

FICHA DE CARACTERÍSTICAS TÉCNICAS  
DEL FORJADO DE VIGUETAS PRETENSADAS  
MODELO T-18

**PREFABRICATS LOMAR, S.L.**

Muntanyola, 2  
08400 GRANOLLERS (Barcelona)

TÉCNICO AUTOR DE LA MEMORIA: Jordi Amat

Hoja nº 19 de 44



Generalitat de Catalunya  
Direcció General  
d'Arquitectura i Habitatge

040005 17.10.00

CADUCA ALS 5 ANYS  
AUTORIZACIÓ ADMINISTRATIVA  
VISAT

**FLEXION POSITIVA (por m)**

| TIPO DE FORJADO | TIPO DE VIGUETA | MOMENTO ÚLTIMO<br>Mu<br>m KN/m<br>[3] | ESFUERZO CORTANTE ULTIMO<br>Vu2 6.3.3.1.b) EF-96<br>Vu 6.3.3.2.a) EF-96<br>1+Mo/Md=2<br>KN/m [4] KN/m [4] |          | ESFUERZO RASANTE<br>Sección tipo<br>Vu2<br>KN/m [5] | MOMENTO FISURACIÓN<br>(hormigón in situ) Mf<br>m KN/m [6] | RIGIDEZ TOTAL Y FISURADA<br>E Ib E If<br>m <sup>2</sup> MN/m [6] |                         | MOMENTO LIMITE DE SERVICIO<br>FISUR.CON. FIS./TRACC. DESCOMPR.<br>CLASE<br>III II I<br>m KN/m [7] |            |            |
|-----------------|-----------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------|----------|-----------------------------------------------------|-----------------------------------------------------------|------------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------------------|------------|------------|
|                 |                 |                                       | KN/m [4]                                                                                                  | KN/m [4] | KN/m [5]                                            |                                                           | m <sup>2</sup> MN/m [6]                                          | m <sup>2</sup> MN/m [6] | m KN/m [7]                                                                                        | m KN/m [7] | m KN/m [7] |
| (h+c) * s       | T-18- 1         | 23.1                                  | 50.5                                                                                                      | 39.0     | 47.2                                                | 14.5                                                      | 13.5                                                             | 12.5                    | 22.3                                                                                              | 19.0       | 12.5       |
|                 | 2               | 35.5                                  | 55.1                                                                                                      | 42.7     | 47.2                                                | 14.7                                                      | 13.7                                                             | 12.7                    | 29.5                                                                                              | 26.1       | 19.5       |
|                 | 3               | 48.8                                  | 53.9                                                                                                      | 42.6     | 46.0                                                | 14.9                                                      | 13.9                                                             | 12.9                    | 38.5                                                                                              | 35.1       | 28.4       |
|                 | 4               | 62.9                                  | 54.2                                                                                                      | 43.8     | 46.3                                                | 15.1                                                      | 14.2                                                             | 13.2                    | 49.4                                                                                              | 45.8       | 39.0       |
|                 | 5               | 74.2                                  | 52.9                                                                                                      | 43.0     | 45.0                                                | 15.3                                                      | 14.3                                                             | 13.3                    | 57.1                                                                                              | 53.5       | 46.5       |
|                 | 6               | 83.9                                  | 51.4                                                                                                      | 41.7     | 43.6                                                | 15.3                                                      | 14.4                                                             | 13.4                    | 63.0                                                                                              | 59.4       | 52.4       |

**FLEXION NEGATIVA (por m)**

| REFUERZO SUPERIOR POR NERVIOS | B400 MOMENTO Y CORTANTE ULTIMO-ABERT. FISURA |          |             |                |            |      | B500 MOMENTO Y CORTANTE ULTIMO-ABERT. FISURA |            |      |                |             |         | ESFUERZO RASANTE Vu2<br>KN/m [5] | MOMENTO DE FIS. Mf<br>m KN/m [6] | RIGIDEZ TOTAL Y FISURADA |                         |      |      |          |     |
|-------------------------------|----------------------------------------------|----------|-------------|----------------|------------|------|----------------------------------------------|------------|------|----------------|-------------|---------|----------------------------------|----------------------------------|--------------------------|-------------------------|------|------|----------|-----|
|                               | Sección tipo                                 |          |             | Sección maciza |            |      | Sección tipo                                 |            |      | Sección maciza |             |         |                                  |                                  | E Ib                     | E If                    |      |      |          |     |
|                               | Mu                                           | Rel. x/d | Vig. límite | Vu2            | Wk         | Mu   | Rel. x/d                                     | Wk         | Mu   | Rel. x/d       | Vig. Límite | Vu2     |                                  |                                  |                          |                         | Wk   | Mu   | Rel. x/d | Wk  |
| m KN/m [3]                    | [8]                                          | [9]      | KN/m [4]    | mm [10]        | m KN/m [3] | [8]  | [10]                                         | m KN/m [3] | [8]  | [10]           | KN/m [4]    | mm [10] | m KN/m [3]                       | [8]                              | [10]                     | m <sup>2</sup> MN/m [6] |      |      |          |     |
| 1ø8                           |                                              |          |             |                |            |      |                                              |            |      |                |             |         |                                  |                                  |                          |                         | 45.7 | 18.7 | 13.3     | 0.7 |
| 1ø10                          |                                              |          |             |                |            |      |                                              |            |      |                |             |         |                                  |                                  |                          |                         | 45.5 | 18.8 | 13.3     | 0.9 |
| 2ø8                           | 6.4                                          | 0.06     | 6           | 34.2           | 0.18       |      |                                              |            | 7.9  | 0.07           | 6           | 36.0    | 0.22                             |                                  |                          |                         | 45.7 | 18.9 | 13.3     | 1.0 |
| 1ø12                          | 7.1                                          | 0.07     | 6           | 35.0           | 0.20       |      |                                              |            | 8.8  | 0.08           | 6           | 37.0    | 0.24                             |                                  |                          |                         | 45.3 | 18.9 | 13.4     | 1.1 |
| 1ø8+1ø10                      | 8.1                                          | 0.08     | 6           | 36.3           | 0.20       |      |                                              |            | 10.0 | 0.10           | 6           | 38.6    | 0.26                             |                                  |                          |                         | 45.6 | 19.0 | 13.4     | 1.2 |
| 2ø10                          | 9.8                                          | 0.09     | 6           | 38.3           | 0.19       |      |                                              |            | 12.0 | 0.12           | 6           | 41.2    | 0.23                             |                                  |                          |                         | 45.5 | 19.1 | 13.4     | 1.4 |
| 1ø10+1ø12                     | 11.8                                         | 0.12     | 6           | 40.8           | 0.20       |      |                                              |            | 19.3 | 0.15           | 6           | 44.3    | 0.25                             |                                  |                          |                         | 45.4 | 19.2 | 13.5     | 1.6 |
| 2ø12                          | 18.3                                         | 0.14     | 6           | 43.3           | 0.19       |      |                                              |            | 22.4 | 0.17           | 6           | 47.4    | 0.24                             |                                  |                          |                         | 45.3 | 19.3 | 13.5     | 1.8 |
| 1ø10+1ø16                     | 22.2                                         | 0.17     | 6           | 47.2           | 0.21       |      |                                              |            | 27.0 | 0.22           | 6           | 52.2    | 0.27                             |                                  |                          |                         | 45.0 | 19.4 | 13.5     | 2.1 |
| 1ø12+1ø16                     | 24.6                                         | 0.20     | 6           | 49.7           | 0.20       |      |                                              |            | 30.0 | 0.25           | 6           | 52.8    | 0.25                             | 32.3                             | 0.03                     | 0.30                    | 45.0 | 19.6 | 13.6     | 2.3 |
| 2ø16                          | 30.6                                         | 0.27     | 6           | 52.7           | 0.19       | 33.1 | 0.03                                         | 0.21       | 36.7 | 0.41           | 6           | 52.7    | 0.23                             | 40.9                             | 0.04                     | 0.27                    | 44.8 | 19.8 | 13.7     | 2.7 |
| 4ø12                          | 34.3                                         | 0.34     | 6           | 53.1           | 0.15       | 37.5 | 0.03                                         | 0.20       | 40.6 | 0.46           | 6           | 53.1    | 0.19                             | 46.2                             | 0.04                     | 0.24                    | 45.3 | 20.1 | 13.8     | 3.0 |
| 2ø16+1ø12                     | 37.6                                         | 0.43     | 6           | 52.8           | 0.18       | 42.1 | 0.04                                         | 0.23       | 44.2 | 0.51           | 6           | 52.8    | 0.22                             | 51.9                             | 0.05                     | 0.29                    | 44.9 | 20.2 | 13.8     | 3.2 |
| 3ø16                          | 42.2                                         | 0.49     | 6           | 52.7           | 0.17       | 48.9 | 0.04                                         | 0.21       | 49.3 | 0.58           | 6           | 52.7    | 0.21                             | 60.1                             | 0.06                     | 0.27                    | 44.8 | 20.5 | 13.9     | 3.6 |
| 4ø16                          | 51.7                                         | 0.61     | 6           | 52.7           | 0.16       | 64.1 | 0.06                                         | 0.21       | 66.2 | 0.59           | 2           | 52.7    | 0.20                             | 78.5                             | 0.08                     | 0.27                    | 44.8 | 21.2 | 14.2     | 4.4 |

RELACION  $\alpha$  o RELACION W1,c/W1,s [11]: 2.00  
 INCREMENTO EXCENTRICIDAD (e,c-e,s), cm [12]: 7.33  
 ESFUERZO CORTANTE ULTIMO Vu2, Sección tipo, KN/m [13]: 39.5  
 ESFUERZO CORTANTE ULTIMO Vu1, Sección maciza, KN/m: 100.9  
 ESFUERZO RASANTE ULTIMO Vu2, Sección maciza, KN/m: 91.1