

## Drill Pipe Performance Characteristics Sheet

**PTECH Drilling Tubulars, LLC**

**Pipe Size and Weight:** 2 3/8 5.80 EU

**Pipe Grade:** S-135

**Range:** 2

**Tool Joint:** 3 1/16 X 1.805 PTECH24+

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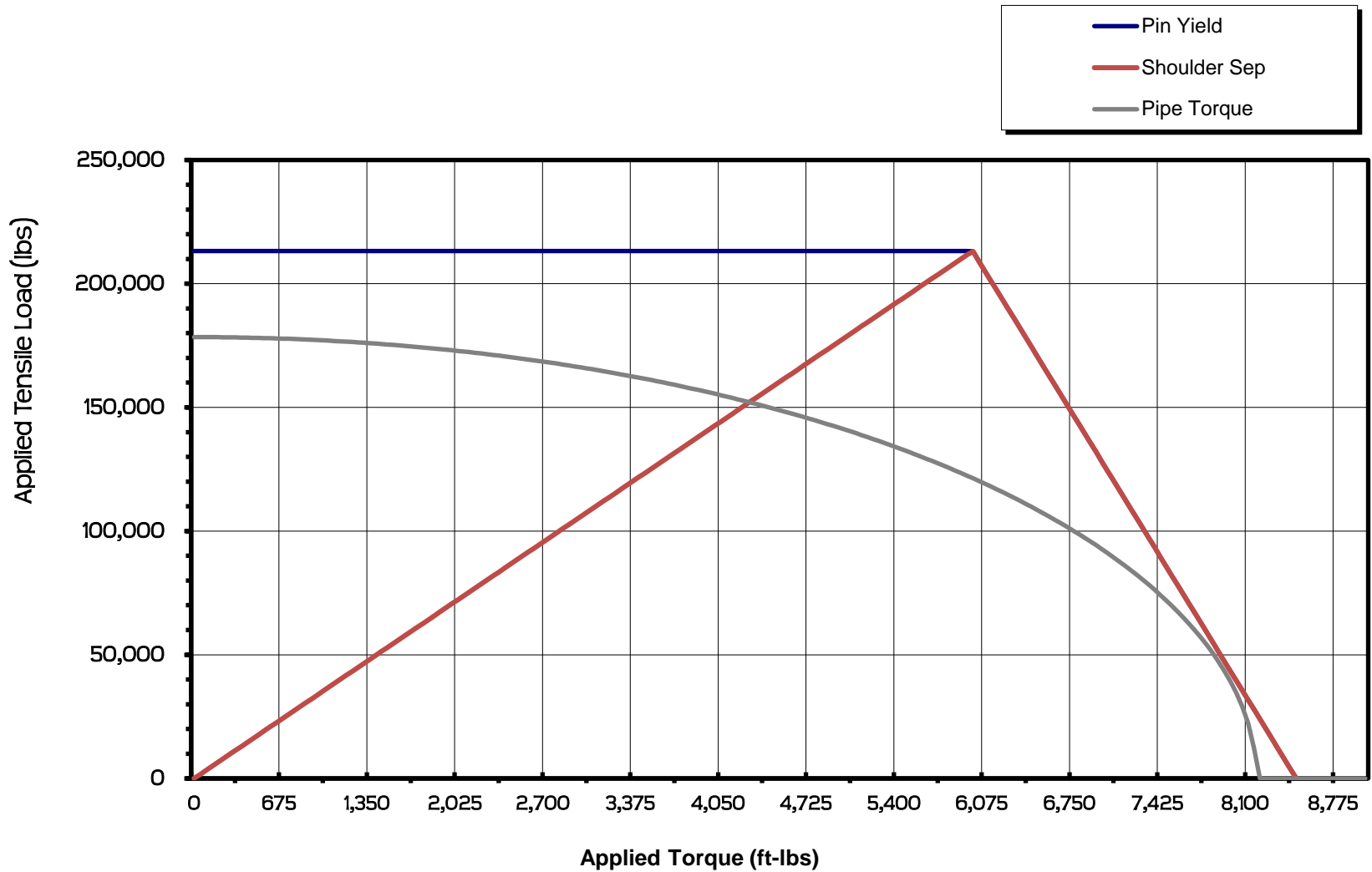
**Patent Pending**

Revision 0

Pipe Body			
	<b>New-API</b>	<b>New-95%RBW</b>	<b>Premium</b>
OD (in)	2.375	2.375	2.273
Wall Thickness (in)	0.254	0.273	0.203
ID (in)	1.867	1.829	1.867
Calculated Plain End weights (lbs/ft)	5.751	6.127	4.491
<b>Note: Premium properties are calculated based on uniform OD and wall thickness.</b>			
Cross sectional area pipe body (in <sup>2</sup> )	1.692	1.803	1.322
Cross sectional area OD (in <sup>2</sup> )	4.430	4.430	4.059
Cross sectional area ID (in <sup>2</sup> )	2.738	2.627	2.738
Section Modulus (in <sup>3</sup> )	0.813	0.853	0.629
Polar Section Modulus (in <sup>3</sup> )	1.626	1.705	1.258
	<b>New-API</b>	<b>New-95%RBW</b>	<b>Premium</b>
Torsional Strength (ft-lbs)	10,600	11,100	8,200
Tensile Strength (lbs)	228,500	243,400	178,400
80% Torsional Strength (ft-lbs)	8,500	8,900	6,600
Pressure Capacity (psi)	25,266	27,161	23,101
Collapse Capacity (psi)	25,788	27,473	21,976
Tool Joint			
<b>PTECH+</b> CONNECTION		<b>PTECH24+</b>	
	OD (in)	<b>3 1/16</b>	
	ID (in)	<b>1.805</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>8,470</b>	
	<b>Recommended Make-up Torque (ft-lbs)</b>	<b>5,100</b>	
	<b>Min Recommended Make-up Torque (ft-lbs)</b>	<b>4,200</b>	
	Balance OD (in)	3.060	
	<b>Tensile Strength (lbs)</b>	<b>217,600</b>	
	Tool joint/Drill pipe torsional ratio (New pipe)	0.80	
	Tool joint/Drill pipe torsional ratio (95% New pipe)	0.76	
	Tool joint/Drill pipe torsional ratio (Prem pipe)	1.03	
	Min OD for premium class (in)	2.938	
Drill Pipe Assembly with PTECH+ Tool Joint	Drill Pipe Bend Radius		
API Adjusted weight (lbs/ft)	6.58	* These calculations are based on new pipe with nominal wall	
95% Adjusted weight (lbs/ft)	6.94	Based on Bending Stress (psi) at Pipe OD	
Approximate length (ft)	32.00	15,000	
95% Fluid Displacement (gal/ft)	0.106	Radius of Curvature ( R ) (ft.) (@ OD of pipe)	
API Fluid Displacement (gal/ft)	0.101	197.9	
Fluid Capacity (gal/ft)	0.139	BUR (dogleg) deg/100 ft.	
Drift Size	1.711	29.0	

## TORQUE TENSION COMBINED LOAD CURVE

For PTECH24+ 3 1/16 X 1.805 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: 2.375 5.80 S-135 Premium Class.



### PTECH24+ 3 1/16 X 1.805 TOOL JOINT OD WEAR CURVE

