

Drill Pipe Performance Sheet

8/19/2016

Grant Prideco | NOV Wellbore Technologies

Pipe Body Specification

Pipe Body OD	in	2.875
Pipe Body Wall Thickness - Nominal Weight		0.362 in - 10.4 lb/ft
Pipe Body Grade		G-105
Drill Pipe Length		Range 2
- Max	ft	32.0
- Min	ft	31.0
Type of Upset		IU
Max Upset OD	in	3.0
Tong Length includes hardbanding if applicable		

Pipe Body Performance

		Nominal	API Premium 80% Inspection Class
Burst Pressure *	psi	23,140	21,200
Collapse Pressure *	psi	23,110	19,910
Slip Crushing Capacity *	lbs	245,000	192,400
- Assumed Slip Length	in	16.5	
- Assumed Transverse Load Factor (K)		4.2	
Adjusted Weight **	lbs/ft	11.09	
Fluid Displacement **	US gal/ft	0.17	
	bbbls/ft	0.004	
Fluid Capacity **	US gal/ft	0.17	
	bbbls/ft	0.0041	
* With no axial load or bending in string ** Best estimate with coating Note: Oil field barrel equivalent to 42 US gal Note: Nominal burst calculated at 87.5% RBW per API			

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Tool Joint Specification

Connection Type and Size		HI-TORQUE™ 2-7/8 PAC
Benchmark		H-Series™
SmoothEdge™ Height per side	in	N/A
Tool Joint SMYS	psi	120,000
Connection OD	in	3.125
Connection ID	in	1.5
Pin Tong Length	in	9.0
Box Tong Length	in	13.0
Thread Compound Friction Factor		1.0

Tool Joint Performance

Max Make-Up Torque (Recommended)	ft-lbs	5,100
Min Make-Up Torque	ft-lbs	4,300
Min TJ OD (API Premium)	in	N/A
Min TJ OD for Counterbore	in	2.946
Drift Size	in	1.375
The maximum make-up torque should be applied when possible. To maintain connection operational torque, a MUT (T _q) = 4,300 should be applied.		

Advisories and Warnings for Drill Pipe

Advisories:

- Connection torsional strength is less than 80% pipe body torsional strength.
- Elevator capacity is less than new tube termite. Consider increasing tool joint OD or adding SmoothEdge Option.
- Tool Joint OD is below Premium Class Tool Joint OD.

Warnings:

- Connection weaker than pipe body in tension.
- Pin connection weak in tension.

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Combined Loading for Drill Pipe

Connection: HI-TORQUE™ 2-7/8 PAC 3.125" x 1.5" (120 KSI SMYS)
Pipe: 2.875" OD 0.362" Wall Thickness G-105 80% Inspection Class

At Max MUT (5100 ft-lbs)		At Min MUT (4300 ft-lbs)	
Operational Torque(ft-lbs)	Assembly Max Tension(lbs)	Operational Torque(ft-lbs)	Assembly Max Tension(lbs)
0	213400	0	233100
200	213400	200	233100
400	213400	400	233000
700	213400	500	233000
900	213400	700	232800
1100	213400	900	232500
1300	213400	1100	232200
1600	213400	1300	231900
1800	213400	1400	231700
2000	213400	1600	231200
2200	213400	1800	230700
2500	213400	2000	230100
2700	213400	2200	229500
2900	213400	2300	229100
3100	213400	2500	228400
3400	213400	2700	227600
3600	213400	2900	226700
3800	213400	3100	225700
4000	213400	3200	225300
4300	213400	3400	224200

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Connection Wear Table

Connection: HI-TORQUE™ 2-7/8 PAC 3.125" x 1.5" (120 KSI SMYS)

Tool Joint OD (in)	Max MUT(ft-lbs)	Min MUT(ft-lbs)
3.125	5100	4300
3.109	5100	4300
3.092	5100	4300
3.076	5100	4300
3.06	5000	4200
3.044	4900	4100
3.027	4800	4000
3.011	4700	3900
2.995	4500	3800
2.979	4400	3700
2.962	4300	3600
2.946	4200	3500

Elevator Capacity

Bore Diameter: 3.09375 Elevator SMYS: 110,100 psi 2.875in. 0.362 in. wall IU G-105 HI-TORQUE™ 2-7/8 PAC

Tool Joint OD (in)	Elevator Hoist Capacity(lbs) No Wear	Elevator Hoist Capacity(lbs) 1/32 In. Wear Factor
2.946	0	0
2.962	0	0
2.979	0	0
2.995	0	0
3.011	0	0
3.027	0	0
3.044	0	0
3.06	0	0
3.076	0	0
3.092	0	0
3.109	8200	1500
3.125	16800	10100