

TECHNICAL SPECIFICATIONS

Equipment No's: Ref. Enclosed page

Spec. No.: DP-4-04

4" OD Drill Pipe, TSS-105, TT-390 Conn's.

New

Premium

80% remaining Body Wall

DESCRIPTION

Type
Range
Conventional=welded T-J. / Integral=Monoblock

IU, 14.0 #, H2S
2
Conventional

TUBE DATA

Material grade		TSS-105			
Internal plastic coating		TK-34P			
Tube body OD x ID	inch	4,000	3,340	3,868	3,340
Wall thickness, nominal	inch	0,330		0,264	
Cross Sectional Area	inch ²	3,805		2,989	
Polar Sectional Modulus	inch ³	6,458		5,046	
Tensile yield pipe	lbf	399 500		313 900	
	kN	1 777		1 396	
Torsional yield pipe	lbf-ft	32 600		25 500	
	kNm	44,2		34,6	
80% Torsional Yield	lbf-ft	26 080		20 400	
	kNm	35,4		27,7	

CONNECTION DATA

Connection type		Turbo Torque 390			
Material grade		130 ksi			
Hardbanding		TCS-Titanium			
OD x ID	inch	4,875	2,688	4,577	2,688
B.S.R.	x : 1	NA		NA	
Tensile yield tooljoint	lbf	686 700		536 700	
	kN	3 055		2 387	
Torsional yield tooljoint	lbf-ft	42 500		33 100	
	kNm	57,6		44,9	
Make up torque (Max.)	lbf-ft	29 700		23 200	
	kNm	40,3		31,5	

OPERATIONAL DATA

Tool joint/Drill pipe torsional ratio	=> 0.80 *	1,30	1,67
Drift diameter	inch		2,563
Type of elevator shoulder:			18°
Burst pressure	psi	15 160	13 860
	Mpa	105	96
Collapse pressure	psi	15 900	11 620
	MPa	110	80
Adjusted weight	lbs/ft		16,34
	kg/mtr		24,3
Approx weight each joint	lbs		521
	kg		236
Capacity	gal/ft		0,43
	ltr/mtr		5,34
Open end displacement	gal/ft		0,25
	ltr/mtr		3,10
Closed end displacement	gal/ft		0,68
	ltr/mtr		8,45
Built In Length (shoulder to shoulder)	ft		31,9
	mtr.		9,7

Calculated using nominal OD & ID. Safety & Dope friction factor used: 1.0

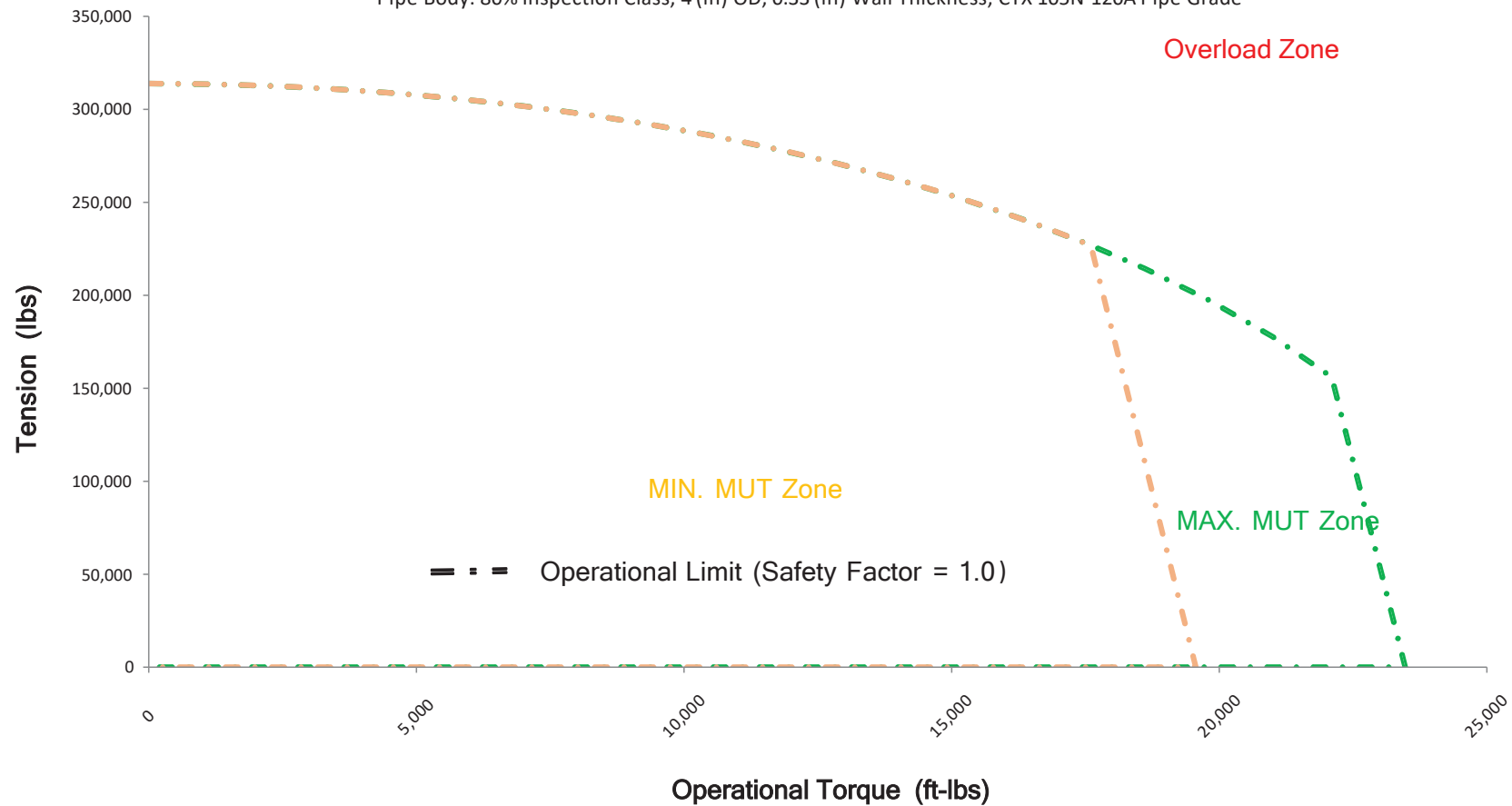
Values herein is meant as guidelines only. Odfjell will not be held liable for any damage or injuries !

<i>String number:</i>	<i>Joints:</i>	<i>Individual serial numbers:</i>
OWS-DP-406	396	OWS-100 to OWS-395

Drill Pipe Operational Limits (Connection at Recommended MUT = 23,474 (ft-lbs)) (Connection at Minimum MUT = 19,562 (ft-lbs))

Connection: TurboTorque™ 390 (4.875 (in) OD 2.688 (in) ID) SMYS = 120,000 (psi) Friction Factor = 1.0

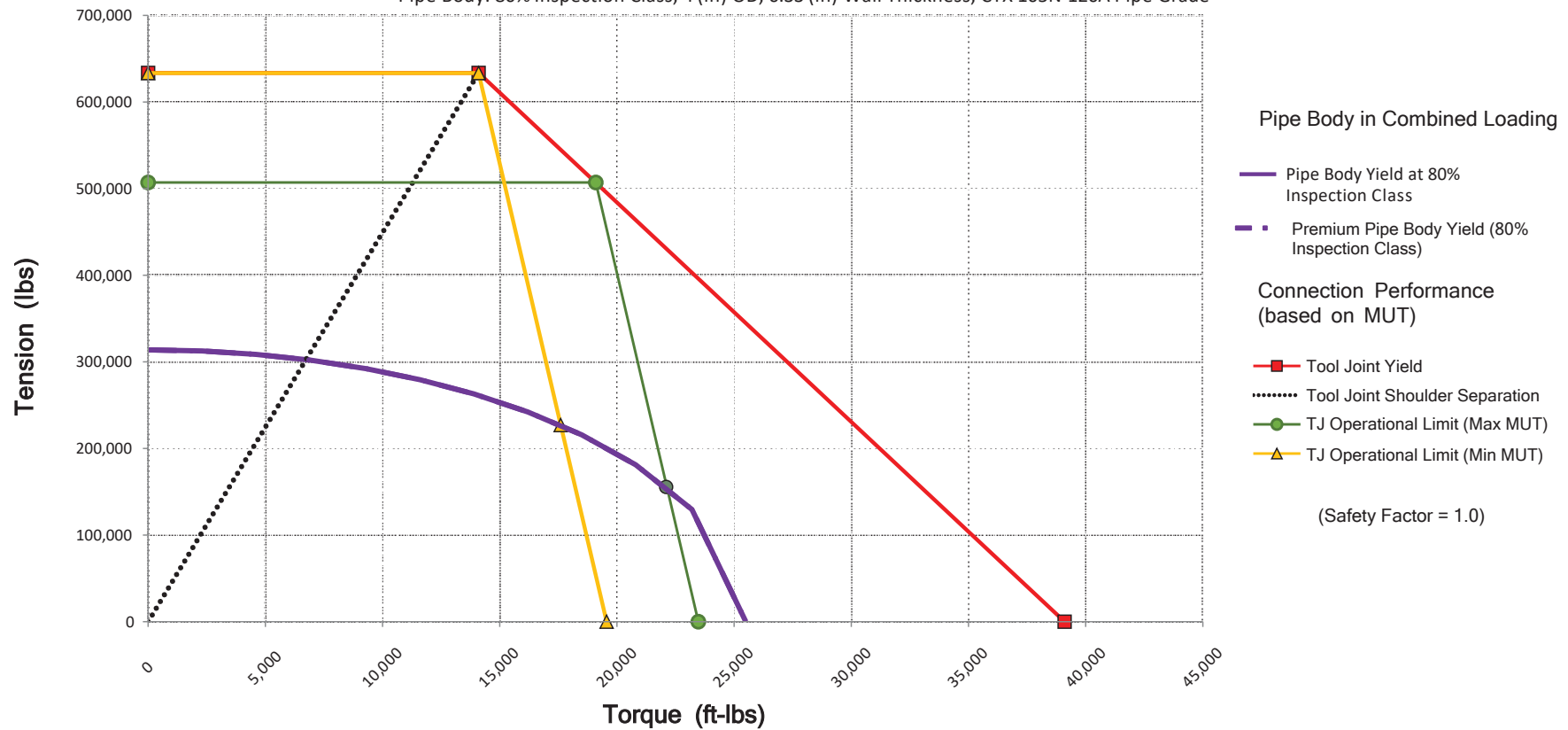
Pipe Body: 80% Inspection Class, 4 (in) OD, 0.33 (in) Wall Thickness, CYX 105N-120A Pipe Grade



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Torque-Tension Graph

Connection: TurboTorque™ 390 (4.875 (in) OD 2.688 (in) ID) SMYS = 120,000 (psi) Friction Factor = 1.0
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Combined Loading for Drill Pipe			
Connection: TurboTorque™ 390 4.875" x 2.688" (120 KSI SMYS) Friction Factor: 1.0			
Pipe: 4.0" OD 0.330" Wall Thickness CYX™ 105N-120A 80% Inspection Class			
At Max MUT (23500 ft-lbs)		At Min MUT (19600 ft-lbs)	
Operational Torque(ft-lbs)	Assembly Max Tension(lbs)	Operational Torque(ft-lbs)	Assembly Max Tension(lbs)
0	313900	0	313900
1200	313500	900	313700
2300	312600	1900	313000
3500	310900	2800	312000
4700	308500	3700	310500
5800	305600	4600	308700
7000	301800	5600	306200
8100	297600	6500	303500
9300	292200	7400	300300
10500	286000	8300	296700
11600	279400	9300	292200
12800	271400	10200	287600
14000	262200	11100	282500
15100	252800	12000	276900
16300	241200	13000	269900
17500	228100	13900	263000
18600	214500	14800	255500
19800	197500	15700	247200
21000	177700	16700	237000
22100	156100	17600	226900

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.

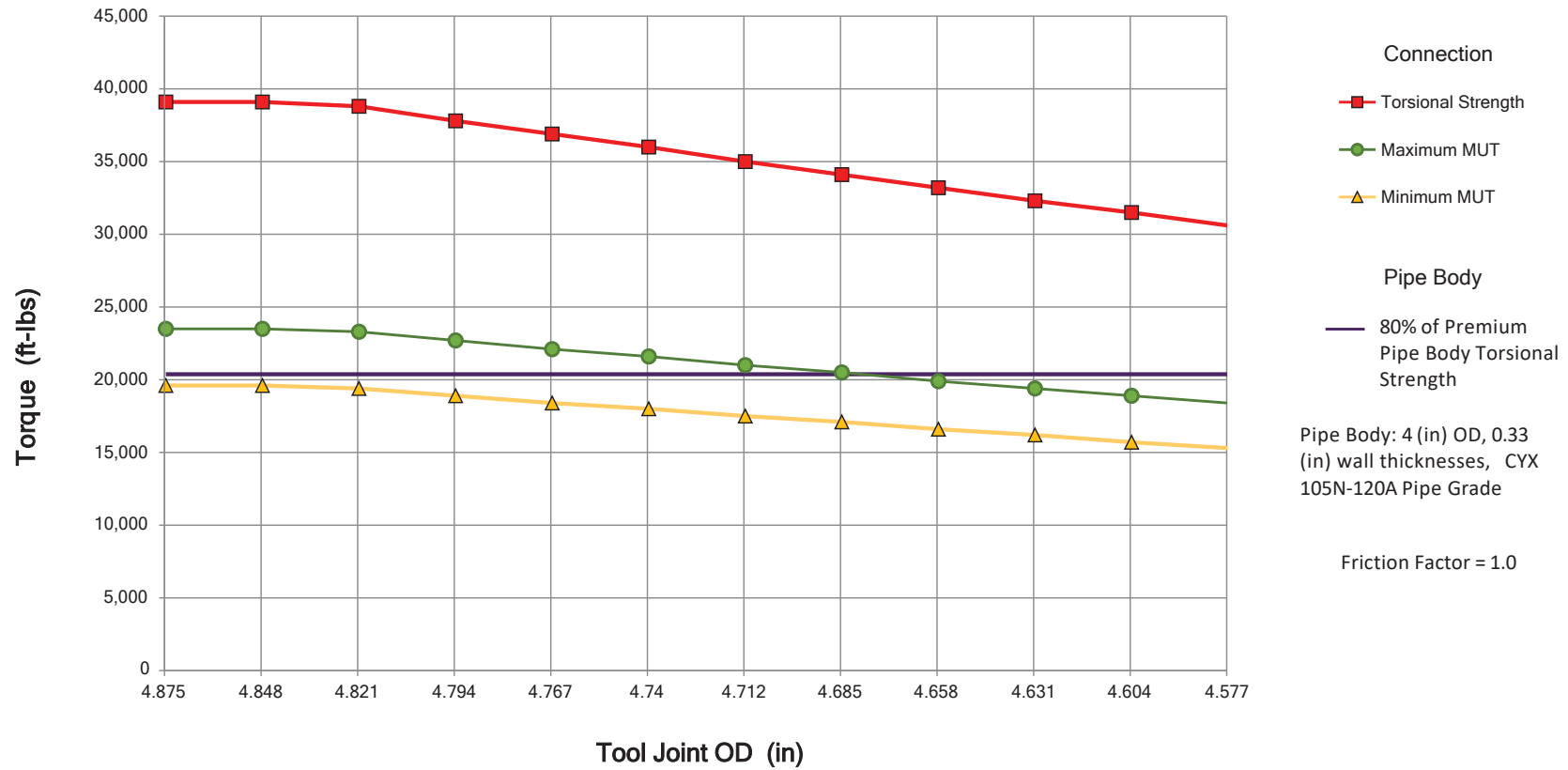
Connection Wear Table		
Connection: TurboTorque™ 390 4.875" x 2.688" (120 KSI SMYS) Friction Factor: 1.0		
Tool Joint OD (in)	Max MUT(ft-lbs)	Min MUT(ft-lbs)
4.875	23500	19600
4.848	23500	19600
4.821	23300	19400
4.794	22700	18900
4.767	22100	18400
4.74	21600	18000
4.712	21000	17500
4.685	20500	17100
4.658	19900	16600
4.631	19400	16200
4.604	18900	15700
4.577	18400	15300

Elevator Capacity		
Elevator Bore Diameter: 4.28175" Elevator SMYS: 110,100 psi Box Taper Angle: 18 deg		
Connection: TurboTorque™ 390 4.0" 0.330" wall IU CYX™ 105N-120A		
Tool Joint OD (in.)	Elevator Hoist Capacity (lbs)	
	No Wear	1/32" Wear Factor
5.0625	630900	607600
5.018	592100	568800
4.974	554100	530800
4.93	516400	493100
4.886	479000	455800
4.842	442000	418800
4.798	405300	382100
4.754	369000	345800
4.709	332200	308900
4.665	296500	273300
4.621	261200	237900
4.577	226200	202900

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Connection Wear for TurboTorque™ 390 (4.875 (in) OD x 2.688 (in) ID)

Material SMYS (Specified Minimum Yield Strength) = 120,000 (psi)



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