



Drill Pipe Performance Characteristics Sheet

Pipe Size and Weight: 2 7/8 10.40 EU

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Patents **9,493,993**
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Pipe Grade: S-135
Range: 2
Tool Joint: 3 5/8 X 2 PTECH28+

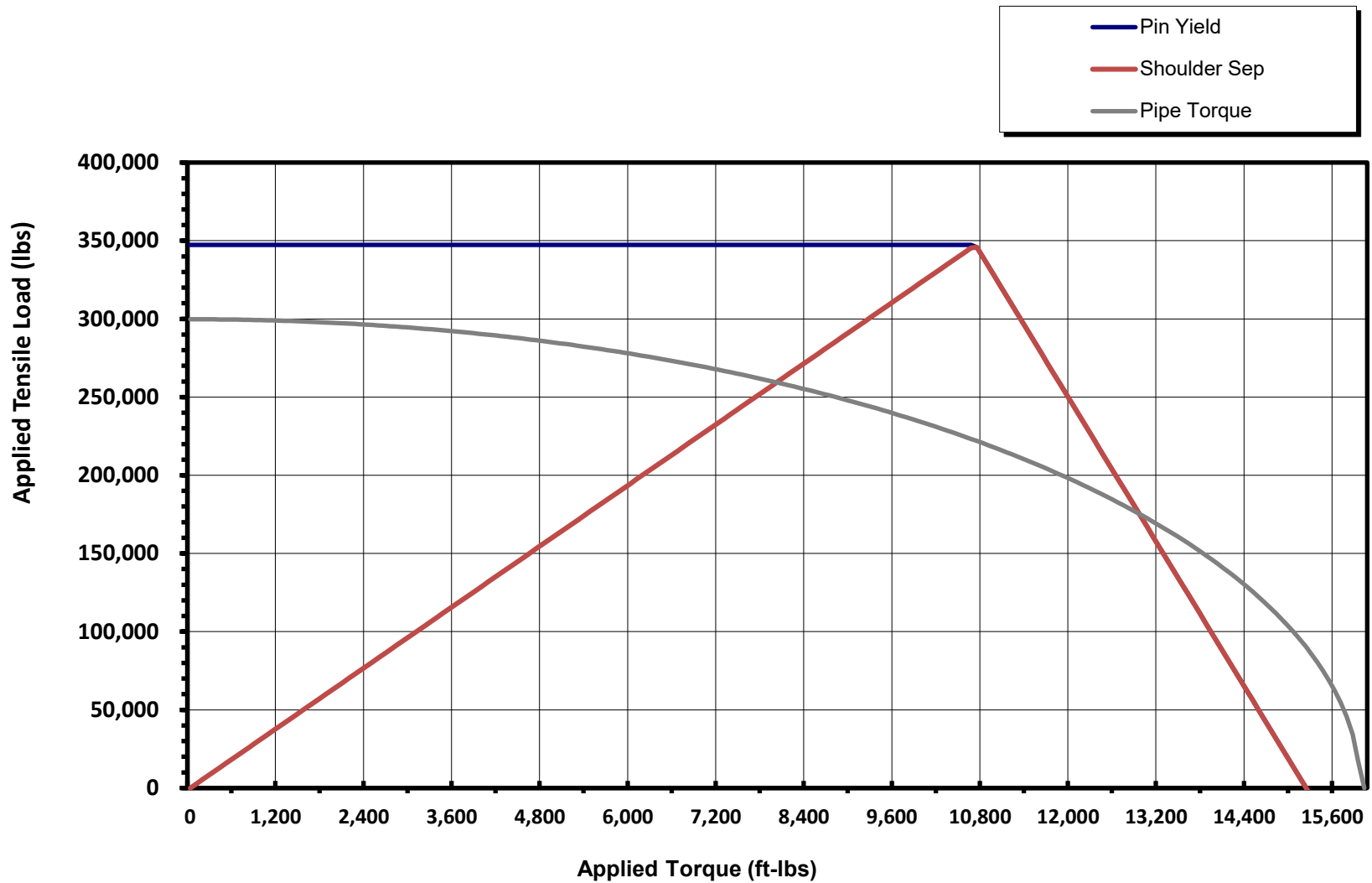
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Pipe Body			
	New-API	New-95%RBW	Premium
OD (in)	2.875	2.875	2.730
Wall Thickness (in)	0.362	0.389	0.290
ID (in)	2.151	2.097	2.151
Calculated Plain End weights (lbs/ft)	9.711	10.327	7.545
Note: Premium properties are calculated based on uniform OD and wall thickness.			
Cross sectional area pipe body (in ²)	2.858	3.039	2.220
Cross sectional area OD (in ²)	6.492	6.492	5.854
Cross sectional area ID (in ²)	3.634	3.453	3.634
Section Modulus (in ³)	1.602	1.673	1.228
Polar Section Modulus (in ³)	3.204	3.346	2.456
	New-API	New-95%RBW	Premium
Torsional Strength (ft-lbs)	20,800	21,700	15,900
Tensile Strength (lbs)	385,800	410,300	299,800
80% Torsional Strength (ft-lbs)	16,600	17,400	12,700
Pressure Capacity (psi)	29,747	31,978	27,197
Collapse Capacity (psi)	29,716	31,599	25,602
Tool Joint			
PTECH+ CONNECTION		PTECH28+	
	OD (in)	3 5/8	
	ID (in)	2	
Tool Joint with a Material Yield Strength of 135000 psi			
	Pin Tong length (in)	12	
	Box Tong length (in)	14 1/2	
	Friction Factor	1.0	1.15
	Torsional Strength (ft-lbs)	15,210	17,500
	Severe Service Recommended Make-up Torque (ft-lbs) [70%]	10,600	12,200
	Standard Service Recommended Make-up Torque (ft-lbs) [60%]	9,100	10,500
	Min Recommended Make-up Torque (ft-lbs)	8,200	9,400
	Balance OD (in)	3.602	
	Tensile Strength (lbs)	352,600	
	Tool joint/Drill pipe torsional ratio (New pipe)	0.73	
	Tool joint/Drill pipe torsional ratio (95% New pipe)	0.70	
	Tool joint/Drill pipe torsional ratio (Prem pipe)	0.96	
	Min OD for premium class (in)	3.484	
Drill Pipe Assembly with PTECH+ Tool Joint		Drill Pipe Bend Radius	
API Adjusted weight (lbs/ft)	11.07	* These calculations are based on new pipe with nominal wall	
95% Adjusted weight (lbs/ft)	11.64	Based on Bending Stress (psi) at Pipe OD	15,000
Approximate length (ft)	32.00	Radius of Curvature (R) (ft.) (@ OD of pipe)	239.6
95% Fluid Displacement (gal/ft)	0.178	BUR (dogleg) deg/100 ft.	23.9
API Fluid Displacement (gal/ft)	0.169		
Fluid Capacity (gal/ft)	0.182		
Drift Size	1.875		

This Performance Sheet was generated by Nels Wickander.

TORQUE TENSION COMBINED LOAD CURVE

For PTECH28+ 3 5/8 X 2 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: 2.875 10.40 S-135 Premium Class.



PTECH28+ 3 5/8 X 2 TOOL JOINT OD WEAR CURVE

