



18.000” 116.09 lb/ft (.625 wt) Q125HP

Wedge-Lock Flush

Connection Brief

Industry Standard Connection Qualification Testing

API RP 5C5:2017 4th ed. CAL I Modified

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A deep water Gulf of Mexico Operator requested qualification testing for the 18.000 116.09 (0.625 wall) Wedge-Lock Flush connection on USS Q125HP casing.

Qualification tests were conducted in accordance with API RP 5C5 CAL I: 2017 test protocol. The qualification testing was conducted at Mechanical Testing Services (MTS) in Waller, Texas. All testing was witnessed by Edif NDE third party inspection company. The manufacturing and testing of the specimens were conducted from November 2017 until January 2018.

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 2,603 kips tension to 3,036 kips of compression with over 8,900 psi of internal pressure and 2,858 psi of external pressure for the various defined API load points. Bending of 10°/100ft was also tested in conjunction with the combined loads.

All required specimen geometries successfully passed the CAL I modified protocol.

Specimen Geometry	MBG	FMU	Bake	TS-B	TS- C	TS-A 92.5%	LL
SP2 (XH-XL)	-	X	X	X	-	X	-
SP5 (H-H)	X	X	-	-	-	-	-

Physical Testing Summary

The deviations from the API RP 5C5 protocol were limited during the Cal I modified qualification testing. The deviations included, limiting bend to 10° per 100 ft, limiting high torque make up to 90,000 ft-lbs, compensated any unintended bend that exceeded 1.5° and limited compression to 92.5% instead of the 100% requested by customer.

The 18.000 116.09 (0.625 wall) Wedge-Lock SF connection displayed a robust connection design which was successfully qualified to customer specified requirements, based on API RP 5C5:2017 CAL I modified.



WEDGE-LOCK FLUSH

18.000" 116.09 LB/FT (.625"Wall)
USS Q125 HP

Pipe Body Data

Nominal OD:	18.000	in
Nominal Wall:	.625	in
Nominal Weight:	116.09	lb/ft
Plain End Weight:	116.09	lb/ft
Material Grade:	Q125 HP	
Mill/Specification:	USS	
Yield Strength:	135,000	psi
Tensile Strength:	140,000	psi
Nominal ID:	16.750	in
API Drift Diameter:	16.562	in
Special Drift Diameter:	None	in
RBW:	87.5 %	
Body Yield:	4,606,000	lbf
Burst:	8,450	psi
Collapse:	2,860	psi

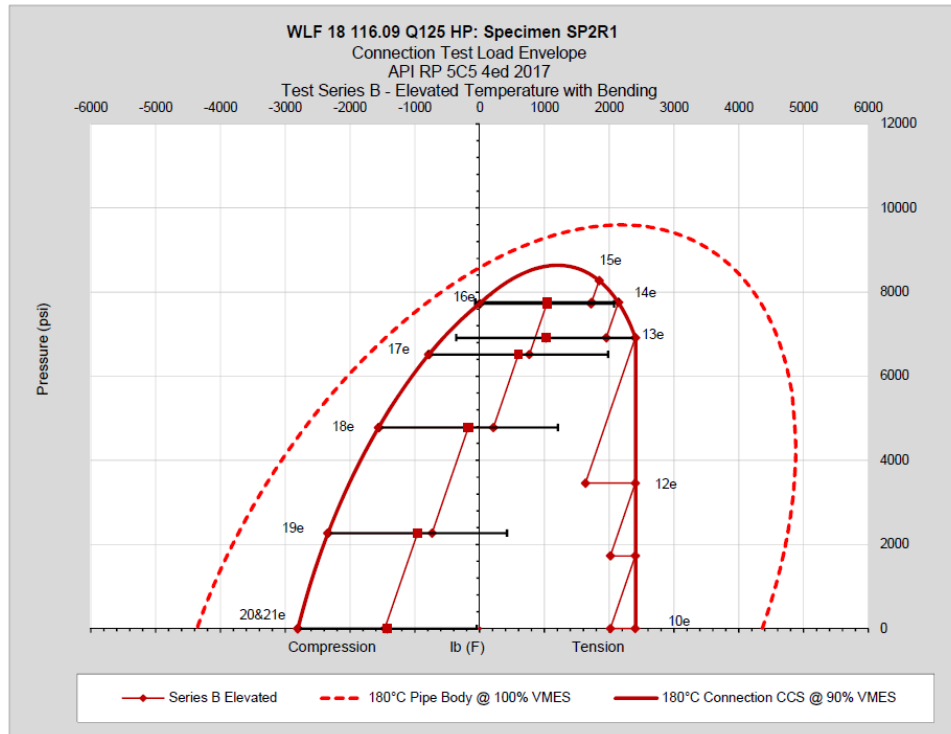
Connection Data

Standard OD:	18.180	in
Pin Bored ID:	16.722	in
Critical Section Area:	22.772	in ²
Tensile Efficiency:	66.7 %	
Compressive Efficiency:	71.4 %	
Longitudinal Yield Strength:	3,074,000	lbf
Compressive Limit:	3,289,000	lbf
Internal Pressure Rating:	8,450	psi
External Pressure Rating:	2,860	psi
Maximum Bend:	23.0	°/100ft

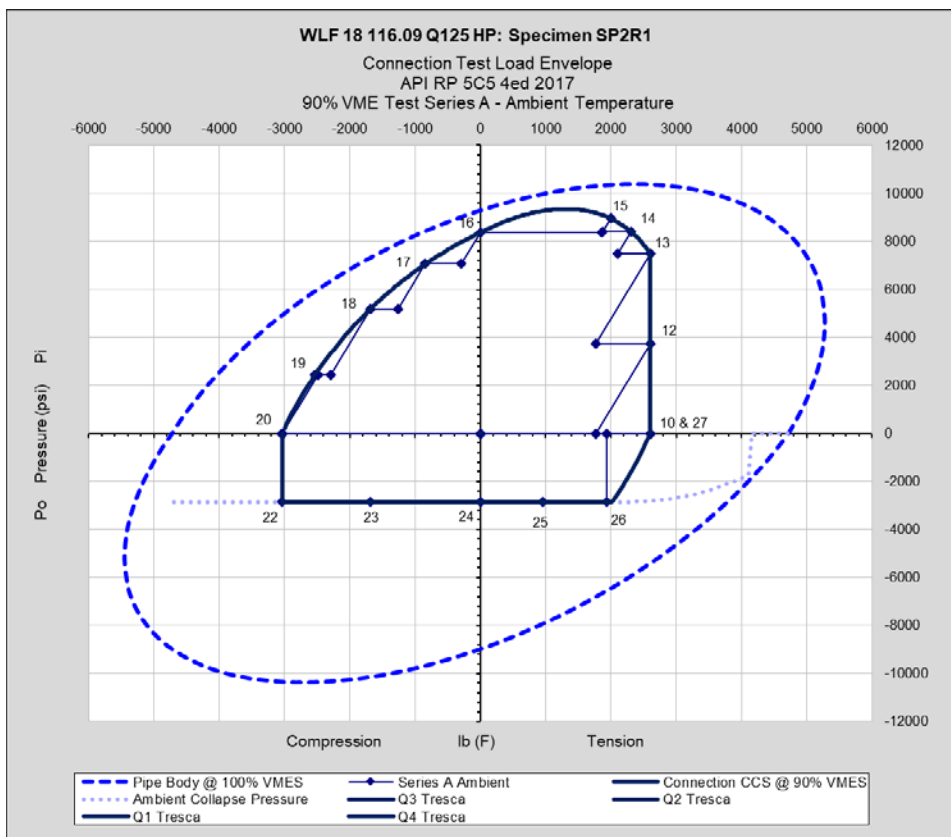
Operational Data

Minimum Makeup Torque:	62,500	ft*lbf
Optimum Makeup Torque:	77,800	ft*lbf
Maximum Makeup Torque:	123,700	ft*lbf
Minimum Yield:	185,000	ft*lbf
Makeup Loss:	7.42	in

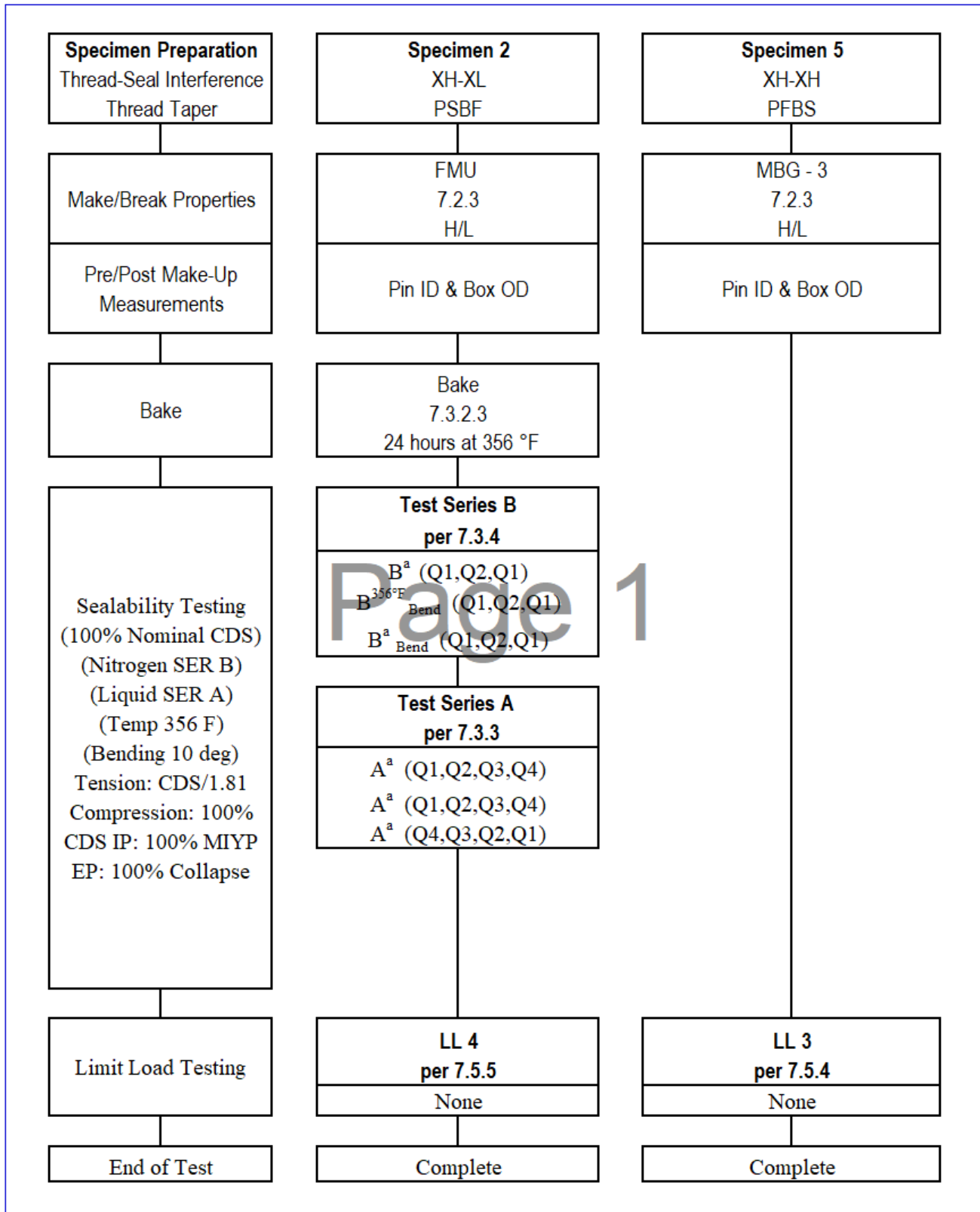
Notes



18.000" 116.09 lb/ft WLF Series B



18.000" 116.09 lb/ft WLF Series A



18.000" 116.09 lb/ft WLF CAL I Modified Flow Chart