## Dimensions and Weights of TYTON JOINT® Ductile Iron Pipe

| Nominal Size | Class | Wall Thickness | Outside Diameter | Average weight per foot (Lb.) | Weight per Piece (Lb) |
|---|---|---|---|---|---|
| 4 | 350 | 0.25 | 4.80 | 11.3 | 205 |
|  | 51 | 0.26 | 4.80 | 11.8 | 210 |
|  | 52 | 0.29 | 4.80 | 13.1 | 235 |
|  | 53 | 0.32 | 4.80 | 14.3 | 255 |
|  | 54 | 0.35 | 4.80 | 15.5 | 280 |
|  | 55 | 0.38 | 4.80 | 16.6 | 300 |
|  | 56 | 0.41 | 4.80 | 17.8 | 320 |
| 6 | 350 | 0.25 | 6.90 | 16.6 | 305 |
|  | 50 | 0.25 | 6.90 | 16.9 | 305 |
|  | 51 | 0.28 | 6.90 | 18.6 | 335 |
|  | 52 | 0.31 | 6.90 | 20.6 | 370 |
|  | 53 | 0.34 | 6.90 | 22.2 | 400 |
|  | 54 | 0.37 | 6.90 | 24.2 | 435 |
|  | 55 | 0.40 | 6.90 | 25.8 | 465 |
|  | 56 | 0.43 | 6.90 | 27.5 | 495 |
| 8 | 350 | 0.25 | 9.05 | 22.0 | 400 |
|  | 50 | 0.27 | 9.05 | 23.9 | 430 |
|  | 51 | 0.30 | 9.05 | 26.4 | 475 |
|  | 52 | 0.33 | 9.05 | 28.9 | 520 |
|  | 53 | 0.36 | 9.05 | 31.1 | 560 |
|  | 54 | 0.39 | 9.05 | 33.6 | 605 |
|  | 55 | 0.42 | 9.05 | 36.1 | 650 |
|  | 56 | 0.45 | 9.05 | 38.3 | 690 |
| 10 | 350 | 0.26 | 11.10 | 28.6 | 515 |
|  | 50 | 0.29 | 11.10 | 31.7 | 570 |
|  | 51 | 0.32 | 11.10 | 34.7 | 625 |
|  | 52 | 0.35 | 11.10 | 37.8 | 680 |
|  | 53 | 0.38 | 11.10 | 40.6 | 730 |
|  | 54 | 0.41 | 11.10 | 43.6 | 785 |
|  | 55 | 0.44 | 11.10 | 46.7 | 840 |
|  | 56 | 0.47 | 11.10 | 49.4 | 890 |
| 12 | 350 | 0.28 | 13.20 | 36.7 | 660 |
|  | 50 | 0.31 | 13.20 | 40.3 | 725 |
|  | 51 | 0.34 | 13.20 | 43.9 | 790 |
|  | 52 | 0.37 | 13.20 | 47.5 | 855 |
|  | 53 | 0.40 | 13.20 | 51.1 | 920 |
|  | 54 | 0.43 | 13.20 | 54.7 | 985 |
|  | 55 | 0.46 | 13.20 | 58.1 | 1045 |
|  | 56 | 0.49 | 13.20 | 61.7 | 1110 |
| 14 | 250 | 0.28 | 15.30 | 43.3 | 780 |
|  | 300 | 0.30 | 15.30 | 46.4 | 835 |
|  | 350 | 0.31 | 15.30 | 47.8 | 860 |
|  | 50 | 0.33 | 15.30 | 50.6 | 910 |
|  | 51 | 0.36 | 15.30 | 54.7 | 985 |
|  | 52 | 0.39 | 15.30 | 58.9 | 1060 |
|  | 53 | 0.42 | 15.30 | 63.1 | 1135 |
|  | 54 | 0.45 | 15.30 | 67.2 | 1210 |
|  | 55 | 0.48 | 15.30 | 71.4 | 1285 |
|  | 56 | 0.51 | 15.30 | 75.6 | 1360 |
| 16 | 250 | 0.30 | 17.40 | 52.8 | 950 |
|  | 300 | 0.32 | 17.40 | 56.1 | 1010 |
|  | 350 | 0.34 | 17.40 | 59.2 | 1065 |
|  | 50 | 0.34 | 17.40 | 59.2 | 1065 |
|  | 51 | 0.37 | 17.40 | 63.9 | 1150 |
|  | 52 | 0.40 | 17.40 | 68.9 | 1240 |
|  | 53 | 0.43 | 17.40 | 73.6 | 1325 |
|  | 54 | 0.46 | 17.40 | 78.3 | 1410 |
|  | 55 | 0.49 | 17.40 | 83.1 | 1495 |
|  | 56 | 0.52 | 17.40 | 87.8 | 1580 |
| 18 | 250 | 0.31 | 19.50 | 60.8 | 1095 |
|  | 300 | 0.34 | 19.50 | 66.4 | 1195 |
|  | 350 | 0.36 | 19.50 | 70.0 | 1260 |
|  | 50 | 0.35 | 19.50 | 68.1 | 1225 |
|  | 51 | 0.38 | 19.50 | 73.6 | 1325 |
|  | 52 | 0.41 | 19.50 | 78.9 | 1420 |
|  | 53 | 0.44 | 19.50 | 84.4 | 1520 |
|  | 54 | 0.47 | 19.50 | 89.7 | 1615 |
|  | 55 | 0.50 | 19.50 | 95.0 | 1710 |
|  | 56 | 0.53 | 19.50 | 100.3 | 1805 |

| Nominal Size | Class | Wall Thickness | Outside Diameter | Average weight per foot (Lb.) | Weight per Piece (Lb) |
|---|---|---|---|---|---|
| 20 | 250 | 0.33 | 21.60 | 71.4 | 1285 |
|  | 300 | 0.36 | 21.60 | 77.5 | 1395 |
|  | 350 | 0.38 | 21.60 | 81.4 | 1465 |
|  | 50 | 0.36 | 21.60 | 77.5 | 1395 |
|  | 51 | 0.39 | 21.60 | 83.6 | 1505 |
|  | 52 | 0.42 | 21.60 | 89.4 | 1610 |
|  | 53 | 0.45 | 21.60 | 95.6 | 1720 |
|  | 54 | 0.48 | 21.60 | 101.4 | 1825 |
|  | 55 | 0.51 | 21.60 | 107.6 | 1935 |
|  | 56 | 0.54 | 21.60 | 113.3 | 2040 |
| 24 | 200 | 0.33 | 25.8 | 86.1 | 1550 |
|  | 250 | 0.37 | 25.8 | 95.8 | 1725 |
|  | 300 | 0.40 | 25.8 | 103.1 | 1855 |
|  | 350 | 0.43 | 25.8 | 110.3 | 1985 |
|  | 50 | 0.38 | 25.80 | 98.1 | 1765 |
|  | 51 | 0.41 | 25.80 | 105.3 | 1895 |
|  | 52 | 0.44 | 25.80 | 112.5 | 2025 |
|  | 53 | 0.47 | 25.80 | 119.7 | 2155 |
|  | 54 | 0.50 | 25.80 | 126.9 | 2285 |
|  | 55 | 0.53 | 25.80 | 134.2 | 2415 |
|  | 56 | 0.56 | 25.80 | 141.1 | 2540 |
| 30 | 150 | 0.34 | 32.00 | 111.4 | 2005 |
|  | 200 | 0.38 | 32.00 | 123.3 | 2220 |
|  | 250 | 0.42 | 32.00 | 135.3 | 2435 |
|  | 300 | 0.45 | 32.00 | 144.4 | 2600 |
|  | 350 | 0.49 | 32.00 | 156.4 | 2815 |
|  | 50 | 0.39 | 32.00 | 126.4 | 2275 |
|  | 51 | 0.43 | 32.00 | 138.3 | 2490 |
|  | 52 | 0.47 | 32.00 | 150.3 | 2705 |
|  | 53 | 0.51 | 32.00 | 162.2 | 2920 |
|  | 54 | 0.55 | 32.00 | 174.2 | 3135 |
|  | 55 | 0.59 | 32.00 | 186.1 | 3350 |
|  | 56 | 0.63 | 32.00 | 197.8 | 3560 |
| 36 | 150 | 0.38 | 38.30 | 148.9 | 2680 |
|  | 200 | 0.42 | 38.30 | 163.3 | 2940 |
|  | 250 | 0.47 | 38.30 | 181.4 | 3265 |
|  | 300 | 0.51 | 38.30 | 195.8 | 3525 |
|  | 350 | 0.56 | 38.30 | 213.6 | 3845 |
|  | 50 | 0.43 | 38.30 | 166.9 | 3005 |
|  | 51 | 0.48 | 38.30 | 185.0 | 3330 |
|  | 52 | 0.53 | 38.30 | 203.1 | 3655 |
|  | 53 | 0.58 | 38.30 | 220.8 | 3975 |
|  | 54 | 0.63 | 38.30 | 238.6 | 4295 |
|  | 55 | 0.68 | 38.30 | 256.4 | 4615 |
|  | 56 | 0.73 | 38.30 | 274.2 | 4935 |
| 42 | 150 | 0.41 | 44.50 | 193.3 | 3480 |
|  | 200 | 0.47 | 44.50 | 219.2 | 3945 |
|  | 250 | 0.52 | 44.50 | 239.4 | 4310 |
|  | 300 | 0.57 | 44.50 | 260.3 | 4685 |
|  | 350 | 0.63 | 44.50 | 285.3 | 5135 |
|  | 50 | 0.47 | 44.50 | 218.6 | 3935 |
|  | 51 | 0.53 | 44.50 | 243.6 | 4385 |
|  | 52 | 0.59 | 44.50 | 268.6 | 4835 |
|  | 53 | 0.65 | 44.50 | 293.6 | 5285 |
|  | 54 | 0.71 | 44.50 | 318.6 | 5735 |
|  | 55 | 0.77 | 44.50 | 339.4 | 6110 |
|  | 56 | 0.83 | 44.50 | 368.1 | 6625 |
| 48 | 150 | 0.46 | 50.80 | 246.5 | 4930 |
|  | 200 | 0.52 | 50.80 | 275.3 | 5505 |
|  | 250 | 0.58 | 50.80 | 304 | 6080 |
|  | 300 | 0.64 | 50.80 | 332.5 | 6650 |
|  | 350 | 0.70 | 50.80 | 361 | 7220 |
|  | 50 | 0.51 | 50.80 | 270.5 | 5410 |
|  | 51 | 0.58 | 50.80 | 304 | 6080 |
|  | 52 | 0.65 | 50.80 | 337.3 | 6745 |
|  | 53 | 0.72 | 50.80 | 370.5 | 7410 |
|  | 54 | 0.79 | 50.80 | 403.8 | 8075 |
|  | 55 | 0.86 | 50.80 | 436.8 | 8735 |
|  | 56 | 0.93 | 50.80 | 469.8 | 9395 |

## Dimensions and Weights of TYTON
## JOINT® Ductile Iron Pipe (cont.)

| Nominal Size | Class | Wall Thickness | Outside Diameter | Average weight per foot (Lb.) | Weight per Piece (Lb) | Nominal Size | Class | Wall Thickness | Outside Diameter | Average weight per foot (Lb.) | Weight per Piece (Lb) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 54 | 150 | 0.51 | 57.56 | 313.5 | 6270 | 60 | 150 | 0.54 | 61.61 | 356 | 7120 |
| | 200 | 0.58 | 57.56 | 351.5 | 7030 | | 200 | 0.61 | 61.61 | 396.8 | 7935 |
| | 250 | 0.65 | 57.56 | 389.3 | 7785 | | 250 | 0.68 | 61.61 | 437.3 | 8745 |
| | 300 | 0.72 | 57.56 | 427.3 | 8545 | | 300 | 0.76 | 61.61 | 483.8 | 9675 |
| | 350 | 0.79 | 57.56 | 465 | 9300 | | 350 | 0.83 | 61.61 | 524 | 10480 |
| | 50 | 0.57 | 57.56 | 346 | 6920 | 64 | 150 | 0.56 | 65.67 | 394.3 | 7885 |
| | 51 | 0.65 | 57.56 | 389.3 | 7785 | | 200 | 0.64 | 65.67 | 443.8 | 8875 |
| | 52 | 0.73 | 57.56 | 432.5 | 8650 | | 250 | 0.72 | 65.67 | 493.3 | 9865 |
| | 53 | 0.81 | 57.56 | 475.8 | 9515 | | 300 | 0.80 | 65.67 | 542.5 | 10850 |
| | 54 | 0.89 | 57.56 | 518.5 | 10370 | | 350 | 0.87 | 65.67 | 585.8 | 11715 |

## TYTON JOINT® Ductile Iron Pipe
## Lubricant Usage Chart

| Pipe Size | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
|---|---|---|---|---|---|---|---|---|---|
| Joints/gal. | 250 | 240 | 130 | 100 | 100 | 80 | 65 | 50 | 45 |

| Pipe Size | 20 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 64 |
|---|---|---|---|---|---|---|---|---|---|
| Joints/gal. | 40 | 35 | 30 | 15 | 12 | 10 | 5 | 3 | 2 |

## TYTON JOINT® Ductile Iron Pipe
## Maximum Deflection Chart

| Pipe Size | 3 | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |
|---|---|---|---|---|---|---|---|---|---|
| Degrees | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Inches per 18' lgth. | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |

| Pipe Size | 20 | 24 | 30 | 36 | 42 | 48 | 54 | 60 | 64 |
|---|---|---|---|---|---|---|---|---|---|
| Degrees | 5 | 5 | 5 | 5 | 4 | 4 | 4 | 4 | 4 |
| Inches per 18' lgth. | 19 | 19 | 19 | 19 | 15 | 17* | 17* | 17* | 17* |

* denotes inches per 20' length

# TYTON JOINT® Ductile Iron Pipe
## Field Cut Pipe Tolerances

| Size | Min Diameter | Max Diameter | Min Circum. | Max Circum. | Size | Min Diameter | Max Diameter | Min Circum. | Max Circum. |
|---|---|---|---|---|---|---|---|---|---|
| 4 | 4.74 | 4.86 | 14-7/8 | 15-9/32 | 24 | 25.72 | 25.85 | 80-25/32 | 81-7/32 |
| 6 | 6.84 | 6.96 | 21-1/2 | 21-7/8 | 30 | 31.94 | 32.08 | 100-11/32 | 100-25/32 |
| 8 | 8.99 | 9.11 | 28-1/4 | 28-5/8 | 36 | 38.24 | 38.38 | 120-1/8 | 120-9/16 |
| 10 | 11.04 | 11.16 | 34-11/16 | 35-1/16 | 42 | 44.44 | 44.58 | 139-5/8 | 140-1/16 |
| 12 | 13.14 | 13.26 | 41-9/32 | 41-21/32 | 48 | 50.74 | 50.88 | 159-3/8 | 159-27/32 |
| 14 | 15.22 | 15.35 | 47-13/16 | 48-7/32 | 54 | 57.46 | 57.60 | 180-1/2 | 180-15/16 |
| 16 | 17.32 | 17.45 | 54-13/32 | 54-13/16 | 60 | 61.51 | 61.65 | 193-1/4 | 193-11/16 |
| 18 | 19.42 | 19.55 | 61 | 61-13/32 | 64 | 65.57 | 65.71 | 206 | 206-7/16 |
| 20 | 21.52 | 21.65 | 67-19/32 | 68-1/32 | | | | | |

# POLYWRAP CALCULATIONS

| Size | Tube Size | Tube Multiplier | Tape Multiplier | Size | Tube Size | Tube Multiplier | Tape Multiplier |
|---|---|---|---|---|---|---|---|
| 4 | 20" | 1.11 | 0.33 | 24 | 53" | 1.11 | 1.25 |
| 6 | 20" | 1.11 | 0.43 | 30 | 60" | 1.11 | 1.50 |
| 8 | 30" | 1.11 | 0.52 | 36 | | 1.11 | 1.75 |
| 10 | 30" | 1.11 | 0.62 | 42 | | 1.11 | 1.90 |
| 12 | 30" | 1.11 | 0.70 | 48 | | 1.11 | 2.10 |
| 14 | 33" | 1.11 | 0.80 | 54 | | 1.11 | 2.70 |
| 16 | 37" | 1.11 | 0.87 | 60 | | 1.11 | 3.10 |
| 18 | 41" | 1.11 | 0.98 | 64 | | 1.11 | 3.50 |
| 20 | 45" | 1.11 | 1.07 | | | | |

To calculate the linear feet of Polwrap needed,  multiply the pipe footage by the Tube Multiplier
To calculate the linear feet of Tape needed,  multiply the pipe footage by the Tape Multiplier

Polywrap is ordered, shipped, and billed by the Roll.   Roll lengths may vary depending on the
size and specification of polywrap required.   Please see the pricelist pages for common polywrap
roll lengths.   Determine the number of rolls required by dividing the polywrap footage required by the
roll length shown.  Round up to the nearest full roll.

Example:   Calculate the number of polywrap rolls and tape needed for 13,455' - 16" DIP.

13,455' x 1.11 = 14,935'      14,935' / 500' Roll length = 29.87 rounded up to 30 ROLLS polywrap needed.

13,455' x 0.87 = 11,706'      11,706'/100' Roll length = 117 rounded up to 118 ROLLS tape needed

Note:  The Roll length of polywrap will depend on the polywrap specification and plant purchased from.
Please refer to the Accessories Pricesheets or contact Customer Service to verify actual roll length.

## Equation of Pipe

|    | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 24 |
|----|------|------|------|------|------|------|------|------|------|------|
| 4  | 1.0 | | | | | | | | | |
| 6  | 2.9 | 1.0 | | | | | | | | |
| 8  | 6.3 | 2.1 | 1.0 | | | | | | | |
| 10 | 11.3 | 3.9 | 1.8 | 1.0 | | | | | | |
| 12 | 18.4 | 6.3 | 2.9 | 1.6 | 1.0 | | | | | |
| 14 | 27.7 | 9.4 | 4.4 | 2.4 | 1.5 | 1.0 | | | | |
| 16 | 39.4 | 13.5 | 6.3 | 3.5 | 2.1 | 1.4 | 1.0 | | | |
| 18 | 53.8 | 18.4 | 8.6 | 4.7 | 2.9 | 1.9 | 1.4 | 1.0 | | |
| 20 | 71.2 | 24.3 | 11.3 | 6.3 | 3.9 | 2.6 | 1.8 | 1.3 | 1.0 | |
| 24 | 115.4 | 39.4 | 18.4 | 10.2 | 6.3 | 4.2 | 2.9 | 2.1 | 1.6 | 1.0 |
| 30 | 208.4 | 71.2 | 33.2 | 18.4 | 11.3 | 7.5 | 5.3 | 3.9 | 2.9 | 1.8 |
| 36 | 337.9 | 115.4 | 53.8 | 29.8 | 18.4 | 12.2 | 8.6 | 6.3 | 4.7 | 2.9 |
| 42 | 508.3 | 173.6 | 81.0 | 44.8 | 27.7 | 18.4 | 12.9 | 9.4 | 7.1 | 4.4 |
| 48 | 724.2 | 247.3 | 115.4 | 63.9 | 39.4 | 26.2 | 18.4 | 13.5 | 10.2 | 6.3 |
| 54 | 989.4 | 337.9 | 157.6 | 87.3 | 53.8 | 35.8 | 25.1 | 18.4 | 13.9 | 8.6 |
| 60 | 1308.1 | 446.7 | 208.4 | 115.4 | 71.2 | 47.3 | 33.2 | 24.3 | 18.4 | 11.3 |
| 64 | 1552.1 | 530.0 | 247.3 | 136.9 | 84.4 | 56.1 | 39.4 | 28.8 | 21.8 | 13.5 |

The above chart will show how many smaller diameter pipe would be required to equal the capacity of a single larger diameter pipe. This table is calculated on the basis of the diameter ratio to the 2.65 power to compensate for velocity differences between the larger and smaller diameters at equal head. To read the chart: the intersection of a row and a column is the number of pipe in the column's size that it takes to equal the capacity of a single pipe in the row's size.

## Contents of Pipe

| Dia. Inches | Pipe Class | Outside Diameter | Wall Thickness | US Gallons Per Linear Foot | Dia. Inches | Pipe Class | Outside Diameter | Wall Thickness | US Gallons Per Linear Foot |
|------|------|------|------|------|------|------|------|------|------|
| 0.25 | n/a | n/a | n/a | 0.003 | 12 | 350 | 13.20 | 0.28 | 6.52 |
| 0.5 | n/a | n/a | n/a | 0.010 | 14 | 350 | 15.30 | 0.31 | 8.79 |
| 0.75 | n/a | n/a | n/a | 0.023 | 16 | 350 | 17.40 | 0.34 | 11.41 |
| 1 | n/a | n/a | n/a | 0.041 | 18 | 250 | 19.50 | 0.31 | 14.54 |
| 1.25 | n/a | n/a | n/a | 0.064 | 20 | 250 | 21.60 | 0.33 | 17.89 |
| 1.5 | n/a | n/a | n/a | 0.092 | 24 | 250 | 25.80 | 0.37 | 25.62 |
| 2 | n/a | n/a | n/a | 0.163 | 30 | 250 | 32.00 | 0.42 | 39.61 |
| 2.5 | n/a | n/a | n/a | 0.255 | 36 | 200 | 38.30 | 0.42 | 57.25 |
| 3 | 51 | 3.96 | 0.25 | 0.49 | 42 | 200 | 44.50 | 0.47 | 77.42 |
| 4 | 350 | 4.80 | 0.25 | 0.75 | 48 | 200 | 50.80 | 0.52 | 101.02 |
| 6 | 350 | 6.90 | 0.25 | 1.67 | 54 | 200 | 57.56 | 0.58 | 129.78 |
| 8 | 350 | 9.05 | 0.25 | 2.98 | 60 | 150 | 61.61 | 0.54 | 149.49 |
| 10 | 350 | 11.10 | 0.26 | 4.57 | 64 | 150 | 65.67 | 0.56 | 170.00 |

.25-2.5" figures are based on nominal diameters of pipe, not actual inside diameters.
3-64" figures are based on the actual inside diameter of the referenced class of Ductile Iron Pipe
    exclusive of any linings