Every valve testing standard has an acceptable leakage rate; this includes ANSI FCI 70-2 CL V & VI, MSSP-61 and API 598, the three most applied standards. There are two things that the test standards have in common:

a) they all allow leakage
b) the hold times vary

Based on standard specifications we can see how Valvtechnologies, Inc. Metal Seated Valves far exceed the competition with zero leakage.

All tests at Valvtechnologies, Inc. are done at standard pressures, this being as follows:

- A hydrostatic shell test is performed 1.5 times the cold working pressure.
- A hydrostatic seat test is performed at 1.1 times the cold working pressure.
- A low pressure air test is performed between 50 and 80 psig. In addition, high pressure valves are gas tested to zero leakage.

**MSS-SP-61**

**Seat Leakage:** The maximum allowable leakage of each seat closure shall be 10m/hr of liquid or 0.1 standard cu. ft/hr of gas per unit of NPS (0.4 ml/hr of liquid or 120 standard ml/hr of gas per unit of DN) under specified test conditions.

**Seat Leakage Test Times:**
- 2” and smaller = 15 seconds
- 2-1/2” – 8” = 30 seconds
- 10” – 18” = 60 seconds
- 20” and larger = 120 seconds

**ANSI FCI 70/2**

**Class V:** 1.1 times cold working pressure allowable leakage: .005ml/min of water per inch of port diameter per psi differential.

**Class VI:** 50 psi air or nitrogen, allowable leakage: 2” – 3 bpm*, 6”-27 bpm*, 8” – 45 bpm*
Allow sufficient time for leakage flow to stabilize and use a suitable measuring device.
*.bpm = bubbles per min.
Allowable leakage shall be in accordance with the following table:

<table>
<thead>
<tr>
<th>Size</th>
<th>Leakage Type</th>
<th>Test Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 2&quot;</td>
<td>leakage liquid “0 (b)” - gas test “0 (b)”</td>
<td>15 seconds</td>
</tr>
<tr>
<td>2-1/2” – 6”</td>
<td>leakage liquid 12 dpm* (a) gas test 24 bpm**</td>
<td>60 seconds</td>
</tr>
<tr>
<td>8” – 12”</td>
<td>leakage liquid 20 dpm* (a) gas test 40 bpm**</td>
<td>120 seconds</td>
</tr>
<tr>
<td>&lt; 14”</td>
<td>leakage liquid 28 dpm* (a) gas test 56 bpm**</td>
<td>120 seconds</td>
</tr>
</tbody>
</table>

** 1 millimeter is considered equivalent to 16 dpm

There shall be no leakage for the specified test duration. For liquid test, 0 drops means no visible leakage per minimum specified test duration. For gas test, 0 bubble means less than 1 bubble specified test duration.

dpm = drops per min.
**bpm = bubbles per min.

Hydrostatic shell test 1.5 times cold working pressure for 3 min. = **ZERO LEAKAGE**

Hydrostatic seat test 1.1 times cold working pressure for 3 min. = **ZERO LEAKAGE**

Low pressure gas test, 50 psig for 3 min. = **ZERO LEAKAGE**

ANSI 900# class and higher gas test at 1000 psig for 3 min. = **ZERO LEAKAGE**

ANSI 3500# and higher gas test at 3000 psig for 3 min. = **ZERO LEAKAGE**

100% of all Valvtechnologies, Inc. valves built and shipped go through stringent testing to ensure absolute **ZERO LEAKAGE**.

There is not a single test specification that exceeds the **VALVTECHNOLOGIES, INC.** testing standard.