Heavy Weight Drill Pipe Performance Characteristics Sheet

TSC Drill Pipe

Patent: 9,885,214

Pipe Size and Weight: 4 25.18 HWDP

Pipe Grade: 55 KSI

Range: 2

Tool Joint: 4 7/8 X 2 9/16 PTECH+™39

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Revision 05 1-Jun-2023

Pipe Body

	New-API
OD (in)	4.000
Wall Thickness (in)	0.719
ID (in)	2.562
Calculated Plain End weights (lbs/ft)	25.183
Cross sectional area pipe body (in^2)	7.411
Cross sectional area OD (in^2)	12.566
Cross sectional area ID (in^2)	5.155
Section Modulus (in^3)	5.226
Polar Section Modulus (in^3)	10.451

	New-API
Torsional Strength (ft-lbs)	27,600
Tensile Strength (lbs)	407,600
80% Torsional Strength (ft-lbs)	22,100
Pressure Capacity (psi)	17,301
Collapse Capacity (psi)	16,218

Tool Joint

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) **25 7/8**

Box Tong length (in) **27**

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/HWDP pipe torsional ratio (New pipe)	1.48	

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

Drill Pipe Assembly with PTECH+ Tool Joint

API Adjusted weight (kg/m)(lbs/ft)	*42.75*	28.72
Approximate length (M)(ft)	*9.59*	31.48
Fluid Displacement CuM/M)(gal/ft)	*0.00546*	0.439
Fluid Capacity (CuM/M)(gal/ft)	*0.00321*	0.258
Drift Size (mm)(in)	*61.91*	2.438

Drill Pipe Bend Radius

* These calculations are based on new pipe with nominal wall

Based on Bending Stress (psi) at Pipe OD	9,268
Radius of Curvature (R) (ft.) (@ OD of pipe)	539.5
BUR (dogleg) deg/100 ft.	10.6