

**DRILL PIPE DATA SHEET**  
**DRILL PIPE: 5 1/2" IEU by 21.90 lb/ft by Grade S135 by Range 2 (31.5 ft)**  
**TOOL JOINT: 6 5/8" OD by 4" ID by TSC54 (135 ksi SMYS)**

DRILL PIPE BODY DIMENSIONAL DATA		
	NEW	PREMIUM (80% RBW)
OD (in)	5.500	5.356
ID, Ref (in)	4.778	4.778
Wall Thickness (in)	0.361	0.289
Cross Sectional Area (in <sup>2</sup> )	5.828	4.597
Polar Section Modulus, J/C (in <sup>3</sup> )	14.062	11.054
Section Modulus, I/C (in <sup>3</sup> )	7.031	5.527

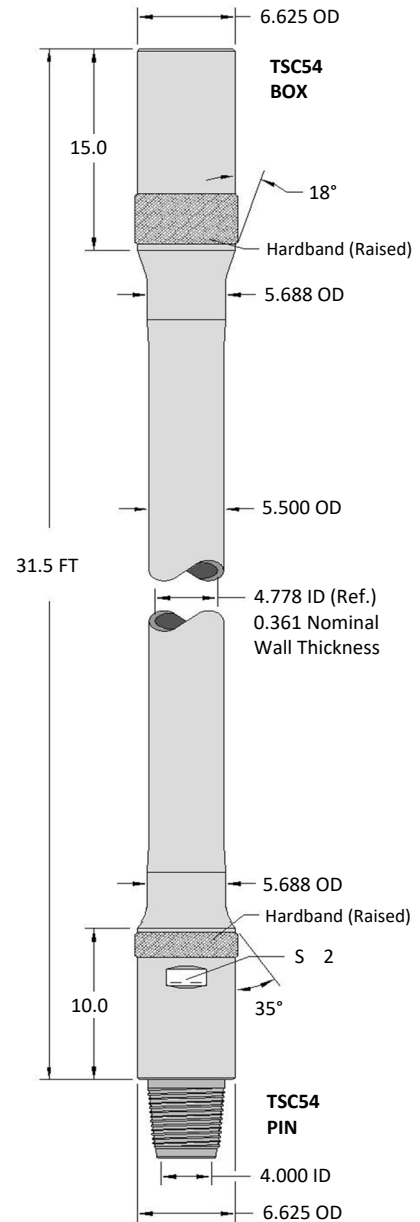
Premium Class values based on a minimum wall thickness equal to 80% of New drill pipe nominal wall thickness, ref. API RP 7G-2.

DRILL PIPE BODY PERFORMANCE PROPERTIES		
	NEW	PREMIUM (80% RBW)
Tensile Yield (lb)	786,809	620,604
Torsional Yield (ft-lb)	91,278	71,754
Collapse Pressure (psi)	12,679	7,496
Internal Yield Pressure (psi)	15,507	14,177
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	TSC54	
OD (in)	6.625	
ID (in)	4.000	
Box Tool Joint OD Length (in)	15.0	
Pin Tool Joint OD Length (in)	10.0	
Material Yield Strength (psi)	135,000	
<b>Thread Compound Friction Factor</b>	<b>1.0 (a)</b>	<b>1.15 (b)</b>
Recommended Make-Up Torque (ft-lb)	56,200	64,600 (c)
Max Make-Up Torque (ft-lb)	65,500	75,300 (d)
Torsional Yield (ft-lb)	93,600	
Approximate Tension to Yield Pin at Recommended Make-Up Torque (lb)	925,700	
Tool Joint Tensile Yield (lb)	1,290,600	
Balanced OD (in)	6.681	
Torsional Strength Ratio, TJ/DP	1.03	

- (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.



DRILL PIPE ASSEMBLY DATA (New)							
Weight (Approx.)		Capacity (Approx.)		Displacement Open Ends (Approx.)		Drift Diameter	Length Shld'r to Shld'r (Approx.)
(lb/Joint)	(lb/ft)	(US gallon/ft)	(BBL/ft)	(US gallon/ft)	(BBL/ft)	(in)	(ft)
810	25.73	0.8822	0.0210	0.3931	0.0094	3.875	31.5

Assembly data based on New TSC 95% RBW 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 data is based on a minimum wall thickness equal to 80% of New drill pipe nominal wall thickness, ref. 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.

Tool Joint Make-Up Torque TSC54 x 4.000" ID (135 ksi SMYS) 1.0 Friction Factor Thread Compound			
Tool Joint OD (in)	Recommended	Max	Torsional Yield Ref. (ft-lb)
	Make-up Torque (1) (2) (ft-lb)	Make-Up Torque (1) (3) (ft-lb)	
6.625	56,200	65,500	93,600
6.500	51,300	59,800	85,600
6.375	46,600	54,400	77,700
6.313	44,400	51,700	74,000

(1)

Combined Torque and Tension to Yield Drill-Pipe Body Premium Class (80% RBW) 5 1/2" IEU x 21.90 lb/ft x S135	
Operational Torque (ft-lb)	Drill-Pipe Body Max Tension (lb)
0	620,604
2,000	620,300
4,000	619,600
6,000	618,400
8,000	616,700
10,000	614,500
12,000	611,800
14,000	608,600
16,000	604,900
18,000	600,700
20,000	596,000
22,000	590,700
24,000	584,800
26,000	578,400
28,000	571,400
30,000	563,700
32,000	555,400
34,000	546,500
36,000	536,800
38,000	526,400
40,000	515,200
42,000	503,100
44,000	490,200
46,000	476,200
48,000	461,200
50,000	445,100

(5)

Tool Joint Make-Up Torque TSC54 x 4.000" ID (135 ksi SMYS) 1.15 Friction Factor Thread Compound		
Tool Joint OD (in)	Recommended	Max
	Make-up Torque (4) (2) (ft-lb)	Make-Up Torque (4) (3) (ft-lb)
6.625	64,600	75,300
6.500	59,000	68,800
6.375	53,600	62,500
6.313	51,000	59,500

(4)

Estimated Elevator Hoist Capacity (lb)		
Tool Joint OD (in)	5.813" Dia. Assumed Elev. Bore	5.844" Dia. Assumed Elev. Bore
6.625	873,000	841,500
6.500	731,300	699,800
6.375	592,200	560,800
6.313	524,300	492,800

(6)

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\* Estimated elevator hoist capacity is less than Premium Class drill-pipe body tensile yield capacity.

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.