



## Drill Pipe Performance Characteristics Sheet

PTECH Canada

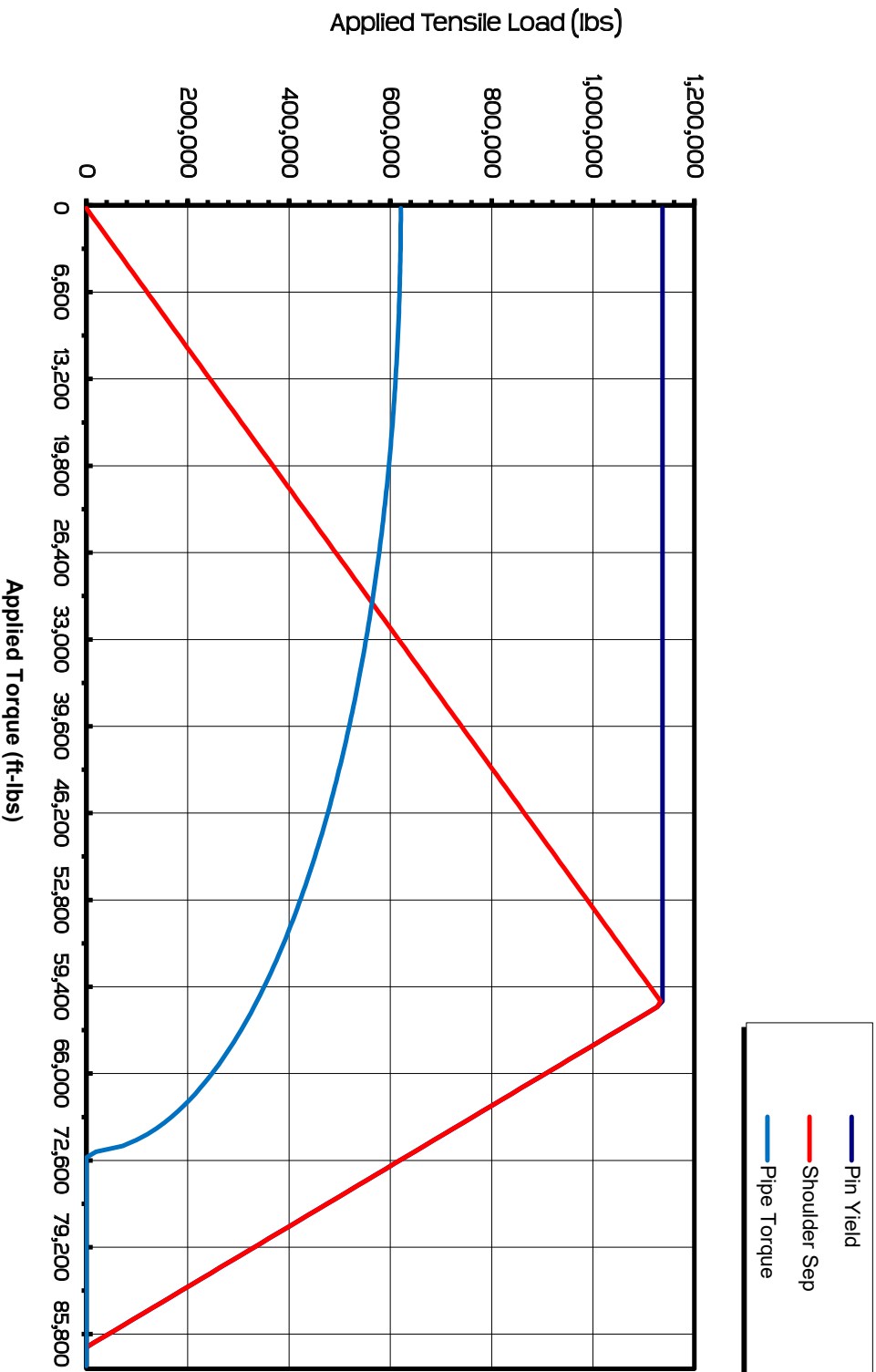
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**PTECHCanada.com** | US Patent # 9,943,993 | Conroe, TX 936.231.1241

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+

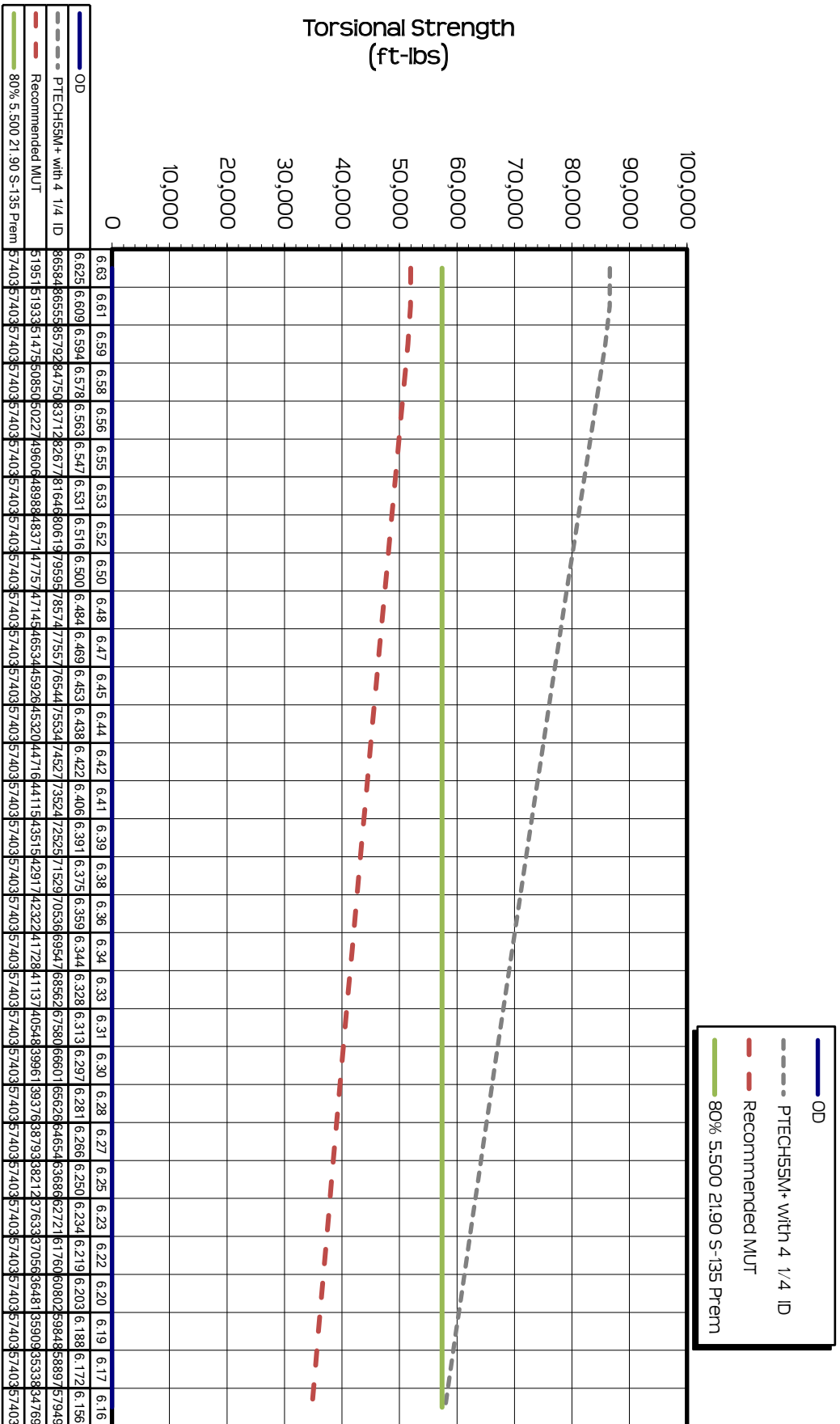
Pipe Body			
	<b>New-API</b>	<b>New-95%RBW</b>	<b>Premium</b>
OD (in)	5.500	5.500	5.356
Wall Thickness (in)	0.361	0.388	0.289
ID (in)	4.778	4.724	4.778
Calculated Plain End weights (lbs/ft)	19.804	21.177	15.621
<b>Note: Premium properties are calculated based on uniform OD and wall thickness.</b>			
Cross sectional area pipe body (in <sup>2</sup> )	5.828	6.232	4.597
Cross sectional area OD (in <sup>2</sup> )	23.758	23.758	22.527
Cross sectional area ID (in <sup>2</sup> )	17.930	17.526	17.930
Section Modulus (in <sup>3</sup> )	7.031	7.445	5.527
Polar Section Modulus (in <sup>3</sup> )	14.062	14.891	11.054
	<b>New-API</b>	<b>New-95%RBW</b>	<b>Premium</b>
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			
<b>PTECH+</b> CONNECTION		<b>PTECH55M+</b>	
	OD (in)	6 5/8	
	ID (in)	4 1/4	
<b>Tool Joint with a Material Yield Strength of 135000 psi</b>			
	Pin Tong length (in)	13	
	Box Tong length (in)	15	
	<b>Torsional Strength (ft-lbs)</b>	<b>86,600</b>	
	<b>Recommended Make-up Torque (ft-lbs)</b>	<b>52,000</b>	<b>1.15 59,800</b>
	<b>Min Recommended Make-up Torque (ft-lbs)</b>	<b>40,900</b>	<b>1.15 47,000</b>
	Balance OD (in)	6.605	
	<b>Tensile Strength (lbs)</b>	<b>1,147,500</b>	
	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	* These calculations are based on new pipe with nominal wall	
95% Adjusted weight (lbs/ft)	25.48	Based on Bending Stress (psi) at Pipe OD	15,000
Approximate length (ft)	31.50	Radius of Curvature ( R ) (ft.) (@ OD of pipe)	458.3
95% Fluid Displacement (gal/ft)	0.390	BUR (dogleg) deg/100 ft.	12.5
API Fluid Displacement (gal/ft)	0.370		
Fluid Capacity (gal/ft)	0.907		
Drift Size	4.125		

## 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



Tool Joint Box OD (in.)

THIS TECHNICAL DATA IS FOR REFERENCE ONLY.

PTECH Drilling Tubulars, LLC

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