4.500” 15.10 lb/ft (.337 wt) P110
Seal-Lock XD
Connection Brief

Industry Standard Connection Qualification Testing

API RP 5C5:2017 4th ed. CAL IV

Hunting Energy Services

Connection Technology Division

www.hunting-intl.com

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Qualification tests were conducted in accordance with API RP 5C5:2017 CAL IV test protocol. The qualification testing was conducted at Mechanical Testing Services (MTS) laboratory located in Waller, Texas. All testing was witnessed by TIEC Third Party Inspection Company. The manufacturing and testing of the specimens was conducted from September 2019 until January 2019.

The product was qualified using combined load testing under ambient and elevated temperatures (180˚C), which includes tension, compression, internal pressure, external pressure and applied bending. Combined loads varied from 571 kips tension to 571 kips of compression with over 18,000 psi of internal pressure and 14,000 psi of external pressure for the various defined API load points. Bending of 20°/100ft was also tested in conjunction with the combined loads.

All required specimen geometries successfully passed the CAL IV protocol.

Specimen Geometry	MBG	FMU	Bake	TS-B	TS- C	TS-A 90%	TS-A 95%	LL
SP1 (XH-XL)	X	X	X	X	X	X	X	X
SP2 (XH-XL)	-	X	X	X	X	X	X	X
SP3 (L-H)	X	X	X	X	X	X	X	X
SP4 (L-L)	X	X	X	X	X	X	X	X
SP5 (H-H)	X	X	-	-	-	-	-	X

Physical Testing Summary

Limit Load Testing of the Specimens was conducted after the required CAL IV combined load testing sequence. Failure loads included over 640 kips of pure tension, 552 kips of tension with 22,200 psi of internal pressure, 287 kips of compression with 21,654 psi of external pressure, 690 kips of tension with over 18,400 psi of internal pressure, and 267 kips of compression with over 13,325 psi internal pressure. All limit load testing was well beyond the 100% VME failure criteria defined for the connection.

There were no known deviations from the API RP 5C5:2017 protocol during the Cal IV qualification testing.

The 4.500 15.10 (0.337 wall) Seal-Lock XD connection was successfully qualified to API RP 5C5:2017 CAL IV requirements.

SEAL-LOCK XD

4.500" 15.10 LB/FT (.337" Wall)
API P-110

Pipe Body Data

Nominal OD:	4.500	in
Nominal Wall:	.337	in
Nominal Weight:	15.10	lb/ft
Plain End Weight:	15.10	lb/ft
Material Grade:	API P-110	
Mill/Specification:	API	
Yield Strength:	110,000	psi
Tensile Strength:	125,000	psi
Nominal ID:	3.826	in
API Drift Diameter:	3.701	in
Special Drift Diameter:	None	in
RBW:	87.5 %	
Body Yield:	485,000	lbf
Burst:	14,420	psi
Collapse:	14,340	psi

Connection Data

Standard OD:	5.145	in	Special Clearance OD (SC):	5.081	in
Pin Bored ID:	3.781	in	SC Pin Bored ID:	3.781	in
Critical Section Area:	4.40744	in²	SC Critical Section Area:	4.407	in²
Coupling Length:	10.020	in	SC Coupling Length:	10.020	in
Tensile Efficiency:	100.0 %		SC Tensile Efficiency:	100.0 %	
Compressive Efficiency:	100.0 %		SC Compressive Efficiency:	100.0 %	
Longitudinal Yield Strength:	485,000	lbf	SC Longitudinal Yield:	485,000	lbf
Compressive Limit:	485,000	lbf	SC Compressive Limit:	485,000	lbf
Internal Pressure Rating:	14,420	psi	SC Internal Pressure Rating:	14,420	psi
External Pressure Rating:	14,340	psi	SC External Pressure Rating:	14,340	psi
Maximum Bend:	112.1	°/100ft	SC Standard OD Max Bend:	112.1	°/100ft

Operational Data

Min Shoulder Torque:	1,180	ft*lbf
Max Shoulder Torque:	6,270	ft*lbf
Minimum Makeup Torque:	7,830	ft*lbf
Optimum Makeup Torque:	8,700	ft*lbf
Maximum Makeup Torque:	9,570	ft*lbf
Minimum Yield:	12,200	ft*lbf
Makeup Loss:	4.57	in

Notes

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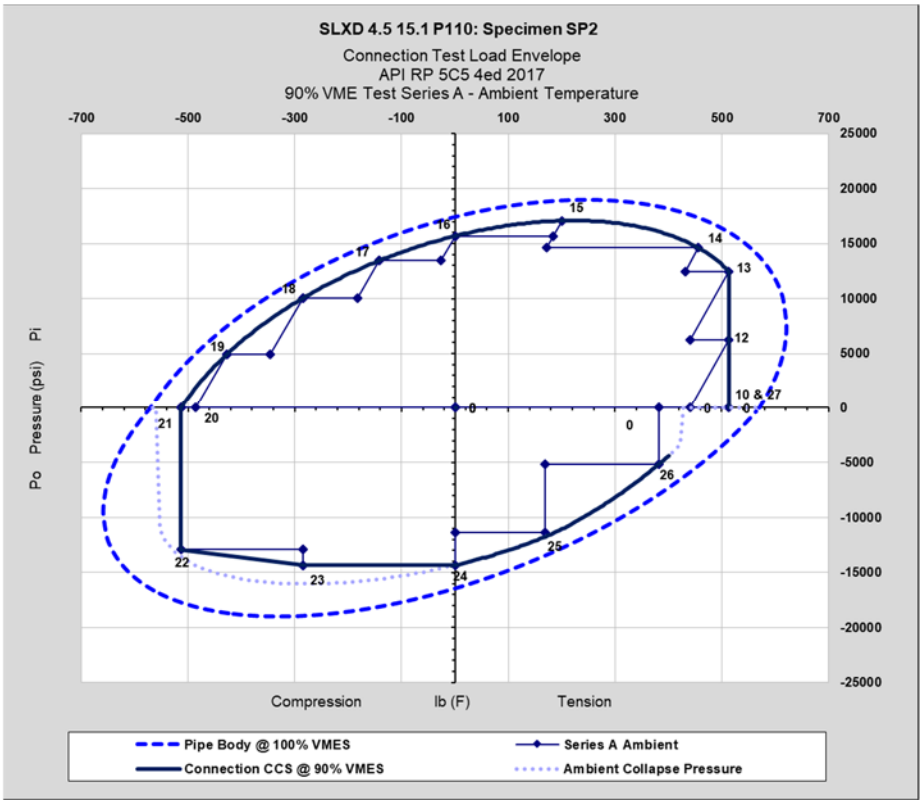
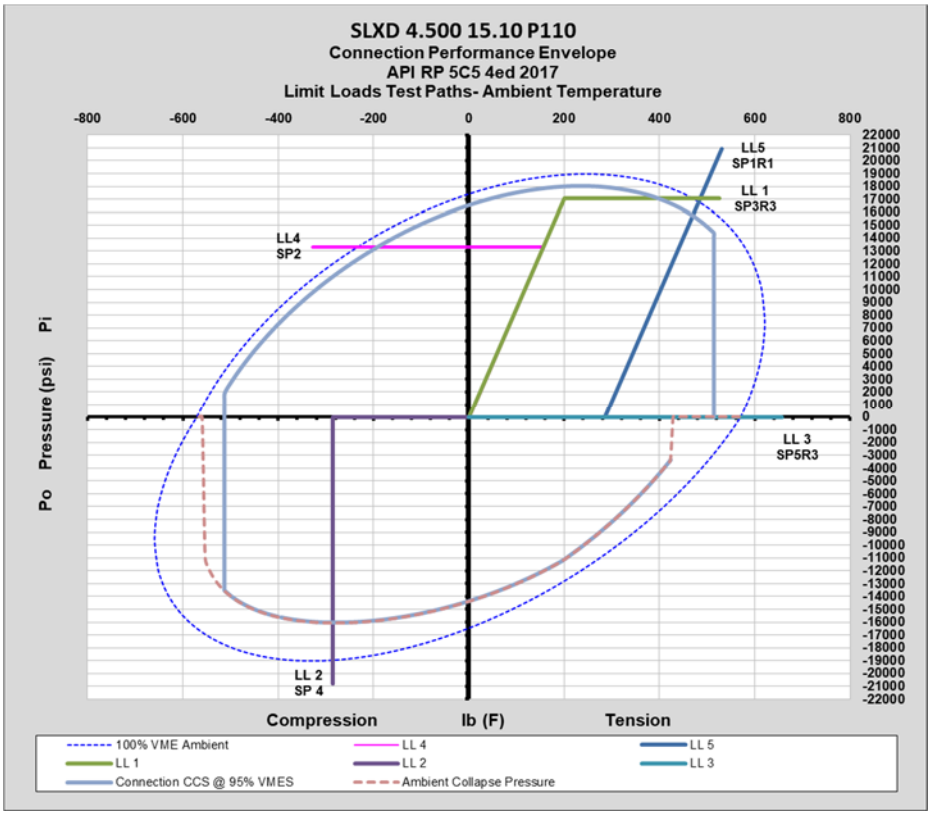
Connection Datasheet



4.500” 15.10 lb/ft TLE



4.500” 15.10 lb/ft SLXD Limit Loads