



Product Test Report

PTR-5028

Swagelok Company
29495 F.A. Lennon Dr.
Solon, Ohio 44139 U.S.A.

Ver 01
August 2023
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TITLE

ASTM B117 Salt Spray Test of Swagelok® 8GB and 16GB Series General Service Ball Valves, Tested by Element Materials Technology

PRODUCT TESTED

Series	Example Ordering Numbers	Quantity
8GB	SS-8GBF6	2
16GB	SS-16GBF16	2

PURPOSE

This test was performed under laboratory conditions to observe the effects of extended salt spray exposure on valve materials and valve performance.

TEST CONDITIONS

Original test date: September 2020

Salt Spray

- Performed by Element Materials Technology
- Media: 5% salt solution
- Temperature: 95°F (35°C)
- Duration: 672 hours

Performance

- Performed by Swagelok
- Pressure: 80 psig (5.5 bar), 1000 psig (68.9 bar), and 6000 psig (413 bar)
- Test temperature: 70°F (20°C)
- Media: nitrogen
- Seat test: max allowable leak rate 0.1 std cm³/min.
- Shell test: no detectable leakage with liquid leak detector

TEST METHOD

Salt Spray: The test procedure was in accordance with ASTM-B117-19.

Performance: After salt spray testing, all valves were performance tested in both directions with nitrogen.

TEST RESULTS

The third-party lab test report observations are included at the end of this product test report. The following images show the valve surface appearance during the salt spray procedure. All valves passed subsequent performance testing to the above-stated performance criteria.



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Test Results for SS-8GBF6

Time	Results
24 hours	No visible change.
72 hours	No visible change.
192 hours	No visible change.
336 hours	No visible change.
384 hours	No visible change.
504 hours	Light corrosion forming on the outside body and end screws was observed.
672 hours	Evidence of isolated spots of red rust corrosion was visible on both samples. The total corrosion was estimated at less than 5% of the total surface area of each part.

SS-8GBF6 Valve 1 Discoloration

Before Test



After Test



SS-8GBF6 Valve 2 Discoloration

Before Test



After Test





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Test Results for SS-16GBF16

Time	Results
24 hours	No visible change.
72 hours	No visible change.
192 hours	No visible change.
336 hours	No visible change.
384 hours	No visible change.
504 hours	Light corrosion forming on the outside body and end screws was observed.
672 hours	Evidence of isolated spots of red rust corrosion was visible on both samples. The total corrosion was estimated at less than 5 to 10% of the total surface area of each part.

SS-16GBF16 Valve 1 Discoloration

Before Test



After Test



SS-16GBF16 Valve 2 Discoloration

Before Test



After test





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These tests were performed to consider a specific set of conditions and should not be considered valid outside those conditions. Swagelok Company makes no representation or warranties regarding these selected conditions or the results attained. Laboratory tests cannot duplicate the variety of actual operating conditions. Test results are not offered as statistically significant. See the product catalog for technical data.

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.

Referenced Documents

ASTM B 117: 2019, Standard Practice for Operating Salt Spray (fog) apparatus, ASTM-American Society Testing & Materials, 100 Barr Harbor Drive P.O. Box C700 West Conshohocken, PA 19428-2959, USA, www.astm.org

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