



# **INVERTED T BEAMS LOAD TABLES**

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## About this Publication

To the best of our knowledge and understanding, the information given in this reference book is complete and accurate. This document is intended to guide the design professional while making his or her own preliminary evaluations of approximate depth, span, spacing and connections. The information given represents typical installations and applications for Structural Prestressed Industries Inc. (SPI) products. For applications requiring special loadings and or special serviceability requirements please contact SPI.

These guidelines are specific to Structural Prestressed Industries (SPI) precast/prestressed members and should never be used to evaluate members from other precast producers. These guidelines are not expressed nor implied warranties for other applications.

SPI encourages the Design and Construction Professionals to contact our Engineering Department for value engineering solutions and design build projects. Our team of experienced engineers, designers and project managers are available to assist you with all your needs.

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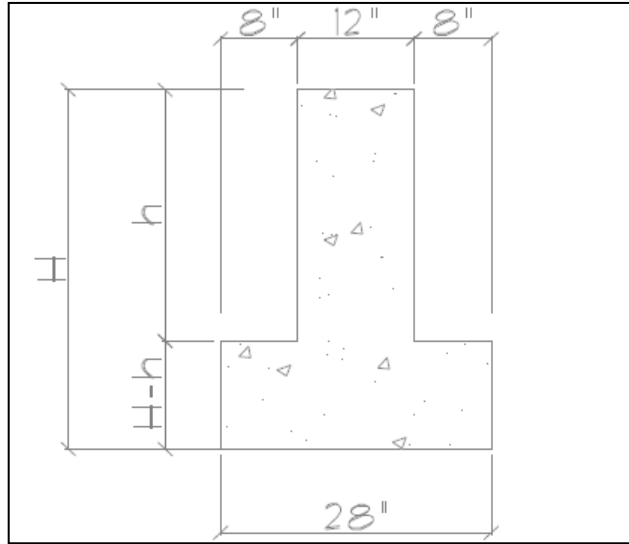


FOR SPANS AND LOADS NOT SHOWN IN TABLES CONTACT SPI ENGINEERING. CHECK WITH SPI ENGINEERING DEPARTMENT FOR CASES OF HIGH WIND UPLIFT.

CAMBER IS INHERENT TO PRESTRESSED MEMBERS. HEAVY LOADING AND LONG SPANS MAY RESULT IN HIGHER CAMBERS. CONTACT SPI WITH ANY CAMBER CONCERNS.

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### 12" WEB PRESTRESSED INVERTED TEE BEAM



| Description                             | Area (in) | I (in <sup>4</sup> ) | Sb (in <sup>3</sup> ) | Yb (in) | Weight (plf) |
|---|-----------|----------------------|-----------------------|---------|--------------|
| 12" Web 28" Bottom 28" Height 12" Ledge | 528       | 32075                | 2892                  | 11.1    | 550          |
| 12" Web 28" Bottom 36" Height 12" Ledge | 624       | 68100                | 4760                  | 14.3    | 650          |
| 12" Web 28" Bottom 38" Height 12" Ledge | 648       | 80009                | 5282                  | 15.2    | 675          |

| SERVICE LOADS IN (klf) |    |           |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------------------------|----|-----------|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Depth (in)             |    | Span (ft) |      |      |      |      |      |     |     |     |     |     |     |     |     |     |     |     |     |     |
| H                      | h  | 20        | 22   | 24   | 25   | 26   | 27   | 28  | 29  | 30  | 31  | 32  | 33  | 34  | 35  | 36  | 37  | 38  | 39  | 40  |
| 28                     | 16 | 11.0      | 9.0  | 8.0  | 7.5  | 7.0  | 6.5  | 6.0 | 5.0 | 4.5 | 4.0 | 3.8 | 3.6 | 3.4 | 3.2 | 3.0 | 2.8 | 2.5 | 2.4 | 2.3 |
| 36                     | 24 | 18.0      | 15.0 | 12.5 | 11.5 | 10.5 | 9.5  | 8.5 | 8.0 | 7.5 | 7.0 | 6.5 | 6.0 | 5.8 | 5.3 | 5.0 | 4.8 | 4.5 | 4.2 | 4.0 |
| 38                     | 26 | 19.5      | 16.5 | 13.5 | 12.5 | 11.5 | 10.5 | 9.5 | 9.0 | 8.5 | 7.7 | 7.2 | 7.0 | 6.2 | 6.0 | 5.5 | 5.3 | 5.0 | 4.7 | 4.3 |

These tables provide allowable superimposed service loads (in plf) on the Inverted Tee Beam based on the following assumptions:

- 1- Prestressed Concrete:  $f'_c=6000$  psi
- 2- Service loads in the shaded boxes represent members with  $f'_ci > 4000$  psi and cambers over 2".
- 3- 50% of the allowable superimposed service load is considered dead load on the member.
- 4- Loads are based on ACI 318-19.

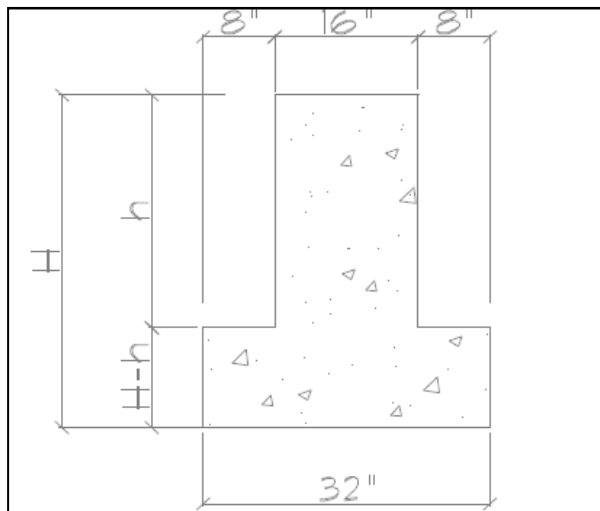


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### 16" WEB PRESTRESSED INVERTED TEE BEAM



| Description                             | Area (in) | I (in <sup>4</sup> ) | Sb (in <sup>3</sup> ) | Yb (in) | Weight (plf) |
|---|-----------|----------------------|-----------------------|---------|--------------|
| 16" Web 32" Bottom 28" Height 12" Ledge | 640       | 40175                | 3549                  | 11.5    | 667          |
| 16" Web 32" Bottom 36" Height 12" Ledge | 768       | 85248                | 5807                  | 14.9    | 800          |
| 16" Web 32" Bottom 38" Height 12" Ledge | 800       | 100127               | 6438                  | 15.8    | 833          |

| SERVICE LOADS IN (klf) |    |           |     |     |     |     |     |                      |     |                      |
|------------------------|----|-----------|-----|-----|-----|-----|-----|----------------------|-----|----------------------|
| Depth (in)             |    | Span (ft) |     |     |     |     |     |                      |     |                      |
| H                      | h  | 30        | 32  | 34  | 36  | 38  | 40  | 42                   | 44  | 46                   |
| 28                     | 16 | 6.0       | 5.5 | 4.0 | 3.5 | 3.0 | 2.5 | Call SPI Engineering |     |                      |
| 36                     | 24 | 9.0       | 8.0 | 7.0 | 6.0 | 5.5 | 5.0 | 4.5                  | 4.0 | Call SPI Engineering |
| 38                     | 26 | 10.5      | 9.5 | 8.5 | 7.5 | 6.5 | 6.0 | 5.0                  | 4.0 | 3.0                  |

These tables provide allowable superimposed service loads (in plf) on the Inverted Tee Beam based on the following assumptions:

- 1- Prestressed Concrete:  $f'_c=6000$  psi
- 2- Service loads in the shaded boxes represent members with  $f'_ci > 4000$  psi and cambers over 2.25".
- 3- 50% of the allowable superimposed service load is considered dead load on the member.
- 4- Loads are based on ACI 318-19.

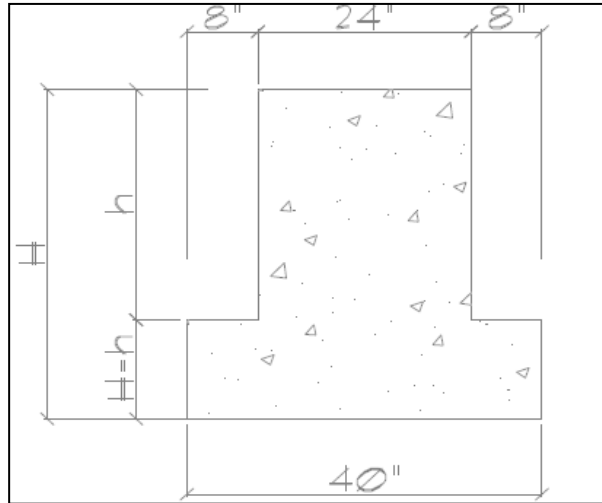


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### 24" WEB PRESTRESSED INVERTED TEE BEAM



| Description                             | Area (in) | I (in <sup>4</sup> ) | Sb (in <sup>3</sup> ) | Yb (in) | Weight (plf) |
|---|-----------|----------------------|-----------------------|---------|--------------|
| 24" Web 40" Bottom 28" Height 12" Ledge | 864       | 55765                | 4668                  | 12.1    | 900          |
| 24" Web 40" Bottom 36" Height 12" Ledge | 1056      | 118237               | 7654                  | 15.7    | 1100         |
| 24" Web 40" Bottom 38" Height 12" Ledge | 1104      | 138853               | 8487                  | 16.6    | 1150         |

| SERVICE LOADS IN (klf) |    |           |     |    |     |     |    |                      |     |                      |
|------------------------|----|-----------|-----|----|-----|-----|----|----------------------|-----|----------------------|
| Depth (in)             |    | Span (ft) |     |    |     |     |    |                      |     |                      |
| H                      | h  | 36        | 38  | 40 | 42  | 44  | 46 | 48                   | 50  | 52                   |
| 28                     | 16 | 5         | 4.5 | 4  | 3.5 | 3   | 2  | Call SPI Engineering |     |                      |
| 36                     | 24 | 9         | 8.5 | 8  | 6   | 5.5 | 5  | 4.5                  | 4   | Call SPI Engineering |
| 38                     | 26 | 10        | 9.5 | 8  | 7   | 6.5 | 6  | 5                    | 4.5 | 3.5                  |

These tables provide allowable superimposed service loads (in plf) on the Inverted Tee Beam based on the following assumptions:

- 1- Prestressed Concrete:  $f_c=6000$  psi
- 2- Service loads in the shaded boxes represent members with  $f_{ci} > 4000$  psi and cambers over 2.75".
- 3- 50% of the allowable superimposed service load is considered dead load on the member
- 4- Loads are based on ACI 318-19



# Disclaimer

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With respect to the load tables provided on this website, the information and data presented are intended to assist designers in determining applicable prestressed members. They should not be construed as express or implied warranties of suitability. The data does not account for unusual loads or stresses. Designers are encouraged to consult S.P.I.'s Engineering Department for project-specific information.

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