

DRILL PIPE DATA SHEET
DRILL PIPE: 5" IEU by 19.50 lb/ft by Grade S135 by Range 2 (31.5 ft)
TOOL JOINT: 6 1/2" OD by 3 3/4" ID by PTech52+ (135 ksi SMYS)

DRILL PIPE BODY DIMENSIONAL DATA		
	NEW	PREMIUM (80% RBW)
OD (in)	5.000	4.855
ID, Ref (in)	4.276	4.276
Wall Thickness (in)	0.362	0.290
Cross Sectional Area (in ²)	5.275	4.154
Polar Section Modulus, J/C (in ³)	11.415	8.953
Section Modulus, I/C (in ³)	5.708	4.476

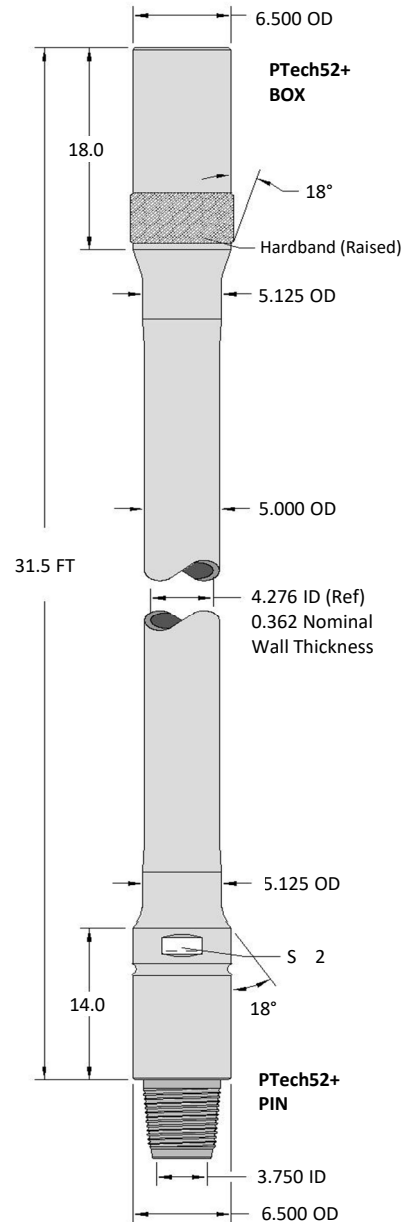
Premium class values based on a minimum wall thickness equal to 80% of New drill pipe body nominal wall thickness, reference API RP 7G-2.

DRILL PIPE BODY PERFORMANCE PROPERTIES		
	NEW	PREMIUM (80% RBW)
Tensile Yield (lb)	712,070	560,764
Torsional Yield (ft-lb)	74,100	58,114
Collapse Pressure (psi)	15,672	10,029
Internal Yield Pressure (psi)	17,105	15,638
Material Yield Strength (psi)	135,000	

Drill pipe body performance properties are based on API RP 7G. Class New drill pipe body data is for reference only and is not intended for drill string design purposes.

TOOL JOINT DATA (New)		
Connection Size	PTech52+	
OD (in)	6.500	
ID (in)	3.750	
Box Tool Joint OD Length (in)	18.0	
Pin Tool Joint OD Length (in)	14.0	
Material Yield Strength (psi)	135,000	
Thread Compound Friction Factor	1.0 (a)	1.15 (b)
Recommended Make-Up Torque (ft-lb)	54,600	62,800 (c)
Max Make-Up Torque (ft-lb)	63,600	73,100 (d)
Torsional Yield (ft-lb)	91,000	
Approximate Tension to Yield Pin at Recommended Make-Up Torque (lb)	835,000	
Tool Joint Tensile Yield (lb)	1,234,100	
Balanced OD (in)	6.429	

- (a) Make-Up Torque values shown under column 1.0 are based on using a 1.0 friction factor thread compound (0.08 coefficient of friction).
- (b) Make-Up Torque values shown under column 1.15 have been adjusted based on using a 1.15 friction factor thread compound. The make-up torque values are only applicable when using a thread compound rated by the manufacturer to have a 1.15 friction factor.
- (c) Recommended Make-Up Torque is based on 60% of the connection torsional yield, ref. API RP 7G.
- (d) Max Make-Up Torque is based on 70% of the connection torsional yield. It is the maximum make-up torque that can be applied to the connection to prevent downhole make-up, reference IADC Drilling Manual. Never exceed Max Make-Up Torque.



ASSEMBLY DATA (New)							
Weight (Approx.)		Capacity (Approx.)		Displacement Open Ends (Approx.)		Drift Diameter	Assembly Length Shld'r to Shld'r (Approx.)
(lb/Joint)	(lb/ft)	(US gallon/ft)	(BBL/ft)	(US gallon/ft)	(BBL/ft)	(in)	(ft)
780	24.76	0.7069	0.0168	0.3783	0.0090	3.625	31.5

Assembly data based on TSC 95% RBW New drill pipe nominal dimensions and no internal plastic coating. Conversion Factor: 1 BBL= 42 US gallons

Notes:

1. All data is calculated based on standard methods. No safety factor applied.
2. Premium Class drill pipe body data is based on a minimum wall thickness equal to 80% of New drill pipe nominal wall thickness, reference API RP 7G-2.
3. Drawing is for reference purposes only, not to scale, and based on New drill pipe nominal dimensions, units of inches unless otherwise indicated.
4. Pin tool joint has 18° tapered shoulder.

The technical information contained herein is for reference purposes only. TSC Drill Pipe does not assume responsibility for results obtained through the use of the technical information, no warranty is expressed or implied. User is fully responsible for the accuracy and suitability of use of the technical information and application of appropriate safety factor.

Tool Joint Make-Up Torque PTech52+ x 3.750" ID (135 ksi SMYS) 1.0 Friction Factor Thread Compound			
Tool Joint OD (in)	Recommended Make-Up Torque (1) (2) (ft-lb)	Max Make-Up Torque (1) (3) (ft-lb)	Torsional Yield Ref. (ft-lb)
6.500	54,600	63,600	91,000
6.375	52,600	61,300	87,600
6.250	48,000	55,900	80,000
6.125	43,500	50,700	72,500
6.094	42,400	49,500	70,700

Tool Joint Make-Up Torque PTech52+ x 3.750" ID (135 ksi SMYS) 1.15 Friction Factor Thread Compound		
Tool Joint OD (in)	Recommended Make-Up Torque (4) (2) (ft-lb)	Max Make-Up Torque (4) (3) (ft-lb)
6.500	62,800	73,100
6.375	60,400	70,400
6.250	55,200	64,200
6.125	50,100	58,300
6.094	48,800	56,900

Estimated Elevator Hoist Capacity (lb)		
Tool Joint OD (in)	5.250" Dia. Assumed Elev. Bore	5.281" Dia. Assumed Elev. Bore
6.500	1,268,900	1,240,400
6.094	827,100	798,700

Combined Torque and Tension to Yield Drill Pipe Body Premium Class (80% RBW) 5" IEU x 19.50 lb/ft x Grade S135	
Operational Torque (ft-lb)	Drill Pipe Body Max Tension (lb)
0	560,764
2,000	560,400
4,000	559,400
6,000	557,700
8,000	555,400
10,000	552,300
12,000	548,600
14,000	544,200
16,000	539,000
18,000	533,100
20,000	526,500
22,000	519,000
24,000	510,700
26,000	501,500
28,000	491,300
30,000	480,200
32,000	468,000
34,000	454,700
36,000	440,200
38,000	424,200
40,000	406,700
42,000	387,500
44,000	366,300
46,000	342,600

(5)

Caution: Operational (rotating) torque should never exceed 80% of the connection make-up torque, reference IADC Drilling Manual.

(6)

Notes:

- (1) Make-Up Torque values are based on 1.0 friction factor thread compound (0.08 coefficient of friction).
- (2) Recommended Make-Up Torque is based on 60% of the connection torsional yield, ref. API RP 7G.
- (3) Max Make-Up Torque is based on 70% of the connection torsional yield. It is the maximum make-up torque that can be applied to the connection to prevent downhole make-up, reference IADC Drilling Manual. Never exceed Max Make-Up Torque.
- (4) Make-Up Torque values have been adjusted based on using a 1.15 friction factor thread compound. The make-up torque values are only applicable when using a thread compound rated by the manufacturer to have a 1.15 friction factor.
- (5) Premium class drill pipe body based on 80% remaining pipe body wall and other requirements specified in API RP 7G-2. Drill pipe body combined torque and tension based on API RP 7G, no safety factor applied.
- (6) Estimated elevator hoist capacity is for reference only and based on tool joint projected taper area, 110,000 psi SMYS and no safety factor. User is advised to contact their elevator manufacturer for elevator hoist capacity versus tool joint OD.