | 1.072 | | 4Φ16 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min | |
|------|------|----------|----------|----------|---------|----------|----------|----------|---------|
| 1 | I | 4-13 | -302300. | 4-13 | 302300. | 5-13 | -256820. | 5-13 | 256820. |
| 1 | S | 4-15 | -356450. | 4-15 | 356455. | 4-15 | -449660. | 4-15 | 449660. |
| 2 | I | 4- 4 | -309700. | 4- 4 | 309700. | 5- 2 | -399240. | 5- 2 | 399240. |
| 2 | S | 4- 4 | -313335. | 4- 4 | 313335. | 5-15 | -409360. | 5-15 | 409360. |
| 3 | I | 4-15 | -334695. | 4-15 | 334695. | 4-13 | -418350. | 4-13 | 418360. |
| 3 | S | 4- 4 | -315900. | 4- 4 | 315900. | 5- 4 | -383780. | 5- 4 | 383790. |

TAGLI GERARCHIA:

| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ | | |
|----|----|------|-------|------|---------|------|--------|------|---------|------|--------|
| 1 | | 216. | | 4- 6 | -5371. | 4- 6 | 5371. | 4- 6 | -4252.1 | 4- 6 | 4252.1 |
| 2 | | 321. | | 4- 2 | -3300.1 | 4- 2 | 3300.1 | 5- 2 | -2572.1 | 5- 2 | 2572.1 |
| 3 | | 276. | | 4- 4 | -3445.7 | 4- 4 | 3445.7 | 5- 4 | -2705.7 | 5- 4 | 2705.7 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NEd | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | | | |
|------|------|------|---------|----------|-------|----------|----------|-------|----------|-------|--------|-------|--------|----|
| > 1 | | 5-12 | -8368. | -294005. | 1.07 | 125050. | 1.08 | -.153 | -133.4 | -.09 | -1894. | .184 | 3870.1 | SI |
| 1 | | 5-12 | -8143. | -119219. | 1.04 | 63531. | 1.02 | -.059 | -71. | -.039 | -816. | .05 | 1056.1 | SI |
| 1 | | 4- 4 | -14350. | 57815. | 1.37 | 125158. | 1.16 | -.051 | -63.1 | -.039 | -820.3 | .02 | 412.9 | SI |
| > 2 | | 5- 5 | -9911. | 209332. | 1.18 | -146998. | 1.16 | -.124 | -120.5 | -.078 | -1636. | .126 | 2653.1 | SI |
| 2 | | 1- 1 | -13690. | 19678. | 1.16 | -9907. | 1.09 | -.017 | -23. | -.015 | -322. | -.008 | -163.5 | SI |
| 2 | | 5-13 | -7239. | 178217. | 1.14 | 150182. | 1.11 | -.113 | -114.2 | -.07 | -1469. | .123 | 2575.1 | SI |
| > 3 | | 5- 5 | -5084. | 84458. | 1.11 | -91492. | 1.09 | -.056 | -67.9 | -.036 | -758.4 | .055 | 1155.8 | SI |
| 3 | | 1- 1 | -8036. | -63188. | 1.07 | 17114. | 1.04 | -.025 | -32.7 | -.019 | -388.9 | .008 | 167. | SI |
| 3 | | 1- 1 | -7670. | -181629. | 1.12 | 154875. | 1.1 | -.115 | -115.9 | -.072 | -1513. | .124 | 2606.3 | SI |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu | |
|------|------|------|-----------|------|---------|---------|----------|----------|----------|------|
| 1 | I | 5-12 | -205887.3 | 240. | 3820.9 | 10.2233 | -275361. | -282056. | -294005. | .079 |
| 2 | I | 5- 5 | -100210.8 | 345. | 3843. | 10.1646 | 177232. | 188629. | 209332. | .094 |
| 3 | S | 1- 1 | -132044. | 300. | 3829. | 10.2019 | -162403. | -170073. | -181629. | .079 |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu | |
|------|------|------|-----------|------|---------|--------|---------|---------|---------|------|
| 1 | I | 5-12 | -345857.4 | 240. | 6418.6 | 8.7636 | 115331. | 122025. | 125050. | .079 |

| | | | | | | | | | |
|-----|------|-----------|------|--------|--------|----------|----------|----------|------|
| 2 I | 5- 5 | -168061.8 | 345. | 6445. | 8.7276 | -126932. | -138330. | -146998. | .094 |
| 3 S | 1- 1 | -221680.1 | 300. | 6428.2 | 8.7505 | 141336. | 149006. | 154875. | .079 |

TAGLIO Y:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|--------|----------|---------|---------|---------|-----|-----|------|----|
| 1 I | 4- 6 | 733.5 | 5371. | 16118.7 | 16118.7 | 16201.4 | .57 | 8. | 2.5 | SI |
| 1 C | 4- 6 | 733.5 | 5371. | 6786.8 | 6786.8 | 16171.3 | .57 | 19. | 2.5 | SI |
| 1 S | 4- 6 | 733.5 | 5371. | 16118.7 | 16118.7 | 16141.1 | .57 | 8. | 2.5 | SI |
| 2 I | 4- 3 | 1485.7 | 3290.7 | 15750.7 | 15796.3 | 15750.7 | .57 | 8. | 2.45 | SI |
| 2 C | 4- 2 | 1503.8 | 3300.1 | 6786.8 | 6786.8 | 15570.6 | .57 | 19. | 2.5 | SI |
| 2 S | 4- 3 | 1485.7 | 3290.7 | 15662.7 | 15796.3 | 15662.7 | .57 | 8. | 2.45 | SI |
| 3 I | 4- 4 | 1194.3 | 3445.7 | 15303.3 | 15473.9 | 15303.3 | .57 | 8. | 2.4 | SI |
| 3 C | 4- 4 | 1194.3 | 3445.7 | 6786.8 | 6786.8 | 14825.9 | .57 | 19. | 2.5 | SI |
| 3 S | 4- 4 | 1194.3 | 3445.7 | 15225.7 | 15473.9 | 15225.7 | .57 | 8. | 2.4 | SI |

TAGLIO Z:

| Asta | Caso | VEd | VEd ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|--------|----------|--------|--------|---------|-----|-----|------|----|
| 1 I | 4- 6 | -293.2 | 4252.1 | 13007. | 13007. | 15688.5 | .57 | 8. | 2.5 | SI |
| 1 C | 4- 6 | -293.2 | 4252.1 | 5476.6 | 5476.6 | 15659.3 | .57 | 19. | 2.5 | SI |
| 1 S | 4- 6 | -293.2 | 4252.1 | 13007. | 13007. | 15630.1 | .57 | 8. | 2.5 | SI |
| 2 I | 5- 2 | 1074.2 | 2572.1 | 13007. | 13007. | 14969. | .57 | 8. | 2.5 | SI |
| 2 C | 5- 2 | 1074.2 | 2572.1 | 5476.6 | 5476.6 | 14927. | .57 | 19. | 2.5 | SI |
| 2 S | 5- 2 | 1074.2 | 2572.1 | 13007. | 13007. | 14885.1 | .57 | 8. | 2.5 | SI |
| 3 I | 5- 4 | 887.7 | -2705.7 | 13007. | 13007. | 14319.5 | .57 | 8. | 2.5 | SI |
| 3 C | 5- 4 | 887.7 | -2705.7 | 5476.6 | 5476.6 | 14283. | .57 | 19. | 2.5 | SI |
| 3 S | 5- 4 | 887.7 | -2705.7 | 13007. | 13007. | 14246.5 | .57 | 8. | 2.5 | SI |

NED LIMITE (NEd < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | Caso | NEd | Nmax | Ncls | % Ncls | VE |
|------|------|----------|----------|----------|--------|----|
| 1 | 4- 2 | -15780.8 | -68786.2 | -105825. | 14.91 | SI |
| 2 | 4- 2 | -10726.7 | -68786.2 | -105825. | 10.14 | SI |
| 3 | 4- 2 | -5342.8 | -68786.2 | -105825. | 5.05 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|----------|-----------|----------|-------|---------|---------|----|
| 1 I | 8- 1 | -13792.3 | -137472.4 | 75655.9 | -87.6 | -928.5 | 779.2 | SI |
| 1 C | 8- 1 | -13567.3 | -60362.8 | 53463.9 | -44.9 | -537.9 | 80.9 | SI |
| 1 S | 8- 1 | -13342.3 | 16746.9 | 31271.9 | -26.7 | -350.3 | -113.7 | SI |
| 2 I | 8- 1 | -10061.1 | 25458.3 | -72941.3 | -36.3 | -433.9 | 107.6 | SI |
| 2 C | 8- 1 | -9737.7 | 11834.8 | -6485. | -15.8 | -216.3 | -122.4 | SI |
| 2 S | 8- 1 | -9414.2 | -1788.8 | 59971.3 | -24.5 | -311. | -13.7 | SI |
| 3 I | 8- 1 | -5924.9 | 31175.2 | -76867.1 | -41.2 | -442.8 | 405.3 | SI |
| 3 C | 8- 1 | -5643.7 | -40239.8 | 11790.2 | -21.7 | -248.7 | 79.9 | SI |
| 3 S | 8- 1 | -5362.4 | -111654.8 | 100447.6 | -92.4 | -865. | 1493.4 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|----------|-----------|----------|-------|---------|---------|----|
| 1 I | 9- 1 | -11976.8 | -119775.1 | 65678.3 | -76.3 | -807.9 | 680.9 | SI |
| 1 C | 9- 1 | -11751.8 | -53047.1 | 46837.6 | -39.3 | -470.1 | 75.4 | SI |
| 1 S | 9- 1 | -11526.8 | 13681. | 27996.9 | -23. | -302.9 | -98. | SI |
| 2 I | 9- 1 | -8577.7 | 25348.1 | -64434.1 | -33. | -390.4 | 119.9 | SI |
| 2 C | 9- 1 | -8254.3 | 9191. | -5676.9 | -13.2 | -181.5 | -105.6 | SI |
| 2 S | 9- 1 | -7930.9 | -6966.1 | 53080.3 | -22.9 | -285.4 | 14.7 | SI |
| 3 I | 9- 1 | -4796. | 22944.3 | -68532.1 | -34.8 | -371.1 | 370.7 | SI |
| 3 C | 9- 1 | -4514.7 | -26401.1 | 11016.4 | -15.4 | -181.7 | 33. | SI |
| 3 S | 9- 1 | -4233.5 | -75746.6 | 90564.9 | -71.2 | -679. | 1123.5 | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|-------|---------|-----------|----------|-------|---------|---------|----|
| 1 I | 10- 1 | -11360. | -113587.9 | 62639. | -72.5 | -767.5 | 647.5 | SI |
| 1 C | 10- 1 | -11135. | -50510. | 44446.3 | -37.4 | -446.5 | 72.8 | SI |
| 1 S | 10- 1 | -10910. | 12567.8 | 26253.6 | -21.6 | -285.1 | -94.4 | SI |
| 2 I | 10- 1 | -8097.6 | 25081.8 | -61017.2 | -31.7 | -373.4 | 119.9 | SI |
| 2 C | 10- 1 | -7774.2 | 8415.4 | -5387.1 | -12.4 | -170.4 | -100. | SI |
| 2 S | 10- 1 | -7450.8 | -8251. | 50243. | -22.2 | -274.5 | 21.1 | SI |
| 3 I | 10- 1 | -4459.5 | 21010.8 | -64915.5 | -32.7 | -347.8 | 353.8 | SI |
| 3 C | 10- 1 | -4178.3 | -22831.5 | 10562.8 | -13.7 | -163.5 | 23.6 | SI |
| 3 S | 10- 1 | -3897. | -66673.7 | 86041.2 | -65.1 | -622.3 | 1023.8 | SI |

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : PILASTRO_ABBAINO001 (ID=30)
 Aste : 326

SEZIONI UTILIZZATE

1) Rettangolare: base=12; alt.=20; Acls=240; iy=3.46; iz=5.77

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | eiz | eiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm |
|----|----|-----|-----|-----|-----|-------|------|-------|-------|------|------------|
| 1 | 1 | 2. | 2. | .43 | .43 | 130. | 114. | 45. | 45. | 6.16 | 2.566 4φ14 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min |
|------|------|----------|------|----------|------|----------|------|----------|
| 1 I | 5-11 | -69015. | 5- 9 | 69020. | 5-10 | -157985. | 5- 9 | 157990. |
| 1 S | 5- 9 | -69000. | 5- 9 | 68995. | 5- 9 | -158170. | 5- 9 | 158175. |

TAGLI GERARCHIA:

| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ |
|----|------|------|---------|------|--------|------|---------|------|--------|
| 1 | 114. | 4-12 | -3057.2 | 4-12 | 3057.1 | 5- 5 | -1333.2 | 5- 5 | 1333.3 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NED | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | |
|------|------|-------|--------|------|--------|------|----------|-------|----------|-------|------|------|
| > 1 | 5- 7 | -185. | -3103. | 1.03 | 1359. | 1.06 | -.01 | -13.2 | -.002 | -36.7 | .007 | 143. |
| 1 | 5- 7 | -176. | -1264. | 1.01 | 381. | 1. | -.004 | -5. | -.001 | -19.8 | .002 | 38. |
| 1 | 1- 1 | -385. | -950. | 2.25 | -1645. | 1.11 | -.004 | -5.2 | -.002 | -42.2 | .001 | 14.6 |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|----------|------|-------|---------|--------|--------|--------|------|
| 1 I | 5- 7 | -27294.4 | 130. | 148.6 | 19.3782 | -3002. | -3082. | -3103. | .005 |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|-------|-------|-------|------|
| 1 I | 5- 7 | -262926.1 | 130. | 1431.7 | 5.5879 | 1278. | 1358. | 1359. | .005 |

TAGLIO Y:

| Asta | Caso | VED | VED ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|-------|----------|--------|--------|--------|-----|-----|------|----|
| 1 I | 4-12 | -18.2 | -3057.2 | 6028.5 | 6069.1 | 6028.5 | .57 | 6. | 1.15 | SI |
| 1 C | 4-12 | -18.2 | -3057.2 | 4452.9 | 4452.9 | 4517.3 | .57 | 16. | 2.25 | SI |
| 1 S | 4-12 | -18.2 | -3057.2 | 6025.2 | 6069.1 | 6025.2 | .57 | 6. | 1.15 | SI |

TAGLIO Z:

| Asta | Caso | VED | VED ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|-------|----------|--------|--------|--------|-----|-----|------|----|
| 1 I | 5- 5 | -26.5 | 1333.3 | 4916.5 | 4916.5 | 4920.3 | .85 | 6. | 1.25 | SI |
| 1 C | 5- 5 | -26.5 | 1333.3 | 3539.9 | 3539.9 | 3580.1 | .85 | 16. | 2.4 | SI |
| 1 S | 5- 5 | -26.5 | 1333.3 | 4916.5 | 4916.5 | 4917.6 | .85 | 6. | 1.25 | SI |

NED LIMITE (NEd < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | Caso | NEd | Nmax | Ncls | % Ncls | VE |
|------|------|--------|----------|---------|--------|----|
| 1 | 5- 7 | -185.2 | -22011.6 | -33864. | .55 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|--------|--------|--------|------|---------|---------|----|
| 1 I | 8- 1 | -280.8 | -516.6 | 2586.5 | -5.4 | -42.6 | 33.2 | SI |
| 1 C | 8- 1 | -271.4 | -400.4 | 794.4 | -2.4 | -22.9 | -1.4 | SI |
| 1 S | 8- 1 | -262.1 | -284.1 | -997.8 | -2.3 | -23.1 | -.2 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|------|--------|--------|--------|------|---------|---------|----|
| 1 I | 9- 1 | -188.7 | -299.1 | 1527.6 | -3.1 | -25.9 | 16.5 | SI |
| 1 C | 9- 1 | -179.4 | -236.6 | 451.3 | -1.4 | -14.1 | -2.2 | SI |
| 1 S | 9- 1 | -170. | -174.1 | -624.9 | -1.5 | -14.6 | -.6 | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|-------|--------|--------|--------|------|---------|---------|----|
| 1 I | 10- 1 | -165.7 | -243.3 | 1261.5 | -2.6 | -21.7 | 12.3 | SI |
| 1 C | 10- 1 | -156.4 | -195. | 365. | -1.2 | -11.9 | -2.3 | SI |
| 1 S | 10- 1 | -147. | -146.7 | -531.5 | -1.2 | -12.5 | -.7 | SI |

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : PILASTRO_ABBAINO002 (ID=31)
Aste : 327

SEZIONI UTILIZZATE

1) Rettangolare: base=12; alt.=20; Acls=240; iy=3.46; iz=5.77

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| As | Se | e0z | e0y | eiz | eiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm |
|----|----|-----|-----|-----|-----|-------|------|-------|-------|------|-------|
| 1 | 1 | 2. | 2. | .43 | .43 | 130. | 114. | 45. | 45. | 6.16 | 2.566 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| Asta | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min |
|------|------|----------|------|----------|------|----------|------|----------|
| 1 I | 5- 7 | -69010. | 5- 5 | 69015. | 5- 5 | -157910. | 5- 5 | 157910. |
| 1 S | 5- 5 | -68995. | 5- 6 | 68995. | 5- 5 | -158175. | 5- 5 | 158175. |

TAGLI GERARCHIA:

| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ |
|----|------|------|---------|------|--------|------|---------|------|--------|
| 1 | 114. | 4-11 | -3057.3 | 4-11 | 3057.4 | 5- 9 | -1333.3 | 5-10 | 1333.3 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| Asta | Caso | NEd | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE | |
|------|------|-------|--------|------|--------|------|----------|-------|----------|-------|------|-------|
| > 1 | 5- 7 | -146. | -3014. | 1.03 | 1665. | 1.04 | -.01 | -13.5 | -.002 | -37.8 | .007 | 150.3 |
| 1 | 5- 7 | -137. | -1110. | 1.01 | 585. | 1. | -.003 | -4.8 | -.001 | -19.4 | .002 | 40.1 |
| 1 | 1- 1 | -380. | 940. | 3.44 | -1322. | 1.14 | -.003 | -4.7 | -.002 | -38.6 | 0. | 9.6 |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|----------|------|-------|---------|--------|--------|--------|------|
| 1 I | 5- 7 | -27287.4 | 130. | 148.6 | 19.3832 | -2935. | -2998. | -3014. | .004 |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
|------|------|-----------|------|--------|---------|-------|-------|-------|------|
| 1 I | 5- 7 | -262914.4 | 130. | 1431.6 | 5.5882 | 1601. | 1664. | 1665. | .004 |

TAGLIO Y:

| Asta | Caso | VED | VED ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|-------|----------|--------|--------|--------|-----|-----|------|----|
| 1 I | 4- 4 | -9.2 | 3056.6 | 6027.5 | 6069.1 | 6027.5 | .57 | 6. | 1.15 | SI |
| 1 C | 4-11 | -13.8 | 3057.4 | 4452.9 | 4452.9 | 4517.8 | .57 | 16. | 2.25 | SI |
| 1 S | 4- 4 | -9.2 | 3056.6 | 6024.2 | 6069.1 | 6024.2 | .57 | 6. | 1.15 | SI |

TAGLIO Z:

| Asta | Caso | VED | VED ger. | VRd | VRsd | VRcd | Asw | s | ctgT | VE |
|------|------|-----|----------|--------|--------|--------|-----|-----|------|----|
| 1 I | 5-10 | 23. | 1333.3 | 4916.5 | 4916.5 | 4920.1 | .85 | 6. | 1.25 | SI |
| 1 C | 5-10 | 23. | 1333.3 | 3539.9 | 3539.9 | 3579.9 | .85 | 16. | 2.4 | SI |
| 1 S | 5-10 | 23. | 1333.3 | 4916.5 | 4916.5 | 4917.4 | .85 | 6. | 1.25 | SI |

NED LIMITE (Ned < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| Asta | Caso | NEd | Nmax | Ncls | % Ncls | VE |
|------|------|--------|----------|---------|--------|----|
| 1 | 5-12 | -183.4 | -22011.6 | -33864. | .54 | SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| Asta | Caso | NEd | MEyd | MEzd | Scls | SaccMin | SaccMax | VE |
|------|------|--------|--------|--------|------|---------|---------|----|
| 1 I | 8- 1 | -277.9 | -422.1 | 2362. | -4.7 | -39. | 26.3 | SI |
| 1 C | 8- 1 | -268.6 | -119.8 | 789.9 | -1.8 | -19.8 | -4.9 | SI |
| 1 S | 8- 1 | -259.2 | 182.4 | -782.3 | -1.9 | -19.9 | -3.9 | SI |

Frequenti:

| Asta | Caso | NEd | MEyd | MEzd | Scls | SaccMin | SaccMax | VE |
|------|------|--------|--------|--------|------|---------|---------|----|
| 1 I | 9- 1 | -186.9 | -283.4 | 1437.3 | -2.9 | -24.8 | 14.4 | SI |
| 1 C | 9- 1 | -177.6 | -87.6 | 472.8 | -1.1 | -12.8 | -3.6 | SI |
| 1 S | 9- 1 | -168.2 | 108.2 | -491.7 | -1.2 | -12.7 | -2.8 | SI |

Quasi permanenti:

| Asta | Caso | NEd | MEyd | MEzd | Scls | SaccMin | SaccMax | VE |
|------|-------|--------|--------|--------|------|---------|---------|----|
| 1 I | 10- 1 | -164.2 | -246.8 | 1206.7 | -2.5 | -21.2 | 11.4 | SI |
| 1 C | 10- 1 | -154.8 | -78.6 | 393.7 | -1. | -11. | -3.3 | SI |

1 S| 10- 1| -145.5| 89.6| -419.3| -1. | -10.9| -2.5|SI|

L'elemento che segue fa riferimento alla Tipologia 3.

VERIFICA PILASTRO IN CEMENTO ARMATO

Nome pilastro : PILASTRO_ABBAINO003 (ID=32)
Aste : 324

SEZIONI UTILIZZATE

1) Rettangolare: base=10; alt.=16; Acls=160; iy=2.89; iz=4.62

DESCRIZIONE ASTE E ARMATURA LONGITUDINALE

| | | | | | | | | | | | | |
|----|----|-----|-----|-----|-----|-------|------|-------|-------|------|-------|------|
| As | Se | e0z | e0y | eiz | eiy | Lassi | Lnet | Lcr.I | Lcr.S | Af | % arm | |
| 1 | 1 | 2. | 2. | .12 | .12 | 35. | 19. | 0. | 0. | 6.16 | 3.848 | 4φ14 |

GERARCHIA DELLE RESISTENZE

MOMENTI ULTIMI MINIMI (CASI SISMICI):

| | | | | | | | | |
|------|------|----------|------|----------|------|----------|------|----------|
| Asta | caso | Myu- min | caso | Myu+ min | caso | Mzu- min | caso | Mzu+ min |
| 1 I | 4-10 | -33570. | 4- 9 | 33570. | 5- 7 | -105725. | 5- 7 | 105725. |
| 1 S | 4- 9 | -33660. | 4-11 | 33660. | 5- 5 | -106090. | 5- 5 | 106090. |

TAGLI GERARCHIA:

| | | | | | | | | | |
|----|-----|------|-------|------|-------|------|-------|------|-------|
| As | Lp | caso | VEyd- | caso | VEyd+ | caso | VEzd- | caso | VEzd+ |
| 1 | 19. | 4- 1 | 0. | 4-11 | 44.2 | 5- 7 | -72.5 | 5-10 | 69.8 |

VERIFICHE ALLO STATO LIMITE ULTIMO

PRESSO-FLESSIONE (inclusi imperfezioni e second'ordine):

| | | | | | | | | | | | |
|------|------|-------|--------|------|-------|------|----------|-------|----------|-------|---------------|
| Asta | Caso | NED | MEyd | MEzd | eCls% | sig | eAccMin% | sig | eAccMax% | sig | VE |
| > 1 | 5- 7 | -113. | -2027. | 1.01 | -977. | 1.01 | -.013 | -17.5 | -.001 | -13.2 | .006 131.7 SI |
| 1 | 5- 7 | -111. | -1169. | 1. | -479. | 1. | -.007 | -9.8 | 0. | -10.5 | .003 65.6 SI |
| 1 | 1- 1 | -299. | -635. | 4. | 633. | 999. | -.004 | -5.5 | -.002 | -32.9 | 0. 5.3 SI |

INSTABILITA' - RIGIDEZZA NOMINALE Y [EC2 5.8.7]:

| | | | | | | | | | |
|------|------|----------|-----|------|---------|--------|--------|--------|------|
| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
| 1 I | 5- 7 | -84449.2 | 35. | 33.3 | 40.0026 | -2011. | -2024. | -2027. | .005 |

INSTABILITA' - RIGIDEZZA NOMINALE Z [EC2 5.8.7]:

| | | | | | | | | | |
|------|------|-----------|-----|-------|---------|-------|-------|-------|------|
| Asta | Caso | NB | 10 | Jn | Jcls/Jn | Mcal | M0Ed | MEd | nu |
| 1 I | 5- 7 | -1584694. | 35. | 625.5 | 5.4573 | -964. | -977. | -977. | .005 |

TAGLIO Y:

| | | | | | | | | | |
|------|------|------|----------|--------|--------|--------|-----|----|---------|
| Asta | Caso | VED | VED ger. | VRd | VRsd | VRcd | Asw | s | ctgT VE |
| 1 I | 1- 1 | 75.4 | 0. | 3828.7 | 4739.8 | 3828.7 | .57 | 5. | 1. SI |
| 1 C | 1- 1 | 75.4 | 0. | 3828.4 | 4739.8 | 3828.4 | .57 | 5. | 1. SI |
| 1 S | 1- 1 | 75.4 | 0. | 3828. | 4739.8 | 3828. | .57 | 5. | 1. SI |

TAGLIO Z:

| | | | | | | | | | |
|------|------|-------|----------|--------|--------|--------|-----|----|---------|
| Asta | Caso | VED | VED ger. | VRd | VRsd | VRcd | Asw | s | ctgT VE |
| 1 I | 5- 7 | -48.4 | -72.5 | 3011.9 | 3524.9 | 3011.9 | .85 | 5. | 1. SI |
| 1 C | 5- 7 | -48.4 | -72.5 | 3011.7 | 3524.9 | 3011.7 | .85 | 5. | 1. SI |
| 1 S | 5- 7 | -48.4 | -72.5 | 3011.5 | 3524.9 | 3011.5 | .85 | 5. | 1. SI |

NED LIMITE (NED < Nmax , Nmax=65% di Ncls ; Ncls=fcd*Ac) [7.4.4.2.1]:

| | | | | | |
|------|------|--------|----------|---------|-----------|
| Asta | Caso | NED | Nmax | Ncls | % Ncls VE |
| 1 | 4- 8 | -113.1 | -14674.4 | -22576. | .5 SI |

VERIFICHE ALLO STATO LIMITE DI ESERCIZIO

Rare:

| | | | | | | | |
|------|------|--------|--------|---------|------|---------|------------|
| Asta | Caso | NEd | MEyd | MEzd | Scls | SaccMin | SaccMax VE |
| 1 I | 8- 1 | -206. | -170.8 | -1780.1 | -5.8 | -38.5 | 33.5 SI |
| 1 C | 8- 1 | -204.4 | -138.8 | -890. | -3.2 | -25.8 | 4.5 SI |
| 1 S | 8- 1 | -202.7 | -106.8 | 0. | -1.2 | -13.4 | -11.3 SI |

Frequenti:

| | | | | | | | |
|------|------|--------|--------|---------|------|---------|------------|
| Asta | Caso | NEd | MEyd | MEzd | Scls | SaccMin | SaccMax VE |
| 1 I | 9- 1 | -131.4 | -104.3 | -1116.6 | -3.6 | -24.3 | 20.6 SI |
| 1 C | 9- 1 | -129.7 | -85.2 | -558.3 | -2. | -16.2 | 2.6 SI |
| 1 S | 9- 1 | -128.1 | -66. | 0. | -.8 | -8.4 | -7.2 SI |

| Asta | Caso | NEd | MEyd | MEzd | ScIs | SaccMin | SaccMax | VE |
|------|-------|--------|-------|--------|------|---------|---------|----|
| 1 I | 10- 1 | -112.8 | -87. | -950.7 | -3.1 | -20.7 | 17.4 | SI |
| 1 C | 10- 1 | -111.1 | -71.3 | -475.4 | -1.7 | -13.8 | 2.1 | SI |
| 1 S | 10- 1 | -109.4 | -55.7 | 0. | -.6 | -7.2 | -6.1 | SI |

3. Verifica Platea

CASI DI CARICO: ->

| Nome | Descrizione |
|------|----------------------|
| 1 | SLU SENZA SISMA |
| 4 | SLU con SISMAX PRINC |
| 5 | SLU con SISMAX PRINC |

| | | |
|--|----------|-----------|
| tensione di snervamento acciaio (fyk): | 4500 | daN/cm2 |
| coefficiente sicurezza acciaio | : 1.15 | |
| deformazione ultima acciaio | : 1.9565 | per mille |
| deformazione ultima cls | : 3.5 | per mille |
| rapporto rottura/snervamento (k): | 1 | |
| resistenza cilindrica cls (fck): | 249 | daN/cm2 |
| coefficiente sicurezza cls | : 1.5 | |
| coefficiente riduttivo (alfa): | 0.85 | |
| copriferro inferiore (asse armatura): | 3 | cm |
| copriferro superiore (asse armatura): | 3 | cm |
| moltiplicatore sollecitazioni | : 1 | |

spess = spessore guscio. Verifica effettuata su sezione BxH, con B=1 cm e H="spess" cm
Af = area disposta al lembo teso, in cm2 al metro
Afc = area disposta al lembo compresso, in cm2 al metro
Mom = momento flettente [daNcm/cm]
Nor = sforzo normale [daN]
epsC = deformazione cls [per mille]
epsF = deformazione acciaio [per mille]

CASI DI CARICO: ->

| Nome | Descrizione |
|------|-------------------------------|
| 8 | Rara (RARA) |
| 9 | Frequente (FREQUENTE) |
| 10 | Quasi Perm (QUASI PERMANENTE) |

copriferro inferiore (asse armatura): 3 cm
copriferro superiore (asse armatura): 3 cm

```
Af      = area effettiva tesa (cm2 al metro)
Afc     = area effettiva compressa (cm2 al metro)
Mom     = momento flettente [daNcm/cm]
Nor     = sforzo normale [daN]
sigC    = tensione calcestruzzo [daN/cm2]
         valore max per combinazione rara                = 149.4 daN/cm2
         '' '' '' '' '' quasi permanente                 = 112 daN/cm2
```

sigF = tensione acciaio [daN/cm²]
valore max per combinazione rara = 3600 daN/cm²

wkF = apertura caratteristica per combinazione frequente (mm) - valore max =
0.4 mm
wkP = " " " " quasi permanente (mm) - " " =

0.3 mm

DATI FRC (calcestruzzo fibrorinforzato, verifica secondo Linee Guida maggio 2022):
fFtsk = tensione di progetto in esercizio = 0 daN/cm2
<-

L'elemento che segue fa riferimento alla Tipologia 1.

MACROGUSCIO platea

VERIFICA ARMATURE EFFETTIVE (EFFETTO MEMBRANA + PIASTRA)

L'armatura è sufficiente se le deformazioni dei materiali sono ovunque minori delle corrispondenti deformazioni ultime.

Per gli elementi non dissipativi la permanenza in campo elastico è ottenuta limitando la deformazione dell'acciaio alla deformazione di snervamento (1.9565 per mille) e quella del calcestruzzo al 2 per mille.

| | | INFERIORE ORIZZONTALE | | | | | | | | INFERIORE VERTICALE | | | | | | | |
|-------|-------|-----------------------|------|-------|-----|------|------|------|------|---------------------|-----|------|------|----|-----|-----|-----|
| COEF. | | | | | | | | | | | | | | | | | |
| GUSCI | spess | Af | Afc | Mom | Nor | epsC | epsF | Af | Afc | Mom | Nor | epsC | epsF | Af | Afc | Mom | Nor |
| MAX % | | | | | | | | | | | | | | | | | |
| 1 | 40 | 7.83 | 7.83 | 1300. | 0. | 0.06 | 0.24 | 7.89 | 7.91 | 1111. | 0. | 0.05 | 0.20 | | | | |
| 12 | | | | | | | | | | | | | | | | | |
| 2 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 3 | 40 | 7.83 | 7.83 | 2163. | 0. | 0.10 | 0.40 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 20 | | | | | | | | | | | | | | | | | |
| 4 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 5 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 6 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 7 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 8 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 9 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 10 | 40 | 7.83 | 7.83 | 853. | 0. | 0.04 | 0.16 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 11 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 12 | 40 | 7.83 | 7.83 | 153. | 0. | 0.01 | 0.03 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 1 | | | | | | | | | | | | | | | | | |
| 13 | 40 | 7.83 | 7.83 | 174. | 0. | 0.01 | 0.03 | 7.89 | 7.91 | 6448. | 0. | 0.30 | 1.19 | | | | |
| 58 | | | | | | | | | | | | | | | | | |
| 14 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 5266. | 0. | 0.25 | 0.97 | | | | |
| 47 | | | | | | | | | | | | | | | | | |
| 15 | 40 | 7.83 | 7.83 | 2052. | 0. | 0.10 | 0.38 | 7.89 | 7.91 | 6288. | 0. | 0.29 | 1.16 | | | | |
| 56 | | | | | | | | | | | | | | | | | |
| 16 | 40 | 7.83 | 7.83 | 717. | 0. | 0.03 | 0.13 | 7.89 | 7.91 | 6475. | 0. | 0.30 | 1.19 | | | | |
| 58 | | | | | | | | | | | | | | | | | |
| 17 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 5165. | 0. | 0.24 | 0.95 | | | | |
| 46 | | | | | | | | | | | | | | | | | |
| 18 | 40 | 7.83 | 7.83 | 2365. | 0. | 0.11 | 0.44 | 7.89 | 7.91 | 6507. | 0. | 0.30 | 1.20 | | | | |
| 58 | | | | | | | | | | | | | | | | | |
| 19 | 40 | 7.83 | 7.83 | 1189. | 0. | 0.06 | 0.22 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 11 | | | | | | | | | | | | | | | | | |
| 20 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 21 | 40 | 7.83 | 7.83 | 493. | 0. | 0.02 | 0.09 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 22 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 23 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 24 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 25 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |
| 0 | | | | | | | | | | | | | | | | | |
| 26 | 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0.00 | 7.89 | 7.91 | 0. | 0. | 0.00 | 0.00 | | | | |

| | | | | | | | | | | | | | |
|----|----|------|------|-------|----|------|------|------|------|--------|----|------|------|
| 3 | 40 | 7.83 | 7.83 | 4396. | 0. | 0.21 | 0.81 | 7.91 | 7.89 | 6346. | 0. | 0.30 | 1.16 |
| 57 | 40 | 7.83 | 7.83 | 5311. | 0. | 0.25 | 0.98 | 7.91 | 7.89 | 9170. | 0. | 0.43 | 1.68 |
| 4 | 40 | 7.83 | 7.83 | 4386. | 0. | 0.21 | 0.81 | 7.91 | 7.89 | 8113. | 0. | 0.38 | 1.49 |
| 82 | 40 | 7.83 | 7.83 | 3378. | 0. | 0.16 | 0.63 | 7.91 | 7.89 | 8383. | 0. | 0.39 | 1.54 |
| 5 | 40 | 7.83 | 7.83 | 2488. | 0. | 0.12 | 0.46 | 7.91 | 7.89 | 7633. | 0. | 0.36 | 1.40 |
| 73 | 40 | 7.83 | 7.83 | 3265. | 0. | 0.15 | 0.60 | 7.91 | 7.89 | 7174. | 0. | 0.33 | 1.32 |
| 6 | 40 | 7.83 | 7.83 | 2588. | 0. | 0.12 | 0.48 | 7.91 | 7.89 | 7313. | 0. | 0.34 | 1.34 |
| 75 | 40 | 7.83 | 7.83 | 3594. | 0. | 0.17 | 0.67 | 7.91 | 7.89 | 5156. | 0. | 0.24 | 0.95 |
| 7 | 40 | 7.83 | 7.83 | 3678. | 0. | 0.17 | 0.68 | 7.91 | 7.89 | 4165. | 0. | 0.19 | 0.76 |
| 68 | 40 | 7.83 | 7.83 | 2502. | 0. | 0.12 | 0.46 | 7.91 | 7.89 | 4399. | 0. | 0.20 | 0.81 |
| 8 | 40 | 7.83 | 7.83 | 4146. | 0. | 0.19 | 0.77 | 7.91 | 7.89 | 161. | 0. | 0.01 | 0.03 |
| 64 | 40 | 7.83 | 7.83 | 4310. | 0. | 0.20 | 0.80 | 7.91 | 7.89 | 0. | 0. | 0.00 | 0.00 |
| 9 | 40 | 7.83 | 7.83 | 1905. | 0. | 0.09 | 0.35 | 7.91 | 7.89 | 0. | 0. | 0.00 | 0.00 |
| 65 | 40 | 7.83 | 7.83 | 4319. | 0. | 0.20 | 0.80 | 7.91 | 7.89 | 523. | 0. | 0.02 | 0.10 |
| 10 | 40 | 7.83 | 7.83 | 4275. | 0. | 0.20 | 0.79 | 7.91 | 7.89 | 0. | 0. | 0.00 | 0.00 |
| 46 | 40 | 7.83 | 7.83 | 1930. | 0. | 0.09 | 0.36 | 7.91 | 7.89 | 0. | 0. | 0.00 | 0.00 |
| 11 | 40 | 7.83 | 7.83 | 3763. | 0. | 0.18 | 0.70 | 7.91 | 7.89 | 4887. | 0. | 0.23 | 0.90 |
| 37 | 40 | 7.83 | 7.83 | 3600. | 0. | 0.17 | 0.67 | 7.91 | 7.89 | 3864. | 0. | 0.18 | 0.71 |
| 12 | 40 | 7.83 | 7.83 | 2323. | 0. | 0.11 | 0.43 | 7.91 | 7.89 | 4001. | 0. | 0.19 | 0.73 |
| 39 | 40 | 7.83 | 7.83 | 2184. | 0. | 0.10 | 0.40 | 7.91 | 7.89 | 7227. | 0. | 0.34 | 1.33 |
| 13 | 40 | 7.83 | 7.83 | 2926. | 0. | 0.14 | 0.54 | 7.91 | 7.89 | 6750. | 0. | 0.31 | 1.24 |
| 37 | 40 | 7.83 | 7.83 | 2127. | 0. | 0.10 | 0.39 | 7.91 | 7.89 | 6712. | 0. | 0.31 | 1.23 |
| 14 | 40 | 7.83 | 7.83 | 4699. | 0. | 0.22 | 0.87 | 7.91 | 7.89 | 8390. | 0. | 0.39 | 1.54 |
| 39 | 40 | 7.83 | 7.83 | 3823. | 0. | 0.18 | 0.71 | 7.91 | 7.89 | 7555. | 0. | 0.35 | 1.39 |
| 15 | 40 | 7.83 | 7.83 | 2703. | 0. | 0.13 | 0.50 | 7.91 | 7.89 | 7747. | 0. | 0.36 | 1.42 |
| 16 | 40 | 7.83 | 7.83 | 7149. | 0. | 0.33 | 1.32 | 7.91 | 7.89 | 6647. | 0. | 0.31 | 1.22 |
| 17 | 40 | 7.83 | 7.83 | 5233. | 0. | 0.24 | 0.97 | 7.91 | 7.89 | 4509. | 0. | 0.21 | 0.83 |
| 39 | 40 | 7.83 | 7.83 | 3676. | 0. | 0.17 | 0.68 | 7.91 | 7.89 | 5909. | 0. | 0.28 | 1.08 |
| 18 | 40 | 7.83 | 7.83 | 4362. | 0. | 0.20 | 0.81 | 7.91 | 7.89 | 5449. | 0. | 0.25 | 1.00 |
| 19 | 40 | 7.83 | 7.83 | 7085. | 0. | 0.33 | 1.31 | 7.91 | 7.89 | 5710. | 0. | 0.27 | 1.05 |
| 44 | 40 | 7.83 | 7.83 | 8151. | 0. | 0.38 | 1.51 | 7.91 | 7.89 | 8209. | 0. | 0.38 | 1.51 |
| 20 | 40 | 7.83 | 7.83 | 3332. | 0. | 0.16 | 0.62 | 7.91 | 7.89 | 8332. | 0. | 0.39 | 1.53 |
| 35 | 40 | 7.83 | 7.83 | 5748. | 0. | 0.27 | 1.07 | 7.91 | 7.89 | 9481. | 0. | 0.44 | 1.74 |
| 21 | 40 | 7.83 | 7.83 | 5904. | 0. | 0.28 | 1.09 | 7.91 | 7.89 | 10963. | 0. | 0.52 | 1.96 |
| 36 | 40 | 7.83 | 7.83 | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | |
|----|--|----|--|------|------|-------|----|------|------|--|------|------|-------|----|------|------|--|
| 42 | | 40 | | 7.83 | 7.83 | 4508. | 0. | 0.21 | 0.84 | | 7.91 | 7.89 | 6069. | 0. | 0.28 | 1.11 | |
| 54 | | | | | | | | | | | | | | | | | |
| 43 | | 40 | | 7.83 | 7.83 | 2338. | 0. | 0.11 | 0.43 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0.00 | |
| 21 | | | | | | | | | | | | | | | | | |
| 44 | | 40 | | 7.83 | 7.83 | 5137. | 0. | 0.24 | 0.95 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0.00 | |
| 46 | | | | | | | | | | | | | | | | | |
| 45 | | 40 | | 7.83 | 7.83 | 4835. | 0. | 0.23 | 0.90 | | 7.91 | 7.89 | 366. | 0. | 0.02 | 0.07 | |
| 44 | | | | | | | | | | | | | | | | | |
| 46 | | 40 | | 7.83 | 7.83 | 2319. | 0. | 0.11 | 0.43 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0.00 | |
| 21 | | | | | | | | | | | | | | | | | |
| 47 | | 40 | | 7.83 | 7.83 | 5125. | 0. | 0.24 | 0.95 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0.00 | |
| 46 | | | | | | | | | | | | | | | | | |
| 48 | | 40 | | 7.83 | 7.83 | 5278. | 0. | 0.25 | 0.98 | | 7.91 | 7.89 | 708. | 0. | 0.03 | 0.13 | |
| 48 | | | | | | | | | | | | | | | | | |
| 49 | | 40 | | 7.83 | 7.83 | 2483. | 0. | 0.12 | 0.46 | | 7.91 | 7.89 | 3957. | 0. | 0.18 | 0.73 | |
| 35 | | | | | | | | | | | | | | | | | |
| 50 | | 40 | | 7.83 | 7.83 | 4558. | 0. | 0.21 | 0.84 | | 7.91 | 7.89 | 4413. | 0. | 0.21 | 0.81 | |
| 41 | | | | | | | | | | | | | | | | | |
| 51 | | 40 | | 7.83 | 7.83 | 4749. | 0. | 0.22 | 0.88 | | 7.91 | 7.89 | 5734. | 0. | 0.27 | 1.05 | |
| 51 | | | | | | | | | | | | | | | | | |
| 52 | | 40 | | 7.83 | 7.83 | 2381. | 0. | 0.11 | 0.44 | | 7.91 | 7.89 | 6900. | 0. | 0.32 | 1.27 | |
| 62 | | | | | | | | | | | | | | | | | |
| 53 | | 40 | | 7.83 | 7.83 | 3725. | 0. | 0.17 | 0.69 | | 7.91 | 7.89 | 7428. | 0. | 0.35 | 1.36 | |
| 66 | | | | | | | | | | | | | | | | | |
| 54 | | 40 | | 7.83 | 7.83 | 2750. | 0. | 0.13 | 0.51 | | 7.91 | 7.89 | 8143. | 0. | 0.38 | 1.49 | |
| 73 | | | | | | | | | | | | | | | | | |
| 55 | | 40 | | 7.83 | 7.83 | 2911. | 0. | 0.14 | 0.54 | | 7.91 | 7.89 | 7809. | 0. | 0.36 | 1.43 | |
| 70 | | | | | | | | | | | | | | | | | |
| 56 | | 40 | | 7.83 | 7.83 | 4429. | 0. | 0.21 | 0.82 | | 7.91 | 7.89 | 8154. | 0. | 0.38 | 1.50 | |
| 73 | | | | | | | | | | | | | | | | | |
| 57 | | 40 | | 7.83 | 7.83 | 4631. | 0. | 0.22 | 0.86 | | 7.91 | 7.89 | 9227. | 0. | 0.43 | 1.69 | |
| 82 | | | | | | | | | | | | | | | | | |
| 58 | | 40 | | 7.83 | 7.83 | 5725. | 0. | 0.27 | 1.06 | | 7.91 | 7.89 | 4904. | 0. | 0.23 | 0.90 | |
| 52 | | | | | | | | | | | | | | | | | |
| 59 | | 40 | | 7.83 | 7.83 | 3878. | 0. | 0.18 | 0.72 | | 7.91 | 7.89 | 6012. | 0. | 0.28 | 1.10 | |
| 54 | | | | | | | | | | | | | | | | | |
| 60 | | 40 | | 7.83 | 7.83 | 7015. | 0. | 0.33 | 1.30 | | 7.91 | 7.89 | 6966. | 0. | 0.32 | 1.28 | |
| 63 | | | | | | | | | | | | | | | | | |

L'ARMATURA È OVUNQUE > DELLA QUANTITÀ RICHIESTA: IL PUNTO 2.3 DELLE NTC È VERIFICATO (Rd > Ed)

| VERIFICHE A PUNZONAMENTO | | | | | | | | | | | |
|--------------------------|----------|-------|------|-----------|-------|---------|---------|---------|-------|----------|--------|
| | | Norm | beta | sigT | Pcrit | Ro | Acrit | VRd,c | VEd | A staffe | VRd,cs |
| | | [daN] | | [daN/cm2] | [cm] | [%] | [m2] | [daN] | [daN] | [cm2] | [daN] |
| A 421 | -18765.2 | 1.38 | 0.10 | 171.2 | 0.21 | 0.91208 | 25286.0 | 25033.0 | 0.0 | 0.0 | Sì |
| A 422 | -33614.1 | 1.10 | 0.10 | 312.5 | 0.21 | 1.52717 | 46143.0 | 35474.0 | 0.0 | 0.0 | Sì |
| A 423 | -16844.9 | 1.38 | 0.10 | 171.2 | 0.21 | 0.91208 | 25286.0 | 22378.0 | 0.0 | 0.0 | Sì |
| A 424 | -38335.6 | 1.12 | 0.10 | 312.5 | 0.21 | 1.52717 | 46143.0 | 41383.0 | 0.0 | 0.0 | Sì |
| A 425 | -68725.5 | 1.01 | 0.10 | 575.0 | 0.21 | 2.60934 | 84902.0 | 66673.0 | 0.0 | 0.0 | Sì |
| A 426 | -37984.7 | 1.38 | 0.10 | 171.2 | 0.21 | 0.91208 | 25286.0 | 42436.0 | 14.0 | 66744.0 | Sì |
| A 427 | -23485.5 | 1.38 | 0.10 | 171.2 | 0.21 | 0.91208 | 25286.0 | 30973.0 | 12.6 | 62017.0 | Sì |
| A 428 | -41249.1 | 1.38 | 0.10 | 171.2 | 0.21 | 0.91208 | 25286.0 | 42209.0 | 14.0 | 66744.0 | Sì |
| A 429 | -19276.3 | 1.38 | 0.10 | 171.2 | 0.21 | 0.91208 | 25286.0 | 25547.0 | 7.5 | 44789.0 | Sì |

*** VERIFICHE A TAGLIO SECONDO NTC2018 (cap. 7.4.4.5.1) ***

Vrcd = compressione cls d'anima

Vrsd = trazione armatura trasversale

Vrd,s = scorrimento in zona dissipativa

| Quota | Sezione | Af long. | Af trasv. | Taglio | Vrcd | Vrsd | alfas | Vrd,s |
|-------|---------|----------|-----------|--------|--------|--------|-------|-------|
| [cm] | [m2] | [cm2] | [cm2] | [daN] | [daN] | [daN] | | [daN] |
| 35.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 75.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 115.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 155.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 195.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 235.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 275.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 315.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 355.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 395.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 435.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 475.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 515.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 555.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 595.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |

| | | | | | | | | |
|-------|--------|-------|-------|----|--------|--------|---|---|
| 635.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 675.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 715.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 755.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 795.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 835.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 875.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 915.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 955.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |
| 995.5 | 2.4600 | 97.20 | 96.33 | 0. | 694212 | 301560 | - | - |

L'elemento che segue fa riferimento alla Tipologia 2.

MACROGUSCIO platea

VERIFICHE A FESSURAZIONE (EFFETTO MEMBRANA + PIASTRA)

ARMATURA INFERIORE ORIZZONTALE

| GUSCI | | | COMBINAZIONE RARA | | | | COMB. FREQUENTE | | | COMB. QUASI PERMANENTE | | | |
|-------|------|------|-------------------|-----|------|------|-----------------|-----|-------|------------------------|-----|------|-------|
| | Af | Afc | Mom | Nor | sigC | sigF | Mom | Nor | WkF | Mom | Nor | sigC | WkP |
| 1 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 2 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 3 | 7.83 | 7.83 | 127 | 0. | 0.82 | 47. | 153 | 0. | 0.001 | 150 | 0. | 0.96 | 0.001 |
| 4 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 5 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 6 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 7 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 8 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 9 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 10 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 11 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 12 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 13 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 14 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 15 | 7.83 | 7.83 | 322 | 0. | 2.07 | 119. | 318 | 0. | 0.001 | 305 | 0. | 1.96 | 0.001 |
| 16 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 17 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 18 | 7.83 | 7.83 | 985 | 0. | 6.33 | 366. | 889 | 0. | 0.003 | 842 | 0. | 5.41 | 0.003 |
| 19 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 20 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 21 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 22 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 23 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 24 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 25 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 26 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 27 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 28 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 29 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 30 | 7.83 | 7.83 | 531 | 0. | 3.42 | 197. | 466 | 0. | 0.002 | 430 | 0. | 2.77 | 0.002 |
| 31 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 32 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 33 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 34 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 35 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 36 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 37 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 38 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 39 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 40 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 41 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 42 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 43 | 7.83 | 7.83 | 90 | 0. | 0.58 | 34. | 146 | 0. | 0.001 | 155 | 0. | 0.99 | 0.001 |
| 44 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 45 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 46 | 7.83 | 7.83 | 684 | 0. | 4.39 | 254. | 685 | 0. | 0.003 | 669 | 0. | 4.30 | 0.002 |
| 47 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 48 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 49 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 50 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 51 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 52 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 53 | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |

| | | | | | | | | | | | | | | |
|----|--|------|------|-----|----|------|-----|-----|----|-------|-----|----|------|-------|
| 54 | | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 55 | | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 56 | | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 57 | | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 58 | | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 59 | | 7.83 | 7.83 | 265 | 0. | 1.70 | 99. | 303 | 0. | 0.001 | 300 | 0. | 1.93 | 0.001 |
| 60 | | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |

ARMATURA INFERIORE VERTICALE

| GUSCI | | COMBINAZIONE RARA | | | | | | COMB. FREQUENTE | | | COMB. QUASI PERMANENTE | | | |
|-------|--|-------------------|------|------|-----|-------|-------|-----------------|-----|-------|------------------------|-----|-------|-------|
| | | Af | Afc | Mom | Nor | sigC | sigF | Mom | Nor | WkF | Mom | Nor | sigC | WkP |
| 1 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 2 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 3 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 4 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 5 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 6 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 7 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 8 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 9 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 10 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 11 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 12 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 13 | | 7.89 | 7.91 | 3828 | 0. | 24.50 | 1410. | 3337 | 0. | 0.012 | 3161 | 0. | 20.23 | 0.011 |
| 14 | | 7.89 | 7.91 | 2235 | 0. | 14.30 | 823. | 1944 | 0. | 0.007 | 1837 | 0. | 11.76 | 0.007 |
| 15 | | 7.89 | 7.91 | 3383 | 0. | 21.65 | 1247. | 2907 | 0. | 0.011 | 2729 | 0. | 17.46 | 0.010 |
| 16 | | 7.89 | 7.91 | 3839 | 0. | 24.57 | 1415. | 3329 | 0. | 0.012 | 3149 | 0. | 20.15 | 0.011 |
| 17 | | 7.89 | 7.91 | 2264 | 0. | 14.49 | 834. | 1958 | 0. | 0.007 | 1846 | 0. | 11.81 | 0.007 |
| 18 | | 7.89 | 7.91 | 3327 | 0. | 21.29 | 1226. | 2850 | 0. | 0.010 | 2673 | 0. | 17.11 | 0.010 |
| 19 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 20 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 21 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 22 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 23 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 24 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 25 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 26 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 27 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 28 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 29 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 30 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 31 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 32 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 33 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 34 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 35 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 36 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 37 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 38 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 39 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 40 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 41 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 42 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 43 | | 7.89 | 7.91 | 3311 | 0. | 21.19 | 1220. | 2929 | 0. | 0.011 | 2786 | 0. | 17.83 | 0.010 |
| 44 | | 7.89 | 7.91 | 2406 | 0. | 15.40 | 887. | 2061 | 0. | 0.007 | 1937 | 0. | 12.39 | 0.007 |
| 45 | | 7.89 | 7.91 | 4534 | 0. | 29.02 | 1671. | 3823 | 0. | 0.014 | 3575 | 0. | 22.88 | 0.013 |
| 46 | | 7.89 | 7.91 | 3270 | 0. | 20.93 | 1205. | 2882 | 0. | 0.010 | 2738 | 0. | 17.52 | 0.010 |
| 47 | | 7.89 | 7.91 | 2504 | 0. | 16.02 | 923. | 2127 | 0. | 0.008 | 1992 | 0. | 12.75 | 0.007 |
| 48 | | 7.89 | 7.91 | 4772 | 0. | 30.54 | 1758. | 3989 | 0. | 0.014 | 3719 | 0. | 23.80 | 0.013 |
| 49 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 50 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 51 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 52 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 53 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 54 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 55 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 56 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 57 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 58 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 59 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 60 | | 7.89 | 7.91 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |

ARMATURA SUPERIORE ORIZZONTALE

| GUSCI | | COMBINAZIONE RARA | | | | | | COMB. FREQUENTE | | | COMB. QUASI PERMANENTE | | | |
|-------|--|-------------------|------|------|-----|-------|-------|-----------------|-----|-------|------------------------|-----|-------|-------|
| | | Af | Afc | Mom | Nor | sigC | sigF | Mom | Nor | WkF | Mom | Nor | sigC | WkP |
| 1 | | 7.83 | 7.83 | 3974 | 0. | 25.54 | 1476. | 3501 | 0. | 0.013 | 3336 | 0. | 21.44 | 0.012 |

| | | | | | | | | | | | | | | |
|----|--|------|------|------|----|-------|-------|------|----|-------|------|----|-------|-------|
| 2 | | 7.83 | 7.83 | 3979 | 0. | 25.57 | 1477. | 3455 | 0. | 0.013 | 3272 | 0. | 21.03 | 0.012 |
| 3 | | 7.83 | 7.83 | 2398 | 0. | 15.41 | 891. | 2015 | 0. | 0.007 | 1889 | 0. | 12.14 | 0.007 |
| 4 | | 7.83 | 7.83 | 2463 | 0. | 15.83 | 915. | 2170 | 0. | 0.008 | 2070 | 0. | 13.30 | 0.008 |
| 5 | | 7.83 | 7.83 | 2789 | 0. | 17.92 | 1036. | 2421 | 0. | 0.009 | 2293 | 0. | 14.73 | 0.008 |
| 6 | | 7.83 | 7.83 | 2235 | 0. | 14.36 | 830. | 1891 | 0. | 0.007 | 1777 | 0. | 11.42 | 0.007 |
| 7 | | 7.83 | 7.83 | 1295 | 0. | 8.32 | 481. | 1134 | 0. | 0.004 | 1078 | 0. | 6.92 | 0.004 |
| 8 | | 7.83 | 7.83 | 2199 | 0. | 14.13 | 816. | 1911 | 0. | 0.007 | 1813 | 0. | 11.65 | 0.007 |
| 9 | | 7.83 | 7.83 | 1647 | 0. | 10.58 | 611. | 1395 | 0. | 0.005 | 1313 | 0. | 8.44 | 0.005 |
| 10 | | 7.83 | 7.83 | 2357 | 0. | 15.14 | 875. | 2067 | 0. | 0.008 | 1965 | 0. | 12.63 | 0.007 |
| 11 | | 7.83 | 7.83 | 2408 | 0. | 15.48 | 894. | 2098 | 0. | 0.008 | 1992 | 0. | 12.80 | 0.007 |
| 12 | | 7.83 | 7.83 | 1481 | 0. | 9.52 | 550. | 1255 | 0. | 0.005 | 1181 | 0. | 7.59 | 0.004 |
| 13 | | 7.83 | 7.83 | 2152 | 0. | 13.83 | 799. | 1894 | 0. | 0.007 | 1801 | 0. | 11.57 | 0.007 |
| 14 | | 7.83 | 7.83 | 3151 | 0. | 20.25 | 1170. | 2746 | 0. | 0.010 | 2605 | 0. | 16.74 | 0.010 |
| 15 | | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 16 | | 7.83 | 7.83 | 2613 | 0. | 16.79 | 970. | 2300 | 0. | 0.008 | 2188 | 0. | 14.06 | 0.008 |
| 17 | | 7.83 | 7.83 | 3092 | 0. | 19.87 | 1148. | 2700 | 0. | 0.010 | 2563 | 0. | 16.47 | 0.009 |
| 18 | | 7.83 | 7.83 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 19 | | 7.83 | 7.83 | 2385 | 0. | 15.33 | 886. | 2090 | 0. | 0.008 | 1985 | 0. | 12.76 | 0.007 |
| 20 | | 7.83 | 7.83 | 2320 | 0. | 14.91 | 861. | 2030 | 0. | 0.007 | 1930 | 0. | 12.40 | 0.007 |
| 21 | | 7.83 | 7.83 | 1354 | 0. | 8.70 | 503. | 1160 | 0. | 0.004 | 1097 | 0. | 7.05 | 0.004 |
| 22 | | 7.83 | 7.83 | 1364 | 0. | 8.76 | 506. | 1187 | 0. | 0.004 | 1125 | 0. | 7.23 | 0.004 |
| 23 | | 7.83 | 7.83 | 2027 | 0. | 13.03 | 753. | 1780 | 0. | 0.007 | 1695 | 0. | 10.89 | 0.006 |
| 24 | | 7.83 | 7.83 | 1383 | 0. | 8.89 | 514. | 1201 | 0. | 0.004 | 1143 | 0. | 7.34 | 0.004 |
| 25 | | 7.83 | 7.83 | 2023 | 0. | 13.00 | 751. | 1843 | 0. | 0.007 | 1780 | 0. | 11.44 | 0.007 |
| 26 | | 7.83 | 7.83 | 2476 | 0. | 15.91 | 919. | 2184 | 0. | 0.008 | 2081 | 0. | 13.37 | 0.008 |
| 27 | | 7.83 | 7.83 | 1819 | 0. | 11.69 | 676. | 1585 | 0. | 0.006 | 1508 | 0. | 9.69 | 0.006 |
| 28 | | 7.83 | 7.83 | 3585 | 0. | 23.04 | 1331. | 3246 | 0. | 0.012 | 3124 | 0. | 20.08 | 0.011 |
| 29 | | 7.83 | 7.83 | 3665 | 0. | 23.55 | 1361. | 3245 | 0. | 0.012 | 3095 | 0. | 19.89 | 0.011 |
| 30 | | 7.83 | 7.83 | 1848 | 0. | 11.88 | 686. | 1610 | 0. | 0.006 | 1533 | 0. | 9.85 | 0.006 |
| 31 | | 7.83 | 7.83 | 2269 | 0. | 14.58 | 842. | 1924 | 0. | 0.007 | 1810 | 0. | 11.63 | 0.007 |
| 32 | | 7.83 | 7.83 | 4832 | 0. | 31.06 | 1794. | 4017 | 0. | 0.015 | 3746 | 0. | 24.07 | 0.014 |
| 33 | | 7.83 | 7.83 | 5065 | 0. | 32.55 | 1881. | 4257 | 0. | 0.016 | 3983 | 0. | 25.60 | 0.015 |
| 34 | | 7.83 | 7.83 | 2191 | 0. | 14.08 | 813. | 1861 | 0. | 0.007 | 1751 | 0. | 11.25 | 0.006 |
| 35 | | 7.83 | 7.83 | 3478 | 0. | 22.35 | 1291. | 2885 | 0. | 0.011 | 2688 | 0. | 17.27 | 0.010 |
| 36 | | 7.83 | 7.83 | 3227 | 0. | 20.74 | 1198. | 2698 | 0. | 0.010 | 2521 | 0. | 16.20 | 0.009 |
| 37 | | 7.83 | 7.83 | 1831 | 0. | 11.76 | 680. | 1517 | 0. | 0.006 | 1414 | 0. | 9.09 | 0.005 |
| 38 | | 7.83 | 7.83 | 2602 | 0. | 16.72 | 966. | 2174 | 0. | 0.008 | 2030 | 0. | 13.05 | 0.007 |
| 39 | | 7.83 | 7.83 | 1471 | 0. | 9.45 | 546. | 1256 | 0. | 0.005 | 1182 | 0. | 7.59 | 0.004 |
| 40 | | 7.83 | 7.83 | 1636 | 0. | 10.51 | 607. | 1361 | 0. | 0.005 | 1272 | 0. | 8.17 | 0.005 |
| 41 | | 7.83 | 7.83 | 2970 | 0. | 19.09 | 1103. | 2487 | 0. | 0.009 | 2324 | 0. | 14.94 | 0.009 |
| 42 | | 7.83 | 7.83 | 2840 | 0. | 18.25 | 1054. | 2401 | 0. | 0.009 | 2251 | 0. | 14.46 | 0.008 |
| 43 | | 7.83 | 7.83 | 7 | 0. | 0.05 | 3. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 44 | | 7.83 | 7.83 | 3709 | 0. | 23.84 | 1377. | 3132 | 0. | 0.012 | 2934 | 0. | 18.86 | 0.011 |
| 45 | | 7.83 | 7.83 | 2570 | 0. | 16.52 | 954. | 2183 | 0. | 0.008 | 2048 | 0. | 13.16 | 0.008 |
| 46 | | 7.83 | 7.83 | 111 | 0. | 0.71 | 41. | 38 | 0. | 0.000 | 23 | 0. | 0.15 | 0.000 |
| 47 | | 7.83 | 7.83 | 3653 | 0. | 23.48 | 1356. | 3086 | 0. | 0.011 | 2893 | 0. | 18.59 | 0.011 |
| 48 | | 7.83 | 7.83 | 3185 | 0. | 20.47 | 1183. | 2695 | 0. | 0.010 | 2526 | 0. | 16.23 | 0.009 |
| 49 | | 7.83 | 7.83 | 1415 | 0. | 9.09 | 525. | 1198 | 0. | 0.004 | 1128 | 0. | 7.25 | 0.004 |
| 50 | | 7.83 | 7.83 | 2928 | 0. | 18.82 | 1087. | 2453 | 0. | 0.009 | 2293 | 0. | 14.74 | 0.008 |
| 51 | | 7.83 | 7.83 | 2963 | 0. | 19.04 | 1100. | 2493 | 0. | 0.009 | 2332 | 0. | 14.99 | 0.009 |
| 52 | | 7.83 | 7.83 | 1588 | 0. | 10.20 | 589. | 1349 | 0. | 0.005 | 1271 | 0. | 8.17 | 0.005 |
| 53 | | 7.83 | 7.83 | 2447 | 0. | 15.72 | 908. | 2076 | 0. | 0.008 | 1951 | 0. | 12.54 | 0.007 |
| 54 | | 7.83 | 7.83 | 1662 | 0. | 10.68 | 617. | 1393 | 0. | 0.005 | 1300 | 0. | 8.36 | 0.005 |
| 55 | | 7.83 | 7.83 | 1931 | 0. | 12.41 | 717. | 1677 | 0. | 0.006 | 1591 | 0. | 10.23 | 0.006 |
| 56 | | 7.83 | 7.83 | 2744 | 0. | 17.64 | 1019. | 2380 | 0. | 0.009 | 2252 | 0. | 14.47 | 0.008 |
| 57 | | 7.83 | 7.83 | 2339 | 0. | 15.03 | 868. | 2039 | 0. | 0.007 | 1940 | 0. | 12.46 | 0.007 |
| 58 | | 7.83 | 7.83 | 3890 | 0. | 25.00 | 1444. | 3411 | 0. | 0.013 | 3241 | 0. | 20.83 | 0.012 |
| 59 | | 7.83 | 7.83 | 1939 | 0. | 12.46 | 720. | 1696 | 0. | 0.006 | 1616 | 0. | 10.38 | 0.006 |
| 60 | | 7.83 | 7.83 | 4025 | 0. | 25.87 | 1494. | 3495 | 0. | 0.013 | 3314 | 0. | 21.30 | 0.012 |

ARMATURA SUPERIORE VERTICALE

| GUSCI | | | | COMBINAZIONE RARA | | | | COMB. FREQUENTE | | | COMB. QUASI PERMANENTE | | | |
|-------|----|------|------|-------------------|------|-------|-------|-----------------|-----|-------|------------------------|-----|-------|-------|
| | Af | Afc | Mom | Nor | sigC | sigF | | Mom | Nor | WkF | Mom | Nor | sigC | WkP |
| 1 | | 7.91 | 7.89 | 4161 | 0. | 26.61 | 1530. | 3653 | 0. | 0.013 | 3477 | 0. | 22.24 | 0.013 |
| 2 | | 7.91 | 7.89 | 2377 | 0. | 15.21 | 874. | 2068 | 0. | 0.007 | 1972 | 0. | 12.61 | 0.007 |
| 3 | | 7.91 | 7.89 | 3906 | 0. | 24.99 | 1436. | 3395 | 0. | 0.012 | 3212 | 0. | 20.55 | 0.012 |
| 4 | | 7.91 | 7.89 | 6366 | 0. | 40.72 | 2341. | 5571 | 0. | 0.020 | 5294 | 0. | 33.86 | 0.019 |
| 5 | | 7.91 | 7.89 | 5368 | 0. | 34.34 | 1974. | 4693 | 0. | 0.017 | 4457 | 0. | 28.51 | 0.016 |
| 6 | | 7.91 | 7.89 | 6028 | 0. | 38.55 | 2216. | 5230 | 0. | 0.019 | 4947 | 0. | 31.64 | 0.018 |
| 7 | | 7.91 | 7.89 | 5353 | 0. | 34.24 | 1968. | 4672 | 0. | 0.017 | 4433 | 0. | 28.35 | 0.016 |
| 8 | | 7.91 | 7.89 | 4929 | 0. | 31.53 | 1812. | 4294 | 0. | 0.016 | 4070 | 0. | 26.03 | 0.015 |
| 9 | | 7.91 | 7.89 | 5115 | 0. | 32.72 | 1881. | 4440 | 0. | 0.016 | 4202 | 0. | 26.87 | 0.015 |
| 10 | | 7.91 | 7.89 | 3296 | 0. | 21.08 | 1212. | 2884 | 0. | 0.010 | 2741 | 0. | 17.53 | 0.010 |
| 11 | | 7.91 | 7.89 | 2298 | 0. | 14.70 | 845. | 2008 | 0. | 0.007 | 1907 | 0. | 12.20 | 0.007 |
| 12 | | 7.91 | 7.89 | 2590 | 0. | 16.57 | 952. | 2247 | 0. | 0.008 | 2126 | 0. | 13.60 | 0.008 |
| 13 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |
| 14 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.000 | 0. | 0. | 0.00 | 0.000 |

| | | | | | | | | | | | | | | |
|----|--|------|------|------|----|-------|-------|------|----|--------|------|----|-------|-------|
| 15 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.0000 | 0. | 0. | 0.00 | 0.000 |
| 16 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.0000 | 0. | 0. | 0.00 | 0.000 |
| 17 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.0000 | 0. | 0. | 0.00 | 0.000 |
| 18 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.0000 | 0. | 0. | 0.00 | 0.000 |
| 19 | | 7.91 | 7.89 | 3152 | 0. | 20.16 | 1159. | 2795 | 0. | 0.010 | 2668 | 0. | 17.07 | 0.010 |
| 20 | | 7.91 | 7.89 | 2135 | 0. | 13.65 | 785. | 1904 | 0. | 0.007 | 1822 | 0. | 11.65 | 0.007 |
| 21 | | 7.91 | 7.89 | 2345 | 0. | 15.00 | 862. | 2075 | 0. | 0.007 | 1977 | 0. | 12.64 | 0.007 |
| 22 | | 7.91 | 7.89 | 5088 | 0. | 32.54 | 1871. | 4506 | 0. | 0.016 | 4297 | 0. | 27.48 | 0.016 |
| 23 | | 7.91 | 7.89 | 4644 | 0. | 29.70 | 1708. | 4111 | 0. | 0.015 | 3919 | 0. | 25.07 | 0.014 |
| 24 | | 7.91 | 7.89 | 4718 | 0. | 30.18 | 1735. | 4172 | 0. | 0.015 | 3974 | 0. | 25.42 | 0.014 |
| 25 | | 7.91 | 7.89 | 5903 | 0. | 37.75 | 2170. | 5283 | 0. | 0.019 | 5061 | 0. | 32.37 | 0.018 |
| 26 | | 7.91 | 7.89 | 5105 | 0. | 32.65 | 1877. | 4552 | 0. | 0.016 | 4355 | 0. | 27.86 | 0.016 |
| 27 | | 7.91 | 7.89 | 5653 | 0. | 36.16 | 2079. | 4989 | 0. | 0.018 | 4749 | 0. | 30.37 | 0.017 |
| 28 | | 7.91 | 7.89 | 3879 | 0. | 24.81 | 1426. | 3504 | 0. | 0.013 | 3370 | 0. | 21.55 | 0.012 |
| 29 | | 7.91 | 7.89 | 2465 | 0. | 15.77 | 907. | 2171 | 0. | 0.008 | 2062 | 0. | 13.19 | 0.007 |
| 30 | | 7.91 | 7.89 | 3496 | 0. | 22.36 | 1286. | 3050 | 0. | 0.011 | 2887 | 0. | 18.46 | 0.010 |
| 31 | | 7.91 | 7.89 | 3031 | 0. | 19.39 | 1115. | 2592 | 0. | 0.009 | 2463 | 0. | 15.75 | 0.009 |
| 32 | | 7.91 | 7.89 | 3098 | 0. | 19.81 | 1139. | 2579 | 0. | 0.009 | 2407 | 0. | 15.39 | 0.009 |
| 33 | | 7.91 | 7.89 | 5161 | 0. | 33.01 | 1898. | 4339 | 0. | 0.016 | 4061 | 0. | 25.97 | 0.015 |
| 34 | | 7.91 | 7.89 | 5894 | 0. | 37.70 | 2167. | 5077 | 0. | 0.018 | 4808 | 0. | 30.75 | 0.017 |
| 35 | | 7.91 | 7.89 | 6139 | 0. | 39.26 | 2257. | 5220 | 0. | 0.019 | 4904 | 0. | 31.37 | 0.018 |
| 36 | | 7.91 | 7.89 | 7520 | 0. | 48.10 | 2765. | 6366 | 0. | 0.023 | 5971 | 0. | 38.19 | 0.022 |
| 37 | | 7.91 | 7.89 | 5248 | 0. | 33.57 | 1930. | 4529 | 0. | 0.016 | 4275 | 0. | 27.35 | 0.015 |
| 38 | | 7.91 | 7.89 | 5290 | 0. | 33.83 | 1945. | 4540 | 0. | 0.016 | 4280 | 0. | 27.38 | 0.015 |
| 39 | | 7.91 | 7.89 | 5994 | 0. | 38.34 | 2204. | 5115 | 0. | 0.018 | 4811 | 0. | 30.77 | 0.017 |
| 40 | | 7.91 | 7.89 | 2444 | 0. | 15.63 | 899. | 2119 | 0. | 0.008 | 2004 | 0. | 12.82 | 0.007 |
| 41 | | 7.91 | 7.89 | 2686 | 0. | 17.18 | 988. | 2277 | 0. | 0.008 | 2138 | 0. | 13.67 | 0.008 |
| 42 | | 7.91 | 7.89 | 3937 | 0. | 25.18 | 1448. | 3329 | 0. | 0.012 | 3122 | 0. | 19.97 | 0.011 |
| 43 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.0000 | 0. | 0. | 0.00 | 0.000 |
| 44 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.0000 | 0. | 0. | 0.00 | 0.000 |
| 45 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.0000 | 0. | 0. | 0.00 | 0.000 |
| 46 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.0000 | 0. | 0. | 0.00 | 0.000 |
| 47 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.0000 | 0. | 0. | 0.00 | 0.000 |
| 48 | | 7.91 | 7.89 | 0. | 0. | 0.00 | 0. | 0. | 0. | 0.0000 | 0. | 0. | 0.00 | 0.000 |
| 49 | | 7.91 | 7.89 | 2180 | 0. | 13.94 | 802. | 1911 | 0. | 0.007 | 1824 | 0. | 11.67 | 0.007 |
| 50 | | 7.91 | 7.89 | 2491 | 0. | 15.93 | 916. | 2144 | 0. | 0.008 | 2025 | 0. | 12.95 | 0.007 |
| 51 | | 7.91 | 7.89 | 3730 | 0. | 23.86 | 1372. | 3188 | 0. | 0.012 | 3002 | 0. | 19.20 | 0.011 |
| 52 | | 7.91 | 7.89 | 4874 | 0. | 31.17 | 1792. | 4284 | 0. | 0.015 | 4071 | 0. | 26.04 | 0.015 |
| 53 | | 7.91 | 7.89 | 5008 | 0. | 32.03 | 1841. | 4361 | 0. | 0.016 | 4131 | 0. | 26.42 | 0.015 |
| 54 | | 7.91 | 7.89 | 5671 | 0. | 36.27 | 2085. | 4902 | 0. | 0.018 | 4633 | 0. | 29.63 | 0.017 |
| 55 | | 7.91 | 7.89 | 5688 | 0. | 36.38 | 2091. | 5039 | 0. | 0.018 | 4803 | 0. | 30.72 | 0.017 |
| 56 | | 7.91 | 7.89 | 5397 | 0. | 34.52 | 1985. | 4723 | 0. | 0.017 | 4488 | 0. | 28.70 | 0.016 |
| 57 | | 7.91 | 7.89 | 6400 | 0. | 40.94 | 2353. | 5579 | 0. | 0.020 | 5294 | 0. | 33.86 | 0.019 |
| 58 | | 7.91 | 7.89 | 2495 | 0. | 15.96 | 917. | 2160 | 0. | 0.008 | 2049 | 0. | 13.10 | 0.007 |
| 59 | | 7.91 | 7.89 | 3463 | 0. | 22.15 | 1273. | 3134 | 0. | 0.011 | 3011 | 0. | 19.26 | 0.011 |
| 60 | | 7.91 | 7.89 | 4233 | 0. | 27.07 | 1556. | 3677 | 0. | 0.013 | 3489 | 0. | 22.31 | 0.013 |

4. Verifica nuova copertura

RESISTENZE LIMITE RAGGIUNTE (%) :

| asta | sez | b | h | fsPfd | fsIf1 | fsIto | fsTau | Caso | % | VE |
|------|-----|-----|-----|-------|-------|-------|-------|------|----|----|
| 167 | 3 | 12. | 20. | .371 | .382 | .167 | .356 | 1- 1 | 38 | si |
| 168 | 3 | 12. | 20. | .518 | .534 | .304 | .310 | 1- 1 | 53 | si |
| 169 | 3 | 12. | 20. | .677 | .697 | .503 | .404 | 1- 1 | 70 | si |
| 170 | 3 | 12. | 20. | .677 | .697 | .503 | .404 | 1- 1 | 70 | si |
| 171 | 3 | 12. | 20. | .669 | .689 | .493 | .400 | 1- 1 | 69 | si |
| 172 | 3 | 12. | 20. | .489 | .504 | .272 | .464 | 1- 1 | 50 | si |
| 173 | 3 | 12. | 20. | .476 | .491 | .279 | .469 | 1- 1 | 49 | si |
| 175 | 3 | 12. | 20. | .669 | .689 | .493 | .400 | 1- 1 | 69 | si |
| 177 | 3 | 12. | 20. | .677 | .697 | .503 | .404 | 1- 1 | 70 | si |
| 178 | 3 | 12. | 20. | .485 | .500 | .265 | .466 | 1- 1 | 50 | si |
| 179 | 3 | 12. | 20. | .677 | .697 | .503 | .404 | 1- 1 | 70 | si |
| 180 | 3 | 12. | 20. | .677 | .697 | .503 | .404 | 1- 1 | 70 | si |
| 181 | 3 | 12. | 20. | .518 | .534 | .304 | .310 | 1- 1 | 53 | si |
| 182 | 3 | 12. | 20. | .487 | .502 | .269 | .465 | 1- 1 | 50 | si |
| 183 | 3 | 12. | 20. | .481 | .496 | .268 | .466 | 1- 1 | 50 | si |
| 184 | 3 | 12. | 20. | .373 | .384 | .167 | .356 | 1- 1 | 38 | si |
| 236 | 4 | 20. | 24. | .356 | 0.000 | .117 | .186 | 1- 1 | 36 | si |
| 238 | 4 | 20. | 24. | .618 | .637 | .384 | .011 | 1- 1 | 64 | si |

| | | | | | | | | | | |
|-----|----|-----|-----|------|-------|-------|------|------|----|----|
| 243 | 4 | 20. | 24. | .586 | .616 | .350 | .024 | 1- 1 | 62 | si |
| 245 | 4 | 20. | 24. | .264 | 0.000 | .038 | .144 | 1- 1 | 26 | si |
| 246 | 4 | 20. | 24. | .001 | 0.000 | 0.000 | .004 | 1- 1 | 0 | si |
| 247 | 4 | 20. | 24. | .349 | 0.000 | .113 | .076 | 1- 1 | 35 | si |
| 258 | 2 | 20. | 32. | .001 | 0.000 | 0.000 | .004 | 1- 1 | 0 | si |
| 259 | 2 | 20. | 32. | .176 | 0.000 | .031 | .221 | 1- 1 | 22 | si |
| 272 | 2 | 20. | 32. | .001 | 0.000 | 0.000 | .004 | 1- 1 | 0 | si |
| 273 | 2 | 20. | 32. | .295 | 0.000 | .087 | .251 | 1- 1 | 30 | si |
| 274 | 3 | 12. | 20. | .326 | .005 | .096 | .240 | 1- 1 | 33 | si |
| 276 | 3 | 12. | 20. | .433 | .008 | .161 | .312 | 1- 1 | 43 | si |
| 277 | 3 | 12. | 20. | .458 | .008 | .187 | .323 | 1- 1 | 46 | si |
| 278 | 3 | 12. | 20. | .419 | .015 | .158 | .189 | 1- 1 | 42 | si |
| 279 | 3 | 12. | 20. | .424 | .014 | .155 | .152 | 1- 1 | 42 | si |
| 280 | 3 | 12. | 20. | .451 | .005 | .173 | .317 | 1- 1 | 45 | si |
| 281 | 3 | 12. | 20. | .437 | .017 | .166 | .313 | 1- 1 | 44 | si |
| 282 | 3 | 12. | 20. | .427 | .011 | .168 | .315 | 1- 1 | 43 | si |
| 283 | 3 | 12. | 20. | .329 | .004 | .096 | .240 | 1- 1 | 33 | si |
| 291 | 3 | 12. | 20. | .146 | 0.000 | .018 | .390 | 1- 1 | 39 | si |
| 294 | 3 | 12. | 20. | .153 | 0.000 | .020 | .408 | 1- 1 | 41 | si |
| 324 | 7 | 10. | 16. | .062 | 0.000 | .022 | .068 | 5- 7 | 7 | si |
| 326 | 12 | 12. | 20. | .053 | .070 | .020 | .011 | 1- 1 | 7 | si |
| 327 | 12 | 12. | 20. | .049 | .066 | .019 | .011 | 1- 1 | 7 | si |
| 330 | 3 | 12. | 20. | .399 | .407 | .139 | .140 | 1- 1 | 41 | si |
| 331 | 3 | 12. | 20. | .355 | .386 | .175 | .113 | 1- 1 | 39 | si |
| 332 | 3 | 12. | 20. | .404 | .412 | .148 | .134 | 1- 1 | 41 | si |
| 333 | 3 | 12. | 20. | .370 | .400 | .174 | .287 | 1- 1 | 40 | si |
| 334 | 10 | 16. | 20. | .129 | 0.000 | .012 | .036 | 1- 1 | 13 | si |
| 335 | 10 | 16. | 20. | .133 | 0.000 | .012 | .068 | 1- 1 | 13 | si |
| 336 | 7 | 10. | 16. | .234 | .066 | .048 | .304 | 1- 1 | 30 | si |
| 337 | 7 | 10. | 16. | .226 | .066 | .046 | .245 | 1- 1 | 24 | si |
| 338 | 7 | 10. | 16. | .076 | .076 | .006 | .082 | 1- 1 | 8 | si |
| 339 | 7 | 10. | 16. | .066 | .067 | .003 | .063 | 5-10 | 7 | si |
| 340 | 8 | 10. | 12. | .030 | .032 | .004 | .051 | 1- 1 | 5 | si |
| 341 | 8 | 10. | 12. | .030 | .032 | .004 | .051 | 1- 1 | 5 | si |
| 345 | 8 | 10. | 12. | .057 | .061 | .008 | .098 | 1- 1 | 10 | si |
| 346 | 8 | 10. | 12. | .057 | .061 | .008 | .098 | 1- 1 | 10 | si |
| 347 | 8 | 10. | 12. | .052 | .056 | .007 | .102 | 1- 1 | 10 | si |
| 348 | 8 | 10. | 12. | .057 | .061 | .008 | .098 | 1- 1 | 10 | si |
| 349 | 8 | 10. | 12. | .057 | .061 | .008 | .098 | 1- 1 | 10 | si |
| 350 | 8 | 10. | 12. | .052 | .056 | .007 | .102 | 1- 1 | 10 | si |
| 351 | 7 | 10. | 16. | .335 | .340 | .110 | .080 | 1- 1 | 34 | si |
| 352 | 7 | 10. | 16. | .475 | .479 | .225 | .036 | 1- 1 | 48 | si |
| 353 | 7 | 10. | 16. | .475 | .479 | .225 | .033 | 1- 1 | 48 | si |
| 354 | 7 | 10. | 16. | .362 | .367 | .135 | .070 | 1- 1 | 37 | si |
| 355 | 11 | 12. | 16. | .317 | .100 | .069 | .071 | 1- 1 | 32 | si |
| 356 | 11 | 12. | 16. | .317 | .076 | .069 | .068 | 1- 1 | 32 | si |
| 357 | 11 | 12. | 16. | .253 | .076 | .047 | .066 | 1- 1 | 25 | si |
| 358 | 11 | 12. | 16. | .300 | .107 | .068 | .075 | 1- 1 | 30 | si |
| 359 | 11 | 12. | 16. | .300 | .075 | .068 | .065 | 1- 1 | 30 | si |
| 360 | 11 | 12. | 16. | .244 | .074 | .047 | .060 | 1- 1 | 24 | si |
| 374 | 9 | 10. | 16. | .148 | .387 | .381 | .004 | 1- 1 | 39 | si |
| 382 | 4 | 20. | 24. | .586 | .615 | .350 | .082 | 1- 1 | 62 | si |
| 388 | 4 | 20. | 24. | .618 | .637 | .384 | .092 | 1- 1 | 64 | si |
| 392 | 9 | 10. | 16. | .096 | .302 | .286 | .004 | 1- 1 | 30 | si |
| 393 | 9 | 10. | 16. | .110 | .325 | .308 | .003 | 1- 1 | 32 | si |
| 394 | 9 | 10. | 16. | .015 | .074 | .063 | .003 | 1- 1 | 7 | si |
| 396 | 4 | 20. | 24. | .504 | 0.000 | .160 | .259 | 1- 1 | 50 | si |
| 397 | 4 | 20. | 24. | .338 | 0.000 | .077 | .134 | 1- 1 | 34 | si |
| 398 | 4 | 20. | 24. | .291 | 0.000 | .106 | .380 | 1- 1 | 38 | si |
| 399 | 4 | 20. | 24. | .430 | .459 | .202 | .187 | 1- 1 | 46 | si |
| 400 | 4 | 20. | 24. | .415 | 0.000 | .122 | .382 | 1- 1 | 42 | si |
| 401 | 4 | 20. | 24. | .500 | .520 | .267 | .180 | 1- 1 | 52 | si |
| 402 | 4 | 20. | 24. | .412 | 0.000 | .178 | .598 | 1- 1 | 60 | si |

5. Computo metrico estimativo adeguamento sismico

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|-------------------------|---|------------|---------|-------|--------|----------|-----------|-----------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | VOCI A MISURA | | | | | | | |
| | CME Intervento di adeguamento sismico | | | | | | | |
| | Demolizioni | | | | | | | |
| | Demolizioni | | | | | | | |
| 1 A25130 | Trasporto a discarica controllata secondo il DLgs 13 gennaio 2003, n. 36 dei materiali di risulta pr ... mputarsi a parte, con autocarro di portata fino a 50 q, compresi carico, viaggio di andata e ritorno e scarico con esclusione degli oneri di discarica | | | | | | | |
| | Macerie murature | 1,500 | 171,650 | | | 257,48 | | |
| | Macerie copertura | | 28,950 | | | 28,95 | | |
| | Macerie solai | 1,500 | 162,360 | | 0,200 | 48,71 | | |
| | Sommano mc | | | | | 335,14 | 48,99 | 16.418,51 |
| 2 A25136a | Compenso alle discariche autorizzate e realizzate secondo il DLgs 13 gennaio 2003, n. 36, per confer ... zioni, escluso il costo relativo alla caratterizzazione del rifiuto: rifiuti ammissibili in discarica per rifiuti inerti (art. 5 DM 27 settembre 2010) | | | | | | | |
| | Muri 800 kg/m3 | 0,800 | 168,370 | | | 134,70 | | |
| | Copertura 400 kg/m3 | 0,400 | 2,200 | | | 0,88 | | |
| | Solai 600 kg/mq | 0,600 | 162,360 | | | 97,42 | | |
| | Sommano t | | | | | 233,00 | 18,00 | 4.194,00 |
| 3 DA2.5.03.029. a | [A25029] Demolizione di muratura, anche voltata, di spessore superiore ad una testa, eseguita a mano, compresa la cernita ed accantonamento del materiale di recupero da riutilizzare: [A25029a] muratura in mattoni | | | | | | | |
| | Muratura lato via Aosta | | 10,700 | 0,500 | 8,430 | 45,10 | | |
| | Muratura cortile interno | | 60,420 | 0,520 | | 31,42 | | |
| | Muratura retro | | 10,700 | 0,495 | 8,430 | 44,65 | | |
| | Muratura confinante con altra u.i. | | 60,420 | | 0,410 | 24,77 | | |
| | Muratura interna | | 6,100 | 0,500 | 8,430 | 25,71 | | |
| | Sommano mc | | | | | 171,65 | 172,78 | 29.657,69 |
| 4 DA2.5.07.072. b | [A25072] Demolizione di solai in laterizio e cemento armato, sia orizzontali che inclinati, escluso pavimento e sottofondo, escluso l'avvicinamento al luogo di deposito provvisorio, in attesa del trasporto allo scarico, ed il calo in basso dei materiali d | | | | | | | |
| | Demolizione solai | 3,000 | 57,800 | | | 173,40 | | |
| | Sommano mq | | | | | 173,40 | 29,75 | 5.158,65 |
| 5 DA2.5.10.088 | RIMOZIONE DI TETTI Avvertenze: Nelle stime relative a questo paragrafo non sono inclusi i costi relativi al carico, trasporto e scarico a discarica autorizzata dei materiali di risulta (i relativi prezzi sono esposti nell'ultima parte di questo capitolo). | | | | | | | |
| | Rimozione manto di copertura | | 114,000 | | | 114,00 | | |
| | Sommano mq | | | | | 114,00 | 16,90 | 1.926,60 |
| 6 DA2.5.10.090. a | [A25090] Smontaggio della grossa armatura in legno di tetto, compresi ferramenta, smuratura delle strutture stesse, cernita del materiale riutilizzabile e | | | | | | | |
| | A RIPORTARE | | | | | | | 57.355,45 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|-------------------------|---|------------|---------|-------|--------|----------|-----------|------------------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 57.355,45 |
| 7 DA2.5.15.135. b | l'avvicinamento al luogo di deposito provvisorio; escluso il solo calo in basso: [A25090a] per strut PUNTONI 12x12 | 13,000 | 9,220 | 0,120 | 0,120 | 1,73 | 138,79 | 305,34 |
| | COLMO 20x20 | | 11,800 | 0,200 | 0,200 | 0,47 | | |
| | Sommano mc | | | | | 2,20 | | |
| | [A25135] Tiro in alto o calo in basso di materiali a mezzo di elevatore meccanico compreso l'onere di carico e scarico dei materiali: [A25135b] valutazione a volume | | | | | | 36,64 | 1.060,73 |
| | VOLUME AUMENTATO DEL 50% DOPO DEMOLIZIONE | | | | | | | |
| | LEGNAME COPERTURA | 1,500 | 2,200 | | | 3,30 | | |
| | MANTO DI COPERTURA | 1,500 | 114,000 | | 0,150 | 25,65 | | |
| | Sommano mc | | | | | 28,95 | | |
| | Totale Demolizioni | | | | | | | 58.721,52 |
| | Totale Demolizioni | | | | | | | 58.721,52 |
| 8 A25013a | CME Intervento di adeguamento sismico | | | | | | 9,83 | 453,75 |
| | Nuove costruzioni | | | | | | | |
| | Opere in cemento armato | | | | | | | |
| | Scavo a sezione obbligata eseguito in zona ristretta con disposizione del materiale di risulta in cumulo di fianco allo scavo: per profondità fino a 1,5 m: in terra vegetale, terreno naturale incoerente o poco coerente | | | | | | | |
| | Scavo per nuova platea | | 69,940 | | 0,600 | 41,96 | | |
| 9 A35054a | eccedenza scavo per casseratura 10% | 0,100 | 41,960 | | | 4,20 | 45,29 | 4.267,22 |
| | Sommano mc | | | | | 46,16 | | |
| | | | | | | | | |
| | Casseforme rette o centinate per getti di conglomerati cementizi semplici o armati compreso armo, di ... a regola d'arte e misurate secondo la superficie effettiva delle casseforme a contatto con il calcestruzzo: per pilastri: legno (sottomisure di abete) | | | | | | 45,29 | 4.267,22 |
| | CASSERATURA NUOVI PILASTRI 25*30 (h= 885 cm) | 6,000 | 1,100 | | 8,850 | 58,41 | | |
| 10 A35055a | CASSERATURA NUOVI PILASTRI 25*30 (h=1085 cm) | 3,000 | 1,100 | | 10,850 | 35,81 | | |
| | Sommano mq | | | | | 94,22 | | |
| | Casseforme rette o centinate per getti di conglomerati cementizi semplici o armati compreso armo, di ... te a regola d'arte e misurate secondo la superficie effettiva delle casseforme a contatto con il calcestruzzo: per travi: legno (sottomisure di abete) | | | | | | 47,96 | 4.392,66 |
| | Casseri Travi T001 - 002 - 004 | | 11,810 | | | 11,81 | | |
| | Casseri Travi T003 - 005 - 006 - 007 - 008 | | 18,720 | | | 18,72 | | |
| | Casseri Travi T009 - 010 - 012 | | 11,810 | | | 11,81 | | |
| | Casseri Travi T011 - 013 - 014 - 015 - 016 | | 18,720 | | | 18,72 | | |
| | Casseri Travi T017 - 018 - 020 | | 11,810 | | | 11,81 | | |
| | Casseri Travi T019 - 021 - 022 - 023 - 024 | | 18,720 | | | 18,72 | | |
| | Sommano mq | | | | | 91,59 | | |
| 11 A35062a | Acciaio in barre per armature di conglomerato cementizio prelaborato e pretagliato a misura, sagomat | | | | | | | |
| | | | | | | | | |
| | A RIPORTARE | | | | | | | 67.835,15 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|--------------------------|---|------------|--------|-------|---------|----------|-----------|-----------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 67.835,15 |
| 12 A35062a | ... Tecnico Centrale della Presidenza del Consiglio Superiore dei LL.PP., in barre: per strutture semplici (50 ÷ 60 kg di acciaio per mc di calcestruzzo) | | | | | | | |
| | ARMATURA PLATEA Diam 14 mm passo 20 x20 cm (lato lungo superiori ed inferiori) | 106,000 | 7,850 | | 1,208 | 1.005,18 | | |
| | ARMATURA PLATEA Diam 14 mm passo 20 x20 cm (lato corto superiori e inferiori) | 68,000 | 12,700 | | 1,208 | 1.043,23 | | |
| | ARMATURA VERTICALE DIAM.16 ; L=4.80; PZ 4 (pilastri h= 885 cm) | 24,000 | 11,900 | | 1,578 | 450,68 | | |
| | STAFFE N 77 DIAM 6 MM L=1.07 (pilastri h= 885 cm) | 462,000 | 1,070 | | 0,222 | 109,74 | | |
| | ARMATURA VERTICALE DIAM.16 ; L=4.80; PZ 4 (pilastri h= 1085 cm) | 12,000 | 14,600 | | 1,578 | 276,47 | | |
| | STAFFE N 99 DIAM 6 MM L=1.07 (pilastri h= 1085 cm) | 297,000 | 1,070 | | 0,222 | 70,55 | | |
| | Sommano kg | | | | | 2.955,85 | 2,59 | 7.655,65 |
| | Acciaio in barre per armature di conglomerato cementizio prelaborato e pretagliato a misura, sagomato | | | | | | | |
| | ... Tecnico Centrale della Presidenza del Consiglio Superiore dei LL.PP., in barre: per strutture semplici (50 ÷ 60 kg di acciaio per mc di calcestruzzo) | | | | | | | |
| | Armatura travi T001 - 002 - 004 (longitudinali diametro 16 staffe diametro 8) | | | | 445,000 | 445,00 | | |
| | Armatura travi T003 - 005 - 006 - 007 - 008 (longitudinali diametro 16 staffe diametro 8) | | | | 599,000 | 599,00 | | |
| 13 DA3.5.05.031. a | Armatura travi T009 - 010 - 012 (longitudinali diametro 16 staffe diametro 8) | | | | 445,000 | 445,00 | | |
| | Armatura travi T011 - 013 - 014 - 015 - 016 (longitudinali diametro 16 staffe diametro 8) | | | | 599,000 | 599,00 | | |
| | Armatura travi T017 - 018 - 020 (longitudinali diametro 16 staffe diametro 8) | | | | 445,000 | 445,00 | | |
| | Armatura travi T019 - 021 - 022 - 023 - 024 (longitudinali diametro 16 staffe diametro 8) | | | | 599,000 | 599,00 | | |
| | Sommano kg | | | | | 3.132,00 | 2,59 | 8.111,88 |
| | [A35031] Magrone di sottofondazione eseguito mediante getto di conglomerato cementizio preconfezionato a dosaggio con cemento 42.5 R, eseguito secondo le prescrizioni tecniche previste, compresa la fornitura del materiale in cantiere, il suo spargimen | | | | | | | |
| | Magrone | | 10,780 | 6,710 | 0,100 | 7,23 | | |
| | Sommano mc | | | | | 7,23 | 127,95 | 925,08 |
| | [A35036] Conglomerato cementizio preconfezionato a resistenze caratteristiche e classe di esposizione XC1-XC2, I | | | | | | | |
| | dimensione massima degli inerti pari a 31,5 mm, classe di lavorabilità (slump) S4 (fluida), rapporto A/Ci <= 0,60; gettato in opera, secondo I | | | | | | | |
| | GETTO PILASTRI 25*30 (pilastro h=885 cm) | 6,000 | 0,250 | 0,300 | 8,850 | 3,98 | | |
| | GETTO PILASTRI 25*30 (pilastro h=1085 cm) | 3,000 | 0,250 | 0,300 | 10,850 | 2,44 | | |
| | Sommano mc | | | | | 6,42 | 226,67 | 1.455,22 |
| 15 DA3.5.05.038. a | [A35038] Conglomerato cementizio preconfezionato a resistenze caratteristiche e classe di esposizione XC1-XC2, I | | | | | | | |
| | dimensione massima degli inerti pari a 31,5 mm, classe di lavorabilità (slump) S4 (fluida), rapporto A/Ci <= 0,60; gettato in opera, secondo I | | | | | | | |
| | CLS travi T001 - 002 - 004 (40X25 cm) | | | | 1,850 | 1,85 | | |
| | CLS travi T003 - 005 - 006 - 007 - 008 (30X25 cm) | | | | 2,700 | 2,70 | | |
| | CLS travi T009 - 010 - 012 (40X25 cm) | | | | 1,850 | 1,85 | | |
| | A RIPORTARE | | | | | | | 85.982,98 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|--------------------------|---|------------|--------|-------|--------|----------|-----------|------------------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 85.982,98 |
| 16 DA3.5.06.043. a | CLS travi T011 - 013 - 014 - 015 - 016 (30X25 cm) | | | | 2,700 | 2,70 | 223,42 | 3.049,68 |
| | CLS travi T017 - 018 - 020 (40X25 cm) | | | | 1,850 | 1,85 | | |
| | CLS travi T019 - 021 - 022 - 023 - 024 (30X25 cm) | | | | 2,700 | 2,70 | | |
| | Sommano mc | | | | | 13,65 | | |
| 17 DA5.5.02.004. e | [A35043] Conglomerato cementizio autocompattante (SCC) preconfezionato conforme alla norma UNI 11040, conforme alle prescrizioni del punto 8.2.2 della norma UNI EN 206-1, con dimensione massima degli inerti a 25 mm (UNI 11040), classe di esposizione XC, S | | | | | | 222,87 | 6.233,67 |
| | GETTO PLATEA DI FONDAZIONE (Spessore 40 cm) | 10,580 | 6,610 | 0,400 | 27,97 | | | |
| | Sommano mc | | | | 27,97 | | | |
| | | | | | | | | |
| 17 DA5.5.02.004. e | [A55004] Solaio misto di cemento armato e laterizio, gettato in opera per strutture piane, costituito da pignatte e successivo getto di calcestruzzo preconfezionato formante nervature parallele tra pignatte e soletta superiore da 4 cm, armata con rete ele | | | | | | 114,31 | 21.556,58 |
| | Solaio piano terra | 60,860 | | | 60,86 | | | |
| | Solaio piano primo + balcone | 66,860 | | | 66,86 | | | |
| | Solaio piano sottotetto | 60,860 | | | 60,86 | | | |
| | Sommano mq | | | | 188,58 | | | |
| | Totale Opere in cemento armato | | | | | | | 58.101,39 |
| | CME Intervento di adeguamento sismico | | | | | | | |
| | Nuove costruzioni | | | | | | | |
| | Opere in legno | | | | | | | |
| 18 B13.5.01.025. a | [135025] Collari per sostegno di pluviali, montati in opera compreso fissaggio al supporto: [135025a] in acciaio zincato | | | | | | 6,07 | 121,40 |
| | COLLARI PER DISCESE | 20,000 | | | 20,00 | | | |
| | Sommano cad | | | | 20,00 | | | |
| | | | | | | | | |
| 19 DB3.5.01.012. a | [B35012] Strutture in legno lamellare, costituite da tavole di abete rosso, a spigoli vivi a filo di sega, posto in opera compresa ogni lavorazione quale la rettifica e la piallatura, la fornitura e posa in opera della staffatura speciale e bulloneria in | | | | | | 3.351,41 | 17.594,90 |
| | PUNTONI 12x20 | 13,000 | 9,220 | 0,120 | 0,200 | 2,88 | | |
| | COLMO 20x24 | | 11,800 | 0,200 | 0,240 | 0,57 | | |
| | SAETTA 10x16 | 4,000 | 0,800 | 0,100 | 0,160 | 0,05 | | |
| | DORMIENTE IN LEGNO 20*32 | | 24,500 | 0,200 | 0,320 | 1,57 | | |
| | ABBAINO | 5,000 | 2,300 | 0,100 | 0,160 | 0,18 | | |
| | Sommano mc | | | | 5,25 | | | |
| 20 DB3.5.12.099. g | [B35099] Canali di gronda, converse e scossaline montate in opera compreso pezzi speciali ed ogni altro onere e magistero per dare l'opera finita a regola d'arte con esclusione delle sole cicogne di sostegno per i canali di gronda: sviluppo fino a cm 33: | | | | | | 80,48 | 3.299,68 |
| | CANALI DI GRONDA + PLUVIALI | 1,000 | 41,000 | | | 41,00 | | |
| | Sommano m | | | | | 41,00 | | |
| | A RIPORTARE | | | | | | | 137.838,89 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|--------------------------|---|----------------|-----------------|----------------|----------------|----------------|-----------|-------------------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 137.838,89 |
| 21 DB3.5.12.106. b | [B35106] Cicogne per sostegno di canali di gronda, montate in opera compreso fissaggio al supporto: [B35106b] in rame o alluminio PER LUNGHEZZA GRONDA PERIMETRO TETTO Sommano cad | 15,000 | | | | 15,00 15,00 | 7,62 | 114,30 |
| 22 DB3.5.13.112. b | [B35112] Dispositivo antiscivolo TIPO C costituito da un sistema di ancoraggio (linea vita) contro le cadute dall'alto da parte del personale manutentore (antennisti, idraulici, tecnici d'impianti etc.) operante sulla copertura, sia piana sia inclinata, pe LINEA VITA Sommano cad | 1,000 | | | | 1,00 1,00 | 1.883,09 | 1.883,09 |
| 23 DB3.5.13.124. a | [B35124] Dispositivi antiscivolo TIPO A secondo le normative UNI EN 795:2012, UNI EN CEN/TS 16415:2013 e UNI 11578:2015 con punti di ancoraggio per superfici orizzontali, verticali e inclinate: gancio sottotegola: [B35124a] in acciaio inox AISI 304 per pun Sommano cad | 7,000 | | | | 7,00 7,00 | 99,29 | 695,03 |
| 24 DC3.5.15.114. a | [C35114] Piastra forata sagomata resistente a ribaltamento (hold down) in acciaio S250GD secondo la norma EN 10327:2004 con zincatura Z275 (spessore minimo 20 micronm) per applicazioni legno-legno e legno-calcestruzzo, installazione con viti svasate tutto ANCORAGGIO PUNTONI DORMIENTE Sommano cad | 2,000 | | | 26,000 | 52,00 52,00 | 4,70 | 244,40 |
| | Totale Opere in legno | | | | | | | 23.952,80 |
| | CME Intervento di adeguamento sismico | | | | | | | |
| | Nuove costruzioni | | | | | | | |
| | Opere in murature | | | | | | | |
| 25 B09.5.03.014. c | [095014] Muratura in mattoni dello spessore superiore ad una testa, retta o curva ed a qualsiasi altezza, compresi oneri e magisteri per l'esecuzione di ammorsature, spigoli, riseghe, ecc., e quanto altro si renda necessario a realizzare l'opera a perfett Realizzazione di tamponamenti esterni verso via Aosta e via Scarlatti Realizzazione di tamponamenti esterni verso cortile interno e verso altra unità immobiliare Sommano mc | 2,000 2,000 | 10,520 6,510 | 0,350 0,350 | 8,710 9,800 | 64,14 44,66 | 422,86 | 46.007,17 |
| | Totale Nuove costruzioni | | | | | | | 128.061,36 |
| | Totale Opere in murature | | | | | | | 46.007,17 |
| | CME Intervento di adeguamento sismico | | | | | | | |
| | Opere provvisoriale | | | | | | | |
| | Opere provvisoriale | | | | | | | |
| 26 28.A15.A10.0 | IMPIANTO DI TERRA per CANTIERE MEDIO (25 kW)-apparecchi utilizzatori ipotizzati: gru a torre, betoni | | | | | | | |
| | A RIPORTARE | | | | | | | 186.782,88 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|--------------------------|--|------------|--------|-------|--------|----------|-----------|------------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 186.782,88 |
| 05 | ... ato da 2 m; collegamento delle baracche e del ponteggio con conduttore equipotenziale in rame isolato da 16 mm². temporaneo per la durata del cantiere IMPIANTO ELETTRICO DI CANTIERE | 1,000 | | | | 1,00 | | |
| | Sommano cad | | | | | 1,00 | 264,04 | 264,04 |
| 27 DA1.5.03.017. a | [A15017] Ponteggio a tubo giunto con altezza fino a 20 m, prodotto da azienda in possesso di autorizzazione ministeriale ed eseguito con l'impiego di tubi Ø48 mm e spessore pari a 3,5 mm, in acciaio zincato o verniciato e giunti realizzati in acciaio spes PONTEGGIO PRIMO MESE | 2,200 | 32,210 | | 7,500 | 531,47 | | |
| | Sommano cad | | | | | 531,47 | 10,76 | 5.718,62 |
| 28 DA1.5.03.017. b | [A15017] Ponteggio a tubo giunto con altezza fino a 20 m, prodotto da azienda in possesso di autorizzazione ministeriale ed eseguito con l'impiego di tubi Ø48 mm e spessore pari a 3,5 mm, in acciaio zincato o verniciato e giunti realizzati in acciaio spes PONTEGGIO PER I 6 MESI RESTANTI | 13,200 | 32,210 | | 7,500 | 3.188,79 | | |
| | Sommano cad | | | | | 3.188,79 | 2,07 | 6.600,80 |
| 29 DA1.5.03.024. a | [A15024] Piano di lavoro per ponteggi costituito da tavole metalliche prefabbricate od in legno di abete, spessore 50 mm, tavola fermapiede e scale di collegamento, valutato a mq di superficie del piano di lavoro (proiezione orizzontale): [A15024a] per i PIANI DI LAVORO PER PONTEGGIO PRIMO MESE | 3,000 | 32,210 | | 1,050 | 101,46 | | |
| | Sommano mq | | | | | 101,46 | 6,78 | 687,90 |
| 30 DA1.5.03.024. b | [A15024] Piano di lavoro per ponteggi costituito da tavole metalliche prefabbricate od in legno di abete, spessore 50 mm, tavola fermapiede e scale di collegamento, valutato a mq di superficie del piano di lavoro (proiezione orizzontale): [A15024b] per og PIANI DI LAVORO PER PONTEGGIO PER 6 MESI RESTANTI | 18,000 | 32,210 | | 1,050 | 608,77 | | |
| | Sommano mq | | | | | 608,77 | 1,82 | 1.107,96 |
| | Totale CME Intervento di adeguamento sismico | | | | | | | 201.162,20 |
| | Totale Opere provvisionali | | | | | | | 14.379,32 |
| | Totale Opere provvisionali | | | | | | | 14.379,32 |
| | TOTALE A MISURA | | | | | | | 201.162,20 |
| | TOTALE | | | | | | | 201.162,20 |

6. Computo metrico estimativo miglioramento sismico

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|-------------------------|---|------------|---------|-------|--------|----------|-----------|-----------------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| 1 A25136a | VOCI A MISURA | | | | | | | |
| | CME Intervento di miglioramento sismico | | | | | | | |
| | Demolizioni | | | | | | | |
| | Demolizioni | | | | | | | |
| | Compenso alle discariche autorizzate e realizzate secondo il DLgs 13 gennaio 2003, n. 36, per confer ... zioni, escluso il costo relativo alla caratterizzazione del rifiuto: rifiuti ammissibili in discarica per rifiuti inerti (art. 5 DM 27 settembre 2010) | | | | | | | |
| | LEGNAME COPERTURA 400 kg/m3 | 0,400 | 2,200 | | | 0,88 | | |
| | MANTO DI COPERTURA 400 kg/m3 | 0,400 | 114,000 | | 0,150 | 6,84 | | |
| | Sommano t | | | | | 7,72 | 18,00 | 138,96 |
| 2 DA2.5.10.088 | RIMOZIONE DI TETTI Avvertenze: Nelle stime relative a questo paragrafo non sono inclusi i costi relativi al carico, trasporto e scarico a discarica autorizzata dei materiali di risulta (i relativi prezzi sono esposti nell'ultima parte di questo capitolo). | | | | | | | |
| | Rimozione manto di copertura | | 114,000 | | | 114,00 | | |
| | Sommano mq | | | | | 114,00 | 16,90 | 1.926,60 |
| 3 DA2.5.10.090. a | [A25090] Smontaggio della grossa armatura in legno di tetto, compresi ferramenta, smuratura delle strutture stesse, cernita del materiale riutilizzabile e l'avvicinamento al luogo di deposito provvisorio; escluso il solo calo in basso: [A25090a] per strut | | | | | | | |
| | PUNTONI 12x12 | 13,000 | 9,220 | 0,120 | 0,120 | 1,73 | | |
| | COLMO 20x20 | | 11,800 | 0,200 | 0,200 | 0,47 | | |
| | Sommano mc | | | | | 2,20 | 138,79 | 305,34 |
| 4 DA2.5.15.130 | MOVIMENTAZIONI E TRASPORTI [A25130] Trasporto a discarica controllata secondo il DLgs 13 gennaio 2003, n. 36 dei materiali di risulta provenienti da demolizioni, previa caratterizzazione di base ai sensi del DM 24 giugno 2015 da computarsi a parte, con au | | | | | | | |
| | LEGNAME COPERTURA | 3,300 | | | | 3,30 | | |
| | MANTO DI COPERTURA | 25,650 | | | | 25,65 | | |
| | Sommano mc | | | | | 28,95 | 59,43 | 1.720,50 |
| 5 DA2.5.15.135. b | [A25135] Tiro in alto o calo in basso di materiali a mezzo di elevatore meccanico compreso l'onere di carico e scarico dei materiali: [A25135b] valutazione a volume | | | | | | | |
| | VOLUME AUMENTATO DEL 50% DOPO DEMOLIZIONE | | | | | | | |
| | LEGNAME COPERTURA | 1,500 | 2,200 | | | 3,30 | | |
| | MANTO DI COPERTURA | 1,500 | 114,000 | | 0,150 | 25,65 | | |
| | Sommano mc | | | | | 28,95 | 36,64 | 1.060,73 |
| | Totale Demolizioni | | | | | | | 5.152,13 |
| | Totale Demolizioni | | | | | | | 5.152,13 |
| 6 | CME Intervento di miglioramento sismico | | | | | | | |
| | Nuove costruzioni | | | | | | | |
| | Opere in legno | | | | | | | |
| | [135025] Collari per sostegno di pluviali, montati in opera | | | | | | | |
| | A RIPORTARE | | | | | | | 5.152,13 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|--------------------------|---|--------------------------|--------------------------|-------------------------|-------------------------|--------------------------------------|-----------|-----------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 5.152,13 |
| B13.5.01.025. a | compreso fissaggio al supporto: [135025a] in acciaio zincato COLLARI PER DISCESE | 20,000 | | | | 20,00 | | |
| | Sommano cad | | | | | 20,00 | 6,07 | 121,40 |
| 7 DB3.5.01.012. a | [B35012] Strutture in legno lamellare, costituite da tavole di abete rosso, a spigoli vivi a filo di sega, posto in opera compresa ogni lavorazione quale la rettifica e la piallatura, la fornitura e posa in opera della staffatura speciale e bulloneria in PUNTONI 12x20 COLMO 20x24 SAETTA 10x16 DORMIENTE IN LEGNO 20*32 ABBAINO | 13,000 4,000 5,000 | 9,220 11,800 2,300 | 0,120 0,200 0,100 | 0,200 0,240 0,160 | 2,88 0,57 0,05 1,48 0,18 | | |
| | Sommano mc | | | | | 5,16 | 3.351,41 | 17.293,28 |
| 8 DB3.5.12.099. g | [B35099] Canali di gronda, converse e scossaline montate in opera compreso pezzi speciali ed ogni altro onere e magistero per dare l'opera finita a regola d'arte con esclusione delle sole cicogne di sostegno per i canali di gronda: sviluppo fino a cm 33: CANALI DI GRONDA + PLUVIALI | 1,000 | 41,000 | | | 41,00 | | |
| | Sommano m | | | | | 41,00 | 80,48 | 3.299,68 |
| 9 DB3.5.12.106. b | [B35106] Cicogne per sostegno di canali di gronda, montate in opera compreso fissaggio al supporto: [B35106b] in rame o alluminio PER LUNGHEZZA GRONDA PERIMETRO TETTO | 15,000 | | | | 15,00 | | |
| | Sommano cad | | | | | 15,00 | 7,62 | 114,30 |
| 10 DB3.5.13.112. b | [B35112] Dispositivo anticaduta TIPO C costituito da un sistema di ancoraggio (linea vita) contro le cadute dall'alto da parte del personale manutentore (antennisti, idraulici, tecnici d'impianti etc.) operante sulla copertura, sia piana sia inclinata, pe LINEA VITA | 1,000 | | | | 1,00 | | |
| | Sommano cad | | | | | 1,00 | 1.883,09 | 1.883,09 |
| 11 DB3.5.13.124. a | [B35124] Dispositivi anticaduta TIPO A secondo le normative UNI EN 795:2012, UNI EN CEN/TS 16415:2013 e UNI 11578:2015 con punti di ancoraggio per superfici orizzontali, verticali e inclinate: gancio sottotegola: [B35124a] in acciaio inox AISI 304 per pun | 7,000 | | | | 7,00 | | |
| | Sommano cad | | | | | 7,00 | 99,29 | 695,03 |
| 12 DC3.5.15.114. a | [C35114] Piastra forata sagomata resistente a ribaltamento (hold down) in acciaio S250GD secondo la norma EN 10327:2004 con zincatura Z275 (spessore minimo 20 micronm) per applicazioni legno-legno e legno-calcestruzzo, installazione con viti svasate tutto ANCORAGGIO PUNTONI DORMIENTE | 2,000 | | | 26,000 | 52,00 | | |
| | A RIPORTARE | | | | | | | 28.558,91 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|--------------------------|---|---|--|---|--------|--|-----------|------------------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 28.558,91 |
| | Sommano cad | | | | | 52,00 | 4,70 | 244,40 |
| | Totale Opere in legno | | | | | | | 23.651,18 |
| | CME Intervento di miglioramento sismico | | | | | | | |
| | Nuove costruzioni | | | | | | | |
| | Rinforzo strutturale | | | | | | | |
| 13 DA3.5.04.025. a | [A35025] Conglomerato cementizio non strutturale, alleggerito con argilla espansa, preconfezionato da centrale di betonaggio, eseguito secondo le prescrizioni tecniche previste, compresa la fornitura del materiale in cantiere, lo spargimento e quant'altro Emaco per livellare piano di posa (per analogia) | | 60,000 | | 0,030 | 1,80 | | |
| | Sommano mc | | | | | 1,80 | 322,52 | 580,54 |
| 14 DA3.5.10.062. a | [A35062] Acciaio in barre per armature di conglomerato cementizio prelavato e pretagliato a misura, sagomato e posto in opera a regola d'arte, compreso ogni sfrido, legature, ecc; nonché tutti gli oneri relativi ai controlli di legge; del tipo B450C pro Rete elettrosaldata per intonaco aramto (2.29 kg/mq) Facciata lato via Aosta Facciata cortile interno Facciata retro Muratura interna Muratura interna confinante su altra u.i. | 2,200 2,200 2,200 2,200 1,100 | 63,000 47,000 55,000 40,600 49,600 | 2,290 2,290 2,290 2,290 2,290 | | 317,39 236,79 277,09 204,54 124,94 | | |
| | Sommano kg | | | | | 1.160,75 | 2,64 | 3.064,38 |
| 15 DA9.3.03.033. a | [A93033] Connettore preformato a "L" in G.F.R.P. (Glass Fiber Reinforced Polymer), provvisto di Certificato di Valutazione Tecnica Europea ETA o Certificato di Valutazione Tecnica CVT, per collegamento di reti in G.F.R.P. a murature e volte in calcestruzz Ancoraggio armatura per rinforzo pilastri in muratura (4 pezzi/mq) | | 1.020,80 0 | | | 1.020,80 | | |
| | Sommano cad | | | | | 1.020,80 | 1,40 | 1.429,12 |
| 16 DA9.5.07.065. a | [A95065] Intonaco armato su pareti di qualsiasi genere, anche ad una testa, o volte, provvisto di marcatura CE o Certificato di Valutazione Tecnica CVT per sistemi CRM, mediante l'applicazione di malta a base di calce idraulica naturale (NHL), fibrorinfor Intonaco armato (per analogia) Facciata lato via Aosta Facciata cortile interno Facciata retro Muratura interna Muratura interna confinante su altra u.i. | 2,000 2,000 2,000 2,000 1,000 | 63,000 47,000 55,000 40,600 49,600 | | | 126,00 94,00 110,00 81,20 49,60 | | |
| | Sommano mq | | | | | 460,80 | 137,59 | 63.401,47 |
| 17 DB3.5.03.017 | PREPARAZIONE PIANO DI POSA [B35017] Tavolato in legno di abete a vista per falde di tetto dello spessore di 2,5 ÷ 3,00 cm, lavorato a fili paralleli, posto in opera comprese battentatura e piallatura | | | | | | | |
| | A RIPORTARE | | | | | | | 97.278,82 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|--------------------------|---|------------|--------|-------|--------|----------|-----------|------------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 97.278,82 |
| 18 28.A15.A10.0 05 | METRI QUADRI | 114,000 | | | | 114,00 | | |
| | Sommano mq | | | | | 114,00 | 64,40 | 7.341,60 |
| | Totale Nuove costruzioni | | | | | | | 99.468,29 |
| | Totale Rinforzo strutturale | | | | | | | 75.817,11 |
| | CME Intervento di miglioramento sismico | | | | | | | |
| | Opere provvisionali | | | | | | | |
| | Opere provvisionali | | | | | | | |
| 19 DA1.5.03.017. a | IMPIANTO DI TERRA per CANTIERE MEDIO (25 kW)-apparecchi utilizzatori ipotizzati: gru a torre, betoni ... ato da 2 m; collegamento delle baracche e del ponteggio con conduttore equipotenziale in rame isolato da 16 mm². temporaneo per la durata del cantiere | | | | | | | |
| | IMPIANTO ELETTRICO DI CANTIERE | 1,000 | | | | 1,00 | | |
| | Sommano cad | | | | | 1,00 | 264,04 | 264,04 |
| | [A15017] Ponteggio a tubo giunto con altezza fino a 20 m, prodotto da azienda in possesso di autorizzazione ministeriale ed eseguito con l'impiego di tubi Ø48 mm e spessore pari a 3,5 mm, in acciaio zincato o verniciato e giunti realizzati in acciaio spes | | | | | | | |
| | PONTEGGIO PRIMO MESE | 2,200 | 32,210 | | 7,500 | 531,47 | | |
| 20 DA1.5.03.017. b | Sommano cad | | | | | 531,47 | 10,76 | 5.718,62 |
| | [A15017] Ponteggio a tubo giunto con altezza fino a 20 m, prodotto da azienda in possesso di autorizzazione ministeriale ed eseguito con l'impiego di tubi Ø48 mm e spessore pari a 3,5 mm, in acciaio zincato o verniciato e giunti realizzati in acciaio spes | | | | | | | |
| | PONTEGGIO PER I 2 MESI RESTANTI | 2,200 | 32,210 | | 7,500 | 531,47 | | |
| | Sommano cad | | | | | 531,47 | 2,07 | 1.100,14 |
| | [A15024] Piano di lavoro per ponteggi costituito da tavole metalliche prefabbricate od in legno di abete, spessore 50 mm, tavola fermapiede e scale di collegamento, valutato a mq di superficie del piano di lavoro (proiezione orizzontale): [A15024a] per i | | | | | | | |
| 21 DA1.5.03.024. a | PIANI DI LAVORO PER PONTEGGIO PRIMO MESE | 3,000 | 32,210 | | 1,050 | 101,46 | | |
| | Sommano mq | | | | | 101,46 | 6,78 | 687,90 |
| | [A15024] Piano di lavoro per ponteggi costituito da tavole metalliche prefabbricate od in legno di abete, spessore 50 mm, tavola fermapiede e scale di collegamento, valutato a mq di superficie del piano di lavoro (proiezione orizzontale): [A15024b] per og | | | | | | | |
| | PIANI DI LAVORO PER PONTEGGIO PER 2 MESI RESTANTI | 6,000 | 32,210 | | 1,050 | 202,92 | | |
| | Sommano mq | | | | | 202,92 | 1,82 | 369,31 |
| | Totale CME Intervento di miglioramento sismico | | | | | | | 112.760,43 |
| | Totale Opere provvisionali | | | | | | | 8.140,01 |
| | Totale Opere provvisionali | | | | | | | 8.140,01 |

7. Computo metrico estimativo intervento locale

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|-------------------------|---|------------|---------|-------|--------|----------|-----------|----------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| 1 A25136a | VOCI A MISURA | | | | | | | |
| | CME Intervento locale | | | | | | | |
| | Demolizioni | | | | | | | |
| | Demolizioni | | | | | | | |
| | Compenso alle discariche autorizzate e realizzate secondo il DLgs 13 gennaio 2003, n. 36, per confer ... zioni, escluso il costo relativo alla caratterizzazione del rifiuto: rifiuti ammissibili in discarica per rifiuti inerti (art. 5 DM 27 settembre 2010) | | | | | | | |
| | LEGNAME COPERTURA 400 kg/m3 | 0,400 | 2,200 | | | 0,88 | | |
| | MANTO DI COPERTURA 400 kg/m3 | 0,400 | 114,000 | | 0,150 | 6,84 | | |
| | Sommano t | | | | | 7,72 | 18,00 | 138,96 |
| 2 DA2.5.05.043 | RIMOZIONE DI INTONACI Avvertenze: Nelle stime relative a questo paragrafo non sono inclusi i costi relativi al carico, trasporto e scarico a discarica autorizzata dei materiali di risulta nonchè quelli concernenti l'eventuale avvicinamento al luogo di dep | | | | | | | |
| | Spicconatura muratura | | 8,500 | | | 8,50 | | |
| | Sommano mq | | | | | 8,50 | 16,52 | 140,42 |
| 3 DA2.5.10.088 | RIMOZIONE DI TETTI Avvertenze: Nelle stime relative a questo paragrafo non sono inclusi i costi relativi al carico, trasporto e scarico a discarica autorizzata dei materiali di risulta (i relativi prezzi sono esposti nell'ultima parte di questo capitolo). | | | | | | | |
| | Rimozione manto di copertura | | 114,000 | | | 114,00 | | |
| | Sommano mq | | | | | 114,00 | 16,90 | 1.926,60 |
| 4 DA2.5.10.090. a | [A25090] Smontaggio della grossa armatura in legno di tetto, compresi ferramenta, smuratura delle strutture stesse, cernita del materiale riutilizzabile e l'avvicinamento al luogo di deposito provvisorio; escluso il solo calo in basso: [A25090a] per strut | | | | | | | |
| | PUNTONI 12x12 | 13,000 | 9,220 | 0,120 | 0,120 | 1,73 | | |
| | COLMO 20x20 | | 11,800 | 0,200 | 0,200 | 0,47 | | |
| | Sommano mc | | | | | 2,20 | 138,79 | 305,34 |
| 5 DA2.5.15.130 | MOVIMENTAZIONI E TRASPORTI [A25130] Trasporto a discarica controllata secondo il DLgs 13 gennaio 2003, n. 36 dei materiali di risulta provenienti da demolizioni, previa caratterizzazione di base ai sensi del DM 24 giugno 2015 da computarsi a parte, con au | | | | | | | |
| | LEGNAME COPERTURA | 3,300 | | | | 3,30 | | |
| | MANTO DI COPERTURA | 25,650 | | | | 25,65 | | |
| | Sommano mc | | | | | 28,95 | 59,43 | 1.720,50 |
| 6 DA2.5.15.135. b | [A25135] Tiro in alto o calo in basso di materiali a mezzo di elevatore meccanico compreso l'onere di carico e scarico dei materiali: [A25135b] valutazione a volume | | | | | | | |
| | VOLUME AUMENTATO DEL 50% DOPO DEMOLIZIONE | | | | | | | |
| | LEGNAME COPERTURA | 1,500 | 2,200 | | | 3,30 | | |
| | MANTO DI COPERTURA | 1,500 | 114,000 | | 0,150 | 25,65 | | |
| | Sommano mc | | | | | 28,95 | 36,64 | 1.060,73 |
| | A RIPORTARE | | | | | | | 5.292,55 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|--------------------------|---|-----------------|----------------|-------------------------|-------------------------|----------------------|-----------|-----------------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 5.292,55 |
| | Totale Demolizioni | | | | | | | 5.292,55 |
| | Totale Demolizioni | | | | | | | 5.292,55 |
| | CME Intervento locale | | | | | | | |
| | Nuove costruzioni | | | | | | | |
| | Opere in legno | | | | | | | |
| 7 B13.5.01.025. a | [135025] Collari per sostegno di pluviali, montati in opera compreso fissaggio al supporto: [135025a] in acciaio zincato COLLARI PER DISCESE | 20,000 | | | | 20,00 | | |
| | Sommano cad | | | | | 20,00 | 6,07 | 121,40 |
| 8 DA3.5.04.025. a | [A35025] Conglomerato cementizio non strutturale, alleggerito con argilla espansa, preconfezionato da centrale di betonaggio, eseguito secondo le prescrizioni tecniche previste, compresa la fornitura del materiale in cantiere, lo spargimento e quant'altro Emaco per livellare piano di posa (per analogia) | | 60,000 | | 0,030 | 1,80 | | |
| | Sommano mc | | | | | 1,80 | 322,52 | 580,54 |
| 9 DA3.5.10.062. a | [A35062] Acciaio in barre per armature di conglomerato cementizio prelaborato e pretagliato a misura, sagomato e posto in opera a regola d'arte, compreso ogni sfrido, legature, ecc; nonché tutti gli oneri relativi ai controlli di legge; del tipo B450C pro Rete elettrosaldata per rinforzo pilastri (2.29 kg/mq) | 1,100 | 8,500 | | 2,290 | 21,41 | | |
| | Sommano kg | | | | | 21,41 | 2,64 | 56,52 |
| 10 DA9.3.03.033. a | [A93033] Connettore preformato a "L" in G.F.R.P. (Glass Fiber Reinforced Polymer), provvisto di Certificato di Valutazione Tecnica Europea ETA o Certificato di Valutazione Tecnica CVT, per collegamento di reti in G.F.R.P. a murature e volte in calcestruzz Ancoraggio armatura per rinforzo pilastri in muratura (4 pezzi/mq) | | 34,000 | | | 34,00 | | |
| | Sommano cad | | | | | 34,00 | 1,40 | 47,60 |
| 11 DA9.5.07.065. a | [A95065] Intonaco armato su pareti di qualsiasi genere, anche ad una testa, o volte, provvisto di marcatura CE o Certificato di Valutazione Tecnica CVT per sistemi CRM, mediante l'applicazione di malta a base di calce idraulica naturale (NHL), fibrorinfor Intonaco armato per rinforzo pilastri (per analogia) | | 8,500 | | | 8,50 | | |
| | Sommano mq | | | | | 8,50 | 137,59 | 1.169,52 |
| 12 DB3.5.01.012. a | [B35012] Strutture in legno lamellare, costituite da tavole di abete rosso, a spigoli vivi a filo di sega, posto in opera compresa ogni lavorazione quale la rettifica e la piallatura, la fornitura e posa in opera della staffatura speciale e bulloneria in PUNTONI 12x20 COLMO 20x24 SAETTA 10x16 | 13,000 4,000 | 9,220 0,800 | 0,120 0,200 0,100 | 0,200 0,240 0,160 | 2,88 0,57 0,05 | | |
| | A RIPORTARE | | | | | | | 7.268,13 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|--------------------------|---|------------|--------|-------|--------|----------|-----------|-----------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 7.268,13 |
| 13 DB3.5.03.017 | DORMIENTE IN LEGNO 20*32 | | 23,190 | 0,200 | 0,320 | 1,48 | | |
| | ABBAINO | 5,000 | 2,300 | 0,100 | 0,160 | 0,18 | | |
| | Sommano mc | | | | | 5,16 | 3.351,41 | 17.293,28 |
| | PREPARAZIONE PIANO DI POSA [B35017] Tavolato in legno di abete a vista per falde di tetto dello spessore di 2,5 ÷ 3,00 cm, lavorato a fili paralleli, posto in opera comprese battentatura e piallatura | | | | | | | |
| | METRI QUADRI | 114,000 | | | | 114,00 | | |
| | Sommano mq | | | | | 114,00 | 64,40 | 7.341,60 |
| 14 DB3.5.12.099. g | [B35099] Canali di gronda, converse e scossaline montate in opera compreso pezzi speciali ed ogni altro onere e magistero per dare l'opera finita a regola d'arte con esclusione delle sole cicogne di sostegno per i canali di gronda: sviluppo fino a cm 33: | | | | | | | |
| | CANALI DI GRONDA + PLUVIALI | 1,000 | 41,000 | | | 41,00 | | |
| | Sommano m | | | | | 41,00 | 80,48 | 3.299,68 |
| | [B35106] Cicogne per sostegno di canali di gronda, montate in opera compreso fissaggio al supporto: [B35106b] in rame o alluminio | | | | | | | |
| 15 DB3.5.12.106. b | PER LUNGHEZZA GRONDA PERIMETRO TETTO | 15,000 | | | | 15,00 | | |
| | Sommano cad | | | | | 15,00 | 7,62 | 114,30 |
| 16 DB3.5.13.112. b | [B35112] Dispositivo anticaduta TIPO C costituito da un sistema di ancoraggio (linea vita) contro le cadute dall'alto da parte del personale manutentore (antennisti, idraulici, tecnici d'impianti etc.) operante sulla copertura, sia piana sia inclinata, pe | | | | | | | |
| | LINEA VITA | 1,000 | | | | 1,00 | | |
| | Sommano cad | | | | | 1,00 | 1.883,09 | 1.883,09 |
| | [B35124] Dispositivi anticaduta TIPO A secondo le normative UNI EN 795:2012, UNI EN CEN/TS 16415:2013 e UNI 11578:2015 con punti di ancoraggio per superfici orizzontali, verticali e inclinate: gancio sottotegola: [B35124a] in acciaio inox AISI 304 per pun | | | | | | | |
| 17 DB3.5.13.124. a | | 7,000 | | | | 7,00 | | |
| | Sommano cad | | | | | 7,00 | 99,29 | 695,03 |
| 18 DC3.5.15.114. a | [C35114] Piastra forata sagomata resistente a ribaltamento (hold down) in acciaio S250GD secondo la norma EN 10327:2004 con zincatura Z275 (spessore minimo 20 micronm) per applicazioni legno-legno e legno-calcestruzzo, installazione con viti svasate tutto | | | | | | | |
| | ANCORAGGIO PUNTONI DORMIENTE | 2,000 | | | 26,000 | 52,00 | | |
| | Sommano cad | | | | | 52,00 | 4,70 | 244,40 |
| | Totale Nuove costruzioni | | | | | | | 32.846,96 |
| | Totale Opere in legno | | | | | | | 32.846,96 |
| | A RIPORTARE | | | | | | | 38.139,51 |

| Num. ORD TARIFFA | DESIGNAZIONE DEI LAVORI | DIMENSIONI | | | | Quantità | IMPORTI € | |
|--------------------------|--|------------|--------|-------|--------|----------|-----------|-----------|
| | | par. ug. | lung. | larg. | H/peso | | Prezzo | Totale |
| | RIPORTO | | | | | | | 38.139,51 |
| | CME Intervento locale | | | | | | | |
| | Opere provvisionali | | | | | | | |
| | Opere provvisionali | | | | | | | |
| 19 28.A15.A10.0 05 | IMPIANTO DI TERRA per CANTIERE MEDIO (25 kW)-apparecchi utilizzatori ipotizzati: gru a torre, betoni ... ato da 2 m; collegamento delle baracche e del ponteggio con conduttore equipotenziale in rame isolato da 16 mm². temporaneo per la durata del cantiere IMPIANTO ELETTRICO DI CANTIERE | 1,000 | | | | 1,00 | | |
| | Sommano cad | | | | | 1,00 | 264,04 | 264,04 |
| 20 DA1.5.03.017. a | [A15017] Ponteggio a tubo giunto con altezza fino a 20 m, prodotto da azienda in possesso di autorizzazione ministeriale ed eseguito con l'impiego di tubi Ø48 mm e spessore pari a 3,5 mm, in acciaio zincato o verniciato e giunti realizzati in acciaio spes PONTEGGIO PRIMO MESE | 2,200 | 32,210 | | 7,500 | 531,47 | | |
| | Sommano cad | | | | | 531,47 | 10,76 | 5.718,62 |
| 21 DA1.5.03.017. b | [A15017] Ponteggio a tubo giunto con altezza fino a 20 m, prodotto da azienda in possesso di autorizzazione ministeriale ed eseguito con l'impiego di tubi Ø48 mm e spessore pari a 3,5 mm, in acciaio zincato o verniciato e giunti realizzati in acciaio spes PONTEGGIO PER I 2 MESI RESTANTI | 2,200 | 32,210 | | 7,500 | 531,47 | | |
| | Sommano cad | | | | | 531,47 | 2,07 | 1.100,14 |
| 22 DA1.5.03.024. a | [A15024] Piano di lavoro per ponteggi costituito da tavole metalliche prefabbricate od in legno di abete, spessore 50 mm, tavola fermapiEDE e scale di collegamento, valutato a mq di superficie del piano di lavoro (proiezione orizzontale): [A15024a] per i PIANI DI LAVORO PER PONTEGGIO PRIMO MESE | 3,000 | 32,210 | | 1,050 | 101,46 | | |
| | Sommano mq | | | | | 101,46 | 6,78 | 687,90 |
| 23 DA1.5.03.024. b | [A15024] Piano di lavoro per ponteggi costituito da tavole metalliche prefabbricate od in legno di abete, spessore 50 mm, tavola fermapiEDE e scale di collegamento, valutato a mq di superficie del piano di lavoro (proiezione orizzontale): [A15024b] per og PIANI DI LAVORO PER PONTEGGIO PER 2 MESI RESTANTI | 3,000 | 32,210 | | 1,050 | 101,46 | | |
| | Sommano mq | | | | | 101,46 | 1,82 | 184,66 |
| | Totale CME Intervento locale | | | | | | | 46.094,87 |
| | Totale Opere provvisionali | | | | | | | 7.955,36 |
| | Totale Opere provvisionali | | | | | | | 7.955,36 |
| | TOTALE A MISURA | | | | | | | 46.094,87 |
| | TOTALE | | | | | | | 46.094,87 |