

## Drill Pipe Performance Characteristics Sheet

**PTECH Drilling Tubulars, LLC**

**Pipe Size and Weight:** 2 7/8 9.35 EU

**Pipe Grade:** S-135

**Range:** 2

**Tool Joint:** 3 17/32 X 2 1/8 PTECH28B+

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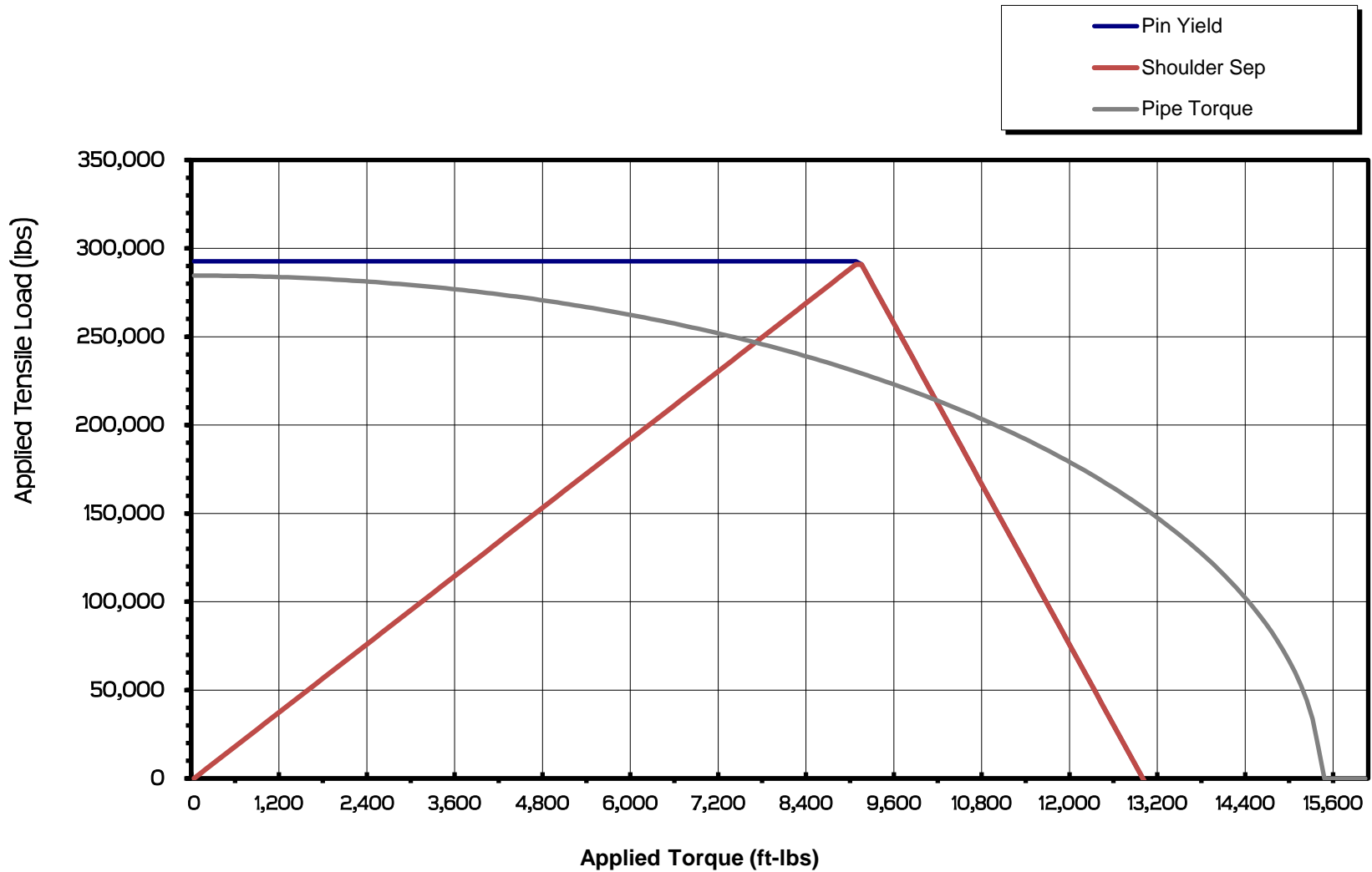
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Revision 0

Pipe Body			
	<b>New-API</b>	<b>New-95%RBW</b>	<b>Premium</b>
OD (in)	2.875	2.875	2.739
Wall Thickness (in)	0.340	0.366	0.272
ID (in)	2.195	2.144	2.195
Calculated Plain End weights (lbs/ft)	9.201	9.791	7.163
<b>Note: Premium properties are calculated based on uniform OD and wall thickness.</b>			
Cross sectional area pipe body (in <sup>2</sup> )	2.708	2.882	2.108
Cross sectional area OD (in <sup>2</sup> )	6.492	6.492	5.892
Cross sectional area ID (in <sup>2</sup> )	3.784	3.610	3.784
Section Modulus (in <sup>3</sup> )	1.540	1.611	1.185
Polar Section Modulus (in <sup>3</sup> )	3.081	3.223	2.371
	<b>New-API</b>	<b>New-95%RBW</b>	<b>Premium</b>
Torsional Strength (ft-lbs)	20,000	20,900	15,400
Tensile Strength (lbs)	365,500	389,000	284,600
80% Torsional Strength (ft-lbs)	16,000	16,700	12,300
Pressure Capacity (psi)	27,939	30,035	25,544
Collapse Capacity (psi)	28,154	29,961	24,150
Tool Joint			
		<b>PTECH28B+</b>	
		OD (in)	<b>3.531</b>
		ID (in)	<b>2.125</b>
<b>Tool Joint with a Material Yield Strength of 135000 psi</b>			
		Pin Tong length (in)	<b>10</b>
		Box Tong length (in)	<b>13</b>
		<b>Torsional Strength (ft-lbs)</b>	<b>12,960</b>
		<b>Recommended Make-up Torque (ft-lbs)</b>	<b>7,800</b>
		<b>Min Recommended Make-up Torque (ft-lbs)</b>	<b>6,200</b>
		Balance OD (in)	3.530
		<b>Tensile Strength (lbs)</b>	<b>297,900</b>
		Tool joint/Drill pipe torsional ratio (New pipe)	0.65
		Tool joint/Drill pipe torsional ratio (95% New pipe)	0.62
		Tool joint/Drill pipe torsional ratio (Prem pipe)	0.84
		Min OD for premium class (in)	3.422
Drill Pipe Assembly with PTECH+ Tool Joint		Drill Pipe Bend Radius	
		* These calculations are based on new pipe with nominal wall	
API Adjusted weight (lbs/ft)	10.26	Based on Bending Stress (psi) at Pipe OD	15,000
95% Adjusted weight (lbs/ft)	10.81		
Approximate length (ft)	31.98	Radius of Curvature ( R ) (ft.) (@ OD of pipe)	239.6
95% Fluid Displacement (gal/ft)	0.165		
API Fluid Displacement (gal/ft)	0.157		
Fluid Capacity (gal/ft)	0.191	BUR (dogleg) deg/100 ft.	23.9
Drift Size	2.000		

# TORQUE TENSION COMBINED LOAD CURVE

For PTECH28B+ 3 17/32 X 2 1/8 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: 2.875 9.35 S-135 Premium Class.



### PTECH28B+ 3 17/32 X 2 1/8 TOOL JOINT OD WEAR CURVE

