

# Drill Pipe Performance Sheet

Size and Weight: 5.000" 19.50 ppf 0.362" wall IEU

Grade: S-135

Range: 3

Tool Joint: 6.625" x 2.750" 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

## Tubular Assembly:

Adjusted Weight (lbs/ft):	22.39	Fluid Displacement (gal/ft):	0.34
Approximate Length (ft):	44.5	Fluid Displacement (bbls/ft):	0.0081
Box TJ Length (in):	12	Fluid Capacity w/IPC (gal/ft):	Not Reported
Pin TJ Length (in):	9	Fluid Capacity w/IPC (bbls/ft):	Not Reported
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):	2.625		

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.

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". Pipe will have an ID of 4.218", which is smaller than pipe purchased at 87.5%.

## Connection: NC50

TJ OD (in): **6.625**

TJ ID (in): **2.750**

MYS (ksi): 120

**Maximum MUT is recommended based on thread compound friction factor (unless stated). Lower than maximum MUT should only be used when MUT is limited by rig equipment or connection tensile. Lower than minimum MUT should never be used.**

	<b>1.0 FF</b>	<b>1.1 FF</b>	<b>1.15 FF</b>
Maximum MUT (ft-lbs):	<b>38,000</b>	<b>41,800</b>	<b>43,700</b>
Tension at Shoulder Separation @ Max MUT (lbs):	Tensile Limited	Tensile Limited	Tensile Limited
Tension at Connection Yield @ Max MUT (lbs):	1,230,700	1,230,700	1,230,700
Minimum MUT (ft-lbs):	<b>31,700</b>	<b>34,870</b>	<b>36,455</b>
Tension at Shoulder Separation @ Min MUT (lbs):	1,529,500	1,529,500	1,529,500
Tension at Connection Yield @ Min MUT (lbs):	1,532,700	1,532,700	1,532,700
Tool Joint Torsional Strength (ft-lbs):	63,400	69,740	72,910
Tool Joint Tensile Strength (lbs):	1,532,700	1,532,700	1,532,700

Note: There is no published pressure rating for this connection.

**\*ADJUST makeup torque according to thread compound friction factor (FF) greater than 1.0 up to 1.15 FF. Not to exceed 1.15 regardless of dope FF.\* Reference Page 3**

## Elevator Shoulder:

Smooth Edge Height (in): N/A

Smooth Edge OD (in): N/A

SE Elevator Shoulder Capacity (lbs): N/A

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.

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. Workstrings International 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.





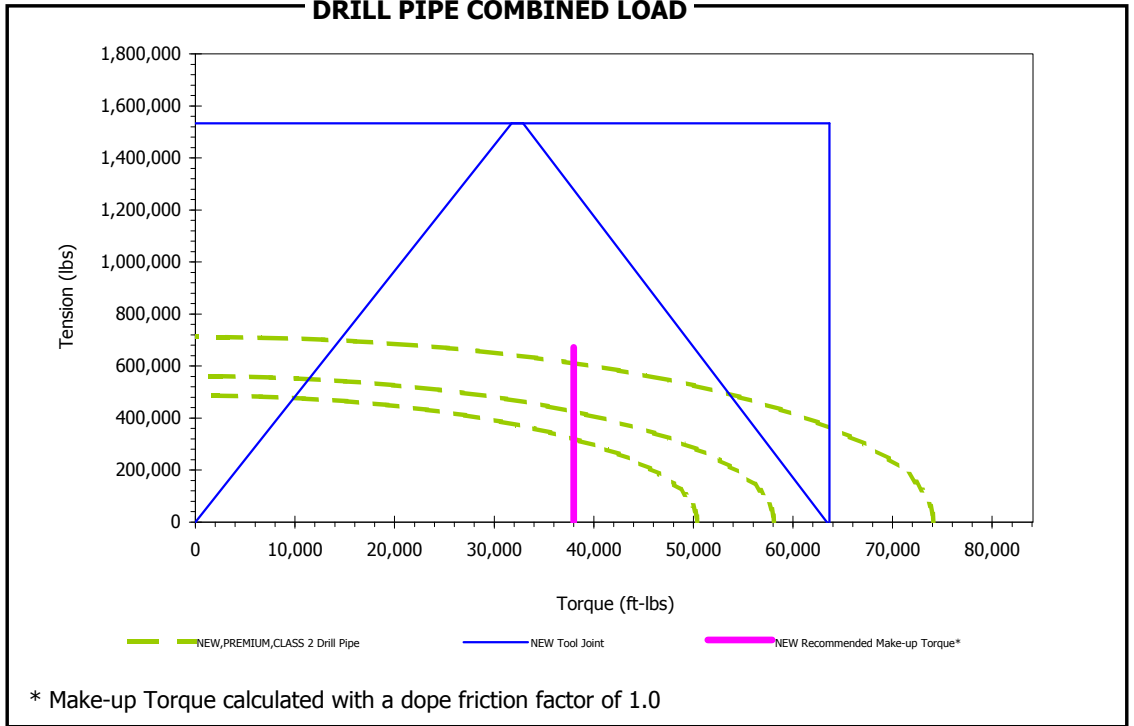
**Performance Datasheet**

Size: **5" IEU x 19.50 lbs/ft**  
 Connection: **NC50**  
 Pipe grade: **S-135**  
 Range: **3**

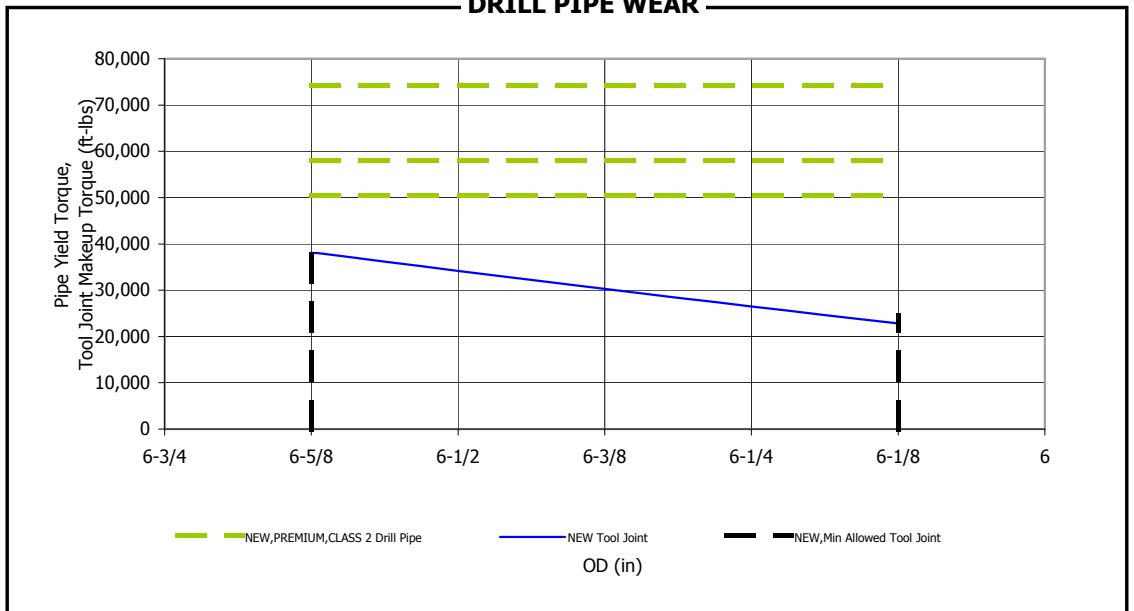
**Drill Pipe**

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**DRILL PIPE COMBINED LOAD**



**DRILL PIPE WEAR**



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\* These values are only recommendations, Vallourec Drilling Products follows API specification for calculations. API only gives a single value for the proper makeup torque. All data nominal and calculated per standard methods. Vallourec Drilling Products does not assume responsibility for results obtained through the use of this information. No warranty expressed or implied.  
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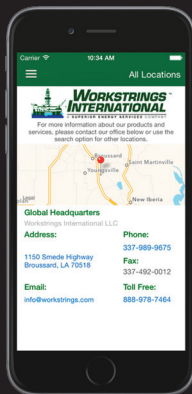
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## Makeup Torque Guidelines

- Good **COPPER-BASED** thread compound is recommended for rotary-shouldered drill pipe connections by the OEM.
- Be **LIBERAL** with the thread compound in the box, the base of the box, and on the pin using a copper-based or a compatible thread compound.
- Ensure **360 DEGREES** of coverage of the threads and torque shoulders.
- Ensure **360 DEGREES** of coverage on the seal surfaces on completion pipe.
- Always **ENSURE** proper pipe alignment.
- **ADJUST** makeup torque according to thread compound Friction Factor (FF) greater than 1.0 FF up to 1.15 FF. Workstrings Engineering is available for more information.
- **MINIMIZE** clamp pressure with the tongs or iron roughneck.
- **MAXIMIZE** the distance between the box shoulder and lower jaw die per OEM guidelines (1"-2" minimum for most tool joints).
- Use a **SLOW** rotation speed during spin-up and break-out of the first 5-6 threads - especially critical for premium and completion connections.

**NOTE:** More detailed running procedures for proprietary rotary-shouldered connections are available from the OEM's website (NOV Grant Prideco and Tenaris), Workstrings Engineering or Workstrings' website.



## PIPE SPECIFICATION MOBILE APP

Download the Workstrings International Pipe Specification App on the App Store<sup>SM</sup> or Google Play<sup>TM</sup>

The App allows users to access specifications for the most commonly used sizes and connections of drill pipe, landing string, HWDP, drill collars and tubing providing the option to view and email specification sheets conveniently using your mobile device.

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