

Control Valve Seat Leakage Classifications (ANSI/FCI 70-2-1991)

Leakage Class	Max Allowable Leakage	Test Medium	Test Pressures	Testing Procedure Required
I	---	---	---	No test required
II	0.5% of rated capacity	Air or water at 50-125 deg F	45-60 psig or max operating differential, whichever is lower	45-60 psig or max operating differential, whichever is lower
III	0.1% of rated capacity	Air or water at 50-125 deg F	45-60 psig or max operating differential, whichever is lower	45-60 psig or max operating differential, whichever is lower
IV	0.01% of rated capacity	Air or water at 50-125 deg F	45-60 psig or max operating differential, whichever is lower	45-60 psig or max operating differential, whichever is lower
V	0.0005 ml per minute of water per inch of orifice per psi differential	Water at 50-125 deg F	Maximum service pressure drop across valve plug not to exceed ANSI body rating, or lesser pressure by agreement.	Maximum service pressure drop across valve plug not to exceed ANSI body rating, or lesser pressure by agreement.
VI	Not to exceed amounts shown in following table*	Air or nitrogen at 50-125 deg F	50 psig or maximum rated differential pressure across valve plug, whichever is lower.	Pressure applied to valve inlet. Actuator should be adjusted to operating conditions specified with full normal closing thrust applied to valve plug seat. Allow time for leakage flow to stabilize and use suitable measuring device.

Class VI Maximum Seat Leakage Allowable (ANSI/FCI 70-2-1991)

Nominal Port Diameter		Bubbles per Minute*	
Inch	Mm	Ml per minute	Bubbles per Minute
1	25	.015	1
1-1/2	38	0.30	2
2	51	0.45	3
2-1/2	64	0.60	4
3	76	0.90	6
4	102	1.70	11
6	152	4.00	27
8	203	6.75	45
10	254	9	63
12	305	11.5	81

* Bubbles per minute as tabulated are a suggested alternative based on a suitably calibrated measuring device, in this case a 1/4" OD x 0.032 inch wall tube submerged in water to a depth of 1/8 to 1/4 inch. The tube end shall be cut square and smooth with no chamfers or burrs, and the tube axis shall be perpendicular to the surface of the water. Other apparatus may be constructed and the number of bubbles per minute may differ from those shown as long as they correctly indicate the flow in ml per minute.