

Drill Pipe Performance Characteristics Sheet



Pipe Size & Weight: 5-1/2 21.90# IEU
Pipe Grade: S-135
Range: 2
Tool Joint Dimensions: 7-1/2" OD x 3" ID
Connection: 5-1/2 FH

THIS TECHNICAL INFORMATION IS FOR REFERENCE ONLY

Pipe Body Information

	<u>New-API</u>	<u>New 95% RBW</u>	<u>Premium</u>
OD (in)	5.500	5.500	5.356
Wall Thickness (in)	.361	.388	.289
ID (in)	4.778	4.724	4.778
Calculated Plain End weights (lbs./ft)	19.804	21.177	15.621

** Note: Premium Properties are calculated based on uniform OD and wall thickness.*

	<u>New-API</u>	<u>New 95% RBW</u>	<u>Premium</u>
Cross Sectional area pipe body (in ²)	5.828	6.232	4.597
Cross Sectional area OD (in ²)	23.758	23.758	22.527
Cross Sectional area ID (in ²)	17.930	17.526	17.930
Section Modulus (in ²)	7.031	7.445	5.527
Polar Section Modulus (in ²)	14.062	14.891	11.054

	<u>New-API</u>	<u>New 95% RBW</u>	<u>Premium</u>
Torsional Strength (ft.-lbs.)	91,300	96,700	71,800
Tensile Strength (lbs.)	786,800	841,400	620,600
80% Torsional Strength (ft.-lbs.)	73,000	77,400	57,400
Pressure Capacity (psi)	15,507	16,670	14,177
Collapse Capacity (psi)	17,023	18,299	7,491

Tool Joint Information

5-1/2 FH

OD (in)	7-1/2"
ID (in)	3"

** Tool Joint with a Material Yield Strength of 120,000 psi*

Pin Tong length (in)	10"
Box Tong length (in)	12"

Torsional Strength (ft.-lbs.)	87,200
Max Recommended Make-up Torque (ft.-lbs.)	44,700
Min Recommended Make-up Torque (ft.-lbs.)	37,900

Balance OD (in)	7.422
Tensile Strength (lbs.)	1,925,500
Tool Joint / Drill Pipe torsional ratio (New Pipe)	0.96
Tool Joint / Drill Pipe torsional ratio (95% New Pipe)	0.90
Tool Joint / Drill Pipe torsional ratio (Premium Pipe)	1.21
Min OD for Premium Class (in)	7.088

Drill Pipe Assembly

API Adjusted Weight (lbs./ft.)	27.25
95% Adjusted Weight (lbs./ft.)	28.53
Approximate Length (ft.)	31.5
Fluid Displacement (gal./ft.)	0.310
Fluid Capacity (gal./ft.)	0.931
Drift Size (in)	2.875

Drill Pipe Bend Radius

<i>* These calculations are based on new pipe with nominal wall</i>	
Based on Bending Stress (psi) at Pipe OD	15,000
Radius of Curvature ® (ft.) (@ OD of pipe)	458.3
BUR (dogleg) deg/100 ft.	12.5