

Drill Pipe Performance Characteristics Sheet

TSC Drill Pipe



Patent: 9,885,214

Pipe Size and Weight: 4 14.00 IU

Pipe Grade: S-135

Range: 2

Tool Joint: 4 7/8 X 2 11/16 PTECH+™39



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Pipe Body		
	New-API	Premium
OD (in)	4.000	3.868
Wall Thickness (in)	0.330	0.264
ID (in)	3.340	3.340
Calculated Plain End weights (lbs/ft)	12.928	10.157
Note: Premium properties are calculated based on uniform OD and wall thickness.		
Cross sectional area pipe body (in ²)	3.805	2.989
Cross sectional area OD (in ²)	12.566	11.751
Cross sectional area ID (in ²)	8.762	8.762
Section Modulus (in ³)	3.229	2.523
Polar Section Modulus (in ³)	6.458	5.046
	New-API	Premium
Torsional Strength (ft-lbs)	41,900	32,800
Tensile Strength (lbs)	513,600	403,500
80% Torsional Strength (ft-lbs)	33,500	26,200
Pressure Capacity (psi)	19,491	17,820
Collapse Capacity (psi)	20,437	13,832

Tool Joint		
PTECH+™		PTECH+™39
	OD (in)	4 7/8
	ID (in)	2 11/16
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)	38,840 31,300
	Severe Service Level Recommended Make-up Torque (ft-lbs) [70%]	27,200 26,800
	Standard Service Level Recommended Make-up Torque (ft-lbs) [60%]	23,300 21,000
	Min Recommended Make-up Torque (ft-lbs)	18,300 21,000
	Balance OD (in)	4.888
	Tensile Strength (lbs)	732,800
	Tool joint/Drill pipe torsional ratio (New pipe)	0.93
	Tool joint/Drill pipe torsional ratio (95% New pipe)	0.88
	Tool joint/Drill pipe torsional ratio (Prem pipe)	1.18
	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)	23.51 15.80	* 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	15,000
Fluid Displacement CuM/M)(gal/ft)	0.00300 0.242	Radius of Curvature (R) (ft.) (@ OD of pipe)	333.3
Fluid Capacity (CuM/M)(gal/ft)	0.00541 0.435	BUR (dogleg) deg/100 ft.	17.2
Drift Size (mm)(in)	65.09 2.563		

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