

THIS TECHNICAL INFORMATION IS FOR REFERENCE ONLY

HEAVY WEIGHT Drill Pipe Performance Characteristics Sheet

TSC Drill Pipe



Patent: **9,885,214**

Pipe Size and Weight: 5 46.11

HWDP

Pipe Grade: HWDP-55Ksi

Range: 2

Tool Joint: 5 7/8 X 3

PTECH+™47



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Revision 06 15-May-2024

Pipe Body		
	New-API	Premium
OD (in)	5.000	4.600
Wall Thickness (in)	1.000	0.800
ID (in)	3.000	3.000
Calculated Plain End weights (lbs/ft)	42.700	32.452
Note: Premium properties are calculated based on uniform OD and wall thickness.		
Cross sectional area pipe body (in ²)	12.566	9.550
Cross sectional area OD (in ²)	19.635	16.619
Cross sectional area ID (in ²)	7.069	7.069
Section Modulus (in ³)	10.681	7.827
Polar Section Modulus (in ³)	21.363	15.654
	New-API	Premium
Torsional Strength (ft-lbs)	56,500	41,400
Tensile Strength (lbs)	691,200	525,300
80% Torsional Strength (ft-lbs)	45,200	33,100
Pressure Capacity (psi)	19,250	17,600
Collapse Capacity (psi)	17,600	15,803

Tool Joint			
PTECH+™ CONNECTION		PTECH+™47	
	OD (in)	5 7/8	
	ID (in)	3	
Tool Joint with a Material Yield Strength of 135000 psi			
	Pin Tong length (in)	25.88	
	Box Tong length (in)	27.00	
	Friction Factor	1.00	1.15
		1.20	
	Torsional Strength (ft-lbs)	74,900	
	Severe Service Level Recommended Make-up Torque (ft-lbs)(70%)	52,400	60,300
	Standard Service Level Recommended Make-up Torque (ft-lbs)(60%)	44,900	53,900
	Minimum Recommended Make-up Torque (ft-lbs)	35,400	42,500
	Balance OD (in)	6.050	
	Tensile Strength (lbs)	1,288,800	
	Tool joint/HWDP torsional ratio (New pipe)	1.33	
	Tool joint/HWDP torsional ratio (Prem pipe)	1.81	
	Min Tool Joint OD for premium class (in)	5.595	
	Min Tool Joint OD/Drill pipe torsional ratio (Prem pipe)	1.47	
	BSR	1.64	

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

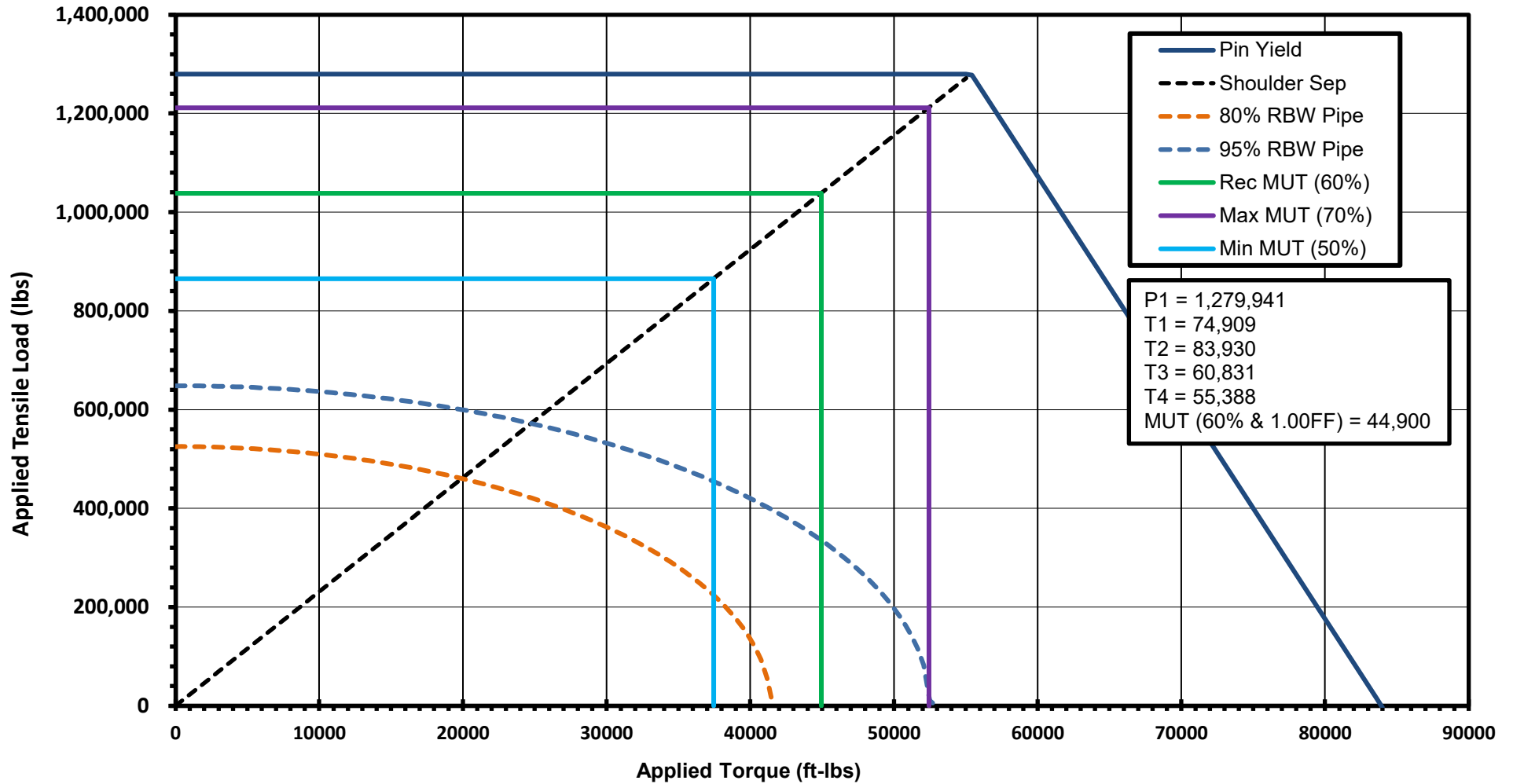
Drill Pipe Assembly with PTECH+ Tool Joint		Drill Pipe Bend Radius	
API Adjusted weight (lbs/ft)	0.000 47.20	* These calculations are based on new pipe with nominal wall	
Approximate length (ft)	0.000 31.00	Based on Bending Stress (psi) at Pipe OD	15,000 30,000
API Fluid Displacement (gal/ft)	0.00000 0.722	Radius of Curvature (R) (ft.) (@ OD of pipe)	417 208
Fluid Capacity (gal/ft)	0.00000 0.354	BUR (dogleg) deg/100 ft.	14 28
Drift Size	73.03 2.875		

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TORQUE TENSION COMBINED LOAD CURVE



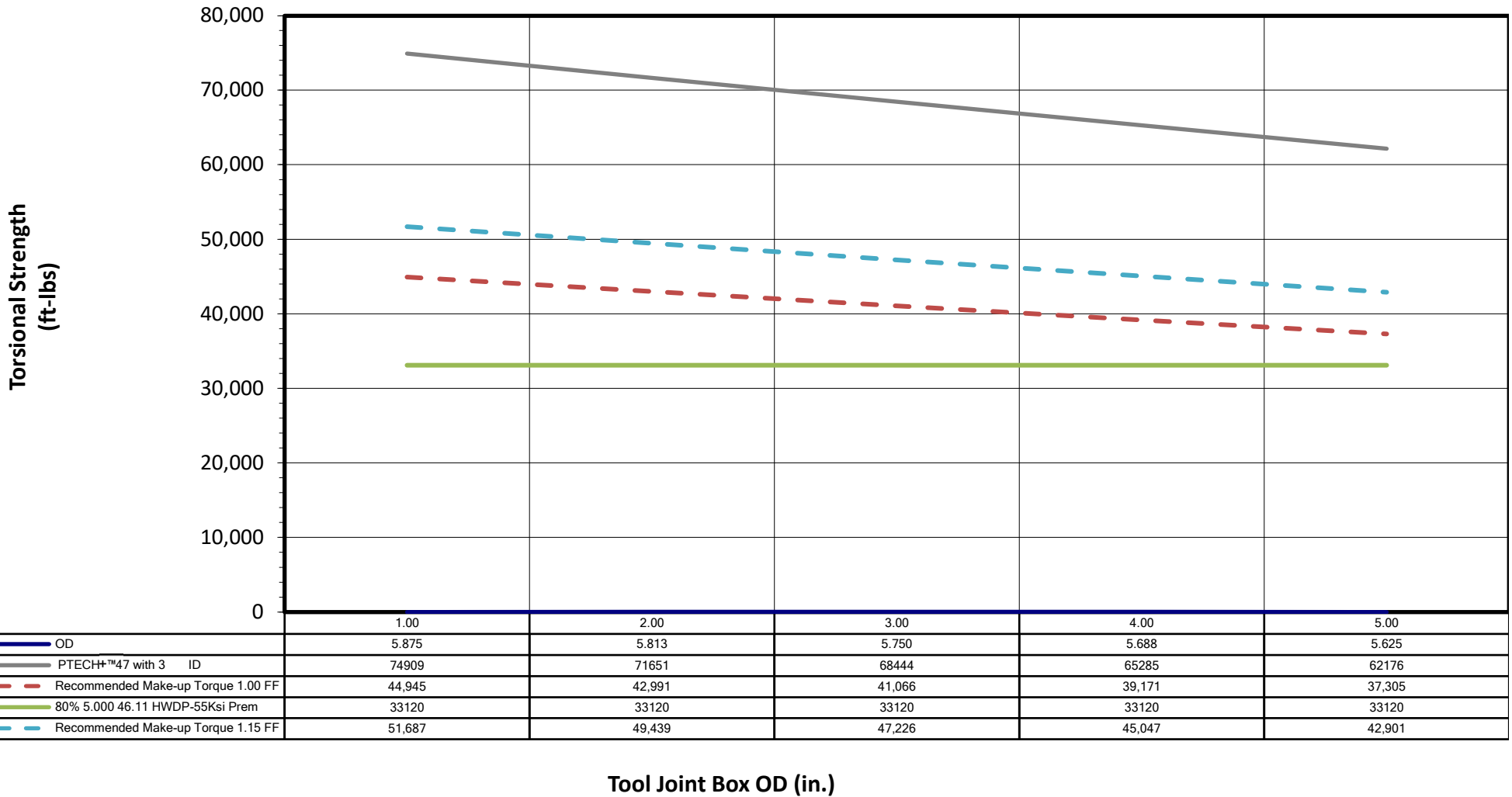
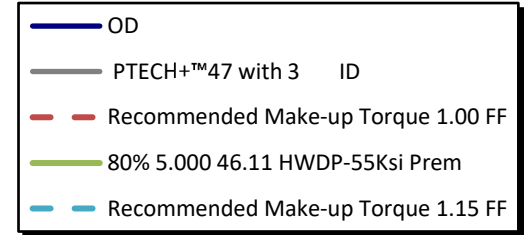
For PTECH+™47 5 7/8 X 3 Tool Joint with a Material Strength of 135000 psi, using a Coefficient of Friction of 0.08 and a Safety Factor of 1.0. On Pipe: 5 HWDP-55Ksi 46.11 Premium Class.



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PTECH+™47 5 7/8 X 3 TOOL JOINT OD WEAR CURVE



Elevator Hoist Capacity, where new Pipe OD= 5.000 in. & new Pipe Wall= 1.000 in. & pipe SMYS = 55,000 psi & Elevator Contact Stress= 110,000 psi & new Tool Joint OD= 5.875 in. and Elevator Bore Dia = 5.250 in.

