ANSI / FCI 4-1-2007

AMERICAN NATIONAL STANDARD

Pressure Regulator Hydrostatic Shell Test Method

1. PURPOSE

1.1. To provide guidelines and procedures for conducting hydrostatic tests of pressure regulator shells and reporting results for manufacturers of pressure regulators.

2. SCOPE AND LIMITATIONS

2.1. This standard establishes a method for conducting hydrostatic testing of pressure regulator shells having bodies, bonnets, casings, and spring cases manufactured from any materials.

2.2. This standard covers the hydrostatic testing of pressure regulator shells as components for use by manufacturers, users, specifiers and approval agencies to validate the structural integrity and leak tightness of the regulator's pressure retaining parts used in the manufacture of pressure regulators.

2.3. This standard includes pressure regulators which may have two static pressure ratings, one for the portion of the regulator subjected to the inlet pressure and the other for the portion subjected to the outlet pressure.

2.4. This standard does not cover proof of design hydrotesting, which is addressed in ANSI/FCI 79-1-2003.

2.5. This standard is not intended to supersede existing standards for regulators in specific applications such as those for gas appliance pressure regulators, for high pressure regulators for gas cylinders, or for fluid power regulators in machinery operations.

3. DEFINITIONS

3.1. Regulator. A pressure regulator as covered by this standard is a self contained and self powered device that serves to automatically maintain a pressure at a controlled value over a specified flow.

3.2. Maximum Operational Pressure. The maximum inlet or outlet pressure at which the regulator will perform within the manufacturer's specification.

3.3. Base Test Pressure. This shall be determined from the maximum operational pressure for the pressure regulator shell under test. For pressure regulator body shells this should be the maximum operating pressure for the body's pressure shell or the body's flange pressure rating, whichever is less.

3.4. Pressure Regulator Shells. The pressure retaining components subjected to the process fluid.

3.5. Flange Pressure Rating. The maximum rated pressure of the connecting flange end at 100˚F (38˚C).

3.6. Hydrostatic Shell Test Pressure. A base test pressure multiplied by 1.5 of the pressure shell under test.

3.7. Proof of Design Hydrotesting. Proof testing of component design in order to derive a pressure rating which is covered in ANSI/FCI 79-1-2003

3.8. Test Fluid. The fluid used as the pressure media for the component under test.