

Drill Pipe Performance Characteristics Sheet



Pipe Size and Weight: 5 19.50 IEU
Pipe Grade: S-135
Range: 2
Tool Joint: 6 5/8 X 3 5/8 PTECH51+

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Revision 2 #####

Pipe Body			
	New-API	New-95%RBW	Premium
OD (in)	5.000	5.000	4.855
Wall Thickness (in)	0.362	0.389	0.290
ID (in)	4.276	4.222	4.276
Calculated Plain End weights (lbs/ft)	17.923	19.154	14.114
Note: Premium properties are calculated based on uniform OD and wall thickness.			
Cross sectional area pipe body (in ²)	5.275	5.637	4.154
Cross sectional area OD (in ²)	19.635	19.635	18.514
Cross sectional area ID (in ²)	14.360	13.998	14.360
Section Modulus (in ³)	5.708	6.035	4.476
Polar Section Modulus (in ³)	11.415	12.070	8.953
	New-API	New-95%RBW	Premium
Torsional Strength (ft-lbs)	74,100	78,300	58,100
Tensile Strength (lbs)	712,100	761,000	560,800
80% Torsional Strength (ft-lbs)	59,300	62,600	46,500
Pressure Capacity (psi)	17,105	18,387	15,638
Collapse Capacity (psi)	18,133	19,379	10,024

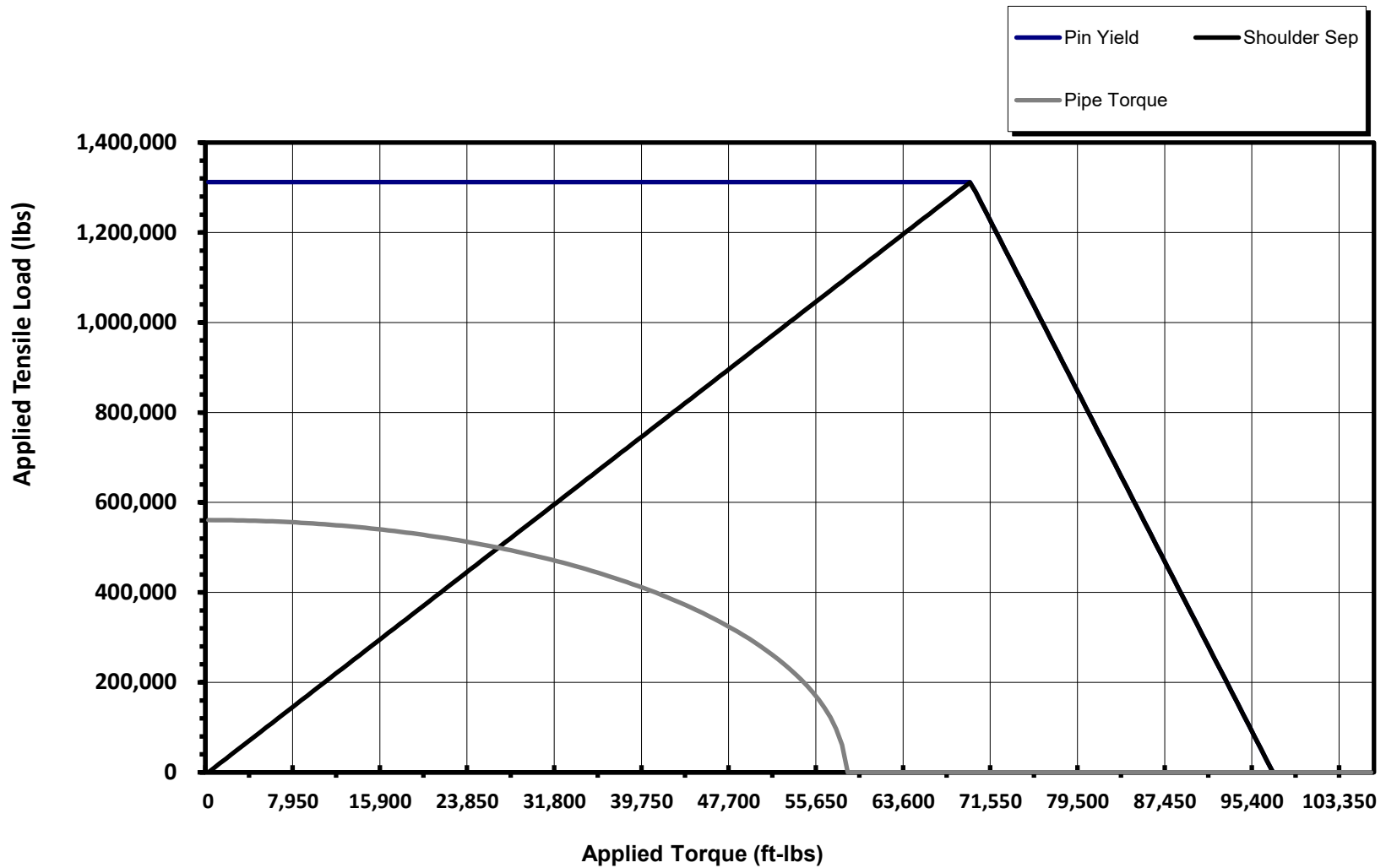
Tool Joint			
PTECH+ CONNECTION		PTECH51+	
	OD (in)	6 5/8	
	ID (in)	3 5/8	
Tool Joint with a Material Yield Strength of 135000 psi			
	Pin Tong length (in)	13	
	Box Tong length (in)	15	
	Friction Factor	1.00	1.15
	Torsional Strength (ft-lbs)	97,000	111,600
	Severe Service Recommended Make-up Torque (ft-lbs) [70%]	67,900	78,100
	Standard Service Recommended Make-up Torque (ft-lbs) [60%]	58,200	66,900
	Min Recommended Make-up Torque (ft-lbs)	45,800	52,700
	Balance OD (in)	6.483	
	Tensile Strength (lbs)	1,320,500	
	Tool joint/Drill pipe torsional ratio (New pipe)	1.31	
	Tool joint/Drill pipe torsional ratio (95% New pipe)	1.24	
	Tool joint/Drill pipe torsional ratio (Prem pipe)	1.67	
	Min OD for premium class (in)	5.656	

Minimum make-up is based on shoulder separation caused by bending.

Drill Pipe Assembly with PTECH51+ Tool Joint		Drill Pipe Bend Radius	
API Adjusted weight (lbs/ft)	23.57	* These calculations are based on new pipe with nominal wall	
95% Adjusted weight (lbs/ft)	24.70	Based on Bending Stress (psi) at Pipe OD	15,000
Approximate length (ft)	31.50	Radius of Curvature (R) (ft.) (@ OD of pipe)	416.7
95% Fluid Displacement (gal/ft)	0.378		
API Fluid Displacement (gal/ft)	0.361		
Fluid Capacity (gal/ft)	0.720	BUR (dogleg) deg/100 ft.	13.8
Drift Size	3.500		

TORQUE TENSION COMBINED LOAD CURVE

For PTECH51+ 6 5/8 X 3 5/8 Tool Joint with a Material Strength of 135000 psi, using a Coefficient of Friction factor of 0.08 and a Safety Factor of 1.0. On Pipe: 5 19.50 S-135 Premium Class.



PTECH51+ 6 5/8 X 3 5/8 TOOL JOINT OD WEAR CURVE

