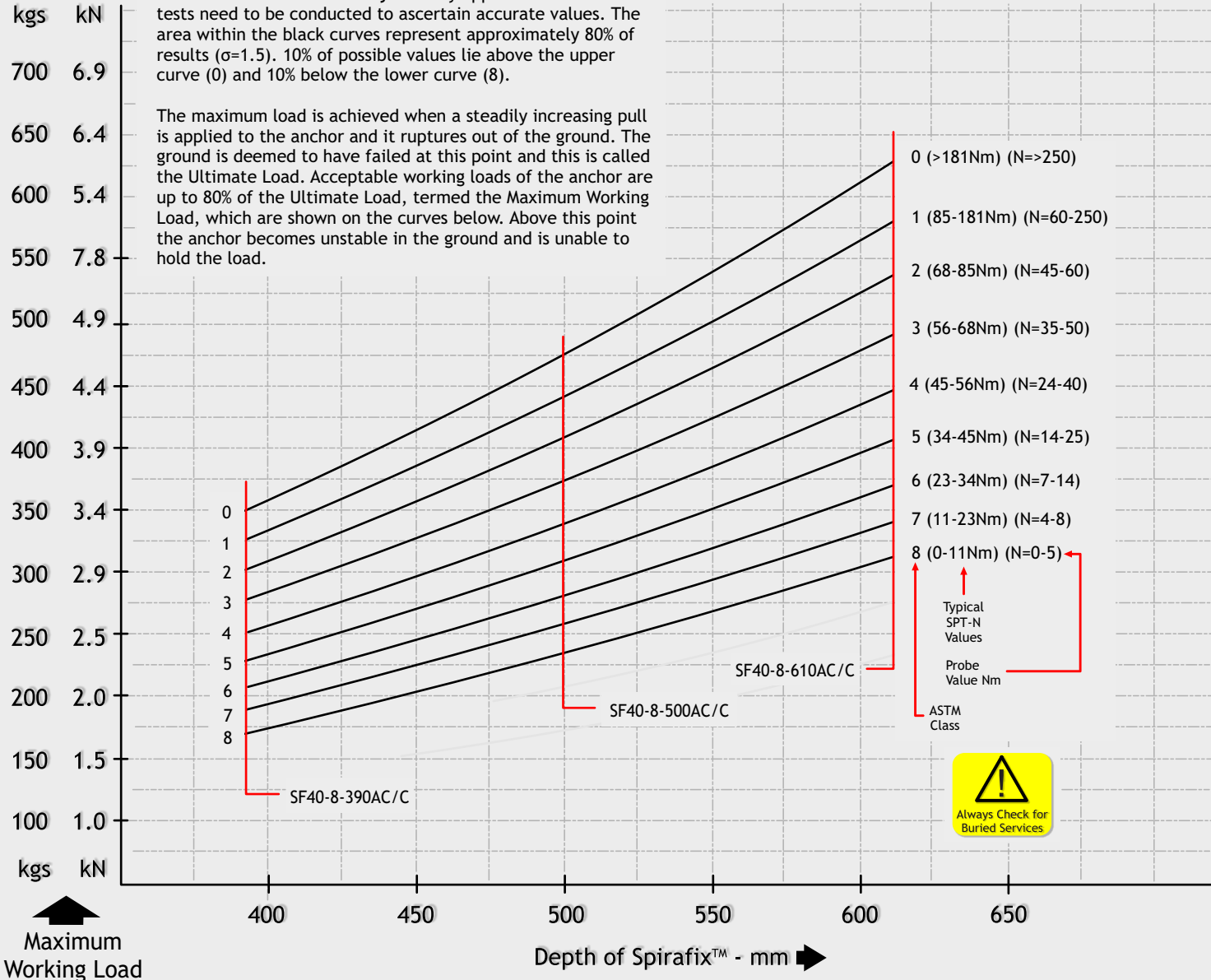


## 40mm Diameter Spirafix™ Vertical Maximum Working Tensile Loads

**These values indicative only.** For any application on-site load tests need to be conducted to ascertain accurate values. The area within the black curves represent approximately 80% of results ( $\sigma=1.5$ ). 10% of possible values lie above the upper curve (0) and 10% below the lower curve (8).

The maximum load is achieved when a steadily increasing pull is applied to the anchor and it ruptures out of the ground. The ground is deemed to have failed at this point and this is called the Ultimate Load. Acceptable working loads of the anchor are up to 80% of the Ultimate Load, termed the Maximum Working Load, which are shown on the curves below. Above this point the anchor becomes unstable in the ground and is unable to hold the load.



| Soil Classification |  |                     |               |            |
|---------------------|--|---------------------|---------------|------------|
| Basic Soil Type     | Sub Group  | Compaction/Strength | SPT-N         | ASTM Class |
| Sands               | Sand   | Very Loose          | 0-3           | 8          |
|                     |  | Loose               | 3-8           | 5          |
|                     |  | Compact Cemented    | 8-30<br>30-58 | 3<br>1     |
| Sands               | Sandy Clay/Sandy Silt  | Soft                | 3-8           | 5          |
|                     |  | Firm                | 8-30          | 3          |
|                     |  | Stiff               | 30-58         | 1          |
| Silt                | Silt   | Very Soft           | 7-14          | 6          |
|                     |  | Soft                | 14-25         | 5          |
|                     |  | Firm                | 25-60         | 4          |
| Silt                | Silty Clay   | Soft                | 7-14          | 6          |
|                     |  | Firm                | 14-25         | 5          |
|                     |  | Stiff               | 25-60         | 4          |
| Clays               | Clay   | Very Soft           | 0-5           | 8          |
|                     |  | Soft                | 4-8           | 7          |
|                     |  | Firm                | 7-14          | 6          |
|                     |  | Stiff               | 14-25         | 5          |
|                     |  | Very Stiff          | 35-60<br>>60  | 3<br>1     |
| Peats               | Organic Clay Silt or Sand  | Firm                | 0-5           | 8          |
|                     | Peat   | Spongy Plastic      | 0-5<br>0-5    | 8<br>8     |
| Chalks              | Very Weak<br>Weak<br>Moderately Weak<br>Moderately strong to very strong |                     | 0-25          | 6          |
|                     |  |                     | 25-100        | 2          |
|                     |  |                     | 100-250       | 1          |
|                     |  |                     | >250          | 0          |

**Notes:**

The above classifications are outlined in BS 5930 with the exception of chalk and the "Sands" and "Clays" sections have been expanded. Also chalk is not covered in the ASTM classification, but for the purposes of predicting loads it has been assigned values. The range of pull out loads in strong chalks can be considerably higher than shown on the chart and field tests need to be carried out to obtain accurate values.

The Standard Penetration Test (SPT) N values quoted above are in accordance with BS1377:1990 Part9, ASTM Standard D1586-84 and AS 1289.6.3.1-1993