

SIZE: 4.5 in. [114.3]
 WEIGHT: 13.5 lbm/ft [20.09]
 GRADE: HCP-110
 CONNECTION: TTRS1
 High Collapse

Material	Imperial	Metric
Yield Stress (min) (psi [kPa])	110,000	758,423
Yield Stress (max) (psi [kPa])	140,000	965,266
Tensile Stress (min) (psi [kPa])	125,000	861,845
Hardness (max) (HRC [HBW])	N/A	N/A
Pipe Body Data		
Outside Diameter, Nominal (in [mm])	4.500	114.30
Weight, Nominal (lbm/ft [kg/m])	13.50	20.09
Wall Thickness, Nominal (in [mm])	0.290	7.37
Inside Diameter, Nominal (in [mm])	3.920	99.57
API Drift Diameter (in [mm])	3.795	96.39
Alternate Drift Diameter (in [mm])	N/A	N/A
Cross Section, Nominal (sq.in. [mm ²])	3.836	2474.83
Pipe Performance		
Tensile Yield (lbf [N])	422,000	1,877,149
Internal Yield Pressure (psi [kPa])	12,410	85,564
Collapse Pressure (psi [kPa])	12,990	89,563
Hydrostatic Test Pressure (psi [kPa])	10,000	68,948
Connection Data		
Connection OD (in [mm])	5.000	127.00
Special Clearance OD (in [mm])	4.875	123.83
Connection ID (in [mm])	3.920	99.57
Coupling Length (min) (in [mm])	8.875	225.43
Make-up Loss (in [mm])	3.938	100.03
Threads per Inch (pitch [mm])	5.000	5.08
Torque Capacity		
Minimum MUT (lbf-ft [N.m])	5,800	7,860
Optimum MUT (lbf-ft [N.m])	7,600	10,300
Maximum MUT (lbf-ft [N.m])	9,400	12,740
Rotating Torque (lbf-ft [N.m])	9,400	12,740
Yield Torque (lbf-ft [N.m])	11,000	14,910

Connection Performance	
Tensile Efficiency (% of pipe Body)	100%
Internal Yield Pressure (% of pipe Body)	100%
External yield pressure (% of pipe Body)	100%
Compression Efficiency (% of pipe Body)	100%
Bending rate, pipe body (°/100 ft)	20°



Connection performance and torque data have been proven by extensive laboratory and field tests.

Inspection Criteria: All the material is inspected to 5% Test notch inspection for OD/ID, Long/Trans and wall check per API/ASTM requirements though EMI/SEA.

1. Yield Torque - Beyond this value the connection will not drift with the standard API drift diameter.
2. Rotating Torque - Recommended maximum torque when rotating the string (calculated as 85% of the Yield Torque, Safety Factor = 1.176).
3. Tensile Yield - Maximum weight that can be pulled on the string.

Note: All the information provided is general data. This is not any kind of warranty/quality certificate. Tejas Tubular has the right to change this data at any time for product improvement. This is a non-controlled document. TTRS1 and the Tejas Tubular logo are marks of Tejas Tubular Products, Inc.

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