

Drill Pipe Performance Characteristics Sheet

PTECH Drilling Tubulars, LLC

Pipe Size and Weight: 5 1/2 21.90 IEU

Pipe Grade: S-135

Range: 2

Tool Joint: 6 5/8 X 4 1/4 PTECH55M+


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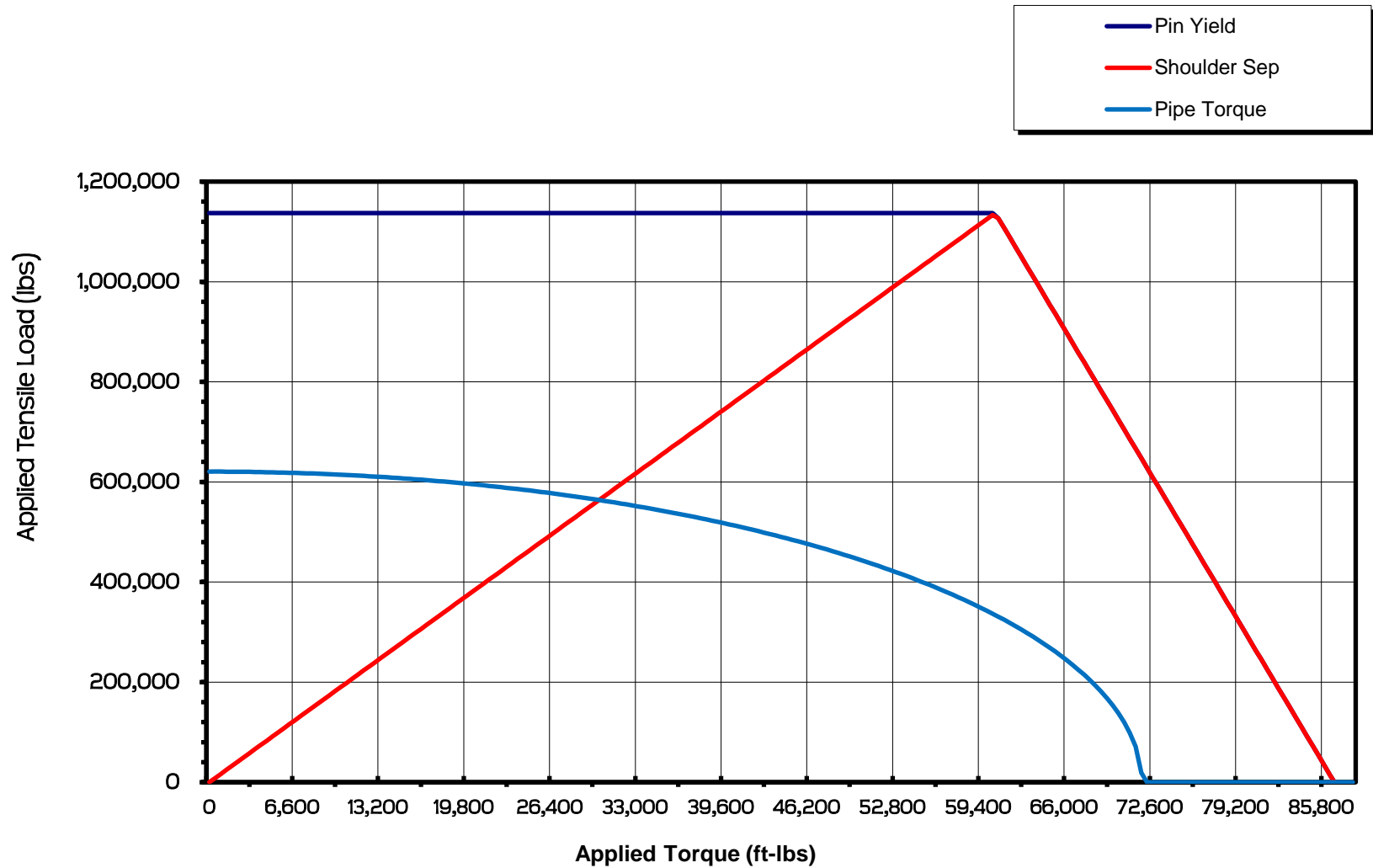
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Pipe Body			
	New-API	New-95%RBW	Premium
OD (in)	5.500	5.500	5.356
Wall Thickness (in)	0.361	0.388	0.289
ID (in)	4.778	4.724	4.778
Calculated Plain End weights (lbs/ft)	19.804	21.177	15.621
Note: Premium properties are calculated based on uniform OD and wall thickness.			
Cross sectional area pipe body (in ²)	5.828	6.232	4.597
Cross sectional area OD (in ²)	23.758	23.758	22.527
Cross sectional area ID (in ²)	17.930	17.526	17.930
Section Modulus (in ³)	7.031	7.445	5.527
Polar Section Modulus (in ³)	14.062	14.891	11.054
	New-API	New-95%RBW	Premium
Torsional Strength (ft-lbs)	91,300	96,700	71,800
Tensile Strength (lbs)	786,800	841,400	620,600
80% Torsional Strength (ft-lbs)	73,000	77,400	57,400
Pressure Capacity (psi)	15,507	16,670	14,177
Collapse Capacity (psi)	16,559	17,707	7,491
Tool Joint			
		PTECH55M+ OD (in) 6 5/8 ID (in) 4 1/4	
Tool Joint with a Material Yield Strength of 135000 psi			
		Pin Tong length (in)	13
		Box Tong length (in)	15
		Torsional Strength (ft-lbs)	86,600
		Recommended Make-up Torque (ft-lbs)	52,000 1.15 59,800
		Min Recommended Make-up Torque (ft-lbs)	40,900 1.15 47,000
		Balance OD (in)	6.605
		Tensile Strength (lbs)	1,147,500
		Tool joint/Drill pipe torsional ratio (New pipe)	0.95
		Tool joint/Drill pipe torsional ratio (95% New pipe)	0.90
		Tool joint/Drill pipe torsional ratio (Prem pipe)	1.21
		Min OD for premium class (in)	6.156
Minimum make-up is based on shoulder separation caused by bending.			
Drill Pipe Assembly with PTECH55M+ Tool Joint	Drill Pipe Bend Radius		
API Adjusted weight (lbs/ft) 24.22 95% Adjusted weight (lbs/ft) 25.48 Approximate length (ft) 31.50 95% Fluid Displacement (gal/ft) 0.390 API Fluid Displacement (gal/ft) 0.370 Fluid Capacity (gal/ft) 0.907 Drift Size 4.125	* These calculations are based on new pipe with nominal wall Based on Bending Stress (psi) at Pipe OD 15,000 Radius of Curvature (R) (ft.) (@ OD of pipe) 458.3 BUR (dogleg) deg/100 ft. 12.5		

TORQUE TENSION COMBINED LOAD CURVE

For PTECH55M+ 6 5/8 X 4 1/4 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: 5.5 21.90 S-135 Premium Class.



PTECH55M+ 6 5/8 X 4 1/4 TOOL JOINT OD WEAR CURVE

