

**Heavy Weight Drill Pipe Performance Characteristics Sheet**

**TSC Drill Pipe**



**Patent: 9,885,214**

**Pipe Size and Weight:** 5 42.77

HWDP

**Pipe Grade:** 55 KSI

**Range:** 2

**Tool Joint:** 5 7/8 X 3 PTECH+™47



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Pipe Body		
	<b>New-API</b>	
OD (in)	5.000	
Wall Thickness (in)	1.000	
ID (in)	3.000	
Calculated Plain End weights (lbs/ft)	42.700	
Cross sectional area pipe body (in <sup>2</sup> )	12.566	
Cross sectional area OD (in <sup>2</sup> )	19.635	
Cross sectional area ID (in <sup>2</sup> )	7.069	
Section Modulus (in <sup>3</sup> )	10.681	
Polar Section Modulus (in <sup>3</sup> )	21.363	
	<b>New-API</b>	
Torsional Strength (ft-lbs)	56,500	
Tensile Strength (lbs)	691,200	
80% Torsional Strength (ft-lbs)	45,200	
Pressure Capacity (psi)	19,250	
Collapse Capacity (psi)	17,600	
Tool Joint		
<b>PTECH+™</b>		<b>PTECH+™47</b>
	OD (in)	5 7/8
	ID (in)	3
<b>Tool Joint with a Material Yield Strength of 135000 psi</b>		
	Pin Tong length (in)	25 7/8
	Box Tong length (in)	27
	<b>Friction Factor</b>	<b>1.0      1.15</b>
	<b>Torsional Yield Strength (ft-lbs)</b>	<b>74,910      </b>
	<b>Severe Service Level Recommended Make-up Torque (ft-lbs) [70%]</b>	<b>52,400      60,300</b>
	<b>Standard Service Level Recommended Make-up Torque (ft-lbs) [60%]</b>	<b>44,900      51,600</b>
	<b>Min Recommended Make-up Torque (ft-lbs)</b>	<b>35,400      40,700</b>
	Balance OD (in)	6.035
	<b>Tensile Strength (lbs)</b>	<b>1,269,400</b>
	Tool joint/HWDP pipe torsional ratio (New pipe)	1.33
	Min OD for premium class (in)	5.595
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)	70.14      47.13	* These calculations are based on new pipe with nominal wall
Approximate length (M)(ft)	9.60      31.50	Based on Bending Stress (psi) at Pipe OD      4,534
Fluid Displacement CuM/M)(gal/ft)	0.00895      0.721	Radius of Curvature ( R ) (ft.) (@ OD of pipe)      1378.4
Fluid Capacity (CuM/M)(gal/ft)	0.00440      0.354	BUR (dogleg) deg/100 ft.      4.2
Drift Size (mm)(in)	73.03      2.875	