



## Drill Pipe Performance Characteristics Sheet

PTECH Canada  
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Pipe Size and weight: 4 HWDP  
 Pipe Grade:  
 Range: 2  
 Tool Joint: 4 15/16 X 2 9/16 PTECH39+

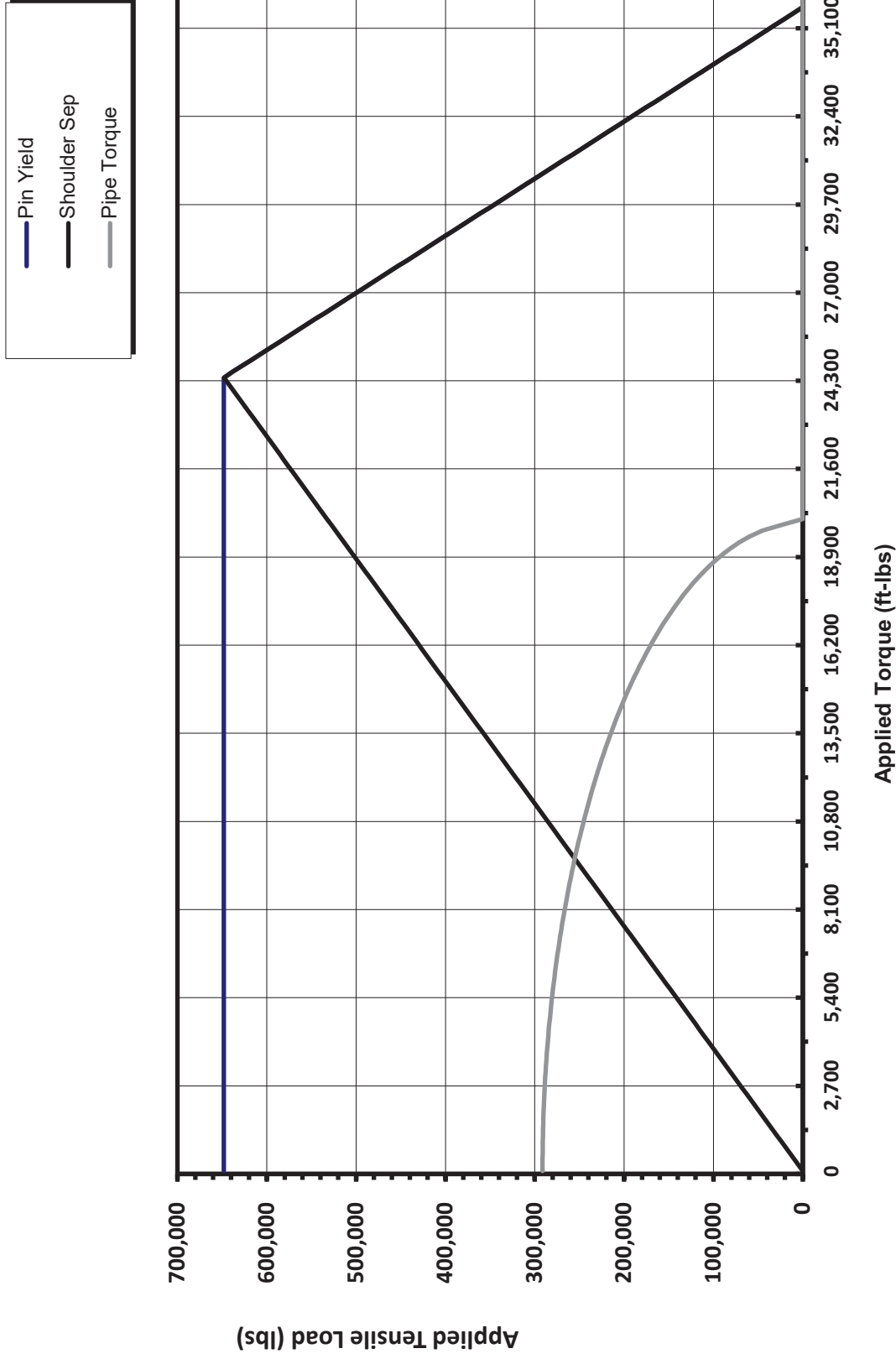
Revision 3 9/29/2020

Pipe Body			
	<b>New-API</b>	<b>New-95%RBW</b>	<b>Premium</b>
OD (in)	4.000	4.000	3.738
Wall Thickness (in)	0.656	0.705	0.525
ID (in)	2.688	2.590	2.688
Calculated Plain End weights (lbs/ft)	23.417	24.803	17.999
<b>Note: Premium properties are calculated based on uniform OD and wall thickness.</b>			
Cross sectional area pipe body (in <sup>2</sup> )	6.892	7.299	5.297
Cross sectional area OD (in <sup>2</sup> )	12.566	12.566	10.972
Cross sectional area ID (in <sup>2</sup> )	5.675	5.267	5.675
Section Modulus (in <sup>3</sup> )	5.002	5.179	3.755
Polar Section Modulus (in <sup>3</sup> )	10.004	10.359	7.509
	<b>New-API</b>	<b>New-95%RBW</b>	<b>Premium</b>
Torsional Strength (ft-lbs)	26,500	27,400	19,900
Tensile Strength (lbs)	379,000	401,500	291,300
80% Torsional Strength (ft-lbs)	21,200	21,900	15,900
Pressure Capacity (psi)	15,785	16,969	14,432
Collapse Capacity (psi)	15,081	15,974	13,277
Tool Joint			
<b>PTECH+</b> CONNECTION		<b>PTECH39+</b>	
	OD (in)	4 15/16	
	ID (in)	2 9/16	
<b>Tool Joint with a Material Yield Strength of 110000 psi</b>			
	Pin Tong length (in)	24	<b>Friction Factor 1.15</b>
	Box Tong length (in)	24	
	<b>Torsional Yield Strength (ft-lbs)</b>	35,160	<b>40,400</b>
	<b>Severe Service Level Recommended Make-up Torque (ft-lbs)(70%)</b>	24,600	<b>28,300</b>
	<b>Standard Service Level Recommended Make-up Torque (ft-lbs)(60%)</b>	21,100	<b>24,300</b>
	<b>Min Recommended Make-up Torque (ft-lbs)</b>	16,600	<b>19,100</b>
	Balance OD (in)	4.955	
	<b>Tensile Strength (lbs)</b>	<b>654,000</b>	
	Tool joint/Drill pipe torsional ratio (New pipe)	1.33	
	Tool joint/Drill pipe torsional ratio (95% New pipe)	1.28	
	Tool joint/Drill pipe torsional ratio (Prem pipe)	1.77	
	Min OD for premium class (in)	4.626	
Minimum make-up is based on shoulder separation caused by bending.			
Drill Pipe Assembly with PTECH+ Tool Joint		Drill Pipe Bend Radius	
API Adjusted weight (kg/m)(lbs/ft)	39.82	26.75	* These calculations are based on new pipe with nominal wall
95% Adjusted weight (kg/m)(lbs/ft)	41.61	27.96	
Approximate length (M)(ft)	9.60	31.50	
Fluid Displacement CuM/M)(gal/ft)	0.00508	0.409	Based on Bending Stress (psi) at Pipe OD
Fluid Capacity (CuM/M)(gal/ft)	0.00358	0.288	9,683
Drift Size (mm)(in)	61.90	2.437	Radius of Curvature ( R ) (ft.) (@ OD of pipe)
			516.4
			BUR (dogleg) deg/100 ft.
			11.1

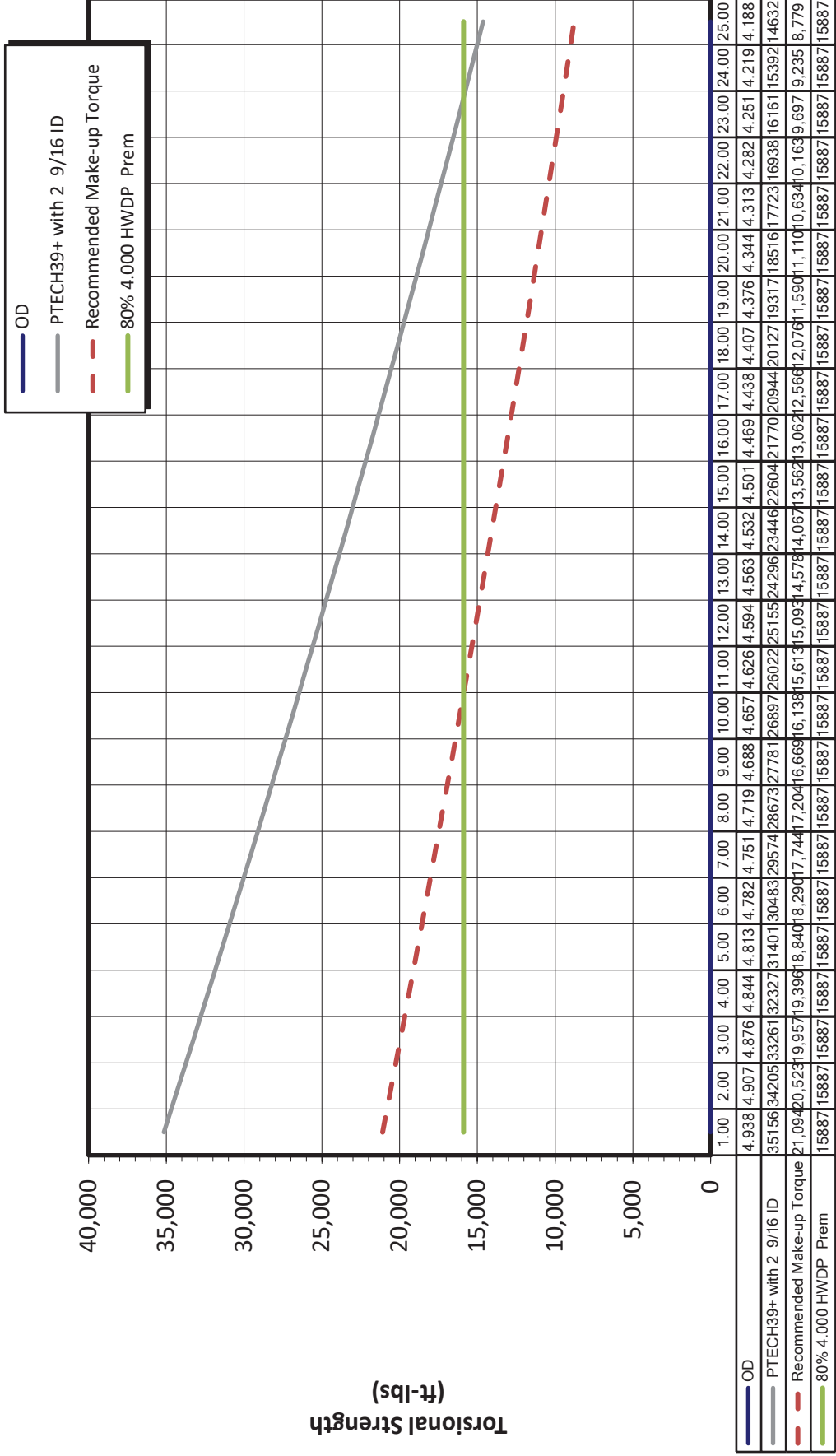
This Performance Sheet was generated by Nels Wickander.

# TORQUE TENSION COMBINED LOAD CURVE

For PTECH39+ 4 15/16 X 2 9/16 Tool Joint with a Material Strength of 110000 psi, using a Coefficient of Friction factor of 0.08 and a Safety Factor of 1.0. On Pipe: 4 HWDP Premium Class.



# PTECH39+ 4 15/16 X 2 9/16 TOOL JOINT OD WEAR CURVE



Tool Joint Box OD (in.)