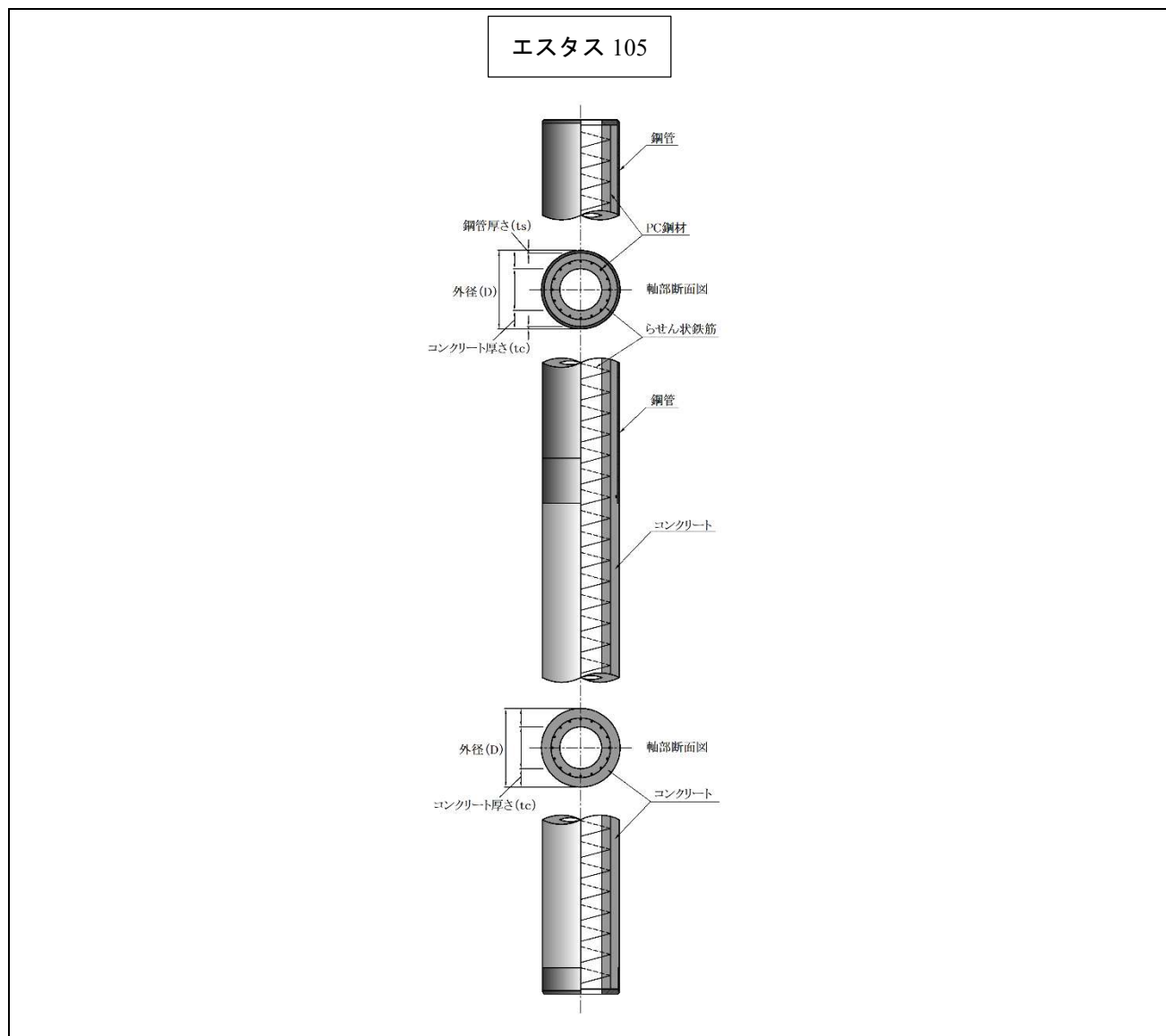


# エスタス105

エスタス 105 パイルは、SC パイルと PHC パイルを一体化させ、継手箇所を削減し施工効率を高めたパイルです。コンクリートの設計基準強度は、 $F_c = 105 \text{ N/mm}^2$  で、杭の厚さは JIS で規定された厚さの「I」、弊社規定の「II」の 2 種類があります。種類の A 種、B 種および C 種は、それぞれ PHC 部の有効プレストレス量を表します。

## ■杭仕様図



## ■評定・評価および認定

| 杭の種類          | 名称         | 養生方法 | 評定・評価番号      |
|---------------|------------|------|--------------|
| エスタス105パイル    | エスタス105    | 常圧   | BCJ評定-FD0447 |
|               | エスタス105-S  | 常圧   | BCJ評定-FD0447 |
| エスタス105-HBパイル | エスタス105-HB | 常圧   | BCJ評定-FD0448 |
| エスタス105-STパイル | エスタス105-ST | 常圧   | BCJ評定-FD0448 |
| エスタス105-HMパイル | エスタス105-HM | 常圧   | BCJ評定-FD0449 |

■設計用数値

| 項目                               |                                   |   | エスタス105                                 |                 |         |        |  |
|----------------------------------|-----------------------------------|---|---|-----------------|---------|--------|--|
|                                  |                                   |   | A種                                      | B種              | C種      |        |  |
| コン<br>ク<br>リ<br>ー<br>ト           | 設計基準強度 $F_c$ (N/mm <sup>2</sup> ) |   |   | 105             |         |        |  |
|                                  | 許容応力度<br>(N/mm <sup>2</sup> )     | 長期                                      | 曲げ圧縮 $\sigma_{ca}$                      | 30              |         |        |  |
|                                  |                                   |   | 曲げ引張 $\sigma_{ba}$                      | $\sigma_{cc}/4$ |         |        |  |
|                                  |                                   |   | 斜引張 $\sigma_{da}$                       | 1.2             |         |        |  |
|                                  |                                   | 短期                                      | 曲げ圧縮 $\sigma_{ca}$                      | 60              |         |        |  |
|                                  |                                   |   | 曲げ引張 $\sigma_{ba}$                      | $\sigma_{cc}/2$ |         |        |  |
| 斜引張 $\sigma_{da}$                |                                   |   | 1.8                                     |                 |         |        |  |
| ヤング係数 $E_c$ (N/mm <sup>2</sup> ) |                                   |   | 40,000                                  |                 |         |        |  |
| P<br>C<br>鋼<br>材                 | PC鋼線                              | φ7.0<br>mm                              | 降伏強度 $\sigma_{py}$ (N/mm <sup>2</sup> ) | 1,325           |         |        |  |
|                                  |                                   |   | 引張強度 $\sigma_{pu}$ (N/mm <sup>2</sup> ) | 1,515           |         |        |  |
|                                  |                                   | φ9.0<br>mm                              | 降伏強度 $\sigma_{py}$ (N/mm <sup>2</sup> ) | 1,226           |         |        |  |
|                                  |                                   |   | 引張強度 $\sigma_{pu}$ (N/mm <sup>2</sup> ) | 1,418           |         |        |  |
|                                  | ヤング係数 $E_p$ (N/mm <sup>2</sup> )  |   |   | 200,000         |         |        |  |
|                                  | PC鋼棒                              | 降伏強度 $\sigma_{py}$ (N/mm <sup>2</sup> ) |   | 1,275           |         |        |  |
|                                  |                                   | 引張強度 $\sigma_{pu}$ (N/mm <sup>2</sup> ) |   | 1,420           |         |        |  |
|                                  |                                   | ヤング係数 $E_p$ (N/mm <sup>2</sup> )        |   |                 | 200,000 |        |  |
| 鋼<br>管                           | 材質                                |   |   | SKK400          |         | SKK490 |  |
|                                  | 許容応力度<br>(N/mm <sup>2</sup> )     | 長期                                      | 圧縮 $f_c$                                | 157             |         | 217    |  |
|                                  |                                   |   | 引張 $f_t$                                | 157             |         | 217    |  |
|                                  |                                   |   | 曲げ $f_b$                                | 157             |         | 217    |  |
|                                  |                                   |   | せん断 $f_s$                               | 90              |         | 125    |  |
|                                  |                                   | 短期                                      | 圧縮 $f_c$                                | 235             |         | 325    |  |
|                                  |                                   |   | 引張 $f_t$                                | 235             |         | 325    |  |
|                                  |                                   |   | 曲げ $f_b$                                | 235             |         | 325    |  |
|                                  |                                   |   | せん断 $f_s$                               | 136             |         | 188    |  |
|                                  | ヤング係数 $E_s$ (N/mm <sup>2</sup> )  |   |   | 205000          |         |        |  |

## エスタス 105 パイル（複合部） 標準性能表

| 外径<br>D<br>(mm) | 厚さ<br>T<br>(含鋼管)<br>(mm) | 種類    | 鋼管                |                |   | 配筋A            |           |           | 配筋B   |                |           | 断面積       |   | 断面二次モーメント  |  | 換算断面係数<br>Z <sub>e</sub><br>×10 <sup>3</sup><br>(mm <sup>3</sup> ) | 断面一次モーメント<br>S <sub>0</sub><br>×10 <sup>3</sup><br>(mm <sup>3</sup> ) | 複合部計算有効プレストレス<br>σ <sub>ce</sub><br>(N/mm <sup>2</sup> ) | PHC部公称有効プレストレス<br>σ <sub>ce</sub><br>(N/mm <sup>2</sup> ) | 設計曲げモーメント<br>(N=0kN)                                 |  |                                  |                                |
|-----------------|--------------------------|-------|-------------------|----------------|---|----------------|-----------|-----------|---|----------------|-----------|-----------|---|--|--|--|---|--|---|--|--|----------------------------------|--------------------------------|
|                 |                          |       | 鋼管厚<br>ts<br>(mm) | 中心位置半径<br>(mm) | 断面積<br>A <sub>s</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心位置半径<br>(mm) | 径<br>(mm) | 本数<br>(本) | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心位置半径<br>(mm) | 径<br>(mm) | 本数<br>(本) | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 小さい断面<br>A<br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 換算断面<br>A <sub>e</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) |  |   |  |   | 小さい断面<br>I<br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) | 換算断面<br>I <sub>e</sub><br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) | 短期許容<br>M <sub>s</sub><br>(kN・m) | 破壊<br>M <sub>u</sub><br>(kN・m) |
| 400             | 65                       | I A   | 6.0               | 196.5          | 61.73   | 165            | 7.0       | 10        | 3.85  | 165            | 7.1       | 10        | 4.00  | 672  | 943  | 1,484  | 7,455   | 3,613  | 3.0   | 4.0  | 254.6  | 440.2                            |                                |
|                 |                          |       | 9.0               | 195.0          | 98.02   |                |           |           |   |                |           |           |   |  | 1,092  | 1,761  | 8,848   |  |   |  | 2.5  | 364.3                            | 619.2                          |
|                 |                          |       | 12.0              | 193.5          | 133.74  |                |           |           |   |                |           |           |   |  | 1,240  | 2,025  | 10,178  |  |   |  | 2.2  | 470.8                            | 780.6                          |
|                 |                          | I B   | 6.0               | 196.5          | 61.73   | 165            | 7.0       | 18        | 6.93  | 165            | 10.0      | 10        | 7.85  | 672  | 958  | 1,500  | 7,539   | 3,613  | 5.9   | 8.0  | 292.9  | 497.2                            |                                |
|                 |                          |       | 9.0               | 195.0          | 98.02   |                |           |           |   |                |           |           |   |  | 1,108  | 1,778  | 8,933   |  |   |  | 5.1  | 402.2                            | 665.3                          |
|                 |                          |       | 12.0              | 193.5          | 133.74  |                |           |           |   |                |           |           |   |  | 1,255  | 2,042  | 10,262  |  |   |  | 4.5  | 507.8                            | 819.8                          |
|                 |                          | I C   | 6.0               | 196.5          | 61.73   | 165            | 9.0       | 16        | 10.18   | 165            | 11.2      | 10        | 10.00   | 672  | 967  | 1,517  | 7,623   | 3,613  | 7.4   | 10.0   | 316.4  | 537.6                            |                                |
|                 |                          |       | 9.0               | 195.0          | 98.02   |                |           |           |   |                |           |           |   |  | 1,116  | 1,794  | 9,017   |  |   |  | 6.4  | 424.9                            | 700.0                          |
|                 |                          |       | 12.0              | 193.5          | 133.74  |                |           |           |   |                |           |           |   |  | 1,264  | 2,059  | 10,346  |  |   |  | 5.6  | 512.5                            | 850.7                          |
| 450             | 70                       | I A   | 6.0               | 221.5          | 69.59   | 190            | 7.0       | 12        | 4.62  | 190            | 10.0      | 6         | 4.71  | 822  | 1,128  | 2,262  | 10,096  | 5,010  | 3.0   | 4.0  | 330.3  | 569.9                            |                                |
|                 |                          |       | 9.0               | 220.0          | 110.58  |                |           |           |   |                |           |           |   |  | 1,297  | 2,662  | 11,882  |  |   |  | 2.6  | 472.5                            | 804.0                          |
|                 |                          |       | 12.0              | 218.5          | 151.02  |                |           |           |   |                |           |           |   |  | 1,463  | 3,045  | 13,595  |  |   |  | 2.3  | 608.3                            | 1,014                          |
|                 |                          | I B   | 6.0               | 221.5          | 69.59   | 190            | 7.0       | 24        | 9.24  | 190            | 10.0      | 12        | 9.42  | 822  | 1,146  | 2,295  | 10,246  | 5,010  | 6.0   | 8.0  | 387.3  | 664.4                            |                                |
|                 |                          |       | 9.0               | 220.0          | 110.58  |                |           |           |   |                |           |           |   |  | 1,315  | 2,695  | 12,031  |  |   |  | 5.2  | 527.0                            | 881.9                          |
|                 |                          |       | 12.0              | 218.5          | 151.02  |                |           |           |   |                |           |           |   |  | 1,482  | 3,079  | 13,744  |  |   |  | 4.6  | 661.2                            | 1,082                          |
|                 |                          | I C   | 6.0               | 221.5          | 69.59   | 190            | 9.0       | 20        | 12.72   | 190            | 11.2      | 12        | 12.00   | 822  | 1,160  | 2,320  | 10,358  | 5,010  | 7.5   | 10.0   | 416.9  | 709.7                            |                                |
|                 |                          |       | 9.0               | 220.0          | 110.58  |                |           |           |   |                |           |           |   |  | 1,329  | 2,720  | 12,143  |  |   |  | 6.5  | 555.5                            | 920.6                          |
|                 |                          |       | 12.0              | 218.5          | 151.02  |                |           |           |   |                |           |           |   |  | 1,496  | 3,104  | 13,856  |  |   |  | 5.8  | 677.8                            | 1,117                          |
| 500             | 80                       | I A   | 6.0               | 246.5          | 77.44   | 215            | 7.0       | 14        | 5.39  | 215            | 10.0      | 7         | 5.50  | 1,040  | 1,381  | 3,384  | 13,589  | 7,017  | 2.4   | 4.0  | 421.3  | 718.8                            |                                |
|                 |                          |       | 9.0               | 245.0          | 123.15  |                |           |           |   |                |           |           |   |  | 1,570  | 3,938  | 15,816  |  |   |  | 2.7  | 597.2                            | 1,017                          |
|                 |                          |       | 12.0              | 243.5          | 168.30  |                |           |           |   |                |           |           |   |  | 1,756  | 4,472  | 17,961  |  |   |  | 2.4  | 768.8                            | 1,287                          |
|                 |                          | I B   | 6.0               | 246.5          | 77.44   | 215            | 7.0       | 30        | 11.54   | 215            | 10.0      | 14        | 10.99   | 1,040  | 1,879  | 4,817  | 19,346  | 7,017  | 2.3   | 8.0  | 881.2  | 1,455                            |                                |
|                 |                          |       | 9.0               | 245.0          | 123.15  |                |           |           |   |                |           |           |   |  | 2,000  | 5,154  | 20,697  |  |   |  | 2.1  | 988.4                            | 1,537                          |
|                 |                          |       | 12.0              | 243.5          | 168.30  |                |           |           |   |                |           |           |   |  | 1,406  | 3,441  | 13,817  |  |   |  | 6.2  | 501.8                            | 847.0                          |
|                 |                          | I C   | 6.0               | 246.5          | 77.44   | 215            | 9.0       | 24        | 15.27   | 215            | 11.2      | 14        | 14.00   | 1,040  | 1,594  | 3,995  | 16,044  | 7,017  | 5.5   | 10.0   | 676.1  | 1,126                            |                                |
|                 |                          |       | 9.0               | 245.0          | 123.15  |                |           |           |   |                |           |           |   |  | 1,780  | 4,529  | 18,189  |  |   |  | 4.9  | 845.5                            | 1,382                          |
|                 |                          |       | 12.0              | 243.5          | 168.30  |                |           |           |   |                |           |           |   |  | 1,903  | 4,874  | 19,574  |  |   |  | 4.5  | 953.4                            | 1,543                          |
| 600             | 90                       | I A   | 6.0               | 241.5          | 227.61  | 260            | 7.0       | 18        | 6.93  | 260            | 10.0      | 10        | 7.85  | 1,423  | 2,025  | 5,210  | 20,925  | 11,647   | 2.8   | 4.0  | 1,063  | 1,698                            |                                |
|                 |                          |       | 9.0               | 246.5          | 77.44   |                |           |           |   |                |           |           |   |  | 1,421  | 3,475  | 13,956  |  |   |  | 7.8  | 543.5                            | 910.3                          |
|                 |                          |       | 12.0              | 243.5          | 168.30  |                |           |           |   |                |           |           |   |  | 1,609  | 4,029  | 16,182  |  |   |  | 6.8  | 714.1                            | 1,180                          |
|                 |                          | I B   | 6.0               | 246.5          | 77.44   | 260            | 9.0       | 26        | 16.54   | 260            | 10.0      | 20        | 15.70   | 1,423  | 1,795  | 4,564  | 18,327  | 11,647   | 6.1   | 8.0  | 881.5  | 1,430                            |                                |
|                 |                          |       | 9.0               | 245.0          | 123.15  |                |           |           |   |                |           |           |   |  | 1,918  | 4,909  | 19,713  |  |   |  | 5.7  | 968.9                            | 1,588                          |
|                 |                          |       | 12.0              | 243.5          | 168.30  |                |           |           |   |                |           |           |   |  | 2,040  | 5,245  | 21,064  |  |   |  | 5.3  | 1,054                            | 1,665                          |
|                 |                          | I C   | 6.0               | 246.5          | 77.44   | 260            | 11.2      | 20        | 20.00   | 260            | 11.2      | 20        | 20.00   | 1,423  | 1,835  | 4,663  | 18,283  | 11,647   | 6.4   | 10.0   | 841.4  | 1,433                            |                                |
|                 |                          |       | 9.0               | 245.0          | 123.15  |                |           |           |   |                |           |           |   |  | 2,101  | 5,731  | 22,513  |  |   |  | 7.1  | 1,092                            | 1,831                          |
|                 |                          |       | 12.0              | 243.5          | 168.30  |                |           |           |   |                |           |           |   |  | 2,326  | 6,731  | 25,767  |  |   |  | 6.4  | 1,339                            | 2,201                          |
| 600             | 90                       | I A   | 6.0               | 296.5          | 93.15   | 260            | 7.0       | 18        | 6.93  | 260            | 10.0      | 10        | 7.85  | 1,423  | 2,475  | 6,663  | 22,283  | 11,647   | 2.4   | 4.0  | 1,145  | 1,929                            |                                |
|                 |                          |       | 9.0               | 295.0          | 148.28  |                |           |           |   |                |           |           |   |  | 2,584  | 7,062  | 25,102  |  |   |  | 2.4  | 1,305                            | 2,183                          |
|                 |                          |       | 12.0              | 293.5          | 202.85  |                |           |           |   |                |           |           |   |  | 2,873  | 8,449  | 28,257  |  |   |  | 2.3  | 1,467                            | 2,425                          |
|                 |                          | I B   | 6.0               | 296.5          | 93.15   | 260            | 9.0       | 26        | 16.54   | 260            | 10.0      | 20        | 15.70   | 1,423  | 2,584  | 7,062  | 25,102  | 11,647   | 2.3   | 8.0  | 1,145  | 1,929                            |                                |
|                 |                          |       | 9.0               | 295.0          | 148.28  |                |           |           |   |                |           |           |   |  | 2,873  | 8,449  | 28,257  |  |   |  | 2.4  | 1,305                            | 2,183                          |
|                 |                          |       | 12.0              | 293.5          | 202.85  |                |           |           |   |                |           |           |   |  | 3,262  | 9,662  | 32,313  |  |   |  | 2.3  | 1,467                            | 2,425                          |
|                 |                          | I C   | 6.0               | 296.5          | 93.15   | 260            | 11.2      | 20        | 20.00   | 260            | 11.2      | 20        | 20.00   | 1,423  | 2,622  | 7,663  | 22,283  | 11,647   | 4.5   | 10.0   | 1,591  | 2,588                            |                                |
|                 |                          |       | 9.0               | 295.0          | 148.28  |                |           |           |   |                |           |           |   |  | 2,101  | 5,731  | 22,513  |  |   |  | 5.7  | 1,026                            | 1,733                          |
|                 |                          |       | 12.0              | 293.5          | 202.85  |                |           |           |   |                |           |           |   |  | 2,326  | 6,731  | 25,767  |  |   |  | 6.4  | 1,273                            | 2,114                          |
| I C             | 6.0                      | 296.5 | 93.15             | 260            | 11.2  | 20             | 20.00     | 260       | 11.2  | 20             | 20.00     | 1,423     | 2,475   | 6,663  | 22,283   | 11,647   | 4.8   | 10.0   | 1,434   | 2,355  |  |                                  |                                |
|                 | 9.0                      | 295.0 | 148.28            |                |   |                |           |           |   |                |           |           | 2,622   | 7,992  | 32,747   |  |   |  | 4.5   | 1,591  | 2,588  |                                  |                                |
|                 | 12.0                     | 293.5 | 202.85            |                |   |                |           |           |   |                |           |           | 2,873   | 9,260  | 30,971   |  |   |  | 6.0   | 1,496  | 2,437  |                                  |                                |
| I C             | 6.0                      | 296.5 | 93.15             | 260            | 11.2  | 20             | 20.00     | 260       | 11.2  | 20             | 20.00     | 1,423     | 2,643   | 8,648  | 28,922   | 11,647   | 5.6   | 10.0   | 1,624   | 2,665  |  |                                  |                                |
|                 | 9.0                      | 295.0 | 148.28            |                |   |                |           |           |   |                |           |           | 2,495   | 9,260  | 30,971   |  |   |  | 6.0   | 1,496  | 2,437  |                                  |                                |
|                 | 12.0                     | 293.5 | 202.85            |                |   |                |           |           |   |                |           |           | 2,643   | 9,860  | 32,978   |  |   |  | 5.6   | 1,624  | 2,665  |                                  |                                |

エスタス 105 パイル (複合部) 標準性能表

| 外径<br>D<br>(mm) | 厚さ<br>T<br>(含鋼管)<br>(mm) | 種類  | 鋼管                |                        |   | 配筋A                    |           |           | 配筋B   |                        |           | 断面積       |   | 断面二次モーメント   |  | 換算<br>断面<br>係数<br>Z <sub>e</sub><br>×10 <sup>3</sup><br>(mm <sup>3</sup> ) | 断面<br>一次<br>モーメント<br>S <sub>0</sub><br>×10 <sup>3</sup><br>(mm <sup>3</sup> ) | 複合部<br>計算<br>有効<br>プレス<br>トレス<br>σ <sub>oc</sub><br>(N/mm <sup>2</sup> ) | PHC部<br>公称<br>有効<br>プレス<br>トレス<br>σ <sub>oc</sub><br>(N/mm <sup>2</sup> ) | 設計曲げモーメント<br>(N=0kN)                                    |  |                                      |                                |
|-----------------|--------------------------|-----|-------------------|------------------------|---|------------------------|-----------|-----------|---|------------------------|-----------|-----------|---|---|--|--|---|--|---|---|--|--------------------------------------|--------------------------------|
|                 |                          |     | 鋼管厚<br>ts<br>(mm) | 中心<br>位置<br>半径<br>(mm) | 断面積<br>A <sub>s</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心<br>位置<br>半径<br>(mm) | 径<br>(mm) | 本数<br>(本) | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心<br>位置<br>半径<br>(mm) | 径<br>(mm) | 本数<br>(本) | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | くい<br>断面<br>A<br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 換算<br>断面<br>A <sub>e</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) |  |   |  |   | くい<br>断面<br>I<br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) | 換算<br>断面<br>I <sub>e</sub><br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) | 短期<br>許容<br>M <sub>s</sub><br>(kN·m) | 破壊<br>M <sub>u</sub><br>(kN·m) |
| 700             | 100                      | I A | 6.0               | 346.5                  | 108.86  | 305                    | 10.0      | 12        | 9.42  | 305                    | 10.0      | 13        | 10.21   | 1,863   | 2,350  | 11,455   | 32,822  | 17,922   | 3.3   | 4.0   | 900.3  | 1,539                                |                                |
|                 |                          |     | 9.0               | 345.0                  | 173.42  |                        |           |           |   |                        |           |           |   |   | 2,616  | 13,017   | 37,297  |  |   |   | 2.9  | 1,255                                | 2,147                          |
|                 |                          |     | 12.0              | 343.5                  | 237.41  |                        |           |           |   |                        |           |           |   |   | 2,880  | 14,538   | 41,656  |  |   |   | 2.7  | 1,605                                | 2,715                          |
|                 |                          |     | 14.0              | 342.5                  | 279.76  |                        |           |           |   |                        |           |           |   |   | 3,055  | 15,530   | 44,499  |  |   |   | 2.5  | 1,829                                | 3,074                          |
|                 |                          |     | 16.0              | 341.5                  | 321.86  |                        |           |           |   |                        |           |           |   |   | 3,228  | 16,505   | 47,291  |  |   |   | 2.4  | 2,052                                | 3,418                          |
|                 |                          |     | 19.0              | 340.0                  | 384.53  |                        |           |           |   |                        |           |           |   |   | 3,487  | 17,934   | 51,386  |  |   |   | 2.2  | 2,381                                | 3,910                          |
|                 |                          | I B | 6.0               | 346.5                  | 108.86  | 305                    | 10.0      | 24        | 18.84   | 305                    | 10.0      | 26        | 20.41   | 1,863   | 2,387  | 11,630   | 33,324  | 17,922   | 6.5   | 8.0   | 1,104  | 1,857                                |                                |
|                 |                          |     | 9.0               | 345.0                  | 173.42  |                        |           |           |   |                        |           |           |   |   | 2,654  | 13,192   | 37,800  |  |   |   | 5.8  | 1,451                                | 2,435                          |
|                 |                          |     | 12.0              | 343.5                  | 237.41  |                        |           |           |   |                        |           |           |   |   | 2,918  | 14,713   | 42,159  |  |   |   | 5.3  | 1,794                                | 2,975                          |
|                 |                          |     | 14.0              | 342.5                  | 279.76  |                        |           |           |   |                        |           |           |   |   | 3,092  | 15,705   | 45,001  |  |   |   | 5.0  | 2,019                                | 3,315                          |
|                 |                          |     | 16.0              | 341.5                  | 321.86  |                        |           |           |   |                        |           |           |   |   | 3,266  | 16,680   | 47,793  |  |   |   | 4.7  | 2,234                                | 3,644                          |
|                 |                          |     | 19.0              | 340.0                  | 384.53  |                        |           |           |   |                        |           |           |   |   | 3,525  | 18,109   | 51,888  |  |   |   | 4.4  | 2,447                                | 4,117                          |
|                 |                          | I C | 6.0               | 346.5                  | 108.86  | 305                    | 10.0      | 32        | 25.12   | 305                    | 11.2      | 26        | 26.00   | 1,863   | 2,413  | 11,747   | 33,659  | 17,922   | 8.2   | 10.0  | 1,217  | 2,054                                |                                |
|                 |                          |     | 9.0               | 345.0                  | 173.42  |                        |           |           |   |                        |           |           |   |   | 2,679  | 13,309   | 38,134  |  |   |   | 7.3  | 1,560                                | 2,612                          |
|                 |                          |     | 12.0              | 343.5                  | 237.41  |                        |           |           |   |                        |           |           |   |   | 2,943  | 14,830   | 42,493  |  |   |   | 6.6  | 1,896                                | 3,133                          |
|                 |                          |     | 14.0              | 342.5                  | 279.76  |                        |           |           |   |                        |           |           |   |   | 3,117  | 15,822   | 45,336  |  |   |   | 6.2  | 2,118                                | 3,464                          |
|                 |                          |     | 16.0              | 341.5                  | 321.86  |                        |           |           |   |                        |           |           |   |   | 3,291  | 16,797   | 48,128  |  |   |   | 5.9  | 2,336                                | 3,784                          |
|                 |                          |     | 19.0              | 340.0                  | 384.53  |                        |           |           |   |                        |           |           |   |   | 3,550  | 18,226   | 52,223  |  |   |   | 5.5  | 2,514                                | 4,247                          |
| 800             | 110                      | I A | 6.0               | 396.5                  | 124.56  | 350                    | 10.0      | 16        | 12.56   | 350                    | 10.0      | 16        | 12.56   | 2,359   | 2,923  | 18,698   | 46,862  | 26,088   | 3.3   | 4.0   | 1,220  | 2,077                                |                                |
|                 |                          |     | 9.0               | 395.0                  | 198.55  |                        |           |           |   |                        |           |           |   |   | 3,228  | 21,049   | 52,753  |  |   |   | 3.0  | 1,693                                | 2,896                          |
|                 |                          |     | 12.0              | 393.5                  | 271.97  |                        |           |           |   |                        |           |           |   |   | 3,531  | 23,346   | 58,511  |  |   |   | 2.7  | 2,147                                | 3,674                          |
|                 |                          |     | 14.0              | 392.5                  | 320.60  |                        |           |           |   |                        |           |           |   |   | 3,732  | 24,848   | 62,276  |  |   |   | 2.6  | 2,450                                | 4,160                          |
|                 |                          |     | 16.0              | 391.5                  | 368.98  |                        |           |           |   |                        |           |           |   |   | 3,931  | 26,327   | 65,983  |  |   |   | 2.5  | 2,748                                | 4,624                          |
|                 |                          |     | 19.0              | 390.0                  | 441.08  |                        |           |           |   |                        |           |           |   |   | 4,229  | 28,503   | 71,436  |  |   |   | 2.3  | 3,179                                | 5,287                          |
|                 |                          | I B | 6.0               | 396.5                  | 124.56  | 350                    | 10.0      | 32        | 25.12   | 350                    | 10.0      | 32        | 25.12   | 2,359   | 2,973  | 19,006   | 47,633  | 26,088   | 6.6   | 8.0   | 1,525  | 2,581                                |                                |
|                 |                          |     | 9.0               | 395.0                  | 198.55  |                        |           |           |   |                        |           |           |   |   | 3,278  | 21,356   | 53,525  |  |   |   | 6.0  | 1,987                                | 3,368                          |
|                 |                          |     | 12.0              | 393.5                  | 271.97  |                        |           |           |   |                        |           |           |   |   | 3,581  | 23,654   | 59,282  |  |   |   | 5.5  | 2,438                                | 4,090                          |
|                 |                          |     | 14.0              | 392.5                  | 320.60  |                        |           |           |   |                        |           |           |   |   | 3,782  | 25,156   | 63,047  |  |   |   | 5.2  | 2,732                                | 4,545                          |
|                 |                          |     | 16.0              | 391.5                  | 368.98  |                        |           |           |   |                        |           |           |   |   | 3,982  | 26,635   | 66,754  |  |   |   | 4.9  | 3,020                                | 4,985                          |
|                 |                          |     | 19.0              | 390.0                  | 441.08  |                        |           |           |   |                        |           |           |   |   | 4,279  | 28,811   | 72,207  |  |   |   | 4.6  | 3,454                                | 5,619                          |
|                 |                          | I C | 6.0               | 396.5                  | 124.56  | 350                    | 11.2      | 32        | 32.00   | 350                    | 11.2      | 32        | 32.00   | 2,359   | 3,001  | 19,174   | 48,055  | 26,088   | 8.3   | 10.0  | 1,683  | 2,844                                |                                |
|                 |                          |     | 9.0               | 395.0                  | 198.55  |                        |           |           |   |                        |           |           |   |   | 3,306  | 21,525   | 53,947  |  |   |   | 7.5  | 2,137                                | 3,599                          |
|                 |                          |     | 12.0              | 393.5                  | 271.97  |                        |           |           |   |                        |           |           |   |   | 3,609  | 23,822   | 59,705  |  |   |   | 6.9  | 2,586                                | 4,295                          |
|                 |                          |     | 14.0              | 392.5                  | 320.60  |                        |           |           |   |                        |           |           |   |   | 3,809  | 25,325   | 63,470  |  |   |   | 6.5  | 2,876                                | 4,737                          |
|                 |                          |     | 16.0              | 391.5                  | 368.98  |                        |           |           |   |                        |           |           |   |   | 4,009  | 26,804   | 67,177  |  |   |   | 6.1  | 3,160                                | 5,167                          |
|                 |                          |     | 19.0              | 390.0                  | 441.08  |                        |           |           |   |                        |           |           |   |   | 4,306  | 28,979   | 72,630  |  |   |   | 5.7  | 3,562                                | 5,788                          |
| 900             | 120                      | I A | 6.0               | 446.5                  | 140.27  | 395                    | 10.0      | 20        | 15.70   | 395                    | 10.0      | 20        | 15.70   | 2,912   | 3,553  | 28,865   | 64,286  | 36,388   | 3.4   | 4.0   | 1,606  | 2,728                                |                                |
|                 |                          |     | 9.0               | 445.0                  | 223.68  |                        |           |           |   |                        |           |           |   |   | 3,897  | 32,233   | 71,789  |  |   |   | 3.1  | 2,208                                | 3,778                          |
|                 |                          |     | 12.0              | 443.5                  | 306.53  |                        |           |           |   |                        |           |           |   |   | 4,239  | 35,534   | 79,139  |  |   |   | 2.8  | 2,788                                | 4,779                          |
|                 |                          |     | 14.0              | 442.5                  | 361.44  |                        |           |           |   |                        |           |           |   |   | 4,466  | 37,697   | 83,957  |  |   |   | 2.7  | 3,176                                | 5,421                          |
|                 |                          |     | 16.0              | 441.5                  | 416.10  |                        |           |           |   |                        |           |           |   |   | 4,691  | 39,830   | 88,708  |  |   |   | 2.5  | 3,544                                | 6,024                          |
|                 |                          |     | 19.0              | 440.0                  | 497.63  |                        |           |           |   |                        |           |           |   |   | 5,028  | 42,975   | 95,713  |  |   |   | 2.4  | 4,109                                | 6,888                          |
|                 |                          | I B | 6.0               | 446.5                  | 140.27  | 395                    | 11.2      | 30        | 30.00   | 395                    | 10.0      | 40        | 31.40   | 2,912   | 3,611  | 29,311   | 65,280  | 36,388   | 6.7   | 8.0   | 2,022  | 3,424                                |                                |
|                 |                          |     | 9.0               | 445.0                  | 223.68  |                        |           |           |   |                        |           |           |   |   | 3,955  | 32,679   | 72,782  |  |   |   | 6.1  | 2,607                                | 4,412                          |
|                 |                          |     | 12.0              | 443.5                  | 306.53  |                        |           |           |   |                        |           |           |   |   | 4,296  | 35,980   | 80,133  |  |   |   | 5.6  | 3,180                                | 5,344                          |
|                 |                          |     | 14.0              | 442.5                  | 361.44  |                        |           |           |   |                        |           |           |   |   | 4,523  | 38,143   | 84,951  |  |   |   | 5.3  | 3,556                                | 5,937                          |
|                 |                          |     | 16.0              | 441.5                  | 416.10  |                        |           |           |   |                        |           |           |   |   | 4,748  | 40,276   | 89,702  |  |   |   | 5.1  | 3,934                                | 6,508                          |
|                 |                          |     | 19.0              | 440.0                  | 497.63  |                        |           |           |   |                        |           |           |   |   | 5,085  | 43,422   | 96,707  |  |   |   | 4.7  | 4,476                                | 7,333                          |
|                 |                          | I C | 6.0               | 446.5                  | 140.27  | 395                    | 11.2      | 40        | 40.00   | 395                    | 11.2      | 40        | 40.00   | 2,912   | 3,651  | 29,623   | 65,975  | 36,388   | 8.4   | 10.0  | 2,250  | 3,820                                |                                |
|                 |                          |     | 9.0               | 445.0                  | 223.68  |                        |           |           |   |                        |           |           |   |   | 3,995  | 32,991   | 73,478  |  |   |   | 7.7  | 2,834                                | 4,797                          |
|                 |                          |     | 12.0              | 443.5                  | 306.53  |                        |           |           |   |                        |           |           |   |   | 4,336  | 36,292   | 80,828  |  |   |   | 7.0  | 3,394                                | 5,695                          |
|                 |                          |     | 14.0              | 442.5                  | 361.44  |                        |           |           |   |                        |           |           |   |   | 4,563  | 38,455   | 85,645  |  |   |   | 6.7  | 3,774                                | 6,265                          |
|                 |                          |     | 16.0              | 441.5                  | 416.10  |                        |           |           |   |                        |           |           |   |   | 4,788  | 40,588   | 90,397  |  |   |   | 6.4  | 4,146                                | 6,819                          |
|                 |                          |     | 19.0              | 440.0                  | 497.63  |                        |           |           |   |                        |           |           |   |   | 5,125  | 43,734   | 97,402  |  |   |   | 5.9  | 4,684                                | 7,624                          |

## エスタス 105 パイル (複合部) 標準性能表

| 外径<br>D<br>(mm) | 厚さ<br>T<br>(含鋼管)<br>(mm) | 種類     | 鋼管                |                |   | 配筋A            |           |           | 配筋B   |                |           | 断面積       |   | 断面二次モーメント   |  | 換算断面係数<br>Z <sub>e</sub><br>(mm <sup>3</sup> ) | 断面一次モーメント<br>S <sub>0</sub><br>(mm <sup>3</sup> ) | 複合部計算有効プレストレスト<br>σ <sub>oc</sub><br>(N/mm <sup>2</sup> ) | PHC部公称有効プレストレスト<br>σ <sub>oc</sub><br>(N/mm <sup>2</sup> ) | 設計曲げモーメント<br>(N=0kN)                                |  |                                  |
|-----------------|--------------------------|--------|-------------------|----------------|---|----------------|-----------|-----------|---|----------------|-----------|-----------|---|---|--|--|---|---|--|---|--|----------------------------------|
|                 |                          |        | 鋼管厚<br>ts<br>(mm) | 中心位置半径<br>(mm) | 断面積<br>A <sub>s</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心位置半径<br>(mm) | 径<br>(mm) | 本数<br>(本) | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心位置半径<br>(mm) | 径<br>(mm) | 本数<br>(本) | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | くい断面<br>A<br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 換算断面<br>A <sub>e</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) |  |   |   |  | くい断面<br>I<br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) | 換算断面<br>I <sub>e</sub><br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) | 短期許容<br>M <sub>s</sub><br>(kN·m) |
| 1000            | 130                      | I A    | 6.0               | 496.5          | 155.98  | 440            | 10.0      | 24        | 18.84   | 440            | 10.0      | 24        | 18.84   | 3.522   | 4.241  | 33.976   | 42.636  | 85.444  | 49.066   | 4.0   | 2.044  | 3.468                            |
|                 |                          |        | 9.0               | 495.0          | 248.81  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 2.791  | 4.780                            |
|                 |                          |        | 12.0              | 493.5          | 341.08  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 3.526  | 6.037                            |
|                 |                          |        | 14.0              | 492.5          | 402.28  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 3.993  | 6.843                            |
|                 |                          |        | 16.0              | 491.5          | 463.23  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 4.468  | 7.620                            |
|                 |                          | 19.0   | 490.0             | 554.18         | 5.157   | 8.715          |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
|                 |                          | I B    | 6.0               | 496.5          | 155.98  | 440            | 11.2      | 36        | 36.00   | 440            | 10.0      | 48        | 37.68   | 3.522   | 4.309  | 33.976   | 43.301  | 86.775  | 49.066   | 8.0   | 2.614  | 4.414                            |
|                 |                          |        | 9.0               | 495.0          | 248.81  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 3.338  | 5.651                            |
|                 |                          |        | 12.0              | 493.5          | 341.08  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 4.062  | 6.823                            |
|                 |                          |        | 14.0              | 492.5          | 402.28  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 4.527  | 7.570                            |
|                 |                          |        | 16.0              | 491.5          | 463.23  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 4.984  | 8.294                            |
|                 |                          | 19.0   | 490.0             | 554.18         | 5.675   | 9.335          |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
|                 |                          | I C    | 6.0               | 496.5          | 155.98  | 440            | 11.2      | 48        | 48.00   | 440            | 11.2      | 48        | 48.00   | 3.522   | 4.357  | 33.976   | 43.766  | 87.706  | 49.066   | 10.0  | 2.921  | 4.944                            |
|                 |                          |        | 9.0               | 495.0          | 248.81  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 3.640  | 6.177                            |
|                 |                          |        | 12.0              | 493.5          | 341.08  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 4.346  | 7.308                            |
| 14.0            | 492.5                    |        | 402.28            | 4.818          | 8.027   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 16.0            | 491.5                    |        | 463.23            | 5.265          | 8.724   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 19.0            | 490.0                    | 554.18 | 5.950             | 9.737          |   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 1100            | 140                      | I A    | 6.0               | 546.5          | 171.69  | 490            | 11.2      | 22        | 22.00   | 490            | 11.2      | 22        | 22.00   | 4.188   | 49.154   | 61.04  | 49.154  | 64.365  | 4.0  | 2.546   | 4.303  |                                  |
|                 |                          |        | 9.0               | 545.0          | 273.95  |                |           |           |   |                |           |           |   |   |  |  |   |   |  | 3.472   | 5.909  |                                  |
|                 |                          |        | 12.0              | 543.5          | 375.64  |                |           |           |   |                |           |           |   |   |  |  |   |   |  | 4.348   | 7.449  |                                  |
|                 |                          |        | 14.0              | 542.5          | 443.12  |                |           |           |   |                |           |           |   |   |  |  |   |   |  | 4.936   | 8.441  |                                  |
|                 |                          |        | 16.0              | 541.5          | 510.35  |                |           |           |   |                |           |           |   |   |  |  |   |   |  | 5.514   | 9.407  |                                  |
|                 |                          | 19.0   | 540.0             | 610.73         | 6.355   | 10.774         |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
|                 |                          | 22.0   | 538.5             | 710.53         | 7.200   | 12.071         |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
|                 |                          | I B    | 6.0               | 546.5          | 171.69  | 490            | 11.2      | 44        | 44.00   | 490            | 11.2      | 44        | 44.00   | 4.188   | 6.192  | 49.154   | 78.169  | 142.384   | 64.365   | 8.0   | 5.643  | 9.516                            |
|                 |                          |        | 9.0               | 545.0          | 273.95  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 6.217  | 10.405                           |
|                 |                          |        | 12.0              | 543.5          | 375.64  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 7.039  | 11.690                           |
|                 |                          |        | 14.0              | 542.5          | 443.12  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 7.862  | 12.925                           |
|                 |                          |        | 16.0              | 541.5          | 510.35  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 8.690  | 14.684                           |
|                 |                          | 19.0   | 540.0             | 610.73         | 9.568   | 16.596         |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
|                 |                          | 22.0   | 538.5             | 710.53         | 10.500  | 18.684         |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
|                 |                          | I C    | 6.0               | 546.5          | 171.69  | 490            | 11.2      | 56        | 56.00   | 490            | 12.6      | 44        | 55.00   | 4.188   | 5.120  | 49.154   | 62.419  | 113.696   | 64.365   | 10.0  | 3.700  | 6.173                            |
| 9.0             | 545.0                    |        | 273.95            | 4.570          | 7.685   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 12.0            | 543.5                    |        | 375.64            | 5.443          | 9.100   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 14.0            | 542.5                    |        | 443.12            | 5.997          | 9.992   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 16.0            | 541.5                    |        | 510.35            | 6.558          | 10.856  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 19.0            | 540.0                    | 610.73 | 7.391             | 12.107         |   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 22.0            | 538.5                    | 710.53 | 8.204             | 13.318         |   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 1200            | 150                      | I A    | 6.0               | 596.5          | 187.40  | 540            | 11.2      | 26        | 26.00   | 540            | 11.2      | 26        | 26.00   | 4.910   | 68.905   | 84.173   | 140.523   | 82.531  | 4.0  | 3.143   | 5.285  |                                  |
|                 |                          |        | 9.0               | 595.0          | 299.08  |                |           |           |   |                |           |           |   |   |  |  |   |   |  | 4.227   | 7.210  |                                  |
|                 |                          |        | 12.0              | 593.5          | 410.20  |                |           |           |   |                |           |           |   |   |  |  |   |   |  | 5.297   | 9.063  |                                  |
|                 |                          |        | 14.0              | 592.5          | 483.96  |                |           |           |   |                |           |           |   |   |  |  |   |   |  | 6.002   | 10.261   |                                  |
|                 |                          |        | 16.0              | 591.5          | 557.48  |                |           |           |   |                |           |           |   |   |  |  |   |   |  | 6.669   | 11.427   |                                  |
|                 |                          | 19.0   | 590.0             | 667.27         | 7.704   | 13.105         |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
|                 |                          | 22.0   | 588.5             | 776.51         | 8.690   | 14.684         |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
|                 |                          | I B    | 6.0               | 596.5          | 187.40  | 540            | 11.2      | 50        | 50.00   | 540            | 11.2      | 50        | 50.00   | 4.910   | 7.106  | 68.905   | 106.866   | 178.408   | 82.531   | 8.0   | 4.125  | 6.811                            |
|                 |                          |        | 9.0               | 595.0          | 299.08  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 5.166  | 8.666                            |
|                 |                          |        | 12.0              | 593.5          | 410.20  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 6.214  | 10.452                           |
|                 |                          |        | 14.0              | 592.5          | 483.96  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 6.888  | 11.596                           |
|                 |                          |        | 16.0              | 591.5          | 557.48  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   | 7.573  | 12.675                           |
|                 |                          | 19.0   | 590.0             | 667.27         | 8.583   | 14.240         |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
|                 |                          | 22.0   | 588.5             | 776.51         | 9.568   | 15.740         |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
|                 |                          | I C    | 6.0               | 596.5          | 187.40  | 540            | 11.2      | 64        | 64.00   | 540            | 12.6      | 52        | 65.00   | 4.910   | 6.400  | 68.905   | 86.390  | 144.223   | 82.531   | 10.0  | 4.616  | 7.720                            |
| 9.0             | 595.0                    |        | 299.08            | 5.671          | 9.519   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 12.0            | 593.5                    |        | 410.20            | 6.688          | 11.203  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 14.0            | 592.5                    |        | 483.96            | 7.372          | 12.282  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 16.0            | 591.5                    |        | 557.48            | 8.042          | 13.330  |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 19.0            | 590.0                    | 667.27 | 9.040             | 14.846         |   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |
| 22.0            | 588.5                    | 776.51 | 10.011            | 16.311         |   |                |           |           |   |                |           |           |   |   |  |  |   |   |  |   |  |                                  |

## エスタス 105 パイル（複合部） パイル標準性能表

| 外径<br>D<br>(mm) | 厚さ<br>T<br>(含鋼管)<br>(mm) | 種類    | 鋼管                |                |   | 配筋A            |           |       | 配筋B   |                |           | 断面積   |   | 断面二次モーメント  |  | 換算断面係数<br>Z <sub>e</sub><br>×10 <sup>3</sup><br>(mm <sup>3</sup> ) | 断面一次モーメント<br>S <sub>0</sub><br>×10 <sup>3</sup><br>(mm <sup>3</sup> ) | 複合部計算有効プレストレス<br>σ <sub>cc</sub><br>(N/mm <sup>2</sup> ) | PHC部公称有効プレストレス<br>σ <sub>cc</sub><br>(N/mm <sup>2</sup> ) | 設計曲げモーメント<br>(N=0kN)                                 |  |                                  |                                |
|-----------------|--------------------------|-------|-------------------|----------------|---|----------------|-----------|-------|---|----------------|-----------|-------|---|--|--|--|---|--|---|--|--|----------------------------------|--------------------------------|
|                 |                          |       | 鋼管厚<br>ts<br>(mm) | 中心位置半径<br>(mm) | 断面積<br>A <sub>s</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心位置半径<br>(mm) | 径<br>(mm) | 本数    | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心位置半径<br>(mm) | 径<br>(mm) | 本数    | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 小さい断面<br>A<br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 換算断面<br>A <sub>e</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) |  |   |  |   | 小さい断面<br>I<br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) | 換算断面<br>I <sub>e</sub><br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) | 短期許容<br>M <sub>a</sub><br>(kN・m) | 破壊<br>M <sub>u</sub><br>(kN・m) |
| 400             | 75                       | II A  | 6.0               | 196.5          | 61.73   | 165            | 7.0       | 10    | 3.85  | 165            | 7.1       | 10    | 4.00  | 753  | 1.023  | 1,040  | 1.553   | 7,802  | 3,952   | 4.0  | 3.0  | 257.2                            | 440.2                          |
|                 |                          |       | 9.0               | 195.0          | 98.02   |                |           |       |   |                |           |       |   |  | 1.173  |  | 1,830   | 9,196  |   |  | 2.6  | 367.8                            | 621.5                          |
|                 |                          |       | 12.0              | 193.5          | 133.74  |                |           |       |   |                |           |       |   |  | 1.320  |  | 2,095   | 10,525   |   |  | 2.3  | 474.3                            | 785.7                          |
|                 |                          | 6.0   | 196.5             | 61.73          | 1.035   |                |           |       |   |                |           |       |   |  | 1,569  |  | 7,886   | 6.1  |   |  | 298.0  | 498.6                            |                                |
|                 |                          | 9.0   | 195.0             | 98.02          | 1.185   |                |           |       |   |                |           |       |   |  | 1,847  |  | 9,280   | 5.3  |   |  | 406.6  | 669.9                            |                                |
|                 |                          | 12.0  | 193.5             | 133.74         | 1.332   |                |           |       |   |                |           |       |   |  | 2,111  |  | 10,610  | 4.7  |   |  | 511.5  | 827.7                            |                                |
|                 | II B                     | 6.0   | 196.5             | 61.73          | 165   | 7.0            | 18        | 6.93  | 165   | 10.0           | 10        | 7.85  | 753   | 1.048  | 1,040  | 1.587  | 7,975   | 3,952  | 7.7   | 7.6  | 325.0  | 539.7                            |                                |
|                 |                          | 9.0   | 195.0             | 98.02          |   |                |           |       |   |                |           |       |   | 1.198  |  | 1,864  | 9,369   |  |   | 6.6  | 432.9  | 705.8                            |                                |
|                 |                          | 12.0  | 193.5             | 133.74         |   |                |           |       |   |                |           |       |   | 1.345  |  | 2,129  | 10,698  |  |   | 5.9  | 523.5  | 860.0                            |                                |
|                 |                          | 6.0   | 196.5             | 61.73          |   |                |           |       |   |                |           |       |   | 1.048  |  | 1,587  | 7,975   |  |   | 7.6  | 325.0  | 539.7                            |                                |
|                 |                          | 9.0   | 195.0             | 98.02          |   |                |           |       |   |                |           |       |   | 1.198  |  | 1,864  | 9,369   |  |   | 6.6  | 432.9  | 705.8                            |                                |
|                 |                          | 12.0  | 193.5             | 133.74         |   |                |           |       |   |                |           |       |   | 1.345  |  | 2,129  | 10,698  |  |   | 5.9  | 523.5  | 860.0                            |                                |
| 450             | 80                       | II A  | 6.0               | 221.5          | 69.59   | 190            | 7.0       | 12    | 4.62  | 190            | 10.0      | 6     | 4.71  | 916  | 1.222  | 1,630  | 2.368   | 10,571   | 5,461   | 4.0  | 3.1  | 335.5                            | 570.0                          |
|                 |                          |       | 9.0               | 220.0          | 110.58  |                |           |       |   |                |           |       |   |  | 1.391  |  | 2,768   | 12,356   |   |  | 2.7  | 477.4                            | 806.5                          |
|                 |                          |       | 12.0              | 218.5          | 151.02  |                |           |       |   |                |           |       |   |  | 1.557  |  | 3,152   | 14,069   |   |  | 2.4  | 613.2                            | 1,021                          |
|                 |                          | 6.0   | 221.5             | 69.59          | 1.240   |                |           |       |   |                |           |       |   |  | 2,401  |  | 10,719  | 6.2  |   |  | 397.3  | 666.1                            |                                |
|                 |                          | 9.0   | 220.0             | 110.58         | 1.409   |                |           |       |   |                |           |       |   |  | 2,801  |  | 12,505  | 5.4  |   |  | 536.4  | 887.5                            |                                |
|                 |                          | 12.0  | 218.5             | 151.02         | 1.576   |                |           |       |   |                |           |       |   |  | 3,185  |  | 14,218  | 4.8  |   |  | 670.4  | 1,092                            |                                |
|                 | II B                     | 6.0   | 221.5             | 69.59          | 190   | 7.0            | 24        | 9.24  | 190   | 10.0           | 12        | 9.42  | 916   | 1.254  | 1,630  | 2.426  | 10,831  | 5,461  | 8.0   | 7.7  | 428.3  | 712.9                            |                                |
|                 |                          | 9.0   | 220.0             | 110.58         |   |                |           |       |   |                |           |       |   | 1.423  |  | 2,826  | 12,617  |  |   | 6.7  | 565.7  | 928.1                            |                                |
|                 |                          | 12.0  | 218.5             | 151.02         |   |                |           |       |   |                |           |       |   | 1.590  |  | 3,210  | 14,330  |  |   | 6.0  | 693.7  | 1,128                            |                                |
|                 |                          | 6.0   | 221.5             | 69.59          |   |                |           |       |   |                |           |       |   | 1.254  |  | 2,426  | 10,831  |  |   | 7.7  | 428.3  | 712.9                            |                                |
|                 |                          | 9.0   | 220.0             | 110.58         |   |                |           |       |   |                |           |       |   | 1.423  |  | 2,826  | 12,617  |  |   | 6.7  | 565.7  | 928.1                            |                                |
|                 |                          | 12.0  | 218.5             | 151.02         |   |                |           |       |   |                |           |       |   | 1.590  |  | 3,210  | 14,330  |  |   | 6.0  | 693.7  | 1,128                            |                                |
| 500             | 100                      | II A  | 6.0               | 246.5          | 77.44   | 215            | 7.0       | 14    | 5.39  | 215            | 10.0      | 7     | 5.50  | 1,241  | 1.582  | 2,622  | 3.642   | 14,627   | 8,042   | 3.7  | 3.0  | 427.2                            | 718.4                          |
|                 |                          |       | 9.0               | 245.0          | 123.15  |                |           |       |   |                |           |       |   |  | 1.771  |  | 4,196   | 16,853   |   |  | 2.7  | 604.7                            | 1,018                          |
|                 |                          |       | 12.0              | 243.5          | 168.30  |                |           |       |   |                |           |       |   |  | 1.957  |  | 4,731   | 18,998   |   |  | 2.4  | 774.6                            | 1,294                          |
|                 |                          | 6.0   | 246.5             | 77.44          | 1.607   |                |           |       |   |                |           |       |   |  | 3,699  |  | 14,855  | 5.8  |   |  | 508.8  | 846.8                            |                                |
|                 |                          | 9.0   | 245.0             | 123.15         | 1.795   |                |           |       |   |                |           |       |   |  | 4,253  |  | 17,082  | 5.2  |   |  | 683.2  | 1,132                            |                                |
|                 |                          | 12.0  | 243.5             | 168.30         | 1.981   |                |           |       |   |                |           |       |   |  | 4,787  |  | 19,227  | 4.7  |   |  | 852.1  | 1,395                            |                                |
|                 | II B                     | 6.0   | 246.5             | 77.44          | 215   | 7.0            | 30        | 11.54 | 215   | 10.0           | 14        | 10.99 | 1,241   | 1.607  | 2,622  | 3.699  | 14,855  | 8,042  | 7.2   | 5.8  | 508.8  | 846.8                            |                                |
|                 |                          | 9.0   | 245.0             | 123.15         |   |                |           |       |   |                |           |       |   | 1.795  |  | 4,253  | 17,082  |  |   | 5.2  | 683.2  | 1,132                            |                                |
|                 |                          | 12.0  | 243.5             | 168.30         |   |                |           |       |   |                |           |       |   | 1.981  |  | 4,787  | 19,227  |  |   | 4.7  | 852.1  | 1,395                            |                                |
|                 |                          | 6.0   | 246.5             | 77.44          |   |                |           |       |   |                |           |       |   | 1.607  |  | 3,699  | 14,855  |  |   | 5.8  | 508.8  | 846.8                            |                                |
|                 |                          | 9.0   | 245.0             | 123.15         |   |                |           |       |   |                |           |       |   | 1.795  |  | 4,253  | 17,082  |  |   | 5.2  | 683.2  | 1,132                            |                                |
|                 |                          | 12.0  | 243.5             | 168.30         |   |                |           |       |   |                |           |       |   | 1.981  |  | 4,787  | 19,227  |  |   | 4.7  | 852.1  | 1,395                            |                                |
| II C            | 6.0                      | 246.5 | 77.44             | 215            | 9.0   | 24             | 15.27     | 215   | 11.2  | 14             | 14.00     | 1,241 | 1.622   | 2,622  | 3.733  | 14,993   | 8,042   | 9.0  | 7.2   | 550.0  | 913.3  |                                  |                                |
|                 | 9.0                      | 245.0 | 123.15            |                |   |                |           |       |   |                |           |       | 1.810   |  | 4,288  | 17,220   |   |  | 6.5   | 724.4  | 1,189  |                                  |                                |
|                 | 12.0                     | 243.5 | 168.30            |                |   |                |           |       |   |                |           |       | 1.996   |  | 4,822  | 19,365   |   |  | 5.8   | 890.3  | 1,447  |                                  |                                |
|                 | 6.0                      | 246.5 | 77.44             |                |   |                |           |       |   |                |           |       | 1.607   |  | 3,699  | 14,855   |   |  | 5.8   | 508.8  | 846.8  |                                  |                                |
|                 | 9.0                      | 245.0 | 123.15            |                |   |                |           |       |   |                |           |       | 1.795   |  | 4,253  | 17,082   |   |  | 5.2   | 683.2  | 1,132  |                                  |                                |
|                 | 12.0                     | 243.5 | 168.30            |                |   |                |           |       |   |                |           |       | 1.981   |  | 4,787  | 19,227   |   |  | 4.7   | 852.1  | 1,395  |                                  |                                |
| 600             | 110                      | II A  | 6.0               | 296.5          | 93.15   | 260            | 7.0       | 18    | 6.93  | 260            | 10.0      | 10    | 7.85  | 1,675  | 2.087  | 5,254  | 7,037   | 23,534   | 13,248  | 3.7  | 3.3  | 638.6                            | 1,090                          |
|                 |                          |       | 9.0               | 295.0          | 148.28  |                |           |       |   |                |           |       |   |  | 2.314  |  | 8,010   | 26,788   |   |  | 3.0  | 898.2                            | 1,527                          |
|                 |                          |       | 12.0              | 293.5          | 202.85  |                |           |       |   |                |           |       |   |  | 2.539  |  | 8,953   | 29,942   |   |  | 2.7  | 1,151                            | 1,938                          |
|                 |                          | 6.0   | 296.5             | 93.15          | 2.087   |                |           |       |   |                |           |       |   |  | 7,037  |  | 23,534  | 3.3  |   |  | 638.6  | 1,090                            |                                |
|                 |                          | 9.0   | 295.0             | 148.28         | 2.314   |                |           |       |   |                |           |       |   |  | 8,010  |  | 26,788  | 3.0  |   |  | 898.2  | 1,527                            |                                |
|                 |                          | 12.0  | 293.5             | 202.85         | 2.539   |                |           |       |   |                |           |       |   |  | 8,953  |  | 29,942  | 2.7  |   |  | 1,151  | 1,938                            |                                |
|                 | II B                     | 6.0   | 296.5             | 93.15          | 260   | 9.0            | 26        | 16.54 | 260   | 10.0           | 20        | 15.70 | 1,675   | 2.087  | 5,254  | 7,037  | 23,534  | 13,248   | 7.4   | 3.3  | 638.6  | 1,090                            |                                |
|                 |                          | 9.0   | 295.0             | 148.28         |   |                |           |       |   |                |           |       |   | 2.314  |  | 8,010  | 26,788  |  |   | 3.0  | 898.2  | 1,527                            |                                |
|                 |                          | 12.0  | 293.5             | 202.85         |   |                |           |       |   |                |           |       |   | 2.539  |  | 8,953  | 29,942  |  |   | 2.7  | 1,151  | 1,938                            |                                |
|                 |                          | 6.0   | 296.5             | 93.15          |   |                |           |       |   |                |           |       |   | 2.087  |  | 7,037  | 23,534  |  |   | 3.3  | 638.6  | 1,090                            |                                |
|                 |                          | 9.0   | 295.0             | 148.28         |   |                |           |       |   |                |           |       |   | 2.314  |  | 8,010  | 26,788  |  |   | 3.0  | 898.2  | 1,527                            |                                |
|                 |                          | 12.0  | 293.5             | 202.85         |   |                |           |       |   |                |           |       |   | 2.539  |  | 8,953  | 29,942  |  |   | 2.7  | 1,151  | 1,938                            |                                |
| II C            | 6.0                      | 296.5 | 93.15             | 260            | 9.0   | 34             | 21.63     | 260   | 11.2  | 20             | 20.00     | 1,675 | 2.087   | 5,254  | 7,037  | 23,534   | 13,248  | 9.1  | 3.3   | 638.6  | 1,090  |                                  |                                |
|                 | 9.0                      | 295.0 | 148.28            |                |   |                |           |       |   |                |           |       | 2.314   |  | 8,010  | 26,788   |   |  | 3.0   | 898.2  | 1,527  |                                  |                                |
|                 | 12.0                     | 293.5 | 202.85            |                |   |                |           |       |   |                |           |       | 2.539   |  | 8,953  | 29,942   |   |  | 2.7   | 1,151  | 1,938  |                                  |                                |
|                 | 6.0                      | 296.5 | 93.15             |                |   |                |           |       |   |                |           |       | 2.087   |  | 7,037  | 23,534   |   |  | 3.3   | 638.6  | 1,090  |                                  |                                |
|                 | 9.0                      | 295.0 | 148.28            |                |   |                |           |       |   |                |           |       | 2.314   |  | 8,010  | 26,788   |   |  | 3.0   | 898.2  | 1,527  |                                  |                                |
|                 | 12.0                     | 293.5 | 202.85            |                |   |                |           |       |   |                |           |       | 2.539   |  | 8,953  | 29,942   |   |  | 2.7   | 1,151  | 1,938  |                                  |                                |

## エスタス 105 パイル（複合部）      パイル標準性能表

| 外径<br>D<br>(mm) | 厚さ<br>T<br>(含鋼管)<br>(mm) | 種類   | 鋼管                |                        |   | 配筋A                    |           |           | 配筋B   |                        |           | 断面積       |   | 断面二次モーメント  |   | 換算<br>断面<br>係数<br>Z <sub>e</sub><br>×10 <sup>3</sup><br>(mm <sup>3</sup> ) | 断面<br>一次<br>モーメント<br>S <sub>0</sub><br>×10 <sup>3</sup><br>(mm <sup>3</sup> ) | 複合部<br>計算<br>有効<br>プレス<br>トレス<br>σ <sub>cc</sub><br>(N/mm <sup>2</sup> ) | PHC部<br>公称<br>有効<br>プレス<br>トレス<br>σ <sub>cc</sub><br>(N/mm <sup>2</sup> ) | 設計曲げモーメント<br>(N=0kN)                                     |   |                                      |                                |       |
|-----------------|--------------------------|------|-------------------|------------------------|---|------------------------|-----------|-----------|---|------------------------|-----------|-----------|---|--|---|--|---|--|---|--|---|--------------------------------------|--------------------------------|-------|
|                 |                          |      | 鋼管厚<br>ts<br>(mm) | 中心<br>位置<br>半径<br>(mm) | 断面積<br>A <sub>s</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心<br>位置<br>半径<br>(mm) | 径<br>(mm) | 本数<br>(本) | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心<br>位置<br>半径<br>(mm) | 径<br>(mm) | 本数<br>(本) | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 小さい<br>断面<br>A<br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 換算<br>断面<br>積<br>A <sub>e</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) |  |   |  |   | 小さい<br>断面<br>I<br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) | 換算<br>断面<br>積<br>I <sub>e</sub><br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) | 短期<br>許容<br>M <sub>a</sub><br>(kN・m) | 破壊<br>M <sub>u</sub><br>(kN・m) |       |
|                 |                          |      | (mm)              | (mm)                   | (mm <sup>2</sup> )  | (mm)                   | (mm)      | (本)       | (mm <sup>2</sup> )  | (mm)                   | (mm)      | (本)       | (mm <sup>2</sup> )  | (mm <sup>2</sup> )                                       | (mm <sup>4</sup> )  |  |   |  |   | (mm <sup>4</sup> )                                       |   |                                      |                                |       |
| 700             | 120                      | II A | 6.0               | 346.5                  | 108.86  | 305                    | 10.0      | 12        | 9.42  | 305                    | 10.0      | 13        | 10.21   | 2.165  | 2.652   | 9,454  | 12,325  | 35,315   | 20,228  | 3.0  | 3.6   | 903.5                                | 1,538                          |       |
|                 |                          |      | 9.0               | 345.0                  | 173.42  |                        |           |           |   |                        |           |           |   |  | 2,918   |  | 13,887  | 39,791   |   |  |   | 2.7                                  | 1,260                          | 2,149 |
|                 |                          |      | 12.0              | 343.5                  | 237.41  |                        |           |           |   |                        |           |           |   |  | 3,182   |  | 15,408  | 44,150   |   |  |   | 2.5                                  | 1,609                          | 2,725 |
|                 |                          |      | 14.0              | 342.5                  | 279.76  |                        |           |           |   |                        |           |           |   |  | 3,357   |  | 16,400  | 46,992   |   |  |   | 2.4                                  | 1,838                          | 3,091 |
|                 |                          |      | 16.0              | 341.5                  | 321.86  |                        |           |           |   |                        |           |           |   |  | 3,530   |  | 17,375  | 49,784   |   |  |   | 2.3                                  | 2,061                          | 3,445 |
|                 |                          |      | 19.0              | 340.0                  | 384.53  |                        |           |           |   |                        |           |           |   |  | 3,789   |  | 18,804  | 53,879   |   |  |   | 2.1                                  | 2,386                          | 3,952 |
|                 |                          | II B | 6.0               | 346.5                  | 108.86  | 305                    | 10.0      | 24        | 18.84   | 305                    | 10.0      | 26        | 20.41   | 2.165  | 2.689   | 9,454  | 12,500  | 35,817   | 20,228  | 6.0  | 7.2   | 1,115                                | 1,859                          |       |
|                 |                          |      | 9.0               | 345.0                  | 173.42  |                        |           |           |   |                        |           |           |   |  | 2,956   |  | 14,062  | 40,293   |   |  |   | 5.5                                  | 1,468                          | 2,445 |
|                 |                          |      | 12.0              | 343.5                  | 237.41  |                        |           |           |   |                        |           |           |   |  | 3,220   |  | 15,584  | 44,652   |   |  |   | 5.0                                  | 1,807                          | 2,998 |
|                 |                          |      | 14.0              | 342.5                  | 279.76  |                        |           |           |   |                        |           |           |   |  | 3,394   |  | 16,576  | 47,494   |   |  |   | 4.7                                  | 2,028                          | 3,349 |
|                 |                          |      | 16.0              | 341.5                  | 321.86  |                        |           |           |   |                        |           |           |   |  | 3,568   |  | 17,550  | 50,286   |   |  |   | 4.5                                  | 2,251                          | 3,688 |
|                 |                          |      | 19.0              | 340.0                  | 384.53  |                        |           |           |   |                        |           |           |   |  | 3,827   |  | 18,979  | 54,381   |   |  |   | 4.2                                  | 2,576                          | 4,176 |
|                 |                          | II C | 6.0               | 346.5                  | 108.86  | 305                    | 10.0      | 32        | 25.12   | 305                    | 11.2      | 26        | 26.00   | 2.165  | 2.715   | 9,454  | 12,617  | 36,152   | 20,228  | 7.4  | 8.9   | 1,222                                | 2,061                          |       |
|                 |                          |      | 9.0               | 345.0                  | 173.42  |                        |           |           |   |                        |           |           |   |  | 2,981   |  | 14,179  | 40,628   |   |  |   | 6.8                                  | 1,574                          | 2,630 |
|                 |                          |      | 12.0              | 343.5                  | 237.41  |                        |           |           |   |                        |           |           |   |  | 3,245   |  | 15,700  | 44,987   |   |  |   | 6.2                                  | 1,910                          | 3,168 |
|                 |                          |      | 14.0              | 342.5                  | 279.76  |                        |           |           |   |                        |           |           |   |  | 3,419   |  | 16,692  | 47,829   |   |  |   | 5.9                                  | 2,134                          | 3,509 |
|                 |                          |      | 16.0              | 341.5                  | 321.86  |                        |           |           |   |                        |           |           |   |  | 3,593   |  | 17,667  | 50,621   |   |  |   | 5.6                                  | 2,353                          | 3,840 |
|                 |                          |      | 19.0              | 340.0                  | 384.53  |                        |           |           |   |                        |           |           |   |  | 3,852   |  | 19,096  | 54,716   |   |  |   | 5.2                                  | 2,675                          | 4,318 |
| 800             | 130                      | II A | 6.0               | 396.5                  | 124.56  | 350                    | 10.0      | 16        | 12.56   | 350                    | 10.0      | 16        | 12.56   | 2.711  | 3.275   | 15,732   | 20,079  | 50,323   | 29,225  | 3.8  | 3.8   | 1,240                                | 2,077                          |       |
|                 |                          |      | 9.0               | 395.0                  | 198.55  |                        |           |           |   |                        |           |           |   |  | 3,580   |  | 22,430  | 56,215   |   |  |   | 2.9                                  | 1,710                          | 2,897 |
|                 |                          |      | 12.0              | 393.5                  | 271.97  |                        |           |           |   |                        |           |           |   |  | 3,883   |  | 24,727  | 61,972   |   |  |   | 2.7                                  | 2,172                          | 3,679 |
|                 |                          |      | 14.0              | 392.5                  | 320.60  |                        |           |           |   |                        |           |           |   |  | 4,084   |  | 26,229  | 65,737   |   |  |   | 2.6                                  | 2,474                          | 4,180 |
|                 |                          |      | 16.0              | 391.5                  | 368.98  |                        |           |           |   |                        |           |           |   |  | 4,283   |  | 27,708  | 69,444   |   |  |   | 2.5                                  | 2,771                          | 4,655 |
|                 |                          |      | 19.0              | 390.0                  | 441.08  |                        |           |           |   |                        |           |           |   |  | 4,581   |  | 29,884  | 74,897   |   |  |   | 2.3                                  | 3,203                          | 5,337 |
|                 |                          | II B | 6.0               | 396.5                  | 124.56  | 350                    | 10.0      | 32        | 25.12   | 350                    | 10.0      | 32        | 25.12   | 2.711  | 3.325   | 15,732   | 20,387  | 51,094   | 29,225  | 7.3  | 7.3   | 1,548                                | 2,581                          |       |
|                 |                          |      | 9.0               | 395.0                  | 198.55  |                        |           |           |   |                        |           |           |   |  | 3,630   |  | 22,737  | 56,986   |   |  |   | 5.7                                  | 2,012                          | 3,374 |
|                 |                          |      | 12.0              | 393.5                  | 271.97  |                        |           |           |   |                        |           |           |   |  | 3,933   |  | 25,035  | 62,744   |   |  |   | 5.2                                  | 2,458                          | 4,119 |
|                 |                          |      | 14.0              | 392.5                  | 320.60  |                        |           |           |   |                        |           |           |   |  | 4,134   |  | 26,537  | 66,509   |   |  |   | 5.0                                  | 2,758                          | 4,588 |
|                 |                          |      | 16.0              | 391.5                  | 368.98  |                        |           |           |   |                        |           |           |   |  | 4,334   |  | 28,016  | 70,216   |   |  |   | 4.7                                  | 3,044                          | 5,042 |
|                 |                          |      | 19.0              | 390.0                  | 441.08  |                        |           |           |   |                        |           |           |   |  | 4,631   |  | 30,192  | 75,668   |   |  |   | 4.4                                  | 3,475                          | 5,696 |
|                 |                          | II C | 6.0               | 396.5                  | 124.56  | 350                    | 11.2      | 32        | 32.00   | 350                    | 11.2      | 32        | 32.00   | 2.711  | 3.353   | 15,732   | 20,555  | 51,517   | 29,225  | 9.1  | 9.1   | 1,704                                | 2,846                          |       |
|                 |                          |      | 9.0               | 395.0                  | 198.55  |                        |           |           |   |                        |           |           |   |  | 3,658   |  | 22,906  | 57,408   |   |  |   | 7.1                                  | 2,165                          | 3,622 |
|                 |                          |      | 12.0              | 393.5                  | 271.97  |                        |           |           |   |                        |           |           |   |  | 3,961   |  | 25,203  | 63,166   |   |  |   | 6.5                                  | 2,608                          | 4,339 |
|                 |                          |      | 14.0              | 392.5                  | 320.60  |                        |           |           |   |                        |           |           |   |  | 4,161   |  | 26,706  | 66,931   |   |  |   | 6.2                                  | 2,903                          | 4,795 |
|                 |                          |      | 16.0              | 391.5                  | 368.98  |                        |           |           |   |                        |           |           |   |  | 4,361   |  | 28,185  | 70,638   |   |  |   | 5.9                                  | 3,192                          | 5,237 |
|                 |                          |      | 19.0              | 390.0                  | 441.08  |                        |           |           |   |                        |           |           |   |  | 4,658   |  | 30,360  | 76,091   |   |  |   | 5.5                                  | 3,619                          | 5,878 |
| 900             | 140                      | II A | 6.0               | 446.5                  | 140.27  | 395                    | 10.0      | 20        | 15.70   | 395                    | 10.0      | 20        | 15.70   | 3.314  | 3.955   | 24,668   | 30,926  | 68,876   | 40,485  | 3.9  | 3.9   | 1,633                                | 2,727                          |       |
|                 |                          |      | 9.0               | 445.0                  | 223.68  |                        |           |           |   |                        |           |           |   |  | 4,299   |  | 34,294  | 76,379   |   |  |   | 3.1                                  | 2,243                          | 3,778 |
|                 |                          |      | 12.0              | 443.5                  | 306.53  |                        |           |           |   |                        |           |           |   |  | 4,641   |  | 37,595  | 83,729   |   |  |   | 2.8                                  | 2,821                          | 4,785 |
|                 |                          |      | 14.0              | 442.5                  | 361.44  |                        |           |           |   |                        |           |           |   |  | 4,868   |  | 39,757  | 88,547   |   |  |   | 2.7                                  | 3,209                          | 5,434 |
|                 |                          |      | 16.0              | 441.5                  | 416.10  |                        |           |           |   |                        |           |           |   |  | 5,093   |  | 41,891  | 93,298   |   |  |   | 2.6                                  | 3,588                          | 6,058 |
|                 |                          |      | 19.0              | 440.0                  | 497.63  |                        |           |           |   |                        |           |           |   |  | 5,430   |  | 45,036  | 100,303  |   |  |   | 2.4                                  | 4,141                          | 6,945 |
|                 |                          | II B | 6.0               | 446.5                  | 140.27  | 395                    | 11.2      | 30        | 30.00   | 395                    | 10.0      | 40        | 31.40   | 3.314  | 4.013   | 24,668   | 31,372  | 69,870   | 40,485  | 7.2  | 7.2   | 2,040                                | 3,427                          |       |
|                 |                          |      | 9.0               | 445.0                  | 223.68  |                        |           |           |   |                        |           |           |   |  | 4,357   |  | 34,740  | 77,372   |   |  |   | 5.7                                  | 2,628                          | 4,426 |
|                 |                          |      | 12.0              | 443.5                  | 306.53  |                        |           |           |   |                        |           |           |   |  | 4,698   |  | 38,041  | 84,723   |   |  |   | 5.3                                  | 3,206                          | 5,376 |
|                 |                          |      | 14.0              | 442.5                  | 361.44  |                        |           |           |   |                        |           |           |   |  | 4,925   |  | 40,204  | 89,541   |   |  |   | 5.0                                  | 3,578                          | 5,985 |
|                 |                          |      | 16.0              | 441.5                  | 416.10  |                        |           |           |   |                        |           |           |   |  | 5,150   |  | 42,337  | 94,292   |   |  |   | 4.8                                  | 3,953                          | 6,573 |
|                 |                          |      | 19.0              | 440.0                  | 497.63  |                        |           |           |   |                        |           |           |   |  | 5,487   |  | 45,482  | 101,297  |   |  |   | 4.5                                  | 4,504                          | 7,423 |
|                 |                          | II C | 6.0               | 446.5                  | 140.27  | 395                    | 11.2      | 40        | 40.00   | 395                    | 11.2      | 40        | 40.00   | 3.314  | 4.053   | 24,668   | 31,684  | 70,565   | 40,485  | 9.3  | 9.3   | 2,297                                | 3,823                          |       |
|                 |                          |      | 9.0               | 445.0                  | 223.68  |                        |           |           |   |                        |           |           |   |  | 4,397   |  | 35,052  | 78,067   |   |  |   | 7.3                                  | 2,871                          | 4,820 |
|                 |                          |      | 12.0              | 443.5                  | 306.53  |                        |           |           |   |                        |           |           |   |  | 4,738   |  | 38,353  | 85,418   |   |  |   | 6.8                                  | 3,445                          | 5,746 |
|                 |                          |      | 14.0              | 442.5                  | 361.44  |                        |           |           |   |                        |           |           |   |  | 4,965   |  | 40,516  | 90,235   |   |  |   | 6.5                                  | 3,822                          | 6,336 |
|                 |                          |      | 16.0              | 441.5                  | 416.10  |                        |           |           |   |                        |           |           |   |  | 5,190   |  | 42,649  | 94,987   |   |  |   | 6.2                                  | 4,191                          | 6,906 |
|                 |                          |      | 19.0              | 440.0                  | 497.63  |                        |           |           |   |                        |           |           |   |  | 5,527   |  | 45,794  | 101,992  |   |  |   | 5.8                                  | 4,737                          | 7,733 |

## エスタス 105 パイル（複合部）      パイル標準性能表

| 外径<br>D<br>(mm) | 厚さ<br>T<br>(含鋼管)<br>(mm) | 種類   | 鋼管                |                    |   | 配筋A                |           |           | 配筋B   |                    |           | 断面A       |   | 断面二次モーメント  |  | 換算断面係数<br>Z <sub>e</sub><br>×10 <sup>3</sup><br>(mm <sup>3</sup> ) | 断面一次モーメント<br>S <sub>s</sub><br>×10 <sup>3</sup><br>(mm <sup>3</sup> ) | 複合部計算有効<br>アレス<br>O <sub>cc</sub><br>(N/mm <sup>2</sup> ) | PHC部<br>公称有効<br>アレス<br>O <sub>cc</sub><br>(N/mm <sup>2</sup> ) | 設計曲げモーメント<br>(N=0kN)                  |                                |        |        |        |
|-----------------|--------------------------|------|-------------------|--------------------|---|--------------------|-----------|-----------|---|--------------------|-----------|-----------|---|--|--|--|---|---|--|---------------------------------------|--------------------------------|--------|--------|--------|
|                 |                          |      | 鋼管厚<br>ts<br>(mm) | 中心位置<br>半径<br>(mm) | 断面積<br>A <sub>s</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心位置<br>半径<br>(mm) | 径<br>(mm) | 本数<br>(本) | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 中心位置<br>半径<br>(mm) | 径<br>(mm) | 本数<br>(本) | 断面積<br>A <sub>p</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 換算断面<br>A <sub>e</sub><br>×10 <sup>2</sup><br>(mm <sup>2</sup> ) | 換算断面<br>I <sub>e</sub><br>×10 <sup>6</sup><br>(mm <sup>4</sup> ) |  |   |   |  | 短期待<br>許容<br>M <sub>a</sub><br>(kN·m) | 破壊<br>M <sub>u</sub><br>(kN·m) |        |        |        |
| 1000            | 150                      | II A | 6.0               | 496.5              | 155.98  | 440                | 10.0      | 24        | 18.84   | 440                | 10.0      | 24        | 18.84   | 3.974  | 36,910   | 4.693  | 45,570  | 91,323  | 54,251   | 3.9                                   | 2.092                          | 3,468  |        |        |
|                 |                          |      | 9.0               | 495.0              | 248.81  |                    |           |           |   |                    |           |           |   |  |  | 5.076  | 50,215  | 100,630   |  |                                       | 3.1                            | 2,836  | 4,780  |        |
|                 |                          |      | 12.0              | 493.5              | 341.08  |                    |           |           |   |                    |           |           |   |  |  | 5.456  | 54,774  | 109,768   |  |                                       | 2.9                            | 3,569  | 6,042  |        |
|                 |                          |      | 14.0              | 492.5              | 402.28  |                    |           |           |   |                    |           |           |   |  |  | 5.709  | 57,768  | 115,768   |  |                                       | 2.8                            | 4,051  | 6,856  |        |
|                 |                          |      | 16.0              | 491.5              | 463.23  |                    |           |           |   |                    |           |           |   |  |  | 5.960  | 60,725  | 121,693   |  |                                       | 2.7                            | 4,526  | 7,649  |        |
|                 |                          |      | 19.0              | 490.0              | 554.18  |                    |           |           |   |                    |           |           |   |  |  | 6.335  | 65,092  | 130,445   |  |                                       | 2.5                            | 5,215  | 8,776  |        |
|                 |                          | II B | 6.0               | 496.5              | 155.98  | 440                | 11.2      | 36        | 36.00   | 440                | 10.0      | 48        | 37.68   | 3.974  | 36,910   | 4.761  | 46,235  | 92,655  | 54,251   | 7.2                                   | 2.622                          | 4,417  |        |        |
|                 |                          |      | 9.0               | 495.0              | 248.81  |                    |           |           |   |                    |           |           |   |  |  | 5.144  | 50,879  | 101,962   |  |                                       | 5.8                            | 3,363  | 5,666  |        |
|                 |                          |      | 12.0              | 493.5              | 341.08  |                    |           |           |   |                    |           |           |   |  |  | 5.525  | 55,439  | 111,100   |  |                                       | 5.4                            | 4,081  | 6,858  |        |
|                 |                          |      | 14.0              | 492.5              | 402.28  |                    |           |           |   |                    |           |           |   |  |  | 5.777  | 58,432  | 117,099   |  |                                       | 5.1                            | 4,541  | 7,624  |        |
|                 |                          |      | 16.0              | 491.5              | 463.23  |                    |           |           |   |                    |           |           |   |  |  | 6.029  | 61,389  | 123,025   |  |                                       | 4.9                            | 5,008  | 8,366  |        |
|                 |                          |      | 19.0              | 490.0              | 554.18  |                    |           |           |   |                    |           |           |   |  |  | 6.404  | 65,756  | 131,776   |  |                                       | 4.6                            | 5,695  | 9,440  |        |
|                 | II C                     | 6.0  | 496.5             | 155.98             | 440   | 11.2               | 48        | 48.00     | 440   | 11.2               | 48        | 48.00     | 3.974   | 36,910   | 4.809  | 46,699   | 93,586  | 54,251  | 9.3  | 2.979                                 | 4,948                          |        |        |        |
|                 |                          | 9.0  | 495.0             | 248.81             |   |                    |           |           |   |                    |           |           |   |  | 5.192  | 51,344   | 102,893   |   |  | 7.4                                   | 3,686                          | 6,192  |        |        |
|                 |                          | 12.0 | 493.5             | 341.08             |   |                    |           |           |   |                    |           |           |   |  | 5.573  | 55,904   | 112,031   |   |  | 6.9                                   | 4,398                          | 7,365  |        |        |
|                 |                          | 14.0 | 492.5             | 402.28             |   |                    |           |           |   |                    |           |           |   |  | 5.825  | 58,897   | 118,030   |   |  | 6.6                                   | 4,864                          | 8,107  |        |        |
|                 |                          | 16.0 | 491.5             | 463.23             |   |                    |           |           |   |                    |           |           |   |  | 6.077  | 61,854   | 123,956   |   |  | 6.3                                   | 5,322                          | 8,827  |        |        |
|                 |                          | 19.0 | 490.0             | 554.18             |   |                    |           |           |   |                    |           |           |   |  | 6.452  | 66,221   | 132,707   |   |  | 6.0                                   | 6,018                          | 9,866  |        |        |
|                 | 1100                     | 160  | II A              | 6.0                | 546.5   | 171.69             | 490       | 11.2      | 22  | 22.00              | 490       | 11.2      | 22  | 22.00  | 4.690  | 53,178   | 5.486   | 64,810  | 118,052  | 70,767                                | 3.9                            | 3.4    | 2,606  | 4,303  |
|                 |                          |      |                   | 9.0                | 545.0   | 273.95             |           |           |   |                    |           |           |   |  |  |  | 5.908   | 71,018  | 129,358  |                                       |                                | 3.2    | 3,529  | 5,908  |
|                 |                          |      |                   | 12.0               | 543.5   | 375.64             |           |           |   |                    |           |           |   |  |  |  | 6.328   | 77,122  | 140,478  |                                       |                                | 3.0    | 4,422  | 7,454  |
|                 |                          |      |                   | 14.0               | 542.5   | 443.12             |           |           |   |                    |           |           |   |  |  |  | 6.606   | 81,136  | 147,789  |                                       |                                | 2.8    | 4,989  | 8,453  |
|                 |                          |      |                   | 16.0               | 541.5   | 510.35             |           |           |   |                    |           |           |   |  |  |  | 6.883   | 85,105  | 155,018  |                                       |                                | 2.7    | 5,567  | 9,429  |
|                 |                          |      |                   | 19.0               | 540.0   | 610.73             |           |           |   |                    |           |           |   |  |  |  | 7.297   | 90,975  | 165,711  |                                       |                                | 2.6    | 6,428  | 10,837 |
| II B            |                          |      | 6.0               | 546.5              | 171.69  | 490                | 11.2      | 44        | 44.00   | 490                | 11.2      | 44        | 44.00   | 4.690  | 53,178   | 5.709  | 66,221  | 132,707   | 70,767   | 7.4                                   | 2.4                            | 7,251  | 12,168 |        |
|                 |                          |      | 9.0               | 545.0              | 273.95  |                    |           |           |   |                    |           |           |   |  |  | 6.416  | 78,179  | 142,402   |  |                                       | 5.6                            | 5,120  | 8,611  |        |
|                 |                          |      | 12.0              | 543.5              | 375.64  |                    |           |           |   |                    |           |           |   |  |  | 6.694  | 82,192  | 149,713   |  |                                       | 5.4                            | 5,699  | 9,574  |        |
|                 |                          |      | 14.0              | 542.5              | 443.12  |                    |           |           |   |                    |           |           |   |  |  | 6.971  | 86,161  | 156,942   |  |                                       | 5.1                            | 6,248  | 10,487 |        |
|                 |                          |      | 16.0              | 541.5              | 510.35  |                    |           |           |   |                    |           |           |   |  |  | 7.385  | 92,032  | 167,635   |  |                                       | 4.8                            | 7,084  | 11,808 |        |
|                 |                          |      | 19.0              | 540.0              | 610.73  |                    |           |           |   |                    |           |           |   |  |  | 7.797  | 97,803  | 178,148   |  |                                       | 4.6                            | 7,925  | 13,076 |        |
| II C            |                          | 6.0  | 546.5             | 171.69             | 490   | 11.2               | 56        | 56.00     | 490   | 12.6               | 44        | 55.00     | 4.690   | 53,178   | 5.822  | 66,443   | 121,026   | 70,767  | 9.0  | 7.9                                   | 3,715                          | 6,174  |        |        |
|                 |                          | 9.0  | 545.0             | 273.95             |   |                    |           |           |   |                    |           |           |   |  | 6.044  | 72,650   | 132,332   |   |  | 7.3                                   | 4,587                          | 7,698  |        |        |
|                 |                          | 12.0 | 543.5             | 375.64             |   |                    |           |           |   |                    |           |           |   |  | 6.464  | 78,755   | 143,452   |   |  | 6.8                                   | 5,447                          | 9,163  |        |        |
|                 |                          | 14.0 | 542.5             | 443.12             |   |                    |           |           |   |                    |           |           |   |  | 6.742  | 82,769   | 150,762   |   |  | 6.5                                   | 6,012                          | 10,079 |        |        |
|                 |                          | 16.0 | 541.5             | 510.35             |   |                    |           |           |   |                    |           |           |   |  | 7.019  | 86,738   | 157,992   |   |  | 6.3                                   | 6,588                          | 10,968 |        |        |
|                 |                          | 19.0 | 540.0             | 610.73             |   |                    |           |           |   |                    |           |           |   |  | 7.433  | 92,608   | 168,684   |   |  | 5.9                                   | 7,412                          | 12,257 |        |        |
| 1200            |                          | 170  | II A              | 6.0                | 596.5   | 187.40             | 540       | 11.2      | 26  | 26.00              | 540       | 11.2      | 26  | 26.00  | 5.463  | 74,260   | 6.340   | 89,528  | 149,463  | 90,277                                | 3.9                            | 3.4    | 3,194  | 5,283  |
|                 |                          |      |                   | 9.0                | 595.0   | 299.08             |           |           |   |                    |           |           |   |  |  |  | 6.801   | 97,615  | 162,963  |                                       |                                | 3.2    | 4,296  | 7,208  |
|                 |                          |      |                   | 12.0               | 593.5   | 410.20             |           |           |   |                    |           |           |   |  |  |  | 7.259   | 105,579   | 176,259  |                                       |                                | 3.0    | 5,363  | 9,067  |
|                 |                          |      |                   | 14.0               | 592.5   | 483.96             |           |           |   |                    |           |           |   |  |  |  | 7.563   | 110,822   | 185,011  |                                       |                                | 2.9    | 6,068  | 10,271 |
|                 |                          |      |                   | 16.0               | 591.5   | 557.48             |           |           |   |                    |           |           |   |  |  |  | 7.867   | 116,010   | 193,673  |                                       |                                | 2.8    | 6,760  | 11,449 |
|                 |                          |      |                   | 19.0               | 590.0   | 667.27             |           |           |   |                    |           |           |   |  |  |  | 8.319   | 123,694   | 206,502  |                                       |                                | 2.6    | 7,768  | 13,167 |
|                 | II B                     |      | 6.0               | 596.5              | 187.40  | 540                | 11.2      | 50        | 50.00   | 540                | 11.2      | 50        | 50.00   | 5.463  | 74,260   | 6.770  | 131,260   | 219,132   | 90,277   | 7.2                                   | 2.5                            | 8,781  | 14,785 |        |
|                 |                          |      | 9.0               | 595.0              | 299.08  |                    |           |           |   |                    |           |           |   |  |  | 6.436  | 90,928  | 151,800   |  |                                       | 6.4                            | 4,128  | 6,808  |        |
|                 |                          |      | 12.0              | 593.5              | 410.20  |                    |           |           |   |                    |           |           |   |  |  | 6.897  | 99,015  | 165,300   |  |                                       | 5.9                            | 5,175  | 8,669  |        |
|                 |                          |      | 14.0              | 592.5              | 483.96  |                    |           |           |   |                    |           |           |   |  |  | 7.355  | 106,979   | 178,596   |  |                                       | 5.5                            | 6,212  | 10,470 |        |
|                 |                          |      | 16.0              | 591.5              | 557.48  |                    |           |           |   |                    |           |           |   |  |  | 7.659  | 112,221   | 187,348   |  |                                       | 5.3                            | 6,904  | 11,638 |        |
|                 |                          |      | 19.0              | 590.0              | 667.27  |                    |           |           |   |                    |           |           |   |  |  | 7.963  | 117,410   | 196,010   |  |                                       | 5.1                            | 7,584  | 12,763 |        |
|                 | II C                     | 6.0  | 596.5             | 187.40             | 540   | 11.2               | 64        | 64.00     | 540   | 12.6               | 52        | 65.00     | 5.463   | 74,260   | 8.415  | 125,094  | 208,838   | 90,277  | 9.0  | 4.8                                   | 8,585                          | 14,368 |        |        |
|                 |                          | 9.0  | 595.0             | 299.08             |   |                    |           |           |   |                    |           |           |   |  | 8.866  | 132,660  | 221,469   |   |  | 4.6                                   | 9,591                          | 15,911 |        |        |
|                 |                          | 12.0 | 593.5             | 410.20             |   |                    |           |           |   |                    |           |           |   |  | 6.492  | 91,745   | 153,163   |   |  | 7.9                                   | 4,806                          | 7,764  |        |        |
|                 |                          | 14.0 | 592.5             | 483.96             |   |                    |           |           |   |                    |           |           |   |  | 6.953  | 99,831   | 166,663   |   |  | 7.4                                   | 5,665                          | 9,555  |        |        |
|                 |                          | 16.0 | 591.5             | 557.48             |   |                    |           |           |   |                    |           |           |   |  | 7.411  | 107,795  | 179,959   |   |  | 6.9                                   | 6,689                          | 11,272 |        |        |
|                 |                          | 19.0 | 590.0             | 667.27             |   |                    |           |           |   |                    |           |           |   |  | 7.715  | 113,038  | 188,711   |   |  | 6.6                                   | 7,364                          | 12,378 |        |        |