Tubing Data & Performance Sheet

4-1/2" 15.50# P-110 4-1/2" PH-6 Type

TUBE BODY DATA

Tube OD	4.500	in.
Wall Thickness	0.337	in.
Tube ID	3.826	in.
Tensile Yield Strength	381,600	lbs. (API Premium 80% Inspection Class)
Torsional Yield Strength	35,400	ft-lbs. (API Premium 80% Inspection Class)
Tube Burst	13,200	psi. (API Premium 80% Inspection Class)
Tube Collapse	9,700	psi. (API Premium 80% Inspection Class)

TUBULAR ASSEMBLY

Approximate Length	30	ft.			
Nominal Weight	15.50	lbs./ft.			
Material Grade	110,000	psi.			
Drift Diameter	3.701	in.			
Displacement	0.2290	gal./ft.		0.0055	bbls./ft.
Capacity	0.5972	gal./ft.		0.0142	bbls./ft.
Compression Yield Strength	484,800	lbs.	•		
Max Bending	112.0	degrees/100 f	t.		
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CONNECTION DATA

Connection	PH-6 Type	
Connection OD	5.125 in.	
Connection ID	3.765 in.	
Threads per inch	6	
Make-Up Loss	3.340 in.	

MAKE-UP TORQUE

Make-Up Torque - Minimum	7,600	ft-lbs.
Make-Up Torque - Optimum	8,600	ft-lbs.
Make-Up Torque Maximum	9,500	ft-lbs.

CONNECTION PERFORMANCE

Connection Torsional Strength	Not Reported
Connection Tensile Strength	484,800 lbs.
External Pressure Capacity	14,300 psi.
Internal Pressure Capacity	14,400 psi.

FEATURES

Hardbanding	None

Notes:

- Referenced tube size, wall and assembly length are nominal, unless indicated otherwise. Values shown may vary with actual values due to OEM tolerances, rounding and other factors. Tubing is manufactured to API 5CT 87-1/2% RBW and inspected to minimum Premium Class (80% RBW).
- Maximum make-up torque is that value above which there is no additional benefit, or reason to exceed. It is not meant to indicate the maximum torque the connection can withstand.

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 Servicers, Inc. cannot assume responsibility for the results obtained through the use of this material. No expressed or implied warranty is intended. Tubular 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.

