

## DRILL PIPE PERFORMANCE DATA SHEET

### 4.500" X .337" Wall, S135, IEU, R2

### DLC™ 425 - 5.250" X 3.000"

PIPE BODY SPECIFICATION			PIPE BODY PERFORMANCE			TUBULAR ASSEMBLY SPECIFICATION			
OD	4.500	<i>in</i>	<b>NEW</b>	<b>PREMIUM</b>		Shoulder Length	31.5	<i>ft</i>	
ID	3.826	<i>in</i>	OD	4.500	4.365	<i>in</i>	Pin TJ Length	14	<i>in</i>
Wall	0.337	<i>in</i>	Thickness	0.337	0.270	<i>in</i>	Box TJ Length	14	<i>in</i>
Nominal Weight	16.60	<i>lb/ft</i>	X-Sec Area	4.407	3.469	<i>in<sup>2</sup></i>	Adjusted Weight	18.23	<i>lbs/ft</i>
Grade	S135		Tensile Yield	595,000	468,000	<i>lbs</i>	Fluid Capacity	0.571	<i>gal/ft</i>
Tube Yield	135	<i>ksi</i>	Torsional Yield	55,500	43,500	<i>ft-lbs</i>		0.0136	<i>bb/ft</i>
Range	2		Burst Capacity	19,200	16,200	<i>psi</i>	Closed End Displacement	0.850	<i>gal/ft</i>
Upset Type	IEU		Collapse Capacity	16,800	11,000	<i>psi</i>		0.0202	<i>bb/ft</i>
							Open End Displacement	0.279	<i>gal/ft</i>
								0.0066	<i>bb/ft</i>

All dimensions shown are presented as nominal unless otherwise stated - actual manufactured values may vary due to tolerancing. Calculations are based on uniform wall thickness and outside diameter with no safety factor applied. The information provided for inspection classes is based on uniform wear and is not intended to confirm operational limits of any specific used product.

CONNECTION SPECIFICATION			CONNECTION PERFORMANCE					
<b>DLC™ 425</b>			<b>Thread Compound Friction Factor</b>	<b>1.0 FF</b>	<b>1.05 FF</b>	<b>1.10 FF</b>	<b>1.15 FF</b>	
Yield Strength	130	<i>ksi</i>	Tensile Strength	<i>lbs</i>	786,400	786,400	786,400	786,400
OD	5.250	<i>in</i>	Torsional Strength	<i>ft-lbs</i>	43,300	45,500	47,600	49,800
ID	3.000	<i>in</i>	Minimum Makeup Torque	<i>ft-lbs</i>	21,700	22,800	23,900	25,000
Drift Size	2.875	<i>in</i>	Standard Makeup Torque	<i>ft-lbs</i>	26,000	27,300	28,600	29,900
Min OD	4.914	<i>in</i>	Enhanced Makeup Torque	<i>ft-lbs</i>	30,300	31,800	33,300	34,800

Connection torque calculations are performed using a thread compound friction factor (FF) of 1.0; values of FF other than 1.0 are provided for reference use only. DLC™ drill pipe does not endorse specific thread compounds and waives all responsibility in appropriate thread compound selection and performance. It is recommended that drilling torque not exceed 80% of the makeup torque and it remains the responsibility of the end user to determine the acceptable use of the end product including the determination of appropriate performance ratings and safety factors where applicable. Modifying makeup torque values for any reason shall be done at the end users discretion and risk. Elevator capacity is provided for reference only and shall not be interpreted as an engineered safe lifting load. DLC™ is protected under one or more issued patents; see website for details.

CONNECTION WEAR PERFORMANCE								
Tool Joint OD <i>in</i>	MAKEUP TORQUE ( <i>ft-lbs</i> )				ELEVATOR CAPACITY ( <i>lbs</i> )			
	1.0 Friction Factor		1.15 Friction Factor		Elevator Bore		4.781 <i>in</i>	
	Standard Makeup <i>ft-lbs</i>	Enhanced Makeup <i>ft-lbs</i>	Standard Makeup <i>ft-lbs</i>	Enhanced Makeup <i>ft-lbs</i>	110,100 psi Stress		130,000 psi Stress	
					New	1/32" Wear	New	1/32" Wear
5.250	26,000	30,300	29,900	34,800	406,800	380,900	480,300	449,700
5.194	25,500	29,700	29,300	34,200	356,200	330,300	420,600	390,000
5.138	24,200	28,200	27,800	32,400	306,200	280,300	361,600	330,900
5.082	22,900	26,700	26,300	30,700	256,700	230,800	303,100	272,500
5.026	21,700	25,300	25,000	29,100	207,800	181,800	245,300	214,700
4.970	20,400	23,800	23,500	27,400	159,400	133,400	188,200	157,600
4.914	19,200	22,400	22,100	25,800	111,500	85,600	131,700	101,000

**OPERATING CURVE: MAKEUP TORQUE THEN TENSION**

