

METHODS FOR REQUALIFYING DOT SPECIFICATION CYLINDERS

WATER JACKET TEST METHOD

This method is applicable to all hydrostatic tests where determination of volumetric expansions are required. It consists of enclosing a cylinder filled with water inside a test jacket filled with water. Pressure is then applied internally to the cylinder, causing the cylinder to expand. The total and permanent volumetric expansions of the cylinder are determined by measuring the amount of water displaced by the expansion of the cylinder when under pressure and after the pressure has been released. This is the only testing method that will requalify a cylinder for charging to 10% in excess of the marked service pressure. All retesters shall have a Retesters Identification Number (RIN) issued by the D.O.T. / RSPA. In Canada test facilities are registered with T.C.

DIRECT EXPANSION TEST METHOD

This method is applicable to hydrostatic tests when volumetric expansion determinations are required. It consist of forcing a measurable volume of water into a cylinder filled with a known weight of water at a known temperature, and measuring the volume of water expelled from the cylinder when the pressure is released. The permanent volumetric expansion of the cylinder is calculated by subtracting the net volume of water expelled from the cylinder from the volume of water forced into the cylinder. The total volumetric expansion of the cylinder is calculated by subtracting from the total volume of water forced into the cylinder (in attaining test pressure), the volume of water due to compressibility and volumetric expansion of the test apparatus. Regulations do not permit this testing method to be used to qualify a cylinder for charging to 10% in excess of marked service pressure. All retesters shall have a Retesters Identification Number (RIN) issued by the D.O.T. / RSPA. In Canada, test facilities are registered with T.C.

PROOF TEST METHOD

This method is permitted where the regulations do not require the determination of total and permanent expansion. It consist of examining a cylinder under pressure for leaks, bulges and any visible defects. Certain specification containers, used exclusively in noncorrosive service, may be retested by this method. All retesters shall have a Retesters Identification Number (RIN) issued by the D.O.T. / RSPA. In Canada, test facilities are registered with T.C.

VISUAL INSPECTION METHOD

This method is permitted where the regulations do not require a hydrostatic test of any kind. An example of a cylinder than is allowed to be visual inspected in place of a hydrostatic test is a propane cylinder. As of May 31, 2004 all whom perform requalification via visual inspection shall have a Retesters Identification Number (RIN) issued by the D.O.T. / RSPA. In Canada, test facilities are registered with T.C.

ULTRASONIC TESTING METHOD

This test method can be used only under an exemption permit for certain specification cylinders. These specification cylinders are re qualified by an ultrasonic measuring device, which is capable of detecting flaws and irregularities in cylinders. All retesters shall have a Retesters Identification Number (RIN) issued by the D.O.T. / RSPA. In Canada, test facilities are registered with T.C.