

Drill Pipe Performance Characteristics Sheet

TSC Drill Pipe



Patent: **9,885,214**

Pipe Size and Weight: 3 1/2 13.30 EU
 Pipe Grade: S-135
 Range: 2
 Tool Joint: 4 7/8 X 2 9/16 PTECH+™39



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

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Pipe Body		
	New-API	Premium
OD (in)	3.500	3.353
Wall Thickness (in)	0.368	0.294
ID (in)	2.764	2.764
Calculated Plain End weights (lbs/ft)	12.304	9.612
Note: Premium properties are calculated based on uniform OD and wall thickness.		
Cross sectional area pipe body (in ²)	3.621	2.829
Cross sectional area OD (in ²)	9.621	8.829
Cross sectional area ID (in ²)	6.000	6.000
Section Modulus (in ³)	2.572	1.991
Polar Section Modulus (in ³)	5.144	3.982
Strength Properties		
	New-API	Premium
Torsional Strength (ft-lbs)	33,400	25,900
Tensile Strength (lbs)	488,800	381,900
80% Torsional Strength (ft-lbs)	26,700	20,700
Pressure Capacity (psi)	24,840	22,711
Collapse Capacity (psi)	25,404	21,626

Tool Joint		
PTECH+™		PTECH+™39
	OD (in)	4 7/8
	ID (in)	2 9/16
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 Yield Strength (ft-lbs)	40,800
	Severe Service Level Recommended Make-up Torque (ft-lbs) [70%]	28,600 32,900
	Standard Service Level Recommended Make-up Torque (ft-lbs) [60%]	24,500 28,200
	Min Recommended Make-up Torque (ft-lbs)	19,300 22,200
	Balance OD (in)	4.955
	Tensile Strength (lbs)	802,400
	Tool joint/Drill pipe torsional ratio (New pipe)	1.22
	Tool joint/Drill pipe torsional ratio (95% New pipe)	1.17
	Tool joint/Drill pipe torsional ratio (Prem pipe)	1.58
	Min OD for premium class (in)	4.531

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)	22.73 15.27	* These calculations are based on new pipe with nominal wall	
Approximate length (M)(ft)	9.61 31.53	Based on Bending Stress (psi) at Pipe OD	18,830
Fluid Displacement CuM/M)(gal/ft)	0.00290 0.234	Radius of Curvature (R) (ft.) (@ OD of pipe)	232.3
Fluid Capacity (CuM/M)(gal/ft)	0.00376 0.303	BUR (dogleg) deg/100 ft.	24.7
Drift Size (mm)(in)	61.91 2.438		

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