

PRODUCT PERFORMANCE SHEET
NEW HEAVY WEIGHT DRILL PIPE, WELDED
4-1/2" OD by 2-3/4" ID by 31.0' OAL (55 ksi SMYS)
TOOL JOINT: 5.250" OD by 2.813" ID by TSDS™42 (135 ksi SMYS)

TUBE DATA, NEW (100% RBW)	
OD, Tube (in)	4.500
ID, Tube (in)	2.750
Nominal Wall Thickness, Tube (in)	0.875
Center Upset OD (in)	5.000
Elevator Upset OD (in)	4.625
Cross Sectional Area, Tube (in ²)	9.965
Polar Section Modulus, Tube, J/c (in ³)	15.397
Section Modulus, Tube, I/c (in ³)	7.698

Above data based on New Heavy Weight drill pipe nominal dimensions (100% RBW).

TUBE PERFORMANCE PROPERTIES, NEW (100% RBW)	
Tensile Yield (lb)	548,060
Torsional Yield (ft-lb)	40,710
Collapse Pressure (psi)	17,230
Internal Yield Pressure (psi)	18,710
Material Yield Strength (psi)	55,000

Above data based on New Heavy Weight pipe body nominal dimensions (100% RBW) and no safety factor. Internal yield pressure based on 87.5% of New Heavy Weight pipe body nominal wall thickness.

TOOL JOINT DATA (NEW)		
Connection Size	TSDS™42	
OD (in)	5.250	
ID (in)	2.813	
Box Tool Joint OAL, Ref. (in)	27.0	
Pin Tool Joint OAL, Ref. (in)	30.0	
Material Yield Strength (psi)	135,000	
Thread Compound Friction Factor	1.0 (a)	1.15 (b)
Recommended Make-Up Torque (ft-lb)	25,300	29,100 (c)
Max Make-Up Torque (ft-lb)	29,500	33,900 (d)
Torsional Yield (ft-lb)	42,200	
Approximate Tension to Yield Pin at Recommended Make-Up Torque (lb)	626,000	
Approximate Tension to Yield Pin at Max Make-Up Torque (lb)	478,000	
Tool Joint Tensile Yield (lb)	903,400	
Balanced OD (in)	5.274	

- (a) Make-Up Torque values shown under column 1.0 are based on using a 1.0 friction factor thread compound (0.08 coefficient of friction).
 (b) Make-Up Torque values shown under column 1.15 have been adjusted based on using a 1.15 friction factor thread compound. The make-up torque values are only applicable when using a thread compound rated by the manufacturer to have a 1.15 friction factor.
 (c) Recommended Make-Up Torque is based on 60% of the connection torsional yield.
 (d) Max Make-Up Torque is based on 70% of the connection torsional yield. It is the maximum make-up torque that can be applied to the connection to prevent downhole make-up, reference IADC Drilling Manual. Never exceed Max Make-Up Torque.
 (e) Caution, pin connection tensile yield capacity at Max Make-Up torque is less than new (100% RBW) Heavy Weight pipe body tensile yield capacity.

ASSEMBLY DATA (NEW)						
Weight (Approx.)		Capacity (Approx.)		Displacement Open Ends (Approx.)		Overall Length (Approx.)
(lb/joint)	(lb/ft)	(US Gal/ft)	(BBL/ft)	(US Gal/ft)	(BBL/ft)	(ft)
1,150	37.49	0.3105	0.0074	0.5728	0.0136	2.500
						31.0

Assembly data based on New Heavy Weight drill pipe nominal dimensions and no internal plastic coating.
 Conversion Factor: 1 BBL = 42 US Gallons

Notes:

- All data is based on New Heavy Weight drill pipe nominal dimensions (100% RBW) and no safety factor.
- Drawing is for reference only, not to scale, and based on New Heavy Weight drill pipe nominal dimensions, units of inches unless otherwise indicated.
- Specified tool joint OD is smaller than the standard API tool joint for 4-1/2" Heavy Weight drill pipe. User is advised to contact their elevator manufacturer for elevator hoist capacity rating versus tool joint OD.

