

Drill Pipe Performance Characteristics Sheet

Rev. 5 2021-07-14

Patent: 9,885,214

13610 Poplar Circle
Suite 102
Conroe, TX 77304, U.S.A.
Phone: (936) 760-3600
Fax: (936) 521-5130

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 PTECH55+



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

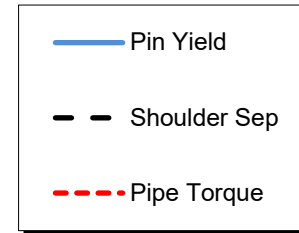
Tool Joint			
PTECH+ CONNECTION		PTECH55+	
	OD (in)	6 5/8	
	ID (in)	4 1/4	
Tool Joint with a Material Yield Strength of 135000 psi			
	Pin Tong length (in)	13	
	Box Tong length (in)	15	
	Friction Factor	1.00	1.15
	Torsional Strength (ft-lbs)	86,400	99,400
	Severe Service Recommended Make-up Torque (ft-lbs) [70%]	60,500	69,600
	Standard Service Recommended Make-up Torque (ft-lbs) [60%]	51,800	59,600
	Min Recommended Make-up Torque (ft-lbs)	40,800	46,900
	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)	0.89	
	Tool joint/Drill pipe torsional ratio (Prem pipe)	1.20	
	Min OD for premium class (in)	6.156	

Minimum make-up is based on shoulder separation caused by bending.

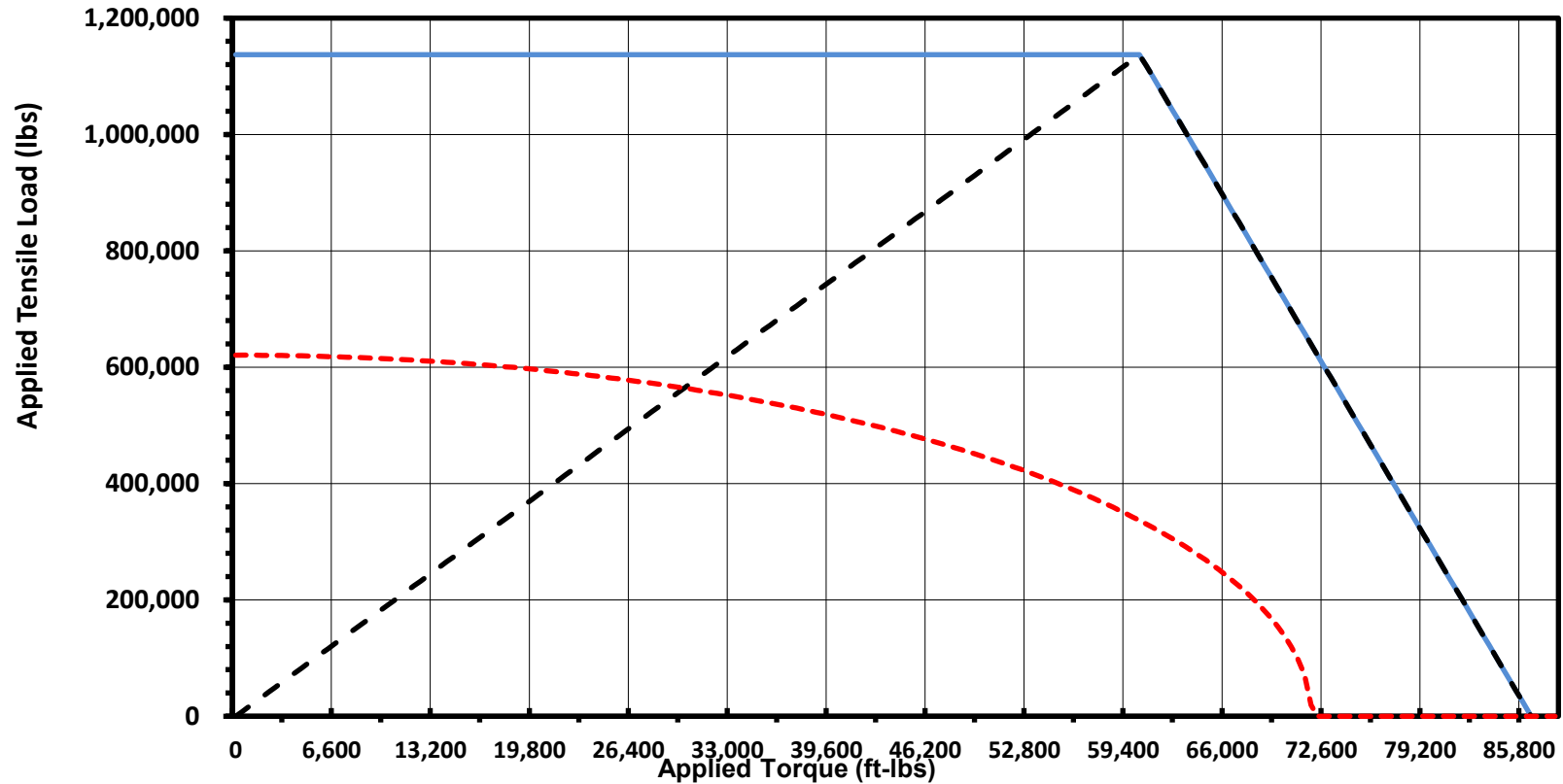
Drill Pipe Assembly with PTECH55+ Tool Joint		Drill Pipe Bend Radius	
API Adjusted weight (lbs/ft)	24.22	* These calculations are based on new pipe with nominal wall	
95% Adjusted weight (lbs/ft)	25.48	Based on Bending Stress (psi) at Pipe OD	15,000
Approximate length (ft)	31.50	Radius of Curvature (R) (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		

This Performance Sheet was generated by Nels Wickander.

TORQUE TENSION COMBINED LOAD CURVE



For PTECH55+ 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.





PTECH55+ 6 5/8 X 4 1/4 TOOL JOINT OD WEAR CURVE

