

# Overhead Crane Wire Rope Specifications

## Compacted Ropes

### 6x31 Fibre Core

| Diameter |       | Section         | Mass            | Minimum breaking load    |
|----------|-------|-----------------|-----------------|--------------------------|
| mm       | inch  | mm <sup>2</sup> | kg/m            | kN                       |
|          |       |                 |                 | 2160 MPa                 |
| 10       | -     | 46.3            | 0.41            | 87.5                     |
| 11       | 7/16  | 56.1            | 0.50            | 106                      |
| 12       | -     | 66.7            | 0.60            | 127                      |
| 13       | 1/2   | 78.3            | 0.70            | 149.5                    |
| 14       | 9/16  | 90.8            | 0.82            | 174                      |
| 16       | 5/8   | 118.6           | 1.03            | 219                      |
| 18       | -     | 150.1           | 1.34            | 287                      |
| 19       | -     | 167.3           | 1.48            | 316                      |
| 20       | -     | 185.4           | 1.62            | 346                      |
| 22       | 7/8   | 224.3           | 1.99            | 425                      |
| 24       | -     | 266.9           | 2.38            | 503                      |
| 25       | -     | 289.6           | 2.60            | 547                      |
| 26       | 1     | 313.2           | 2.78            | 586                      |
| 28       | 1-1/8 | 363.3           | 3.26            | 680                      |
|          |       |                 | f - Fill Factor | k - Spinning Loss Factor |
|          |       |                 | 0.590           | 0.875                    |

⚠ Never use with swivel

## 6x31 Wire Core

| Diameter |       | Section         | Mass            | Minimum breaking load    |
|----------|-------|-----------------|-----------------|--------------------------|
| mm       | inch  | mm <sup>2</sup> | kg/m            | kN                       |
|          |       |                 |                 | 2160 MPa                 |
| 10       | -     | 51.6            | 0.47            | 91                       |
| 11       | 7/16  | 62.5            | 0.56            | 110.8                    |
| 12       | -     | 74.4            | 0.67            | 130.8                    |
| 13       | 1/2   | 87.3            | 0.79            | 154                      |
| 14       | 9/16  | 101.2           | 0.91            | 179                      |
| 15       | -     | 116.2           | 1.05            | 205                      |
| 16       | 5/8   | 132.2           | 1.19            | 233                      |
| 17       | -     | 145.7           | 1.27            | 255                      |
| 18       | -     | 163.3           | 1.43            | 296.2                    |
| 19       | -     | 166.9           | 1.44            | 329                      |
| 20       | -     | 168.2           | 1.45            | 375                      |
| 22       | 7/8   | 203.5           | 1.74            | 454                      |
| 24       | -     | 305.8           | 2.67            | 533                      |
| 25       | -     | 331.8           | 2.90            | 579                      |
| 26       | 1     | 358.9           | 3.13            | 626                      |
| 28       | 1-1/8 | 416.2           | 3.63            | 726                      |
|          |       |                 | f - Fill Factor | k - Spinning Loss Factor |
|          |       |                 | 0.661           | 0.816                    |

⚠ Never use with swivel

## 6x36 Fibre Core

| Diameter |       | Section         | Mass            | Minimum breaking load    |
|----------|-------|-----------------|-----------------|--------------------------|
| mm       | inch  | mm <sup>2</sup> | kg/m            | kN                       |
|          |       |                 |                 | 2160 MPa                 |
| 32       | 1-1/4 | 474.5           | 4.22            | 883                      |
| 34       | 1-3/8 | 535.7           | 4.87            | 1015                     |
| 36       | -     | 600.5           | 5.44            | 1130                     |
| 38       | 1-1/2 | 669.1           | 6.02            | 1245                     |
| 40       | -     | 741.4           | 6.71            | 1388                     |
| 42       | 1-5/8 | 817.4           | 7.26            | 1502                     |
|          |       |                 | f - Fill Factor | k - Spinning Loss Factor |
|          |       |                 | 0.590           | 0.865                    |

⚠ Never use with swivel

# 6x36 Wire Core

| Diameter |       | Section         | Mass                   | Minimum breaking load           |
|----------|-------|-----------------|------------------------|---------------------------------|
| mm       | inch  | mm <sup>2</sup> | kg/m                   | kN                              |
|          |       |                 |                        | 2160 MPa                        |
| 30       | -     | 472.0           | 4.12                   | 820                             |
| 32       | 1-1/4 | 537.0           | 4.69                   | 936                             |
| 34       | 1-3/8 | 599.4           | 5.23                   | 1037                            |
| 36       | -     | 671.9           | 5.86                   | 1163                            |
| 38       | 1-1/2 | 753.9           | 6.57                   | 1302                            |
| 40       | -     | 841.1           | 7.34                   | 1450                            |
| 42       | 1-5/8 | 927.3           | 8.09                   | 1598                            |
| 44       | 1-3/4 | 1017.7          | 8.88                   | 1754                            |
| 46       | -     | 1112.1          | 9.71                   | 1804                            |
| 48       | 1-7/8 | 1210.9          | 10.58                  | 1964                            |
| 50       | 2     | 1313.9          | 11.48                  | 2131                            |
| 52       | -     | 1412.1          | 12.33                  | 2266                            |
| 54       | -     | 1522.8          | 13.29                  | 2443                            |
| 56       | -     | 1631.2          | 14.23                  | 2617                            |
| 58       | -     | 1742.8          | 15.20                  | 2796                            |
| 60       | -     | 1861.6          | 16.24                  | 2994                            |
| 62       | -     | 1984.0          | 17.31                  | 3198                            |
|          |       |                 | <b>f - Fill Factor</b> | <b>k - Spinning Loss Factor</b> |
|          |       |                 | 0.665                  | 0.800                           |

 Never use with swivel

PIR – Plastic Impregnated Ropes

# 8x19 PIR (Plastic Impregnated Rope)

| Diameter |      | Section         | Mass                   | Minimum breaking load           |       |
|----------|------|-----------------|------------------------|---------------------------------|-------|
| mm       | inch | mm <sup>2</sup> | kg/m                   | kN                              | kN    |
|          |      |                 | 1960 MPa      2160 MPa |                                 |       |
| 6.5      | -    | 23.5            | 0.20                   | -                               | 41.8  |
| 7        | -    | 27.3            | 0.24                   | -                               | 48.5  |
| 7.2      | -    | 28.9            | 0.26                   | -                               | 51.6  |
| 8        | 5/16 | 35.8            | 0.32                   | -                               | 65.6  |
| 9        | -    | 45.6            | 0.41                   | -                               | 83.5  |
| 10       | -    | 56.9            | 0.51                   | -                               | 104   |
| 11       | 7/16 | 69.9            | 0.63                   | -                               | 128   |
| 12       | -    | 82.0            | 0.73                   | -                               | 150.5 |
| 13       | 1/2  | 95.8            | 0.86                   | -                               | 175.5 |
| 14       | 9/16 | 110.4           | 0.99                   | -                               | 202   |
| 15       | -    | 127.5           | 1.14                   | -                               | 233.4 |
|          |      |                 | <b>f - Fill Factor</b> | <b>k - Spinning Loss Factor</b> |       |
|          |      |                 | 0.720                  | -                               | 0.845 |

⚠ Never use with swivel

# 8x26 PIR

| Diameter |       | Section         | Mass                   | Minimum breaking load           |       |
|----------|-------|-----------------|------------------------|---------------------------------|-------|
| mm       | inch  | mm <sup>2</sup> | kg/m                   | kN                              | kN    |
|          |       |                 | 1960 MPa      2160 MPa |                                 |       |
| 16       | 5/8   | 140.1           | 1.26                   | 231                             | 245   |
| 18       | -     | 177.3           | 1.59                   | 292                             | 310   |
| 19       | 3/4   | 197.5           | 1.77                   | 326                             | 345   |
| 20       | -     | 218.9           | 1.96                   | 361                             | 382   |
| 22       | 7/8   | 264.8           | 2.37                   | 437                             | 463   |
| 23       | -     | 291.2           | 2.60                   | 481                             | 503   |
| 24       | -     | 317.1           | 2.83                   | 523                             | 548   |
| 25.4     | 1     | 355.2           | 3.17                   | 586                             | 614   |
| 26       | -     | 372.1           | 3.32                   | 614                             | 643   |
| 27       | -     | 401.3           | 3.58                   | 655                             | 685   |
| 28       | 1-1/8 | 420.8           | 3.72                   | 705                             | 737   |
| 29       | -     | 451.4           | 3.99                   | 756                             | 790   |
| 30       | -     | 483.1           | 4.27                   | 809                             | 846   |
| 32       | 1-1/4 | 549.6           | 4.86                   | 920                             | 962   |
|          |       |                 | <b>f - Fill Factor</b> | <b>k - Spinning Loss Factor</b> |       |
|          |       |                 | 0.695                  | 0.845                           | 0.810 |

⚠ Never use with swivel

# 8x31 PIR

| Diameter |       | Section         | Mass                   | Minimum breaking load |      |
|----------|-------|-----------------|------------------------|-----------------------|------|
| mm       | inch  | mm <sup>2</sup> | kg/m                   | kN                    | kN   |
|          |       |                 | 1960 MPa      2160 MPa |                       |      |
| 34       | 1-3/8 | 619.4           | 5.56                   | 1030                  | 1051 |
| 35       | -     | 669.3           | 6.09                   | 1091                  | 1114 |
| 36       | -     | 708.1           | 6.44                   | 1161                  | 1186 |
| 38       | 1-1/2 | 789.0           | 7.18                   | 1294                  | 1321 |
| 40       | -     | 874.2           | 7.96                   | 1434                  | 1464 |
| 41.3     | -     | 932.0           | 8.48                   | 1529                  | 1561 |
| 42       | 1-5/8 | 960.2           | 8.74                   | 1578                  | 1611 |
| 44       | 1-3/4 | 1053.8          | 9.60                   | 1728                  | 1765 |
| 44.5     | -     | 1077.9          | 9.82                   | 1768                  | 1805 |
| 46       | -     | 1151.8          | 10.49                  | 1889                  | 1929 |
| 48       | 1-7/8 | 1254.1          | 11.42                  | 2057                  | 2100 |
| 50       | 2     | 1342.3          | 12.15                  | 2223                  | 2269 |
| 51       | -     | 1396.5          | 12.64                  | 2303                  | 2351 |
| 52       | -     | 1451.8          | 13.14                  | 2394                  | 2444 |
| 54       | 2-1/8 | 1565.6          | 14.17                  | 2582                  | -    |
| 56       | -     | 1683.7          | 15.24                  | 2776                  | -    |
| 58       | 2-1/4 | 1806.2          | 16.35                  | 2978                  | -    |

f - Fill Factor

k - Spinning Loss Factor

0.695

0.839

0.777

⚠ Never use with swivel

# 8x36 PIR

| Diameter |       | Section         | Mass     | Minimum breaking load |
|----------|-------|-----------------|----------|-----------------------|
| mm       | inch  | mm <sup>2</sup> | kg/m     | kN                    |
|          |       |                 | 1960 MPa |                       |
| 60       | 2-3/8 | 1946.1          | 17.72    | 3192                  |
| 62       | -     | 2078.0          | 18.92    | 3408                  |
| 64       | -     | 2214.3          | 20.16    | 3632                  |
| 65       | -     | 2284.0          | 20.80    | 3746                  |

f - Fill Factor

k - Spinning Loss Factor

0.695

0.837

⚠ Never use with swivel

## 9x17 PIR

| Diameter                |      | Section | Mass                   | Minimum breaking load           |          |
|-------------------------|------|---------|------------------------|---------------------------------|----------|
| mm                      | inch |         |                        | 1960 MPa                        | 2160 MPa |
| 16                      | 5/8  | 135.4   | 1.20                   | 219                             | 239      |
| 18                      | -    | 171.7   | 1.54                   | 277                             | 302      |
| 19                      | 3/4  | 191.4   | 1.72                   | 308                             | 336      |
| ⚠ Never use with swivel |      |         | <b>f - Fill Factor</b> | <b>k - Spinning Loss Factor</b> |          |
|                         |      |         | 0.675                  | 0.830                           | 0.815    |

## 9x26 PIR

| Diameter                |       | Section | Mass                   | Minimum breaking load           |          |
|-------------------------|-------|---------|------------------------|---------------------------------|----------|
| mm                      | inch  |         |                        | 1960 MPa                        | 2160 MPa |
| 20                      | -     | 213.5   | 1.92                   | 346                             | 375      |
| 22                      | 7/8   | 255.2   | 2.31                   | 416                             | 450      |
| 24                      | -     | 303.1   | 2.74                   | 493                             | 534      |
| 25                      | -     | 334.1   | 3.02                   | 545                             | 586      |
| 25.4                    | -     | 350.3   | 3.17                   | 569                             | 611      |
| 26                      | -     | 362.7   | 3.28                   | 592                             | 631      |
| 28                      | 1-1/8 | 415.6   | 3.75                   | 677                             | 721      |
| 28.6                    | -     | 430.3   | 3.89                   | 700                             | 746      |
| 30                      | -     | 469.9   | 4.25                   | 763                             | 814      |
| 32                      | 1-1/4 | 534.6   | 4.84                   | 868                             | 926      |
| ⚠ Never use with swivel |       |         | <b>f - Fill Factor</b> | <b>k - Spinning Loss Factor</b> |          |
|                         |       |         | 0.675                  | 0.830                           | 0.815    |

# 9x31 PIR

| Diameter |       | Section<br>mm <sup>2</sup> | Mass<br>kg/m | Minimum breaking load |          |
|----------|-------|----------------------------|--------------|-----------------------|----------|
| mm       | inch  |                            |              | 1960 MPa              | 2160 MPa |
| 34       | 1-3/8 | 617.5                      | 5.56         | 1015                  | 1075     |
| 35       | -     | 652.9                      | 5.88         | 1104                  | 1155     |
| 36       | -     | 689.2                      | 6.21         | 1168                  | 1222     |
| 38       | 1-1/2 | 763.9                      | 6.90         | 1290                  | 1362     |
| 40       | -     | 857.6                      | 7.76         | 1401                  | 1487     |
| 41       | -     | 918.4                      | 8.24         | 1482                  | 1558     |
| 42       | -     | 953.8                      | 8.73         | 1563                  | 1631     |
| 44       | -     | 1051.3                     | 9.51         | 1716                  | 1785     |
| 46       | -     | 1142                       | 10.31        | 1870                  | 1945     |
| 48       | -     | 1235.3                     | 11.18        | 2030                  | 2106     |
| 50       | -     | 1343.2                     | 12.17        | 2198                  | 2272     |

**f** - Fill Factor

**k** - Spinning Loss Factor

0.675

0.830

0.815

⚠ Never use with swivel

# 9x36 PIR

| Diameter |       | Section<br>mm <sup>2</sup> | Mass<br>kg/m | Minimum breaking load |          |
|----------|-------|----------------------------|--------------|-----------------------|----------|
| mm       | inch  |                            |              | 1960 MPa              | 2160 MPa |
| 52       | -     | 1443.4                     | 12.99        | 2343                  | 2405     |
| 54       | -     | 1556.6                     | 14.01        | 2527                  | 2594     |
| 56       | 2-1/8 | 1674.0                     | 15.07        | 2716                  | 2789     |
| 58       | -     | 1784.2                     | 16.03        | 2934                  | 3012     |
| 60       | -     | 1914.6                     | 17.24        | 3160                  | 3244     |
| 62       | 2-3/8 | 2080.0                     | 18.75        | 3402                  | 3492     |
| 64       | -     | 2186.4                     | 19.98        | 3625                  | 3721     |

**f** - Fill Factor

**k** - Spinning Loss Factor

0.675

0.830

0.790

⚠ Never use with swivel

# Compacted and Non-Rotating Ropes

## 24x7 Compacted and Non-Rotating Rope

| Diameter |      | Section         | Mass                   | Minimum breaking load           |
|----------|------|-----------------|------------------------|---------------------------------|
| mm       | inch | mm <sup>2</sup> | kg/m                   | kN                              |
|          |      | 1960 MPa        |                        |                                 |
| 8        | 5/16 | 34.4            | 0.31                   | 56                              |
| 9        | -    | 43.6            | 0.39                   | 71                              |
| 10       | -    | 53.8            | 0.48                   | 88                              |
| 11       | 7/16 | 65.1            | 0.58                   | 107.4                           |
| 12       | -    | 77.5            | 0.69                   | 127                             |
| 12.5     | -    | 84.1            | 0.75                   | 138                             |
| 13       | 1/2  | 91.0            | 0.81                   | 147                             |
| 14       | 9/16 | 106.0           | 0.94                   | 175                             |
| 15       | -    | 121.1           | 1.07                   | 197                             |
| 16       | 5/8  | 137.8           | 1.22                   | 224                             |
| 18       | -    | 174.4           | 1.54                   | 283                             |
| 19       | 3/4  | 194.3           | 1.72                   | 315                             |
| 20       | -    | 215.3           | 1.91                   | 350                             |
| 21       | -    | 237.3           | 2.10                   | 385                             |
| 22       | 7/8  | 260.5           | 2.31                   | 423                             |
|          |      |                 | <b>f - Fill Factor</b> | <b>k - Spinning Loss Factor</b> |

## 24x17 Compacted and Non-Rotating Rope

| Diameter |       | Section         | Mass                   | Minimum breaking load           |
|----------|-------|-----------------|------------------------|---------------------------------|
| mm       | inch  | mm <sup>2</sup> | kg/m                   | kN                              |
|          |       | 1960 MPa        |                        |                                 |
| 24       | -     | 314.1           | 2.87                   | 507                             |
| 25.4     | 1     | 351.9           | 3.21                   | 568                             |
| 28       | 1-1/8 | 427.6           | 3.90                   | 690                             |
| 30       | -     | 490.8           | 4.48                   | 792                             |
| 32       | 1-1/4 | 558.5           | 5.09                   | 901                             |
| 34       | 1-3/8 | 630.5           | 5.75                   | 1017                            |
| 36       | -     | 697.5           | 6.23                   | 1105                            |
| 38       | 1-1/2 | 777.1           | 6.94                   | 1231                            |
| 40       | -     | 850.9           | 7.63                   | 1364                            |
| 42       | -     | 949.3           | 8.48                   | 1503                            |
| 44       | -     | 1041.9          | 9.30                   | 1650                            |
|          |       |                 | <b>f - Fill Factor</b> | <b>k - Spinning Loss Factor</b> |
|          |       |                 | 0.689                  | 0.817                           |

