



GULF ENGINEERING SERVICES LTD. TUBING PERFORMANCE SHEET

Size and Weight: 4.500" 15.50 ppf 0.337" wall
Grade: P-110
Range: 2
Tool Joint: 5.125" x 3.765 TS-HD

PIPE BODY:

	Nominal 100% RBW	87.5% RBW	Premium 80% RBW
OD (in):	4.500	4.416	4.365
Wall Thickness (in):	0.337	0.295	0.270
Nominal ID (in):	3.826	3.826	3.826
Tensile Strength (lbs):	484 818	419 923	381 575
Torsional Strength (ft-lbs):	45 184	39 024	35 404
Burst Capacity (psi):	14 416	14 416	13 180
Collapse Capacity (psi):	14 341	11 503	9 748

TUBULAR ASSEMBLY:

Approximate Length (ft):	31.0
Nominal Weight (lbs/ft):	15.50
Material Grade:	P-110
Drift Size (in):	3.701
Compression Strength (lbs)	485 000
Max Bending (degrees/100ft):	112.0

Notes: Body Properties are calculated based on uniform OD and wall thickness.
Burst Capacity for Nominal (100% RBW) based on 87.5% RBW per API.

CONNECTION: TS-HD

Connection OD (in):	5.125	Threads per inch:	6	Maximum MUT (ft-lbs):	9 400
Connection ID (in):	3.826	Make-up Loss (in):	3.342	Optimum MUT (ft-lbs):	8 450
Special Clearance OD (in):	Not Reported	Internal Pressure Rating (psi):	14 420	Minimum MUT (ft-lbs):	7 500
		Connection Torsional Strength (ft-lbs):	26 700		
		Connection Tensile Strength (lbs):	472 300		

The technical information contained herein, including the product performance sheet and other attached documents, has been extracted from information available from the manufacturer and is for reference only and not a recommendation. The user is fully responsible for the accuracy and suitability of use of the technical information. Gulf Engineering Services Ltd. cannot assume responsibility for the results obtained through the use of this material. No expressed or implied warranty is intended. Drill pipe assembly properties are calculated based on uniform OD and wall thickness. No safety factor is applied. The information provided for various inspection classes and for various wear conditions (remaining body wall) is for information only and does not represent or imply acceptable operation limits. It is the responsibility of the customer and the end user to determine the appropriate performance ratings, acceptable use of the product, maintain safe operational practices, and to apply a prudent safety factor suitable for the application. For API connections that have different pin and box IDs, tool joint ID refers to the pin ID. Per Chapter B, Section 4 VII of the IADC drilling manual, it is recommended that drilling torque should not exceed 80% of MUT.