

Pipe							METRIC	
							NEW	API PREMIUM
Pipe size	in	4.500	mm	114.3	OD	mm	114.3	110.9
Pipe weight	lb/ft	16.60	kg/m	24.70	Thickness	mm	8.6	6.8
Upset Type	IEU		X-Sec Area		cm <sup>2</sup>	28.4	22.4	
Tube grade	S135		Section Modulus		cm <sup>3</sup>	70.0	54.8	
Range	3		Polar Section Modulus		cm <sup>3</sup>	140.0	109.7	
Tube Yield	MPa	931	Tensile Yield		kdaN	265	208	
ID	mm	97.2	Torsional Yield		N-m	75,200	59,000	
					80% Torsional Yield	N-m	60,200	47,200
					Internal Pressure Yield	MPa	122.0	111.7
					Collapse Yield	MPa	115.8	75.8
					D/t	13.35	16.19	
					Connection/Tube Torsional Ratio	0.977		

Tool Joint						METRIC	
						NEW	REC MIN OD
Connection Type	450 DUO		OD		mm	139.7	133.4
Material Yield Strength	MPa	896	Tensile Yield Strength		kdaN	439	439
OD	mm	139.7	Torsional Yield Strength		N-m	73,500	59,400
ID	mm	76.2	Recommended Makeup Torque		N-m	44,100	35,700
Pin Shoulder Angle	deg	18	Maximum Makeup Torque		N-m	47,700	38,600
Pin Tool Joint Length	mm	356					
Box Tool Joint Length	mm	356					

Drill Pipe Assembly						METRIC	
Shoulder-Shoulder Length						m	13.72
Adjusted Weight						kg/m	26.36
Closed End Displacement						L/m	10.55
Open End Displacement						L/m	3.36
Fluid Capacity						L/m	7.19
Drift Size						mm	73.0

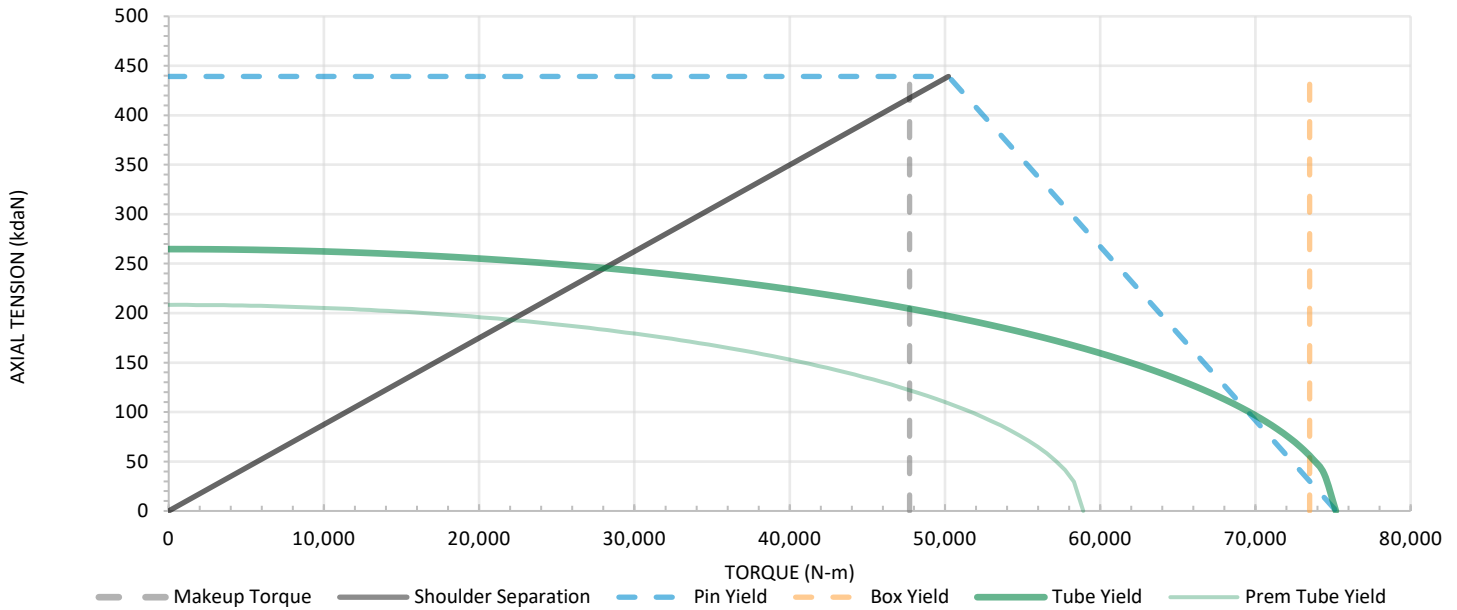
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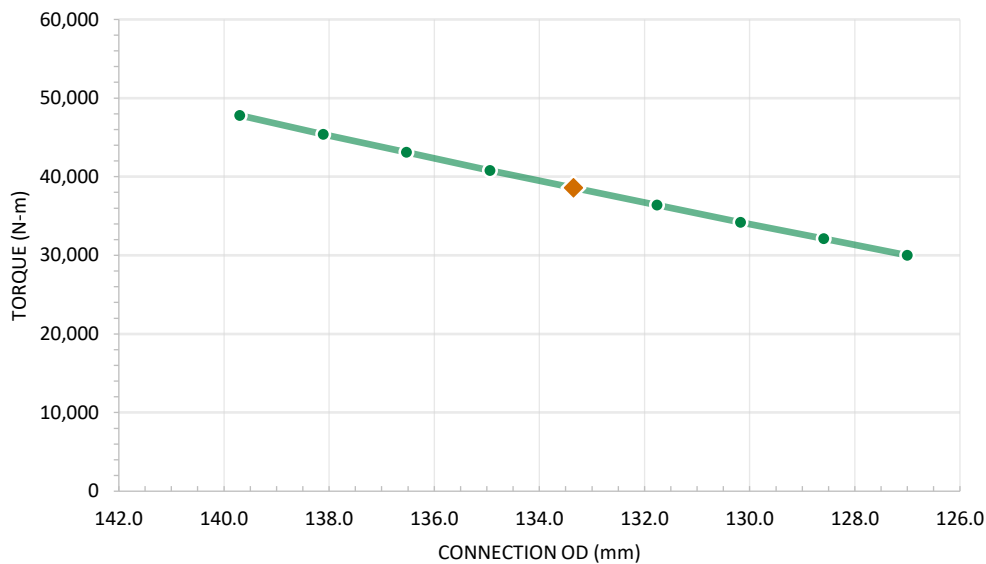
### Makeup Torque Then Tension Chart

METRIC



### Connection Wear Chart

METRIC



CONNECTION OD (mm)	MAXIMUM MAKEUP TORQUE (N-m)
139.7	47,800
138.1	45,400
136.5	43,100
134.9	40,800
133.4	38,600
131.8	36,400
130.2	34,200
128.6	32,100
127.0	30,000
MIN REC OD (mm)	
133.4	38,600

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