

DRILL PIPE SPECIFICATION SHEET

4 1/2" – GPDS™ 42 – 5.375" OD X 2.813" ID – DRILL PIPE

TUBE / PIPE BODY	NOMINAL	
PIPE BODY OD	4.500	in
PIPE BODY ID	3.826	in
WEIGHT	16.60	lbs/ft
WALL THICKNESS	0.337	in
GRADE	S-135	
TYPE OF UPSET	IEU	
MAXIMUM UPSET OD	4.688	in
RANGE	2	

TOOL JOINT SPECIFICATIONS	NOMINAL	
TOOL JOINT DESCRIPTION	GPDS™ 42	
TOOL JOINT OD	5.375	in
TOOL JOINT ID	2.813	in
PIN TONG LENGTH	14	in
BOX TONG LENGTH	18	in
TOOL JOINT SMYS	130,000	psi
DRIFT	2.688	in
TOOL JOINT TORSIONAL	41,552	ft-lbs

PIPE BODY PERFORMANCE	INSPECTION CLASS		
	NOMINAL	API PREMIUM 80%	
REMAINING BODY WALL (RBW)	0.337	0.270	in
BURST PRESSURE*	17,693	16,176	psi
COLLAPSE PRESSURE*	16,771	10,961	psi
SLIP CRUSHING CAPACITY*	431,577	342,982	lbs
- ASSUMED SLIP LENGTH		16.5	in
- ASSUMED TRANSVERSE LOAD FACTOR (K)		4.2	
ADJUSTED WEIGHT**		20.16	lbs/ft
FLUID DISPLACEMENT**		0.0073	bbbls/ft
FLUID CAPACITY**		0.0131	bbbls/ft
TUBE TENSILE		468,300	lbs
TUBE TORSIONAL		43,450	ft-lbs



NOMINAL BURST CALCULATED AT 87.5% RBW PER API
 *WITH NO AXIAL LOAD OR BENDING IN STRING
 **BEST ESTIMATE

MAKEUP TORQUE SPECIFICATIONS	THREAD COMPOUND FRICTION FACTOR	
	1.00 FF	1.15 FF*
MAXIMUM MAKEUP TORQUE	24,900 ft-lbs	28,635 [†] ft-lbs
MINIMUM MAKEUP TORQUE	20,800 ft-lbs	23,920 [†] ft-lbs
TOOL JOINT TORSIONAL	41,533 ft-lbs	47,763 [†] ft-lbs
CONNECTION TENSILE (AT MIN MAKEUP TORQUE)	869,412 lbs	
CONNECTION TENSILE (AT MAX MAKEUP TORQUE)	708,567 lbs	

[†]FRICTION FACTOR ADJUSTMENT BASED ON USING COPPER BASED THREAD COMPOUND WITH A FRICTION FACTOR OF 1.15.
 *WHEN APPLYING A 1.15 FF THREAD COMPOUND THE TOOL JOINT TORSIONAL STRENGTH WILL INCREASE BY AN ADDITIONAL 15%.

- MAXIMUM MAKEUP TORQUE SHOULD BE USED WHEN POSSIBLE.
- IT IS RECOMMENDED THAT DRILLING TORQUE SHOULD NOT EXCEED 80% OF MAKEUP TORQUE.

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Start saving time and money today!

To order your 4 1/2", GPDS™42 Drill Pipe for your offshore & land needs, or for further information, please contact:

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Pipe Body Specification		
Pipe Body OD	in	4.5
Pipe Body Wall Thickness - Nominal Weight		0.337 in - 16.6 lb/ft
Pipe Body Grade		S-135
Drill Pipe Length		Range 2
- Max	ft	32.0
- Min	ft	31.0
Type of Upset		IEU
Max Upset OD	in	4.688
Tong Length includes hardbanding if applicable		

Pipe Body Performance			
		Nominal	API Premium 80% Inspection Class
Burst Pressure *	psi	17,690	16,200
Collapse Pressure *	psi	16,770	10,960
Slip Crushing Capacity *	lbs	431,600	343,000
- Assumed Slip Length	in		16.5
- Assumed Transverse Load Factor (K)			4.2
Adjusted Weight **	lbs/ft		20.09
Fluid Displacement **	US gal/ft		0.31
	Bbls/ft		0.0073
Fluid Capacity **	US gal/ft		0.55
	Bbls/ft		0.0132
* With no axial load or bending in string		** Best estimate with coating	
Note: Oil field barrel equivalent to 42 US gal		Note: Nominal burst calculated at 87.5% RBW per API	

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Tool Joint Specification		
Connection Type and Size		GPDS™42
Benchmark		GPmark™
SmoothEdge™ Height per side	in	0.0625
Tool Joint SMYS	psi	130,000
Connection OD	in	5.375
Connection ID	in	2.813
Pin Tong Length	in	14.0
Box Tong Length	in	18.0
Thread Compound Friction Factor		1.0

Tool Joint Performance		
Max Make-Up Torque (Recommended)	ft-lbs	24,900
Min Make-Up Torque	ft-lbs	20,800
Min TJ OD (API Premium)	in	5.093
Min TJ OD for Counterbore	in	4.893
Drift Size	in	2.688
The maximum make-up torque should be applied when possible.		
To maximize connection operational tensile, a MUT (T4) = 21,200 should be applied.		

Advisories and Warnings for Drill Pipe	
Advisories:	- Connection torsional strength is less than 80% pipe body torsional strength.
Warnings:	

Combined Loading for Drill Pipe			
Connection: GPDS™42 5.375" x 2.813" (130 KSI SMYS) Friction Factor: 1.0			
Pipe: 4.5" OD 0.337" Wall Thickness S-135 80% Inspection Class			
At Max MUT (24900 ft-lbs)		At Min MUT (20800 ft-lbs)	
Operational Torque(ft-lbs)	Assembly Max Tension(lbs)	Operational Torque(ft-lbs)	Assembly Max Tension(lbs)
0	468300	0	468300
1200	468100	1000	468200
2400	467600	1900	467800
3600	466700	2900	467300
4700	465500	3800	466500
5900	464000	4800	465400
7100	462000	5800	464100
8300	459700	6700	462700
9500	457000	7700	460900
10700	453900	8600	459000
11900	450400	9600	456700
13100	446500	10600	454100
14200	442600	11500	451600
15400	437900	12500	448500
16600	432800	13400	445500
17800	427200	14400	441800
19000	421200	15400	437900
20200	414600	16300	434100
21400	407600	17300	429600
22600	400000	18200	425200

Connection Wear Table		
Connection: GPDS™42 5.375" x 2.813" (130 KSI SMYS) Friction Factor: 1.0		
Tool Joint OD (in)	Max MUT(ft-lbs)	Min MUT(ft-lbs)
5.375	24900	20800
5.331	24900	20800
5.287	24900	20800
5.244	24200	20200
5.2	23200	19400
5.156	22200	18500
5.112	21300	17700
5.068	20300	16900
5.024	19300	16100
4.981	18400	15300
4.937	17500	14600
4.893	16600	13800

Elevator Capacity		
Elevator Bore Diameter: 4.78175" Elevator SMYS: 110,100 psi Box Taper Angle: 18 deg		
Connection: GPDS™42 4.5" 0.337" wall IEU S-135		
Tool Joint OD (in.)	Elevator Hoist Capacity (lbs)	
	No Wear	1/32" Wear Factor
5.5	612700	602200
5.445	560600	550200
5.39	509100	498700
5.334	457100	446700
5.279	406700	396300
5.224	356700	346300
5.169	307300	296900
5.114	258400	248000
5.059	210000	199600
5.003	161300	150900
4.948	139900	129500
4.893	93100	82700

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