

Drill Pipe Performance Characteristics Sheet

TSC Drill Pipe



Patent: 9,885,214
Pipe Size and Weight: 5 19.50 IEU
Pipe Grade: S-135
Range: 2
Tool Joint: 6 5/8 X 3 3/4 PTECH52+™



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Pipe Body

	New-API	Premium
OD (in)	5.000	4.855
Wall Thickness (in)	0.362	0.290
ID (in)	4.276	4.276
Calculated Plain End weights (lbs/ft)	17.923	14.114
Note: Premium properties are calculated based on uniform OD and wall thickness.		
Cross sectional area pipe body (in ²)	5.275	4.154
Cross sectional area OD (in ²)	19.635	18.514
Cross sectional area ID (in ²)	14.360	14.360
Section Modulus (in ³)	5.708	4.476
Polar Section Modulus (in ³)	11.415	8.953
New-API Premium		
Torsional Strength (ft-lbs)	74,100	58,100
Tensile Strength (lbs)	712,100	560,800
80% Torsional Strength (ft-lbs)	59,300	46,500
Pressure Capacity (psi)	17,105	15,638
Collapse Capacity (psi)	18,133	10,024

Tool Joint

PTECH+™ CONNECTION		PTECH52+™	
		OD (in)	6 5/8
		ID (in)	3 3/4
Tool Joint with a Material Yield Strength of 135000 psi			
		Pin Tong length (in)	13
		Box Tong length (in)	15
		Friction Factor	1.0 1.15
		Torsional Strength (ft-lbs)	91,400 105,100
		Severe Service Level Recommended Make-up Torque (ft-lbs)(70%)	64,000 73,600
		Standard Service Level Recommended Make-up Torque (ft-lbs)(60%)	54,800 63,000
		Minimum Recommended Make-up Torque (ft-lbs)	43,100 49,600
		Balance OD (in)	6.429
		Tensile Strength (lbs)	1,244,700
		Tool joint/Drill pipe torsional ratio (New pipe)	1.23
		Tool joint/Drill pipe torsional ratio (95% New pipe)	1.17
		Tool joint/Drill pipe torsional ratio (Prem pipe)	1.57
		Min OD for premium class (in)	5.563

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

Drill Pipe Assembly with PTECH52+™ Tool Joint **Drill Pipe Bend Radius**

API Adjusted weight (lbs/ft)	23.43	* These calculations are based on new pipe with nominal wall	
95% Adjusted weight (lbs/ft)	24.55		
Approximate length (ft)	31.50		
95% Fluid Displacement (gal/ft)	0.376	Based on Bending Stress (psi) at Pipe OD	15,000
API Fluid Displacement (gal/ft)	0.358	Radius of Curvature (R) (ft.) (@ OD of pipe)	416.7
Fluid Capacity (gal/ft)	0.722	BUR (dogleg) deg/100 ft.	13.8
Drift Size	3.625		