



GULF ENGINEERING SERVICES LTD. DRILL PIPE PERFORMANCE SHEET

Size and Weight: 5.000" 19.50 ppf 0.362" wall IEU
 Grade: S-135
 Range: 2
 Tool Joint: 6.625" x 3.250" NC50

PIPE BODY:

| | Nominal 100% RBW | 95% RBW | Ultra Class 90% RBW | Premium 80% RBW |
|------------------------------|---------------------|------------|------------------------|--------------------|
| OD (in): | 5.000 | 4.964 | 4.928 | 4.855 |
| Wall Thickness (in): | 0.362 | 0.344 | 0.326 | 0.290 |
| Nominal ID (in): | 4.276 | 4.276 | 4.276 | 4.276 |
| Tensile Strength (lbs): | 712 070 | 673 826 | 635 861 | 560 763 |
| Torsional Strength (ft-lbs): | 74 100 | 70 043 | 66 026 | 58 113 |
| Burst Capacity (psi): | 17 105 | 18 571 | 17 593 | 15 638 |
| Collapse Capacity (psi): | 15 672 | 14 292 | 12 892 | 10 029 |

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: NC50

| | |
|---|-----------------|
| Tool Joint OD (in): | 6.625 |
| Tool Joint ID (in): | 3.250 |
| Connection MYS (ksi): | 120 |
| Maximum MUT (ft-lbs): | 30 700 |
| Tension at Shoulder Separation @ Max MUT (lbs): | Tensile Limited |
| Tension at Connection Yield @ Max MUT (lbs): | 1 117 600 |
| Minimum MUT (ft-lbs): | 25 600 |
| Tension at Shoulder Separation @ Min MUT (lbs): | 1 132 000 |
| Tension at Connection Yield @ Min MUT (lbs): | 1 250 000 |
| Tool Joint Torsional Strength (ft-lbs): | 51 200 |
| Tool Joint Tensile Strength (lbs): | 1 250 000 |

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

TUBULAR ASSEMBLY:

| | | | |
|---------------------------|-------|-----------------------------------|--------|
| Adjusted Weight (lbs/ft): | 24.11 | Fluid Displacement (gal/ft): | 0.37 |
| Approximate Length (ft): | 31.5 | Fluid Displacement (bbls/ft): | 0.0088 |
| Box TJ Length (in): | 14 | Fluid Capacity w/IPC (gal/ft): | 0.70 |
| Pin TJ Length (in): | 12 | Fluid Capacity w/IPC (bbls/ft): | 0.0167 |
| Upset Type: | IEU | Fluid Capacity w/o IPC (gal/ft): | 0.71 |
| Max Upset OD (in): | 5.125 | Fluid Capacity w/o IPC (bbls/ft): | 0.0169 |
| Drift Size (in): | 3.125 | | |

Note: These are OEM values that may vary with actual values due to mill tolerances, IPC tolerances, OEM rounding, and other factors. Pipe is purchased at a guaranteed 95% RBW. IPC is applied to a nominal thickness of 0.009".

ELEVATOR SHOULDER:

| | |
|---|-----------|
| Smooth Edge Height (in): | 3/32 |
| Smooth Edge OD (in): | 6.812 |
| SE Elevator Shoulder Capacity (lbs): | 1 629 800 |
| Nominal TJ OD (in): | 6.625 |
| Nominal TJ OD Elevator Shoulder Capacity (lbs): | 1 411 900 |
| Assumed Elevator Bore (in): | 5.250 |

Note: Elevator capacity based on assumed elevator bore, no wear factor, and contact stress of 110 100 psi. An increased elevator shoulder OD increases elevator capacity without affecting make-up torque.

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