

TEST REPORT



Dong-A University
Technical Center for
High-Performance Valves

840 Hadan2-dong, Saha-gu, Busan-city, Korea
(Tel: +82 51-200-6546 Fax: +82 51 200-6598)

Certificate No.:
TCHPV-14-12-002

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1. Client

- Name : HSME Corporation
- Address : 8, Hwajeonsandan 5-ro, GANGSEO-GU, BUSAN, SOUTH KOREA.
- Person in charge : Seok-Tae, Hwang / QA Dept. (Manager)

2. Use of Report : Test & Analysis

3. Test Sample : VB10D Series Ball Valve (Tube O.D. 30mm)

4. Date of Test : 2014. 11. 28

5. Test Meathod Used

- API STANDARD 607:2010
- KS B ISO 10497 : 2005

6. Testing Environment

- Temperature : (11.7 ± 3.0) °C
- Relative Humidity : (41 ± 5) % R.H.

7. Test Result : Refer to the test result. (Page 2/3, 3/3)

Affirmation	Tested by Researcher	Approved by Technical Manager
	Name : S.J. OH. (Signature)	Name : J.H.LEE (Signature)

The above test certificate is the accredited test results by Korea Laboratory Accreditation Scheme, which signed the ILAC-MRA.

2014. 12. 03.

Director of Dong-A University
Research Foundation for Industry-Academy Cooperation



Decide arbitrarily : Technical Center for High Performance Valves

* The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
This Test Report cannot be reproduced, except in full.



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◆ **Test Result**

1) Test : VB10D Series Ball Valve – Fire Safety Test

2) Test Method Used

2-1) API STANDARD 607:2010

Fire Test for Quarter-turn Valves and Valves Equipped with Nonmetallic Seats

2-2) KS B ISO 10497 : 2005

Testing of valves-Fire type testing requirement

3) Test Sample

3-1) Name : VB10D Series Ball Valve (Tube O.D. 30mm)

3-2) Material : STAINLESS STEEL 316

3-3) Detail : Refer to the Attached DWG. (1of1)

DWG. NO. VB10D-30S-SS (2014.09.25.)

4) Result

① Fire Burn Test Record

Time Min:Sec	Upstream Pressure MPa	Flame Temp °C		Body & Connector Temp °C		Calorimeter Temp °C	
		T1	T2	Bonnet	Body	T3	T4
05:30	7.62	54.9	30.58	497.6	1040.2	50.69	51.38
35:30	7.76	922.8	894.5	1265.1	1253.6	871.4	918.1
Average	7.65	838.2	789.2	1146.2	1232.5	758.8	847.0

Time Min:Sec	Sight Gauge In Vessel 192.4 mL/mm		Reading in Container 76.7 mL/mm	
	mm	mL	mm	mL
05:30	533	102 549.2	0	0
35:30			14.7	1 127.5



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② Cool Down Test Record

Time Min:Sec	Upstream Pressure MPa	Flame Temp °C		Body & Connector Temp °C		Calorimeter Temp °C	
		T1	T2	Bonnet	Body	T3	T4
35:30	7.76	922.8	894.5	1265.1	1253.6	871.4	918.1
45:30	7.66	15.6	75.4	21.6	21.3	21.0	22.3

Time Min:Sec	Sight Gauge In Vessel 192.4 mL/mm		Reading in Container 76.7 mL/mm	
	mm	mL	mm	mL
35:30	/	/	14.7	1 127.5
45:30	527	101 394.8	14.7	1 127.5

③ High Pressure Test Record (After operational test)

Time Min:Sec	Upstream Pressure MPa	Flame Temp °C		Body & Connector Temp °C		Calorimeter Temp °C	
		T1	T3	Bonnet	Body	T2	T4
46:30	7.64	16.0	63.2	21.7	21.4	21.4	22.5
51:30	7.81	18.8	33.8	25.1	25.7	23.1	24.5

Time Min:Sec	Sight Gauge In Vessel 192.4 mL/mm		Reading in Container 76.7 mL/mm	
	mm	mL	mm	mL
46:30	526.5	101 298.6	/	/
51:30	526	101 202.4	/	/



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④ Fire Safe Test Result

Through-seat leakage ml/mim		External leakage ml/mim			
During the burn period		During burn and cool-down period		After operational test	
Permissible Leakage	Actual Leakage	Permissible Leakage	Actual Leakage	Permissible Leakage	Actual Leakage
400	37.6	100	0.7	25	19.24

-END-

