

Drill Pipe Performance Characteristics Sheet

TSC Drill Pipe



Patent: 9,885,214
Pipe Size and Weight: 5 1/2 21.90 IEU
Pipe Grade: S-135
Range: 2
Tool Joint: 6 5/8 X 4 1/4 PTECH+™55



110 Cypress Station Drive
 Suite 160
 Houston, TX 77090
 Phone: (832) 230-8228
 Fax: (281) 741-9914

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| Pipe Body | | |
|--|---------|---------|
| | New-API | Premium |
| OD (in) | 5.500 | 5.356 |
| Wall Thickness (in) | 0.361 | 0.289 |
| ID (in) | 4.778 | 4.778 |
| Calculated Plain End weights (lbs/ft) | 19.804 | 15.621 |
| Note: Premium properties are calculated based on uniform OD and wall thickness. | | |
| Cross sectional area pipe body (in ²) | 5.828 | 4.597 |
| Cross sectional area OD (in ²) | 23.758 | 22.527 |
| Cross sectional area ID (in ²) | 17.930 | 17.930 |
| Section Modulus (in ³) | 7.031 | 5.527 |
| Polar Section Modulus (in ³) | 14.062 | 11.054 |
| | New-API | Premium |
| Torsional Strength (ft-lbs) | 91,300 | 71,800 |
| Tensile Strength (lbs) | 786,800 | 620,600 |
| 80% Torsional Strength (ft-lbs) | 73,000 | 57,400 |
| Pressure Capacity (psi) | 15,507 | 14,177 |
| Collapse Capacity (psi) | 16,559 | 7,491 |

| Tool Joint | | |
|--|---|-------------------------|
| PTECH+™ | PTECH+™55 | |
| | OD (in) | 6 5/8 |
| | ID (in) | 4 1/4 |
| Tool Joint with a Material Yield Strength of 135000 psi | | |
| | Pin Tong length (in) | 13 |
| | Box Tong length (in) | 15 |
| | Friction Factor | 1.00 1.15 |
| | Torsional Strength (ft-lbs) | 86,400 |
| | Severe Service Recommended Make-up Torque (ft-lbs) [70%] | 60,500 69,600 |
| | Standard Service Recommended Make-up Torque (ft-lbs) [60%] | 51,800 59,600 |
| | Min Recommended Make-up Torque (ft-lbs) | 40,800 46,900 |
| | Balance OD (in) | 6.605 |
| | Tensile Strength (lbs) | 1,147,500 |
| | Tool joint/Drill pipe torsional ratio (New pipe) | 0.95 |
| | Tool joint/Drill pipe torsional ratio (Prem pipe) | 1.20 |
| | Min OD for premium class (in) | 6.236 |

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

| Drill Pipe Assembly with PTECH+™55 Tool Joint | | Drill Pipe Bend Radius | |
|---|-------|--|--------|
| API Adjusted weight (lbs/ft) | 24.16 | * These calculations are based on new pipe with nominal wall | |
| Approximate length (ft) | 32.00 | Based on Bending Stress (psi) at Pipe OD | 15,000 |
| API Fluid Displacement (gal/ft) | 0.370 | Radius of Curvature (R) (ft.) (@ OD of pipe) | 458.3 |
| Fluid Capacity (gal/ft) | 0.907 | BUR (dogleg) deg/100 ft. | 12.5 |
| Drift Size | 4.125 | | |

The technical information contained herein is for reference purposes only and is not a recommendation. TSC Drill Pipe does not assume responsibility for results obtained through the use of the technical information. User is fully responsible for the accuracy and suitability of use of the technical information and application of appropriate safety factor.