

**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: 3

Tool Joint: 5 7/8 X 3 1/2 PTECH+™47



110 Cypress Station Drive  
Suite 160  
Houston, TX 77090  
Phone: (832) 230-8228  
Fax: (281) 741-9914

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Pipe Body		
	<b>New-API</b>	<b>Premium</b>
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
<b>Note: Premium properties are calculated based on uniform OD and wall thickness.</b>		
Cross sectional area pipe body (in <sup>2</sup> )	5.275	4.154
Cross sectional area OD (in <sup>2</sup> )	19.635	18.514
Cross sectional area ID (in <sup>2</sup> )	14.360	14.360
Section Modulus (in <sup>3</sup> )	5.708	4.476
Polar Section Modulus (in <sup>3</sup> )	11.415	8.953
	<b>New-API</b>	<b>Premium</b>
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		
<b>PTECH+™47</b>		
	OD (in)	5 7/8
	ID (in)	3 1/2
<b>Tool Joint with a Material Yield Strength of 135000 psi</b>		
	Pin Tong length (in)	13
	Box Tong length (in)	15
	<b>Friction Factor</b>	<b>1.0      1.15</b>
	<b>Torsional Strength (ft-lbs)</b>	<b>57,620      46,300</b>
	<b>Severe Service Recommended Make-up Torque (ft-lbs) [70%]</b>	<b>40,300      39,800</b>
	<b>Standard Service Recommended Make-up Torque (ft-lbs) [60%]</b>	<b>34,600      33,100</b>
	<b>Min Recommended Make-up Torque (ft-lbs)</b>	<b>28,800      33,100</b>
	Balance OD (in)	5.759
	<b>Tensile Strength (lbs)</b>	<b>924,800</b>
	Tool joint/Drill pipe torsional ratio (New pipe)	0.78
	Tool joint/Drill pipe torsional ratio (Prem pipe)	0.99
	Min OD for premium class (in)	5.595
Drill Pipe Assembly with PTECH+ Tool Joint		Drill Pipe Bend Radius
API Adjusted weight (lbs/ft)	20.66	* These calculations are based on new pipe with nominal wall
Approximate length (ft)	45.00	Based on Bending Stress (psi) at Pipe OD
API Fluid Displacement (gal/ft)	0.316	15,000
Fluid Capacity (gal/ft)	0.725	Radius of Curvature ( R ) (ft.) (@ OD of pipe)
Drift Size	3.375	416.7
		BUR (dogleg) deg/100 ft.
		13.8