# QT-1400 Technical Data Sheet

For the appropriate sizes, QT-1400 can be routinely ordered as a TRUE-TAPER™ string, straight wall or as a string with an electric wireline or capillary tube installed. QT-1400 is manufactured from high strength low alloy steel (HSLAS) with alloying additions to provide resistance to atmospheric corrosion.

## Mechanical Properties

| | |
|---|---|
| **Minimum Yield Strength, psi (MPa)** | 140,000 (965) |
| **Minimum Tensile Strength, psi (MPa)** | 145,000 (1,000) |
| **Minimum Elongation** | Calculated from the formula:<br>$E=750{,}000\ \frac{A_w^{0.2}}{L_u^{0.9}}\ \%$<br>Where:<br>$A_w$ = Pipe Metal Cross Section, ($in^2$)<br>$L_u$ = Specified Minimum Tensile Strength (psi) |
| **Maximum Hardness** | 39 HRC |

## Technical Data

| Specified | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Outside Diameter, D** | | **Wall Thickness, t** | | **Calculated Inside Diameter, d** | | **Plain End Mass, $M_{pe}$** | | **Pipe Metal Cross Sectional Area, A** | | **Pipe Body Yield Load, $L_y$** | | **Tensile Load, $L_T$** | | **Internal Yield Pressure, $P_r$** | | **Hydro Test Pressure, $P_T$** | | **Torsional Yield Strength, $T_f$** | |
| in | mm | in | mm | in | mm | lb/ft | kg/m | $in^2$ | $mm^2$ | lb | kg | lb | kg | psi | MPa | psi | MPa | ft-lb | N-m |
| 1 ¾ | 44.5 | 0.134 | 3.4 | 1.482 | 37.6 | 2.315 | 3.45 | 0.680 | 439 | 95,200 | 43,200 | 98,600 | 44,700 | 20,600 | 142 | 15,000 | 103 | 3,400 | 4,600 |
| 1 ¾ | 44.5 | 0.145 | 3.7 | 1.460 | 37.1 | 2.488 | 3.70 | 0.731 | 472 | 102,400 | 46,400 | 106,000 | 48,100 | 22,400 | 154 | 15,000 | 103 | 3,700 | 5,000 |
| 1 ¾ | 44.5 | 0.156 | 4.0 | 1.438 | 36.5 | 2.658 | 3.96 | 0.781 | 504 | 109,400 | 49,600 | 113,300 | 51,400 | 24,200 | 167 | 15,000 | 103 | 3,900 | 5,300 |
| 1 ¾ | 44.5 | 0.175 | 4.4 | 1.400 | 35.6 | 2.946 | 4.39 | 0.866 | 559 | 121,200 | 55,000 | 125,600 | 57,000 | 27,200 | 188 | 15,000 | 103 | 4,200 | 5,700 |
| 1 ¾ | 44.5 | 0.188 | 4.8 | 1.374 | 34.9 | 3.139 | 4.67 | 0.923 | 595 | 129,200 | 58,600 | 133,800 | 60,700 | 29,300 | 202 | 15,000 | 103 | 4,400 | 6,000 |
| 1 ¾ | 44.5 | 0.203 | 5.2 | 1.344 | 34.1 | 3.357 | 5.00 | 0.987 | 637 | 138,100 | 62,600 | 143,100 | 64,900 | 31,700 | 219 | 15,000 | 103 | 4,600 | 6,200 |
| 2 | 50.8 | 0.134 | 3.4 | 1.732 | 44.0 | 2.673 | 3.98 | 0.786 | 507 | 110,000 | 49,900 | 113,900 | 51,700 | 18,100 | 125 | 14,500 | 100 | 4,600 | 6,200 |
| 2 | 50.8 | 0.145 | 3.7 | 1.710 | 43.4 | 2.875 | 4.28 | 0.845 | 545 | 118,300 | 53,700 | 122,500 | 55,600 | 19,600 | 135 | 15,000 | 103 | 4,900 | 6,600 |
| 2 | 50.8 | 0.156 | 4.0 | 1.688 | 42.9 | 3.075 | 4.58 | 0.904 | 583 | 126,500 | 57,400 | 131,000 | 59,400 | 21,100 | 145 | 15,000 | 103 | 5,200 | 7,100 |
| 2 | 50.8 | 0.175 | 4.4 | 1.650 | 41.9 | 3.414 | 5.08 | 1.003 | 647 | 140,500 | 63,700 | 145,500 | 66,000 | 23,800 | 164 | 15,000 | 103 | 5,700 | 7,700 |
| 2 | 50.8 | 0.188 | 4.8 | 1.624 | 41.2 | 3.642 | 5.42 | 1.070 | 690 | 149,800 | 67,900 | 155,200 | 70,400 | 25,600 | 177 | 15,000 | 103 | 6,000 | 8,100 |
| 2 | 50.8 | 0.203 | 5.2 | 1.594 | 40.5 | 3.900 | 5.80 | 1.146 | 739 | 160,400 | 72,800 | 166,200 | 75,400 | 27,700 | 191 | 15,000 | 103 | 6,300 | 8,500 |
| 2 | 50.8 | 0.224 | 5.7 | 1.552 | 39.4 | 4.253 | 6.33 | 1.250 | 806 | 175,000 | 79,400 | 181,200 | 82,200 | 30,700 | 212 | 15,000 | 103 | 6,700 | 9,100 |
| 2 ⅜ | 60.3 | 0.134 | 3.4 | 2.107 | 53.5 | 3.210 | 4.78 | 0.943 | 609 | 132,100 | 59,900 | 136,800 | 62,100 | 15,200 | 105 | 12,200 | 84 | 6,700 | 9,100 |
| 2 ⅜ | 60.3 | 0.145 | 3.7 | 2.085 | 53.0 | 3.457 | 5.14 | 1.016 | 655 | 142,200 | 64,500 | 147,300 | 66,800 | 16,500 | 114 | 13,200 | 91 | 7,200 | 9,800 |
| 2 ⅜ | 60.3 | 0.156 | 4.0 | 2.063 | 52.4 | 3.700 | 5.51 | 1.088 | 702 | 152,300 | 69,100 | 157,700 | 71,500 | 17,800 | 123 | 14,200 | 98 | 7,600 | 10,300 |
| 2 ⅜ | 60.3 | 0.175 | 4.4 | 2.025 | 51.4 | 4.116 | 6.13 | 1.210 | 780 | 169,300 | 76,800 | 175,400 | 79,600 | 20,000 | 138 | 15,000 | 103 | 8,400 | 11,400 |
| 2 ⅜ | 60.3 | 0.188 | 4.8 | 1.999 | 50.8 | 4.395 | 6.54 | 1.292 | 833 | 180,800 | 82,000 | 187,300 | 85,000 | 21,600 | 149 | 15,000 | 103 | 8,800 | 11,900 |
| 2 ⅜ | 60.3 | 0.203 | 5.2 | 1.969 | 50.0 | 4.713 | 7.02 | 1.385 | 894 | 193,900 | 88,000 | 200,900 | 91,100 | 23,300 | 161 | 15,000 | 103 | 9,300 | 12,600 |
| 2 ⅜ | 60.3 | 0.224 | 5.7 | 1.927 | 48.9 | 5.151 | 7.67 | 1.514 | 977 | 211,900 | 96,100 | 219,500 | 99,600 | 25,800 | 178 | 15,000 | 103 | 10,000 | 13,600 |
| 2 ⅜ | 60.3 | 0.236 | 6.0 | 1.903 | 48.3 | 5.396 | 8.03 | 1.586 | 1,023 | 222,000 | 100,700 | 230,000 | 104,300 | 27,200 | 188 | 15,000 | 103 | 10,400 | 14,100 |
| 2 ⅜ | 60.3 | 0.250 | 6.4 | 1.875 | 47.6 | 5.679 | 8.45 | 1.669 | 1,077 | 233,700 | 106,000 | 242,000 | 109,800 | 28,900 | 199 | 15,000 | 103 | 10,800 | 14,600 |
| 2 ⅝ | 66.7 | 0.156 | 4.0 | 2.313 | 58.8 | 4.117 | 6.13 | 1.210 | 781 | 169,400 | 76,800 | 175,500 | 79,600 | 16,100 | 111 | 12,900 | 89 | 9,500 | 12,900 |
| 2 ⅝ | 66.7 | 0.175 | 4.4 | 2.275 | 57.8 | 4.583 | 6.82 | 1.347 | 869 | 188,600 | 85,500 | 195,300 | 88,600 | 18,100 | 125 | 14,500 | 100 | 10,400 | 14,100 |
| 2 ⅝ | 66.7 | 0.188 | 4.8 | 2.249 | 57.1 | 4.898 | 7.29 | 1.439 | 929 | 201,500 | 91,400 | 208,700 | 94,700 | 19,500 | 134 | 15,000 | 103 | 11,000 | 14,900 |
| 2 ⅝ | 66.7 | 0.203 | 5.2 | 2.219 | 56.4 | 5.256 | 7.82 | 1.545 | 997 | 216,200 | 98,100 | 224,000 | 101,600 | 21,100 | 145 | 15,000 | 103 | 11,700 | 15,900 |
| 2 ⅝ | 66.7 | 0.224 | 5.7 | 2.177 | 55.3 | 5.749 | 8.56 | 1.690 | 1,090 | 236,500 | 107,300 | 245,000 | 111,100 | 23,400 | 161 | 15,000 | 103 | 12,600 | 17,100 |
| 2 ⅝ | 66.7 | 0.236 | 6.0 | 2.153 | 54.7 | 6.027 | 8.97 | 1.771 | 1,143 | 248,000 | 112,500 | 256,800 | 116,500 | 24,600 | 170 | 15,000 | 103 | 13,100 | 17,800 |
| 2 ⅝ | 66.7 | 0.250 | 6.4 | 2.125 | 54.0 | 6.347 | 9.45 | 1.865 | 1,203 | 261,100 | 118,400 | 270,500 | 122,700 | 26,100 | 180 | 15,000 | 103 | 13,600 | 18,400 |
| 2 ⅞ | 73.0 | 0.156 | 4.0 | 2.563 | 65.1 | 4.534 | 6.75 | 1.333 | 860 | 186,600 | 84,600 | 193,200 | 87,600 | 14,700 | 101 | 11,800 | 81 | 11,600 | 15,700 |
| 2 ⅞ | 73.0 | 0.175 | 4.4 | 2.525 | 64.1 | 5.051 | 7.52 | 1.484 | 958 | 207,800 | 94,300 | 215,200 | 97,600 | 16,600 | 114 | 13,300 | 92 | 12,700 | 17,200 |
| 2 ⅞ | 73.0 | 0.188 | 4.8 | 2.499 | 63.5 | 5.400 | 8.04 | 1.587 | 1,024 | 222,200 | 100,800 | 230,100 | 104,400 | 17,800 | 123 | 14,200 | 98 | 13,500 | 18,300 |
| 2 ⅞ | 73.0 | 0.203 | 5.2 | 2.469 | 62.7 | 5.798 | 8.63 | 1.704 | 1,099 | 238,600 | 108,200 | 247,100 | 112,100 | 19,300 | 133 | 15,000 | 103 | 14,300 | 19,400 |

**A** Minimum wall thickness is 0.005" (0.13 mm) less than specified wall thickness.

**B** Pressures calculated based on t – 0.005" (0.13 mm).

**C** Maximum hydrostatic test pressure is 15,000 psi (103 MPa).

**D** Additional diameters and wall thicknesses may be available upon request.