

**DRILL PIPE DATA SHEET**  
**DRILL PIPE: 2-7/8" EU by 10.40 lb/ft by Grade S by Range 2 (31.5 ft)**  
**TOOL JOINT: 3- 7/8 " OD by 2- 5/32" ID by 2-7/8 AOH (120 ksi SMYS)**

DRILL PIPE BODY DIMENSIONAL DATA			
	NEW	PREMIUM (80% RBW)	Class 2 (70% RBW)
OD (in)	2.875	2.730	2.658
ID, Ref (in)	2.151	2.151	2.151
Wall Thickness (in)	0.362	0.290	0.253
Cross Sectional Area (in <sup>2</sup> )	2.858	2.220	1.914
Polar Section Modulus, J/c (in <sup>3</sup> )	3.204	2.456	2.105
Section Modulus, I/c (in <sup>3</sup> )	1.602	1.228	1.052

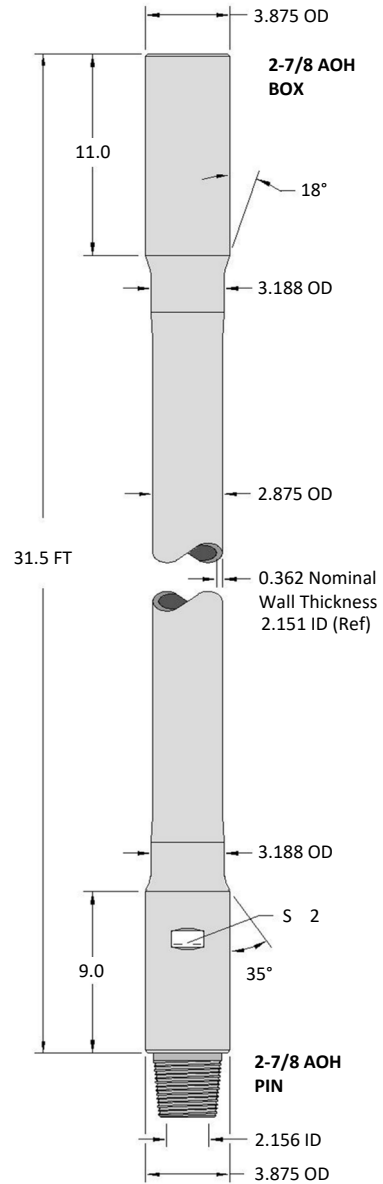
Drill pipe body dimensional data is based on API RP 7G.

DRILL PIPE BODY PERFORMANCE PROPERTIES			
	NEW	PREMIUM (80% RBW)	Class 2 (70% RBW)
Tensile Yield (lb)	385,820	299,764	258,403
Torsional Yield (ft-lb)	20,798	15,945	13,663
Collapse Pressure (psi)	29,716	25,602	23,288
Internal Yield Pressure (psi)	29,747	27,197	23,798
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	2-7/8 AOH	
OD (in)	3.875	
ID (in)	2.156	
Box Tool Joint OD Length (in)	11.0	
Pin Tool Joint OD Length (in)	9.0	
Connection Bevel Diameter (in)	3.609	
Material Yield Strength (psi)	120,000	
<b>Thread Compound Friction Factor</b>	<b>1.0</b>	<b>1.15 (a)</b>
Minimum Make-Up Torque (ft-lb)	4,330	4,980 (b)
Recommended Make-Up Torque (ft-lb)	5,190	5,970 (c)
Max Make-Up Torque (ft-lb)	6,050	6,960 (d)
Approx. Tension to Yield Pin at Recommended Make-Up Torque (lb)	329,000 (e)	
Approx. Tension to Yield Pin at Max Make-Up Torque (lb)	247,000 (f)	
Torsional Yield (ft-lb)	8,656	
Tool Joint Tensile Yield (lb)	337,000	
Balanced OD (in)	3.666	

- (a) 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.
  - (b) Minimum Make-Up Torque is based on 50% of the connection torsional yield.
  - (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.
  - (e) Pin tensile yield capacity is less than New drill pipe body tensile yield capacity.
  - (f) Pin tensile yield capacity is less than Class 2 (70% RBW) drill pipe body tensile yield capacity.
- \* Minimum Make-Up Torque is based on user specified requirement.



DRILL-PIPE 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 gal/ft)	(BBL/ft)	(US gal/ft)	(BBL/ft)	(in)	(ft)
341	10.83	0.1892	0.0045	0.1656	0.0039	2.031	31.5

Assembly data based on New API drill pipe nominal dimensions and no internal plastic coating. Conversion Factor: 1 BBL = 42 US Gallons  
 \* Drift diameter is non-standard TSC Drill Pipe and is based on user specified requirement.

- Notes:
1. All data is calculated based on standard methods. No safety factor applied.
  2. Drawing is for illustration purposes only, not to scale, and based on New drill pipe nominal dimensions, units of inches unless otherwise indicated.
  3. Specified tool joint OD is smaller than the API SDP tool joint size for 2-7/8 EU drill pipe. User is advised to contact their elevator manufacturer for elevator hoist capacity rating versus tool joint OD.

Tool Joint Make-Up Torque 2-7/8 AOH x 2.156" ID (120 ksi SMYS) 1.0 Friction Factor Thread Compound (1)				
Tool Joint OD (in)	Minimum Make-Up Torque (1) (2) (ft-lb)	Recommended Make-Up Torque (1) (3) (ft-lb)	Max Make-Up Torque (1) (4) (ft-lb)	Torsional Yield (ft-lb)
3.875	4,330	5,190	6,050	8,656
3.688	4,330	5,190	6,050	8,656

Tool Joint Make-Up Torque 2-7/8 AOH x 2.156" ID (120 ksi SMYS) 1.15 Friction Factor Thread Compound (5)			
Tool Joint OD (in)	Minimum Make-Up Torque (5) (2) (ft-lb)	Recommended Make-Up Torque (5) (3) (ft-lb)	Max Make-Up Torque (5) (4) (ft-lb)
3.875	4,980	5,970	6,960
3.688	4,980	5,970	6,960

Estimated Elevator Hoist Capacity (lb) (7)		
Tool Joint OD (in)	3.281" Dia Assumed Elev. Bore (lb)	3.313" Dia Assumed Elev. Bore (lb)
3.875	367,000	349,200
3.688	244,500	226,700

\* Estimated elevator hoist capacity is less than Class 2 (70% RBW) drill pipe body tensile yield capacity.

Combined Torque and Tension to Yield Drill Pipe Body 2-7/8" EU x 10.40 lb/ft x Grade S Premium Class (80% RBW) and Class 2 (70% RBW) (6)		
Operational Torque (ft-lb)	Drill Pipe Body Max Tension Premium Class 80% RBW (lb)	Drill Pipe Body Max Tension Class 2 70% RBW (lb)
0	299,764	258,403
250	299,700	258,300
500	299,600	258,200
750	299,400	258,000
1,000	299,100	257,700
1,250	298,800	257,300
1,500	298,400	256,800
1,750	297,900	256,200
2,000	297,300	255,600
2,250	296,700	254,800
2,500	296,000	254,000
2,750	295,200	253,100
3,000	294,400	252,000
3,250	293,400	250,900
3,500	292,400	249,700
3,750	291,300	248,400
4,000	290,100	247,000
4,250	288,900	245,500
4,500	287,500	243,900
4,750	286,100	242,200

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

Notes:

- (1) Make-Up torque values are based on using a 1.0 friction factor thread compound (0.08 coefficient of friction).
- (2) Minimum Make-Up Torque, per user specified requirement, is based on 50% of the connection torsional yield.
- (3) Recommended Make-Up Torque is based 60% of the connection torsional yield, ref API RP 7G.
- (4) Max Make-Up Torque is based 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.
- (5) 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.
- (6) Drill Pipe Body combined torque and tension based on API RP 7G, and no safety factor applied. Premium Class (80% RBW) values are base on uniform OD wear, 2.730" Min. OD and 0.290" Min. Wall. Class 2 (70% RBW) values are base on uniform OD wear, 2.658" Min. OD and 0.253" Min. Wall.
- (7) 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 rating versus tool joint OD.

