

Fire Series Ball Valves

A60T Series



Features

- Operating temperatures up to 400°F (204°C)
- Working pressures up to 2200 psig (151 bar)
- Stainless steel or carbon steel construction
- Meet API Standard 607, 6th edition, and Swagelok fire test specification SEI-00334. See **Fire Test Standards**, next page.
- Available in 63, 65, 67, and 68 series valve sizes.

See the Swagelok *Ball Valves, General Purpose and Special Application—60 Series* catalog, MS-01-146, for materials of construction, pressure-temperature ratings, testing, cleaning and packaging, ordering information, dimensions, options, accessories, and actuators.

⚠ Actuator accessories are not fire-test rated.

Fire Test Standards

Industry standards do not address situations in which a valve seat is only *partially* destroyed. Yet this condition can occur when a valve is heated unevenly during a fire.



As a result, Swagelok developed test specification SEI-00334. This procedure qualifies the performance of valves subjected to uneven heating. Fire series ball valves are tested in the Swagelok fire-test laboratory and meet SEI-00334 test specifications.

Fire Test Data

Fire Test Specification	API 607 6th Edition	Swagelok SEI-00334
Fire test objective	Exposure to fire of specified time, temperature, and heat flux	Exposure to fire and water, producing specified partially destroyed seat
Valve position	Closed	Closed
Flow media	Water	Water
Fire test valve pressure	1650 psig (113 bar)—1/2 to 1 in. 1500 psig (103 bar)—1 1/2 to 2 in.	100 to 130 psig (6.8 to 8.9 bar)
Fuel for fire	Not specified	Fuel, temperature, time, and water are altered to achieve a partially destroyed soft seat
Flame temperature	1400 to 1800°F (760 to 982°C)	
Fire duration	30 min	
Heat flux	Calorimeter cubes reach 1200°F (648°C) within 15 min	
Allowable leak rate	See table below	Seat, during fire and cool down—95 mL/min or 40 mL/min/NPS, ^① whichever is greater
Cycle after burn	1 cycle—open or close under test pressure	None

① NPS = inch of nominal pipe size.

API 607 6th Edition Maximum Allowable Leak Rates

Valve Series	NPS	DIN	During Burn Period mL/min		After Cool Down and Operational Test mL/min	
			Shell	Seat	Shell	Seat
63	1/2	15	60	240	15	24
65	1	25	100	400	25	40
67	1 1/2	40	160	640	40	64
68	2	50	200	800	50	80

Typical Fire Test



Pneumatically actuated fire series ball valve set up for burn.



Test is in progress; fail-safe actuator feature cycles the ball valve to closed position.



Actuator lubricants begin to burn off, and actuator begins to melt.



Actuator melted away.



Valve quenched with water.

Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

WARNING

Do not mix/interchange Swagelok products or components not governed by industrial design standards, including Swagelok tube fitting end connections, with those of other manufacturers.

Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit swagelok.com or contact your authorized Swagelok representative.