

## BORE SECTION HYDROTEST PROCEDURE

### CORE Linepipe® Recommended Test Procedure for Above Ground Hydrotests of pull sections:

- Vent lines are to remain open for the strength test and the leak test.
- Plugs, seals, and caps are to be properly installed.
- No shrink sleeves are to be installed prior to hydrotest.
- Use only medium density foam pigs.
- Install a digital pressure gauge to monitor bore pressure.
- Record volume of fluid pumped into pipe for each step below.

#### 1. Strength hydrotest:

	300 ANSI (PN 50)		600 ANSI (PN 100)		900 ANSI (PN 150)	
	MAOP 720 PSI (4.96 MPa)		MAOP 1440 PSI (9.93 MPa)		MAOP 2160 PSI (14.89 MPa)	
a. Fill line, removing all trapped air.						
b. Bump to pressure and hold for at least 15 minutes and until there is no air flow at the vents.	50 PSI 0.3 MPa		50 PSI 0.3 MPa		50 PSI 0.3 MPa	
c. Bump to pressure and hold for 15 minutes or until stable or rising pressure is achieved.	300 PSI 2.1 MPa		500 PSI 3.4 MPa		500 PSI 3.4 MPa	
d. Bump to pressure and hold for 15 minutes or until stable or rising pressure is achieved.	500 PSI 3.4 MPa		1000 PSI 6.9 MPa		1200 PSI 8.3 MPa	
e. Bump to pressure and hold for 15 minutes or until stable or rising pressure is achieved.	700 PSI 4.8 MPa		1500 PSI 10.3 MPa		2200 PSI 15.2 MPa	
f. Bump to pressure until stable or rising pressure is achieved. It is not uncommon to see small amounts of fluid from the vent ports during this portion of the test.	<b>Min</b>	<b>Max<sup>1,3</sup></b>	<b>Min</b>	<b>Max<sup>1,3</sup></b>	<b>Min</b>	<b>Max<sup>2</sup></b>
	900 PSI 6.2 MPa	1125 PSI 7.8 MPa	1800 PSI 12.4 MPa	2225 PSI 15.3 MPa	2700 PSI 18.6 MPa	2970 PSI 20.5 MPa
g. Adjust the pressure to the appropriate test pressure, and hold for at least 30 minutes. Ambient temperature fluctuations will affect the recorded pressure. A flat or slightly increasing pressure is desired over the hold period. A slight pressure drop over the hold period combined with a quick reduction in the rate of the pressure drop typically indicates the pressure is stabilizing rather than the presence of a leak.						

<sup>1</sup>Based on ASME B16.5 Group 1.1 materials (e.g. ASTM A 350 LF2 class 1 or CSA Z 245.12 GR 359)

<sup>2</sup> Equivalent to 100% of SMYS of 6" Pipe

<sup>3</sup> It is permitted to exceed the maximum pressure by up to 50 PSI during pressure stabilization.

#### 2. Liner leak test:

- Following the successful completion of the strength test, de-pressurize the line to atmospheric pressure and maintain for a duration of 1 hour. This is to allow the liner to relax, thus facilitating the detection of a pressure drop in the unlikely event of a leak.
- Increase the pressure to 2 MPa (290 psi) and stabilize the pressure at 2 MPa (290 psi) until a flat or slightly increasing pressure is achieved.



- c. Hold the pressure for 30 minutes at 2 MPa (290 psi). Ambient temperature fluctuations will affect the recorded pressure. A flat or slightly increasing pressure is desired over the 30-minute hold period. A slight pressure drop over the hold period combined with a quick reduction in the rate of the pressure drop typically indicates the pressure is stabilizing rather than the presence of a leak.
    - d. During the liner leak test, the vents on the annular space shall be periodically monitored for flow of liquids.
  3. De-water/de-pressure line.