



Drill Pipe Specification & Performance Data Sheet

3-1/2", 13.30#, 0.368", S135, EU, R2

NC38 (3-1/2"IF) - 4.875" x 2.563"

QT Item #: 425, 4240, 4857, 5542

Tube / Pipe Body Specification			Tubular Assembly			Tube / Pipe Body Performance		
OD:	3.500	in	Adjusted Weight:	15.53	lbs/ft	Inspection Class:	Premium Class 80%	
ID:	2.764	in	Length (approximate):	30 - 32	ft	Remaining Body Wall:	0.294	in
Wall Thickness:	0.368	in	Box TJ Length (nominal):	14.5	in	Tensile Strength:	381,870	lbs
Weight (nominal):	13.30	lbs/ft	Pin TJ Length (nominal):	12	in	Torsional Strength:	25,850	ft-lbs
Grade:	S135		Fluid Displacement:	0.0057	bbbls/ft	Burst Capacity:	22,710	psi
Range:	R2		Fluid Capacity w/ IPC:	0.0070	bbbls/ft	Collapse Capacity:	21,630	psi
Upset Type:	EU		<i>An oilfield barrel equals 42 US gallons.</i>					
Maximum Upset OD:	3.875	in						

Notes:
 -Dimensions, wall thickness, and tool joint lengths shown above are nominal if not otherwise stated.
 -Values shown may vary with actual values due to OEM tolerances, rounding, and other factors.
 -Capacity, Displacement, & Adjusted Weight are best estimates from the OEM and are based on pipe purchased at 95% RBW with longer than standard tool joints. Nominal thickness of IPC is .009" when applied.

Notes:
 -Tube / Pipe body properties are calculated based on uniform OD and wall thickness.

Connection / Tool Joint Specification			Connection Performance		
Connection:	NC38 (3-1/2"IF)		Thread Compound Friction Factor (FF):	1.0 FF	1.15 FF
OD:	4.875	in	Maximum Make-Up Torque: (Recommended)	12,000	13,800 ft-lbs
ID:	2.563	in	Tension at Maximum Make-Up Torque:	544,300	544,300 lbs
SMYS:	120	ksi	Minimum Make-Up Torque:	10,000	11,500 ft-lbs
Drift Size:	2.438	in	Tension at Minimum Make-Up Torque:	594,500	594,500 lbs
Elevator Taper:	18°		Torsional Strength:	20,100	23,115 ft-lbs

Notes:
 -Above dimensions are nominal.
 -There is no published pressure rating for this connection.

The Maximum Make-Up Torque based on the appropriate thread compound friction factor (FF) is recommended. MUTs lower than maximum should only be applied when MUT is limited by rig equipment or connection tensile capacity. MUT values lower than Minimum MUT should never be used.

Adjust MUT values per the applied thread compound's FF greater than 1.0, without exceeding 1.15. Above values tabulated at 1.0 and 1.15 FF.

Elevator Shoulder Capacity

-Refer to the attached OEM page(s) for capacities with wear prior to using.

For combined loading of drill pipe, connection wear table, & elevator capacity figures, please see the attached page(s) provided by NOV-Grant Prideco™.

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 Houston, TX (281) 445-1777 * Denver, CO (303) 534-1873 * Ok. City/Tulsa, OK (918) 994-4695 * Dallas, TX (972) 661-1443 * San Antonio, TX (210) 822-4801 * Pittsburgh, PA (724) 916-4643

Drill Pipe Performance Sheet (1.00 FF)

6/10/2025



Combined Loading for Drill Pipe			
Connection: NC38 4.875" x 2.563" (120 KSI SMYS) Friction Factor: 1.0			
Pipe: 3.5" OD 0.368" Wall Thickness S135 80% Inspection Class			
At Max MUT (12000 ft-lbs)		At Min MUT (10000 ft-lbs)	
Operational Torque(ft-lbs)	Assembly Max Tension(lbs)	Operational Torque(ft-lbs)	Assembly Max Tension(lbs)
0	381900	0	381900
600	381800	500	381800
1300	381400	1100	381500
1900	380800	1600	381100
2500	380100	2100	380600
3200	378900	2600	379900
3800	377700	3200	378900
4400	376300	3700	377900
5100	374400	4200	376800
5700	372500	4800	375200
6300	370400	5300	373800
7000	367600	5800	372100
7600	365000	6300	370400
8200	362100	6900	368000
8900	358500	7400	365900
9500	355100	7900	363600
10100	351500	8500	360600
10800	346900	9000	358000
11400	342700	9500	355100
12000	338200	10000	352100

The Technical Information contained herein, including the product performance sheet and other attached documents, is for reference only and should not be considered as a recommendation. The user is fully responsible for the accuracy and suitability of use of the technical information. NOV Grant Prideco cannot assume responsibility for the results obtained through the use of this material. No expressed or implied warranty is intended. Drill pipe assembly properties are calculated based on uniform OD and wall thickness. No safety factor is applied. The information provided for various inspection classes and for various wear conditions (remaining body wall) is for information only and does not represent or imply acceptable operating limits. It is the responsibility of the customer and the end user to determine the appropriate performance ratings, acceptable use of the product, maintain safe operating practices, and to apply a prudent safety factor suitable for the application. For API connections that have different pin and box IDs, tool joint ID refers to the pin ID. Per Chapter DS, Section DS-16 of the drilling manual, it is recommended that drilling torque should not exceed 80% of MUT.

Connection Wear Table		
Connection: NC38 4.875" x 2.563" (120 KSI SMYS) Friction Factor: 1.0		
Tool Joint OD (in)	Max MUT(ft-lbs)	Min MUT(ft-lbs)
4.875	12000	10000
4.808	12000	10000
4.74	11400	9500
4.673	10300	8600
4.605	9100	7600
4.538	8000	6700
4.47	6900	5800
4.403	5900	4900
4.335	5000	4000
4.268	4100	3100
4.2	3300	2300
4.1325	2500	1500

Elevator Capacity Table						
Elevator Bore Diameter: 3.96875" Elevator SMYS: 110,100 psi Box Taper Angle: 18 deg						
Connection: NC38 3.5" 0.368" wall EU S135						
TJOD (in.)	Elevator Hoist Capacity (lbs) - Bore Wear					
	No Wear	Custom 0.03125 in.	1/16 in.	1/8 in.	3/16 in.	1/4 in.
4.875	693000	671500	649800	605900	561300	516000
4.808	636900	615400	593700	549800	505200	459900
4.74	580800	559300	537600	493700	449100	403800
4.673	526300	504700	483000	439100	394500	349300
4.605	471700	450200	428500	384600	340000	294700
4.538	418700	397200	375500	331600	287000	241700
4.47	365800	344200	322500	278600	234000	188800
4.403	314400	292800	271100	227200	182600	137400
4.335	263000	241500	219700	175800	131200	86000
4.268	213100	191600	169900	126000	81400	36100
4.2	163300	141800	120100	76200	31600	0
4.1325	114700	93200	71500	27600	0	0

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Drill Pipe Performance Sheet (1.00 FF)

6/10/2025



Slip Crush Capacity Table at 80% Inspection Class					
		Slip Length			
		13.75 in.	16 in.	16.5 in.	22 in.
K Factor	2.1	332200.0 lbs	339100.0 lbs	340300.0 lbs	350700.0 lbs
	2.6	320700.0 lbs	329100.0 lbs	330600.0 lbs	343300.0 lbs
	4.0	290700.0 lbs	302400.0 lbs	304600.0 lbs	323000.0 lbs
	4.2	286700.0 lbs	298800.0 lbs	301100.0 lbs	320200.0 lbs

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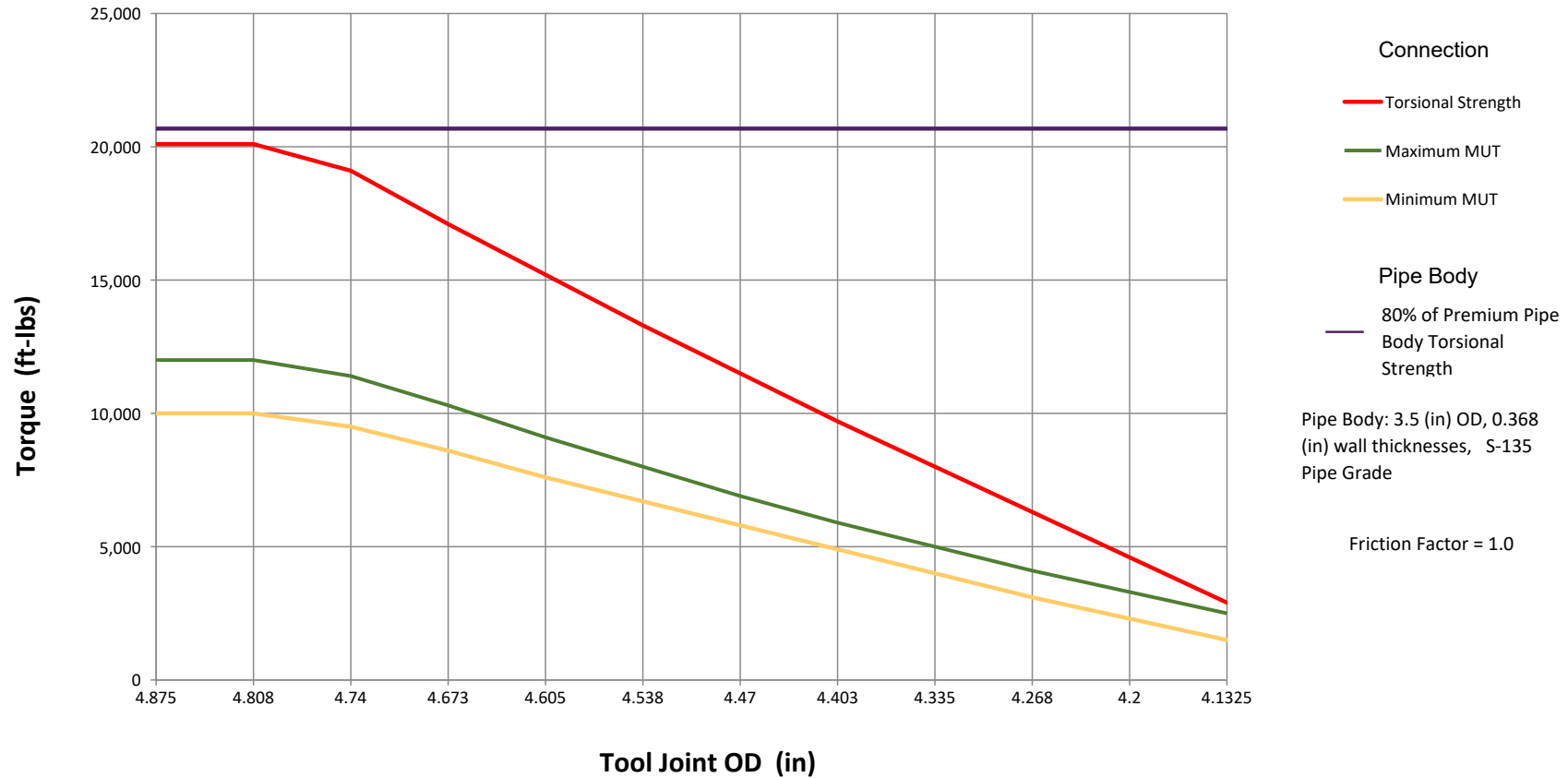
Drill Pipe Performance Sheet (1.00 FF)

6/10/2025



Connection Wear for NC38 (4.875 (in) OD x 2.563 (in) ID)

Material SMYS (Specified Minimum Yield Strength) = 120000 (psi)



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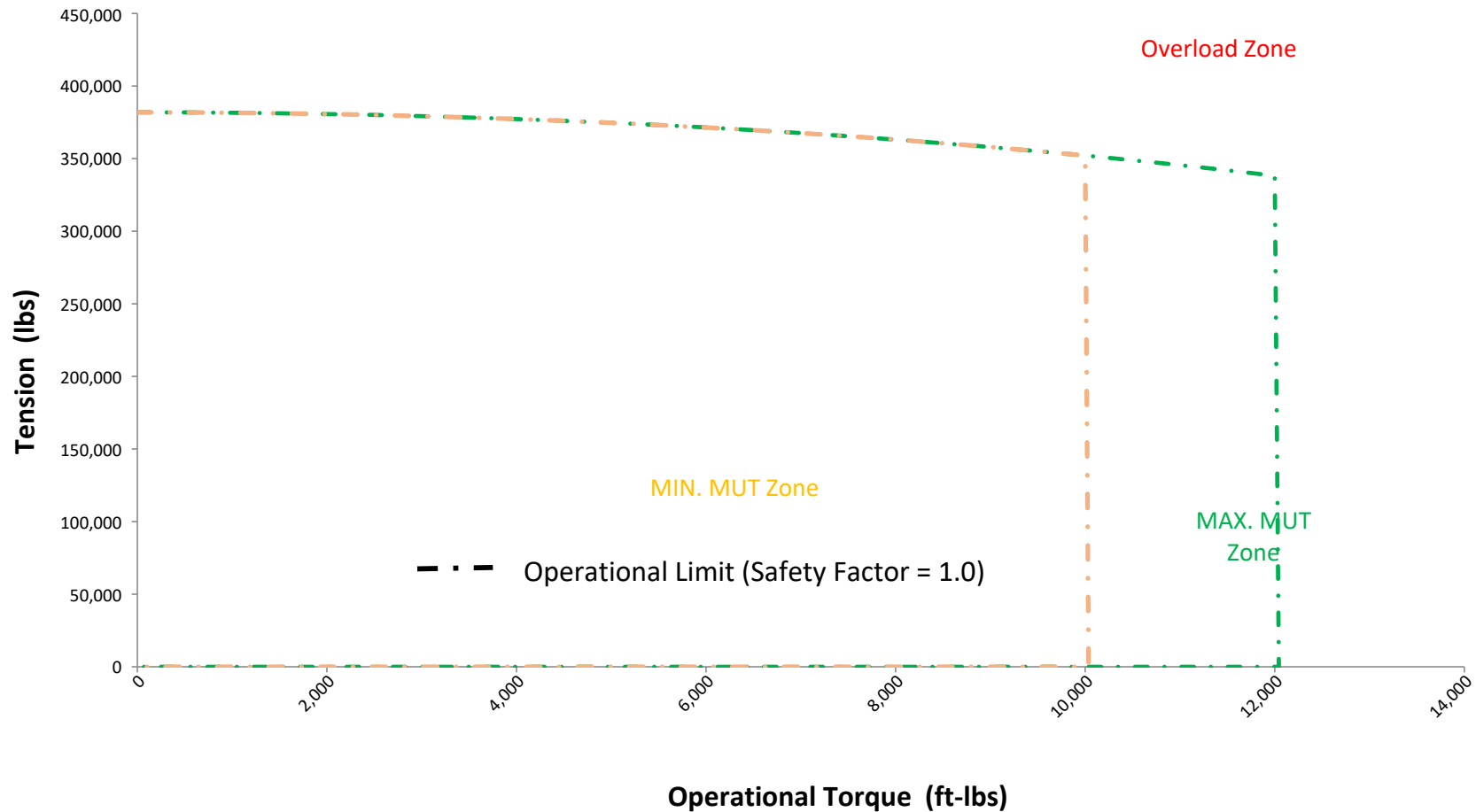
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Drill Pipe Operational Limits (Connection at Recommended MUT = 12043 (ft-lbs)) (Connection at Minimum MUT = 10036 (ft-lbs))

Connection: NC38 (4.875 (in) OD 2.563 (in) ID) SMYS = 120000 (psi) Friction Factor = 1.0

Pipe Body: 80% Inspection Class, 3.5 (in) OD, 0.368 (in) Wall Thickness, S-135 Pipe Grade



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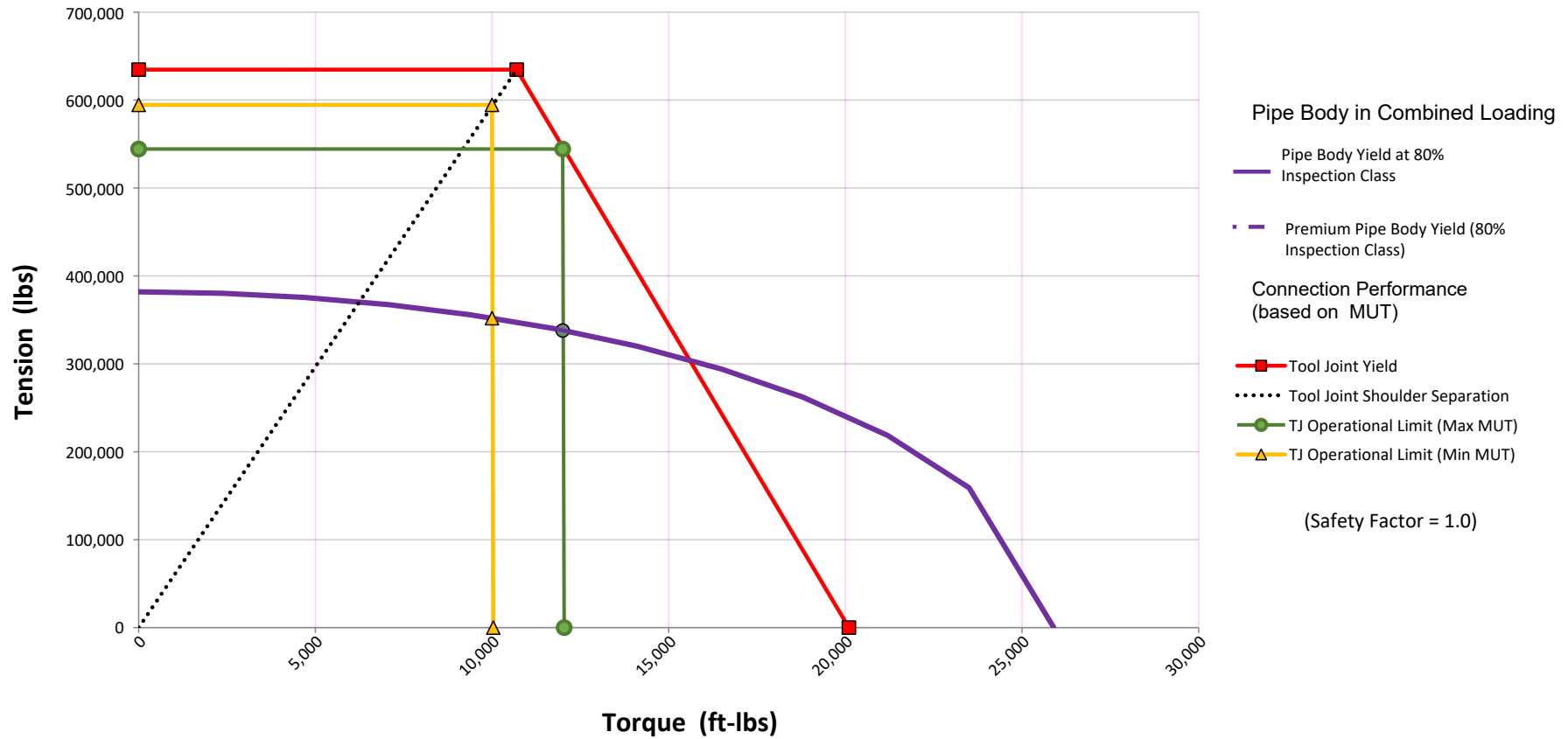
Drill Pipe Performance Sheet (1.00 FF)

6/10/2025



Torque-Tension Graph

Connection: NC38 (4.875 (in) OD 2.563 (in) ID) SMYS = 120000 (psi) Friction Factor = 1.0
 Pipe Body: 80% Inspection Class, 3.5 (in) OD, 0.368 (in) Wall Thickness, S-135 Pipe Grade



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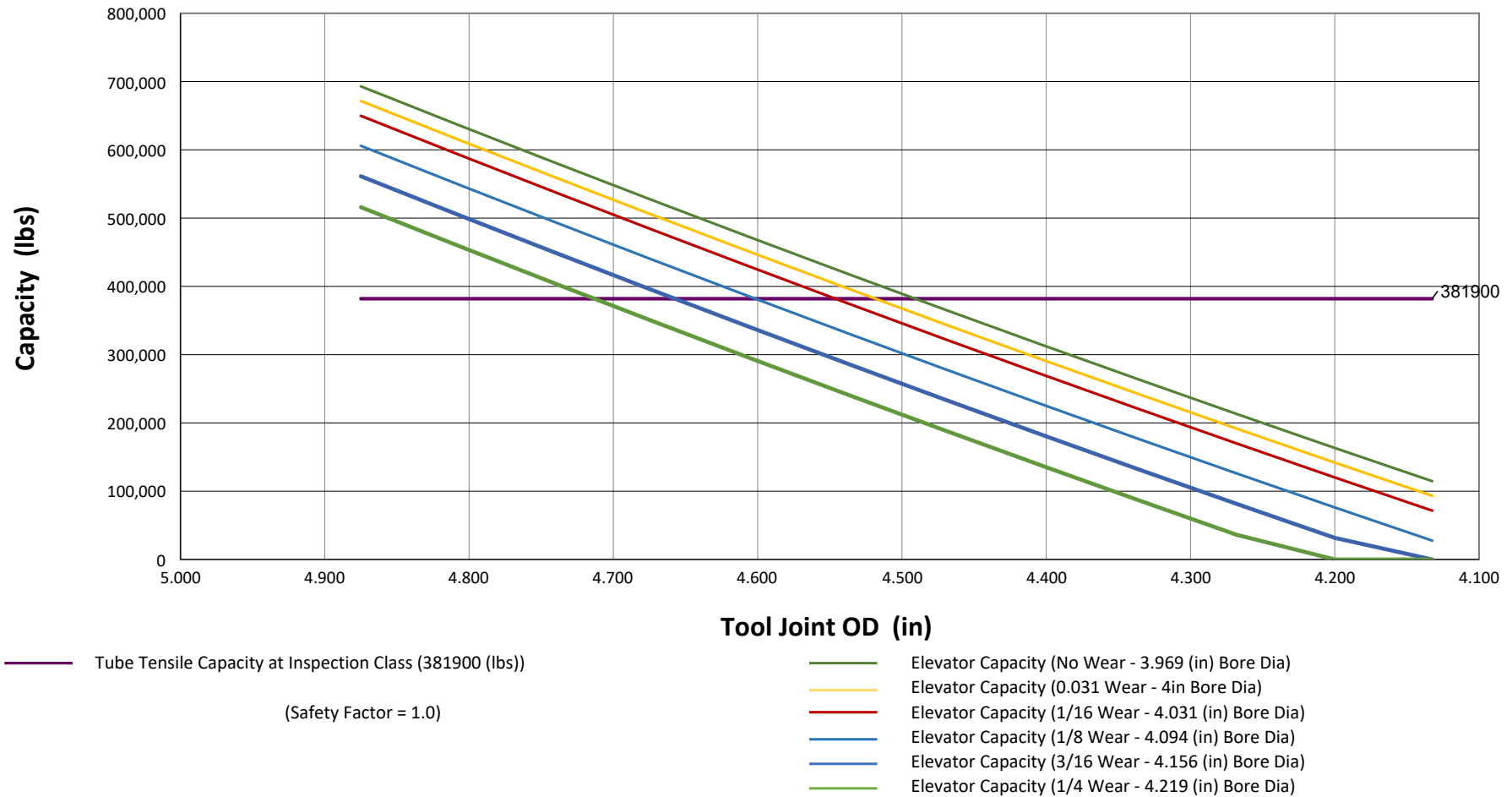
Drill Pipe Performance Sheet (1.00 FF)

6/10/2025



Elevator Capacity Curve

(Based on new Elevator Bore Diameter of 3.969 (in) (0.368 (in) wall) and the elevator yield strength of 110100 (psi)
 3.5 (in) (0.368 (in) wall) EU S-135 NC38 (4.875 (in) x 2.563 (in) Max DTE = 3.875 (in))



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Drill Pipe Performance Sheet (1.15 FF)

6/10/2025



Combined Loading for Drill Pipe			
Connection: NC38 4.875" x 2.563" (120 KSI SMYS) Friction Factor: 1.15			
Pipe: 3.5" OD 0.368" Wall Thickness S135 80% Inspection Class			
At Max MUT (13800 ft-lbs)		At Min MUT (11500 ft-lbs)	
Operational Torque(ft-lbs)	Assembly Max Tension(lbs)	Operational Torque(ft-lbs)	Assembly Max Tension(lbs)
0	381900	0	381900
700	381700	600	381800
1500	381200	1200	381500
2200	380500	1800	380900
2900	379500	2400	380200
3600	378100	3000	379300
4400	376300	3600	378100
5100	374400	4300	376600
5800	372100	4900	374900
6600	369200	5500	373100
7300	366300	6100	371100
8000	363100	6700	368800
8700	359600	7300	366300
9500	355100	7900	363600
10200	350900	8500	360600
10900	346300	9100	357400
11700	340500	9700	354000
12400	335100	10300	350200
13100	329200	10900	346300
13800	322900	11500	342000

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Connection Wear Table		
Connection: NC38 4.875" x 2.563" (120 KSI SMYS) Friction Factor: 1.15		
Tool Joint OD (in)	Max MUT(ft-lbs)	Min MUT(ft-lbs)
4.875	13800	11500
4.808	13800	11500
4.74	13200	11000
4.673	11800	9800
4.605	10500	8700
4.538	9200	7700
4.47	7900	6600
4.403	6700	5600
4.335	5600	4600
4.268	4600	3600
4.2	3600	2600
4.1325	2700	1700

Elevator Capacity Table						
Elevator Bore Diameter: 3.96875" Elevator SMYS: 110,100 psi Box Taper Angle: 18 deg						
Connection: NC38 3.5" 0.368" wall EU S135						
TJOD (in.)	Elevator Hoist Capacity (lbs) - Bore Wear					
	No Wear	Custom 0.03125 in.	1/16 in.	1/8 in.	3/16 in.	1/4 in.
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4.2	163300	141800	120100	76200	31600	0
4.1325	114700	93200	71500	27600	0	0

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Drill Pipe Performance Sheet (1.15 FF)

6/10/2025



Slip Crush Capacity Table at 80% Inspection Class					
		Slip Length			
		13.75 in.	16 in.	16.5 in.	22 in.
K Factor	2.1	332200.0 lbs	339100.0 lbs	340300.0 lbs	350700.0 lbs
	2.6	320700.0 lbs	329100.0 lbs	330600.0 lbs	343300.0 lbs
	4.0	290700.0 lbs	302400.0 lbs	304600.0 lbs	323000.0 lbs
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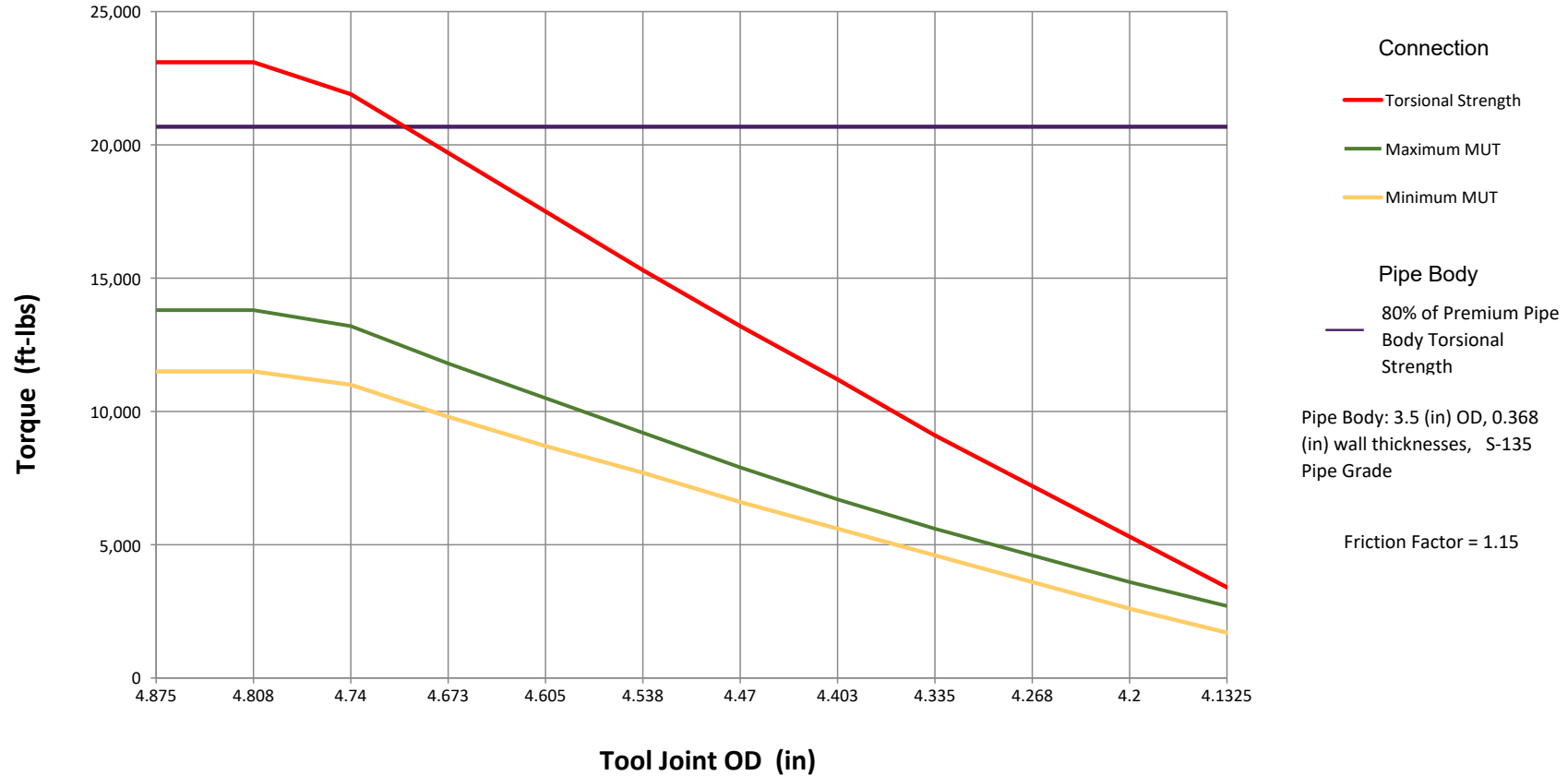
Drill Pipe Performance Sheet (1.15 FF)

6/10/2025



Connection Wear for NC38 (4.875 (in) OD x 2.563 (in) ID)

Material SMYS (Specified Minimum Yield Strength) = 120000 (psi)



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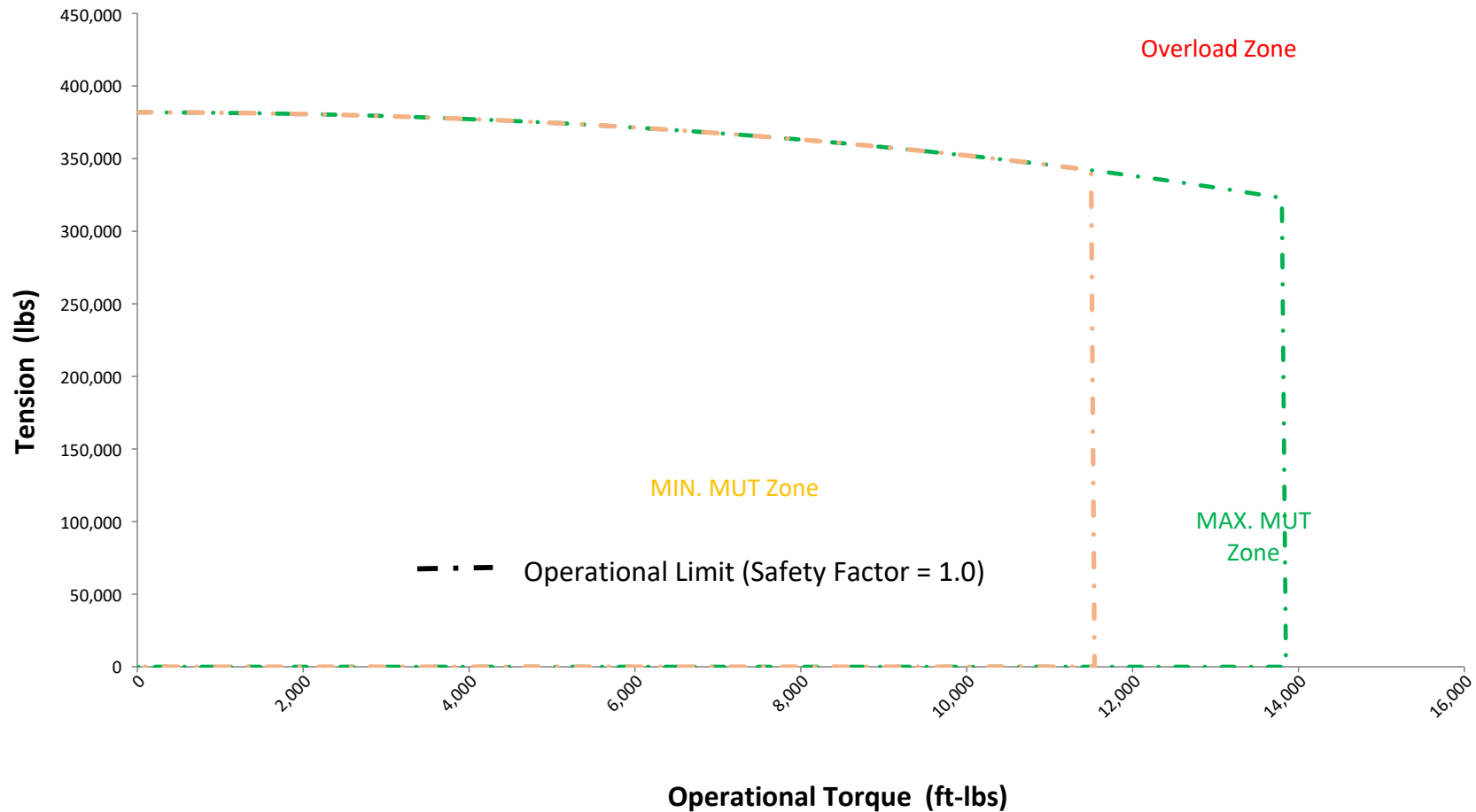
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Drill Pipe Operational Limits (Connection at Recommended MUT = 13849 (ft-lbs)) (Connection at Minimum MUT = 11541 (ft-lbs))

Connection: NC38 (4.875 (in) OD 2.563 (in) ID) SMYS = 120000 (psi) Friction Factor = 1.15

Pipe Body: 80% Inspection Class, 3.5 (in) OD, 0.368 (in) Wall Thickness, S-135 Pipe Grade



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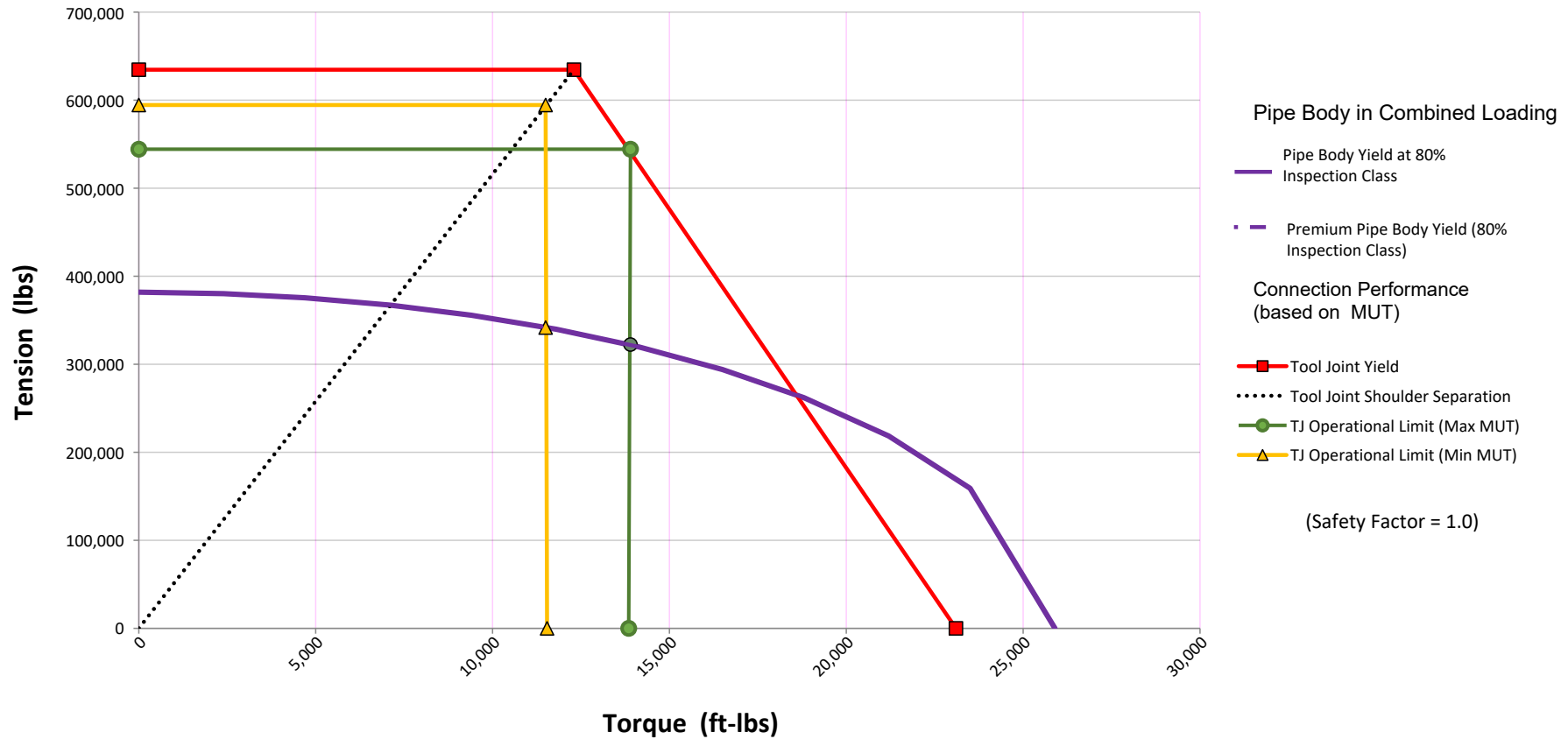
Drill Pipe Performance Sheet (1.15 FF)

6/10/2025



Torque-Tension Graph

Connection: NC38 (4.875 (in) OD 2.563 (in) ID) SMYS = 120000 (psi) Friction Factor = 1.15
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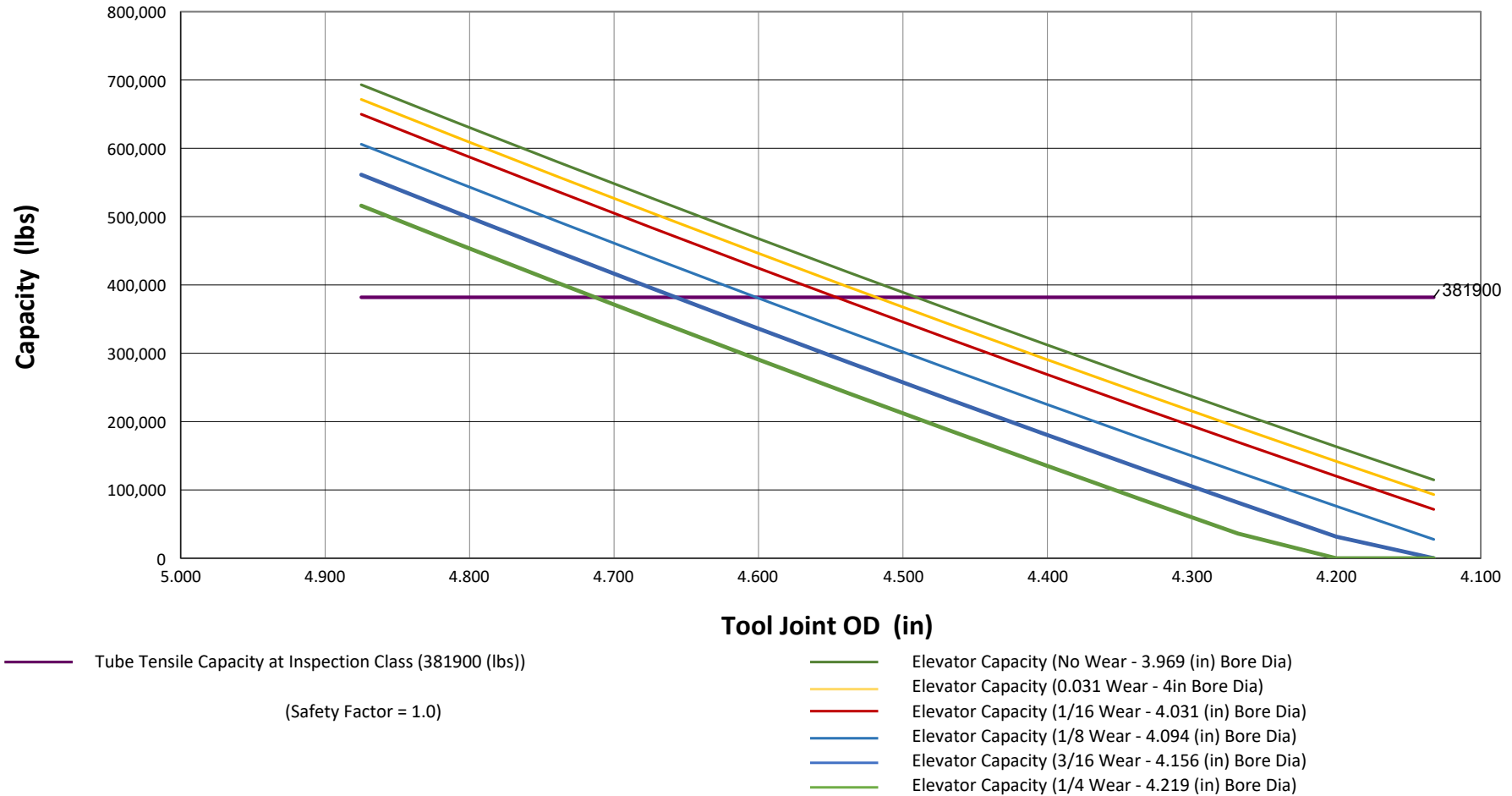
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6/10/2025



Elevator Capacity Curve

(Based on new Elevator Bore Diameter of 3.969 (in) (0.368 (in) wall) and the elevator yield strength of 110100 (psi))
 3.5 (in) (0.368 (in) wall) EU S-135 NC38 (4.875 (in) x 2.563 (in)) Max DTE = 3.875 (in)



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