

EMPIRE T O O L

Drill Pipe Specs
Size & Weight: 4-1/2" 16.60
 Grade: G-105
 Range: III
 Connection: CET43

Tube

	New		Premium	
	OD	4.500 in	114.30 mm	4.365 in
Wall thickness	0.337 in	8.56 mm	0.270 in	6.86 mm
ID	3.826 in	97.18 mm	3.826 in	97.18 mm
Torsional strength	43,130 ft-lbs	58,510 N-m	33,790 ft-lbs	45,840 N-m
80% Torsional strength	34,500 ft-lbs	46,810 N-m	27,030 ft-lbs	36,670 N-m
Tensile strength	462,780 lbs	206,400 daN	364,230 lbs	162,400 daN
Internal Pressure capacity	13,760 psi	94,870 kPa	12,580 psi	86,740 kPa
Collapse capacity	13,820 psi	95,290 kPa	9,470 psi	65,290 kPa
Cross sectional area body	4.407 in ²	2,843 mm ²	3.469 in ²	2,238 mm ²
Cross sectional area OD	15.904 in ²	10,261 mm ²	14.966 in ²	9,655 mm ²
Cross sectional area ID	11.497 in ²	7,417 mm ²	11.497 in ²	7,417 mm ²
Section modulus	4.271 in ³	69,989 mm ³	3.347 in ³	54,848 mm ³
Polar section modulus	8.543 in ³	139,995 mm ³	6.694 in ³	109,695 mm ³

Tool Joint

	New	
	Yield Strength	120,000 psi
OD	5.250 in	133.35 mm
ID	3.000 in	76.20 mm
Pin length	9.0 in	228.60 mm
Box length	12.0 in	304.80 mm
Torsional Strength	40,300 ft-lbs	54,700 N-m
Recommended Make-up Torque	26,200 ft-lbs	35,500 N-m
Min Make-up Torque	23,500 ft-lbs	31,900 N-m
Tensile strength	629,200 lbs	280,600 daN

Drill Pipe Assembly with Connection

Adjusted weight	16.93 lbs/ft	25.19 kg/m
Approximate length	43.00 ft	13.11 m
Fluid displacement	0.263 gal/ft	0.003265 m ³ /m
Fluid capacity	0.584 gal/ft	0.007258 m ³ /m
Drift size	2.875 in	73.03 mm

Drill Pipe Bend Radius

Based on Bending Stress at Pipe OD	12,000 psi	82,737 kPa
Radius of Curvature (R @ OD of Pipe)	468.80 ft	142.89 m
BUR (Dogleg)	12.200 deg/100ft	12.008 deg/30m

While every effort has been made to insure the accuracy of the tables herein, this material is presented as a reference guide only. Empire Tool Company Ltd. cannot assume responsibility for the results obtained through the use of this material. No expressed or implied warranty is intended. All torques are based on a 1.0 friction factor.

Suite 2400, 333 7th Ave SW, Calgary AB T2P 2Z1

www.empiretool.ca

(877) 259-6589