



GULF ENGINEERING SERVICES LTD. DRILL COLLAR PERFORMANCE SHEET

Size: 4.125" x 2.000"
Type: Slick
MYS (ksi): 110
Tool Joint: 4.125" x 2.000" NC31

DRILL COLLAR BODY:

| | Nominal 100% RBW |
|----------------------|---------------------|
| OD (in): | 4.125 |
| Wall Thickness (in): | 1.063 |
| Nominal ID (in): | 2.000 |

DRILL COLLAR ASSEMBLY:

| | |
|-------------------------------|--------|
| Approximate Length (ft): | 31.5 |
| Adjusted Weight (lbs): | 34.35 |
| Type of Drill Collar: | Slick |
| Fluid Displacement (gal/ft): | 0.529 |
| Fluid Displacement (bbls/ft): | 0.0126 |
| Fluid Capacity (gal/ft): | 0.164 |
| Fluid Capacity (bbls/ft): | 0.0039 |
| Drift Size (in): | 1.875 |

CONNECTION: NC31

Tool Joint OD (in): **4.125**
 Tool Joint ID (in): **2.000**
 Connection MYS (ksi): **110**
 Bending Strength Ration (BSR): **2.44**

Maximum MUT (ft-lbs): 7 500
 Tension at Shoulder Separation @ Max MUT (lbs): **Tensile Limited**
 Tension at Connection Yield @ Max MUT (lbs): **348 000**

Minimum MUT (ft-lbs): 6 900
 Tension at Shoulder Separation @ Min MUT (lbs): **Tensile Limited**
 Tension at Connection Yield @ Min MUT (lbs): **393 800**

Tool Joint Torsional Strength (ft-lbs): **12 100**
 Tool Joint Tensile Strength (lbs): **393 800**

Note: MUT values are based on a friction factor of 1.0. There is no published pressure rating for this connection.

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.