

HWDP Data & Performance Sheet

4-1/2" Plain Hevi-Wate DP NC46 (4-1/2 XH)

TUBE BODY DATA

| | | |
|---|-----------|---------|
| Tube OD | 4.500 | in. |
| Wall Thickness | 0.875 | in. |
| Tube ID | 2.750 | in. |
| Pipe Grade | 55,000 | psi. |
| Tensile Yield Strength | 548,100 | lbs. |
| Torsional Yield Strength | 40,700 | ft-lbs. |
| Tube Burst | 18,700 | psi. |
| Tube Collapse | 17,200 | psi. |
| Elevator Capacity | 1,401,000 | lbs. |
| Slip-Crush Capacity (16.5" gripper contact length) | 397,500 | lbs. |

CONNECTION DATA

| | | |
|-----------------|-----------------|------|
| Connection | NC46 (4-1/2 XH) | |
| Tool Joint OD | 6.250 | in. |
| Tool Joint ID | 2.750 | in. |
| Tool Joint SMYS | 120,000 | psi. |

CONNECTION PERFORMANCE

| | | |
|---|----------------|-------------------|
| Make Up Torque (Max.) ¹ | 26,600 | ft-lbs. (1.0 FF) |
| | 30,590 | ft-lbs. (1.15 FF) |
| Connection Tensile Yield (@ Max. M/U TQ) | 1,055,600 lbs. | |
| Connection Torsional Yield | 44,400 | ft-lbs. |

ENGINEERING DATA

| | | | | |
|--------------------|--------|------------|--------|-------------|
| Approximate Length | 30 | ft. | | |
| Drift Diameter | 2.625 | in. | | |
| Adj. Weight | 41.45 | lbs. / ft. | | |
| Displacement | 0.6802 | gal. / ft. | 0.0162 | bbls. / ft. |
| Capacity | 0.3045 | gal. / ft. | 0.0073 | bbls. / ft. |

Notes:

- ¹Max MUT 1.0 FF is 60% of connection torsional strength. Stick and slip is very damaging to connections and can induce higher-than-planned torque. As required, adjust MUT according to applied thread compound friction factor, not exceeding 1.15. Higher MUT should only be applied where rotary torque exceeds 80% 1.0 FF or when downhole torque and/or backoff is a concern.
- Dimensions, wall thickness, and lengths shown above are nominal. Figures may exclude the effects of wear, stress relief, boreback, ID chamfers, and/or spiral features.

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. Patterson Services, Inc. cannot assume responsibility for the results obtained through the use of this material. No expressed or implied warranty is intended. Heavy-weight drill pipe assembly properties are calculated based on uniform OD and wall thickness. No safety factor is applied. Weight, displacement, and capacity are approximate and can vary by ± 10% (or more) depending on OD, specified wall, wall tolerance, and internal coating options. 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.