



Industrie Service

CERTIFICATE

(Certificate of conformity with technical requirements in:)
API STANDARD 607 SEVENTH EDITION, JUNE 2016

Certificate No.:270877

Ref. Test report No.:270878

Name and postal address of applicant: **ValPro s.r.o.**
Kopcianska 10, Bratislava, Slovakia

We hereby certify that the fire test on below valves have been conducted at the laboratory designated by manufacturer and witnessed by TÜV SÜD inspector according to requirements of API STANDARD 607 SEVENTH EDITION, JUNE 2016. The testing results of valves meet the requirements of API STANDARD 607 SEVENTH EDITION, JUNE 2016.

1. Description of Test Valve :

| | |
|---------------------------|-------------------------------|
| Type of Test Valve | Q347N-150LB-8"-AA3 Ball Valve |
| Description of Test Valve | Ball Valve |
| Valve Size (NPS) | 8" |
| Pressure Rating (Class) | Class 150 |
| Valve Body Material | ASTM A350 LF2 |

2. Qualified Range of Valves :

| | |
|--|--------------------------|
| Type | Ball Valves |
| Description of Valves | Ball Valves |
| Qualified Sizes (NPS) (according to API 607 Table 3) | 8" and larger |
| Qualified Pressure Ratings(Class) (according to API 607 Table 4) | Class150, Class 300 |
| Qualified Valve Material | According to API 607 7.2 |
| Remark: the technical data of tested valves see back of this certificate appendix 1. | |

This certificate is issued according to API STANDARD 607 SEVENTH EDITION, JUNE 2016, based upon the result of testing report on above mentioned test valve. The additional valve qualification shall be limited on similar valves of same basic design and construction as the test valves and of the same nonmetallic materials as the test valve in the seat-to-closure member seal, seat-to-body seal, stem seal, and body joint and seal according to API STANDARD 607 SEVENTH EDITION, JUNE 2016, Paragraph 7.

Shanghai, July 24, 2020
(Place, date)

Chen Guilin

Guilin Chen

TÜV SÜD Industrie Service GmbH

Westendstr.199
80686 München Germany



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Industrie Service

Appendix 1:

Certificate No.:270877

Ref. Test report No.:270878

Name and postal address of applicant: ValPro s.r.o.
Kopcianska 10, Bratislava, Slovakia

Technical Data of Valve

1. Type of Test Valve: Q347N-150LB-8"-AA3 Ball Valve

2. Description of Test Valve: Ball Valve

3. Details of Valve:

| Valves Size (NPS) | Material | 8" |
|---------------------|----------|-------------------|
| Part Name | | |
| Body | | ASTM A350 LF2 |
| Bonnet | | ASTM A350 LF2 |
| Ball | | ASTM A350 LF2+ENP |
| Seat Insert | | DEVLON-V |
| Stem | | ASTM A182 F6a |
| Gasket | | SS304+Graphite |
| Lower Cap | | ASTM A350 LF2 |
| Packing | | Graphite |
| Gland | | ASTM A216 WCB |
| Nuts | | ASTM A194 7 |
| Bolts | | ASTM A320 L7 |
| Screw | | ASTM A320 L7 |
| O-Ring | | VITON |
| Spring | | INCONEL X-750 |
| Seat Ring | | ASTM A350 LF2 |
| Design Drawing No.: | | AA3 2018-06-09-02 |

Shanghai, July 24, 2020
(Place, date)

TÜV SÜD Industrie Service GmbH
Shanghai Office
Floor 3-13, No.151, Heng Tong Road,
Shanghai 200070 P. R. China

Chen

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Test Report

(Valve fire test according to API STANDARD 607 SEVENTH EDITION, JUNE 2016.)

Certificate No. :270877
Test Report No.:270878

Applicant: ValPro s.r.o.
Kopcianska 10, Bratislava, Slovakia

Inspection body: TÜV SÜD Industrie Service GmbH
Floor 3-13, No.151, Heng Tong Road, Shanghai, P. R. China

Lab of test: Quality Inspecting Center of Pump and Valve Products of Zhejiang
Province

Test Date: June 17, 2020

Description of valves: Q347N-150LB-8"-AA3 Valve
Size:8"
Pressure Rating: Class 150
Drawing No.: AA3 2018-06-09-02

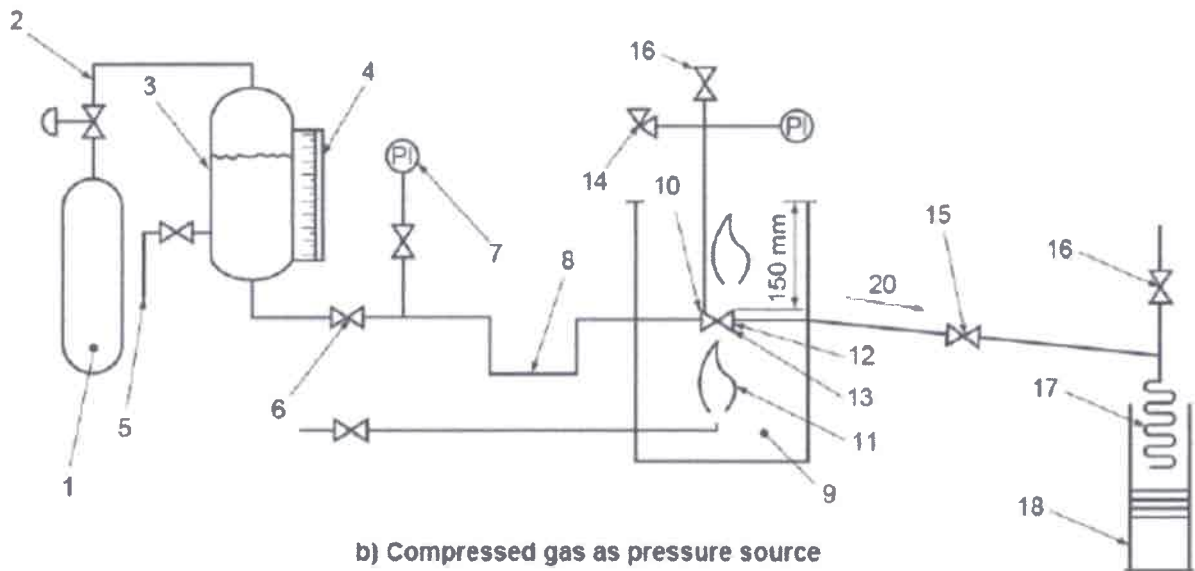
Test Witnessed By: WANG Zhilin / TÜV SÜD Inspector

Inspection and Tests

1. Conformity of Equipment

The test equipment was verified by TÜV SÜD inspector according to requirements of API STANDARD 607 SEVENTH EDITION, JUNE 2016. Para.5.3 and found satisfactory. The detail arrangement of the fire-test equipment is shown below:

Figure 1. Typical Fire-Test System Using Compressed Gas as the Pressure Source



Key

- | | | |
|--|--|-----------------------|
| 1. Pressure source | 10. Test valve mounted horizontally | 19. Check valve |
| 2. Pressure regulator and relief with stem in horizontal position(see 5.6.1) | 20. Slope | |
| 3. Vessel for water (6in.) | 11. Fuel gas supply and burner | 21. Clearance: 150 mm |
| 4. Calibrated sight gauge | 12. Calorimeter cubes (see 5.3.2) | |
| 5. Water supply | 13. Flame environment and body thermocouples (see 5.3.2) | |
| 6. Shut-off valve | 14. Pressure gauge and relief valve (see 5.3.2) | |
| 7. Pressure gauge | 15. Shut-off valve | |
| 8. Piping arranged to provide vapor trap(see 5.3.2) | 16. Vent valve | |
| 9. Enclosure for test | 17. Condenser | |
| | 18. Container (see 5.3.2) | |

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2. Calibration of measurement and test instrument

The measurement and test instrument have been properly calibrated such as pressure gauges, thermocouples, etc.

3. Technical Data of Test Valve:

a) Description of test valve

| | |
|-----------------------|-------------------------------|
| Type of Test Valves | Q347N-150LB-8"-AA3 Ball Valve |
| Description of Valves | Ball Valve |
| Pressure Class | Class 150 |
| Valve Size | 8" |
| Face to Face | ASME B16.10 |
| Designed Standard | API6D |

b) Details of technical data on test valve

| Part Name | Materials |
|---------------------|-------------------|
| Body | ASTM A350 LF2 |
| Bonnet | ASTM A350 LF2 |
| Ball | ASTM A350 LF2+ENP |
| Seat Insert | DEVLON-V |
| Stem | ASTM A182 F6a |
| Gasket | SS304+Graphite |
| Lower Cap | ASTM A350 LF2 |
| Packing | Graphite |
| Gland | ASTM A216 WCB |
| Nuts | ASTM A194 7 |
| Bolts | ASTM A320 L7 |
| Screw | ASTM A320 L7 |
| O-Ring | VITON |
| Spring | INCONEL X-750 |
| Seat Ring | ASTM A350 LF2 |
| Design Drawing No.: | AA3 2018-06-09-02 |

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4. Visual and dimensional Check on Valve Specimen:

The specimen valve was chosen at random by the manufacturer in its workshop and submitted to the laboratory. The visual and dimensional check was performed according to drawing No. AA3 2018-06-09-02 and results found satisfactory. The mark was verified on valve as following:

| | | | |
|---------------------|-----------|------------|------------|
| <u>--</u> | <u>8"</u> | <u>150</u> | <u>LF2</u> |
| Manufacturer` Brand | Size | Class | Material |

The sample valve was equipped with a worm gearbox.

5. Document Review:

The chemical and mechanical test report of forgings was reviewed and found satisfactory. Also the inspection report of shell test, hydro seat test and air seat test were reviewed and found satisfactory.

6. Preparation before testing:

- 6.1 The thermocouples and calorimeters were installed properly according to Figure 1,2,3,4 in API 607. Two thermocouples (part 13) are installed to measure flame temperature, one is located under valve body, another is located under valve stem, both within 1". Two calorimeters (part 12) are positioned to the same place as the thermocouples do, and a third one is positioned nearby the bottom cover.
- 6.2 The test system including test valve (part 10) was cleaned through by water before testing. All air was purged from test valve and testing system by water.
- 6.3 The test system was pressurized to 2.8 MPa after the test valve and system upstream of valve have been completely full of water and system downstream of the test valve have been completely empty of water. The system and test valve were carefully checked for leakage when the test pressure was held at 2.8 MPa. No leakage was found on system and test valve.

7. Fire Test:

The fire test was conducted according to API STANDARD 607 SEVENTH EDITION, JUNE 2016. Section 5. The pressure of the system upstream was kept 0.2 MPa, then the fire ignited. The flame temperature reached 750°C within 2 minutes after ignition. The test pressure and temperature were maintained at 0.2 MPa during the fire test. The temperature and pressure were recorded continuously by the operators. The system and test valve was cooled below 100°C within 8 minutes by shower nozzles after 30 minutes fire test. The loss of water weight in vessel was measured by weighing scale and water in calibrated container (part 18) were read and recorded. The test result is shown as below:

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Test result of fire test

| Item | API 607 Required Value | Actual Value |
|---|------------------------|-------------------|
| Test Pressure (MPa) | 0.2 MPa | 0.2 MPa |
| Test Temperature | 750 - 1000 °C | 777 – 830°C |
| Through-valve leakage according to API 607 table 1 | ≤ 800 ml / minute | 353.3 ml / minute |
| Total weight of water through valve seat during cooling down period | 0 ml | |
| Total time from fire test to cooling down | 38 Minutes | |
| External Leakage | ≤ 200 ml / minute | 0 ml / minute |
| Conclusion: the test result is satisfactory according to API 607. | | |

8. Low Test:

The test valve was cooled below 100°C within 8 minutes after complete the fire test. The low pressure test was conducted according to API STANDARD 607 SEVENTH EDITION, JUNE 2016.Para. 6.4 and 5.6.15. The test result was recorded as below:

Test result of low pressure test

| Item | API 607 Required Value | Actual Value |
|---|------------------------|---------------|
| Test Pressure (MPa) | 0.2 MPa | 0.2 MPa |
| Test Temperature | 30 °C | |
| Test Time | 5 minutes | |
| External Leakage | ≤ 320 ml / minute | 0 ml / minute |
| Conclusion: the test result is satisfactory according to API 607. | | |

9. Operational Test:

The test valve was cooled below 100°C within 8 minutes after complete the fire test. The operational test was conducted according to API STANDARD 607 SEVENTH EDITION, JUNE 2016.Para. 6.6 and 5.6.17. The upstream pressure was increased to 1.5MPa then the test valve was fully opened against the high test pressure differential to vent the piping and test valve body cavity to remove air or steam. The downstream shutoff valve was then closed and the system pressure was increased to and maintained at 1.5MPa. Then measured and recorded external leakage for a period of five minutes after valve was in the open position at high test pressure. The test result was recorded as below:


Test result of operational test

| Item | API 607 Required Value | Actual Value |
|---|------------------------|---------------|
| Test Pressure (MPa) | 1.5 MPa | 1.5 MPa |
| Test Temperature | 30 °C | |
| Test Time | 5 minutes | |
| External Leakage | ≤ 200 ml / minute | 0 ml / minute |
| Conclusion: the test result is satisfactory according to API 607. | | |

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The undersigned, hereby declare that I have checked test valve and witnessed the fire test on the test valve according to API STANDARD 607 SEVENTH EDITION, JUNE 2016. The test result is satisfactory.

TÜV SÜD Industrie Service GmbH



Date: July 24, 2020

WANG Zhilin

Annexes:

- 1) Copy of Drawing No. AA3 2018-06-09-02;
- 2) Copy of Test Record of Fire Test No. WFM202006128.