

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: 7" OD by 4 1/4" ID by TSC57 (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 ²)	5.828	4.597
Polar Section Modulus, J/C (in ³)	14.062	11.054
Section Modulus, I/C (in ³)	7.031	5.527

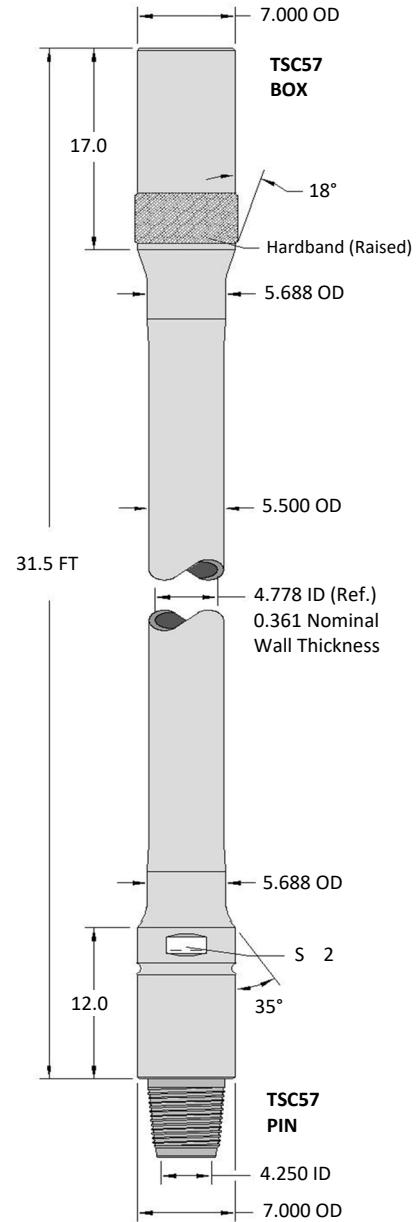
Premium Class values based on a minimum wall thickness equal to 80% of New drill pipe nominal wall thickness, ref. API RP 7G-2.

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	TSC57	
OD (in)	7.000	
ID (in)	4.250	
Box Tool Joint OD Length (in)	17.0	
Pin Tool Joint OD Length (in)	12.0	
Material Yield Strength (psi)	135,000	
Thread Compound Friction Factor	1.0 (a)	1.15 (b)
Recommended Make-Up Torque (ft-lb)	63,600	73,100 (c)
Max Make-Up Torque (ft-lb)	74,100	85,300 (d)
Torsional Yield (ft-lb)	106,000	
Approximate Tension to Yield Pin at Recommended Make-Up Torque (lb)	996,300	
Tool Joint Tensile Yield (lb)	1,350,600	
Balanced OD (in)	6.930	
Torsional Strength Ratio, TJ/DP	1.16	

- (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)
844	26.80	0.8892	0.0212	0.4094	0.0097	4.125	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 TSC57 x 4.250" 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)	
7.000	63,600	74,100	106,000
6.875	61,300	71,400	102,100
6.750	56,100	65,400	93,500
6.625	51,000	59,500	85,000
6.563	48,600	56,600	80,900

(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
52,000	427,600
54,000	408,600
56,000	388,000
58,000	365,300

(5)

Tool Joint Make-Up Torque TSC57 x 4.250" 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)
7.000	73,100	85,300
6.875	70,500	82,100
6.750	64,500	75,200
6.625	58,700	68,400
6.563	55,800	65,100

(4)

Estimated Elevator Hoist Capacity (lb)		
Tool Joint OD (in)	5.813" Dia. Assumed Elev. Bore	5.844" Dia. Assumed Elev. Bore
7.000	1,314,400	1,282,900
6.563	802,400	770,900

(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.