GULF ENGINEERING SERVICES LTD.
HEAVY WEIGHT DRILL PIPE PERFORMANCE CHARACTERISTICS

Pipe Size and Weight:	**3.500” x 2.250” Heavy Weight**
Pipe Grade:	**55ksi Standard Heavy Weight**
Range:	**2**
Tool Joint:	**4.875” x 2.250” NC38**

PIPE BODY:

	New (Nominal)
OD (in):	3.500
Wall Thickness (in):	0.625
ID (in):	2.250
Calculated Plain End Weight (lbs/ft):	19.191
Tensile Strength (lbs):	310 500
Torsional Strength (ft-lbs):	18 500
80% Torsional Strength (ft-lbs):	14 800
Burst Pressure (psi):	17 188
Collapse Pressure (psi):	16 135

	New (Nominal)
Cross Sectional Area of Pipe Body (in^2):	5.645
Cross Sectional Area of OD (in^2):	9.621
Cross Sectional Area of ID (in^2):	3.976
Section Modulus (in^3):	3.490
Polar Section Modulus (in^3):	6.981

TOOL JOINT 120 000 psi MATERIAL YIELD STRENGTH:
NC38 (3-1/2” IF)

OD (in):	4.875
ID (in):	2.250
Pin Tong Length (in):	24.0
Box Tong Length (in):	24.0
Torsional Strength (ft-lbs):	22 900
Max Recommended Make-up Torque (ft-lbs):	13 740
Min Recommended Make-up Torque (ft-lbs):	11 450
Tensile Strength (lbs):	790 900
Tool Joint/ Drill Pipe Torsional Ratio (New Pipe):	1.24
Balance OD (in):	4.936

DRILL PIPE ASSEMBLY WITH NC38 CONVENTIONAL CONNECTION:

Adjusted Weight (lbs/ft):	23.73
Approximate Length (ft):	31.00
Fluid Displacement (gal/ft):	0.363
Fluid Capacity (gal/ft):	0.207
Fluid Capacity (bbls/ft):	0.00493
Drift Size (in):	2.000

Note: Minimum make-up is based on shoulder separation caused by bending