

**KHIMJI FLOW EQUIPMENTS PVT. LTD.**

Block No. 67/E, 67/F, Tarihal - Revadihal Road,

REVADIHAL VILLAGE - 580 026

Karnataka, India



**FIRE SAFE TEST CERTIFICATE**

According to API-607-7<sup>th</sup> Edition, June 2016

**Report NO: 006**

Customer Name : Flow link systems (P) Ltd, Coimbatore  
Test Location : Khimji flow equipments Pvt. Ltd.  
Date of testing : 20<sup>th</sup> March 2021  
Valve Description : Ball valve  
Size & Rating : Full port 2" Class 600 RF  
Valve Drawing : 10303052001 Rev. 0

**Valve Material:**

Body and Adapter : ASTM A352 Gr.LCC  
Trim : ASTM A479 Gr.316 & ASTM A182-F316  
Seals : SOFT SEALS  
Valve Serial No : 1000103002

The above valve was tested in accordance with the standard API-607-7<sup>th</sup> Edition June 2016, the test equipment and Testing procedures are confirming to the required specifications.

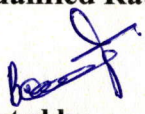
All the tests conducted as per API-607-7<sup>th</sup> Edition June 2016, requirements and found accepted.

**Range Qualified:**

This valve qualifies following sizes and class rating as per API-607-7<sup>th</sup> Edition June 2016,

**Qualified sizes** : NPS 2" and below, 2 1/2", 3" & 4" (DN 50 and below, 65, 80 & 100)

**Qualified Ratings** : 600 & 900 (PN 110 & 150)

  
Tested by

M.E.BHUTE

  
Approved by

R.BASKARAN

Witnessed by

KRISHNA KALWAD







### FIRE SAFE TEST CERTIFICATE

REPORT NO: 006

Customer: Flow link systems (P) Ltd, Coimbatore

Test Standard: API-607-7<sup>th</sup> Edition, June 2016

Place: <b>KHIMJI FLOW EQUIPMENTS PVT. LTD. Hubli , Karnataka, India</b>	Test SL. NO :006	Date : 20-03-2021
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#### OBSERVATIONS

1	Water level in water vessel before Fire Test (h1) mm	955
2	Water level after Cooling (h2) mm	928
3	Seat Leakage during	
	a) Burn period ( HP) – ( V1)ml	2200
	b) Cooling down period ( HP) – (V2)ml	630
	c) After Cool down period (LP) – (V3)ml	300
4	External leakage :	
	a) After cool down period ( LP) – ( V4)ml	180
	b) External during burn & cool down period ( HP)- (V5)ml [Total Volume consumed i.e., Difference in water level H * Water level constant – V1+V2+V3+V4 ]	1766
	External leakage after operation test ( HP) – (V6)ml	150
5	Test durations:	
	a) Burn period – (t1) min	30
	b) Fire test period (up to cool down) – (t2) min	35
	c) Low pressure test period – (t3) min	5
	d) External HP test period after operational – (t4) min	5
6	Water Vessel Calibration constant – ( K) ml/min	188
7	Cavity Volume(initially measured ) – (V7) ml	600
8	Difference in Water Lever – (H=h1-h2)mm	27
9	Total Volume Consumed – H*188	5076

#### TEST RESULTS

Leakage	Test Condition	Formula	Leakage Rate Actual ( ml/min)	Allowable Max ( ml/min)	
1	Seat	Burn Period	V1/t1	73.3	800
2	Seat	After Cool down period	V3/t3	60	80
3	External	Fire test period	V5/t2	40.6	200
4	External	After Cool down period	V4/t3	36	50
5	External	After Operational test	V6/t4	30	50

Test Result: PASSED

Tested by

M.E.BHUTE



Approved by

R.BASKARAN



Witnessed By

KRISHNA KALWAD







**FLOW LINK SYSTEMS (P) Ltd, Coimbatore**

## FIRE SAFE TEST CERTIFICATE

FIRE SAFE TEST REPORT NO : 006

1. TEST CONDUCTED AT	: KHIMJI FLOW EQUIPMENTS PVT LTD	7. WEIGHT OF THE VALVE	: 20.4 kgs
2. DESIGN STANDARD OF VALVE	: API-6D & API 608	8. VALVE SERIAL NO	: 1000103002
3. TESTING STANDARD	: API-607 & API-598	9. TEST DATE	: 20-03-2021
4. TEST VALVE	: NPS 2" CLASS 600 : RF FLANGE ENDS BALL VALVE FP	10. MATERIAL OF CONSTRUCTION OF TEST VALVE	
5. RANGE OF VALVES COVERED	: NPS 2" & BELOW , 2 1/2", 3" & 4" CLASS 600 & 900	a) BODY & ADAPTER	: ASTM A352 Gr. LCC
6. TEST VALVE DRAWING NO	: 10303052001 REV 0	b) BALL & STEM	: F316 & 316
		c) SEAT	: SOFT SEALS
		d) BODY SEAL	: SOFT SEALS
		e) STUD	: ASTM A320 Gr. L7M
		f) NUT	: ASTM A194 Gr. 7M

TEST VALVE PASSED HYDROSTATIC SHELL & SEAT TEST BEFORE FIRE SAFE TEST

### TABULATION

#### FIRE TEST TEMPERATURE / PRESSURE MEASUREMENT DETAILS

SL.NO:	TIME (MIN)	GAUGE PRESSURE Bar		FLAME THEROCOUPLE TEMPERATURE ( ° C )			BODY AND ADAPTER THERMOCOUPLE TEMPERATURE ( ° C )		CALORIMETER CUBE THERMOCOUPLE TEMPERATURE ( ° C )			REMARKS
		UPSTREAM	CAVITY	BELOW BODY	NEAR STEM	AVG (T1)	BODY (T2)	ADAPTER (T3)	BELOW BODY	NEAR ADAPTER	AVG (T4)	
1	0.0	76	76	170	184	177	65	156	189	204	196.5	
2	0.5	76	76	354	190	272	94	178	196	224	210	
3	1.5	76	76	368	195	281.5	114	196	215	253	234	
4	2.0	76	76	380	205	292.5	245	205	256	262	259	
5	2.5	76	76	405	218	311.5	257	225	286	274	280	
6	3.0	76	76	418	258	338	286	268	321	280	300.5	
7	3.5	76	76	425	304	364.5	305	310	345	326	335.5	
8	4.0	76	76	444	328	386	328	336	369	340	354.5	
9	4.5	76	76	489	364	426.5	333	384	402	359	380.5	
10	5.0	76	76	499	398	448.5	360	402	428	356	392	
11	5.5	76	76	502	405	453.5	369	418	439	368	403.5	
12	5.0	76	76	517	419	468	375	429	451	385	418	
13	6.0	76	76	523	435	479	401	456	462	394	428	
14	6.5	76	76	536	459	497.5	419	468	487	408	447.5	
15	7.0	76	76	540	463	501.5	428	479	456	419	437.5	
16	7.5	76	76	564	478	521	436	496	486	426	456	
17	8.0	76	76	560	490	525	451	503	512	435	473.5	
18	8.5	76	76	578	504	541	459	516	528	445	486.5	
19	9.0	76	76	580	532	556	478	528	536	481	508.5	
20	9.5	76	76	587	564	575.5	496	540	541	502	521.5	
21	10.0	76	76	590	579	584.5	503	550	556	519	537.5	
22	10.5	76	76	605	586	595.5	524	564	568	526	547	
23	11.0	76	76	615	605	610	546	570	608	530	569	
24	11.5	76	76	628	619	623.5	568	604	624	556	590	
25	12.0	76	76	631	628	629.5	578	621	631	578	604.5	
26	12.5	76	76	645	654	649.5	588	630	628	594	611	
27	13.0	76	76	685	666	675.5	592	639	645	606	625.5	
28	13.5	76	76	714	684	699	601	652	649	623	636	
29	14.0	76	76	724	690	707	612	663	653	635	644	
30	14.5	76	76	735	709	722	623	678	666	648	657	
31	15.0	76	76	744	728	736	629	689	678	655	666.5	
32	15.5	76	76	756	735	745.5	635	695	690	669	679.5	
33	16.0	76	76	768	746	757	648	708	705	679	692	
34	16.5	76	76	772	750	761	684	725	715	694	704.5	

**WITNESS BY:**

INSPECTOR TUV NORD INDIA  
KRISHNA KALWAD



APPROVED BY  
R. BASKARAO



TESTED BY KFEL HUBLI

M.E. BHUTE







**FLOW LINK SYSTEMS (P) Ltd, Coimbatore**

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		UPSTREAM	CAVITY	BELOW BODY	NEAR STEM	AVG (T1)	BODY (T2)	ADAPTER (T3)	BELOW BODY	NEAR ADAPTER	AVG (T4)	
35	17.0	76	76	775	756	765.5	691	726	728	715	721.5	
36	17.5	76	76	770	765	767.5	705	728	735	726	730.5	
37	18.0	76	76	775	780	777.5	730	735	740	738	739	
38	18.5	76	76	777	784	780.5	745	746	745	754	749.5	
39	19.0	76	76	784	788	786	750	759	748	762	755	
40	19.5	76	76	790	796	793	766	766	764	774	769	
41	20.0	76	76	795	794	794.5	774	779	768	780	774	
42	20.5	76	78	799	804	801.5	786	784	770	786	778	
43	21.0	76	80	801	815	808	786	798	778	798	788	
44	21.5	76	84	812	822	817	790	804	789	806	797.5	
45	22.0	76	86	806	828	817	801	813	792	821	806.5	
46	22.5	76	82	812	836	824	815	824	805	829	817	
47	23.0	76	80	813	840	826.5	826	814	812	834	823	
48	23.5	76	80	814	845	829.5	834	819	816	844	830	
49	24.0	76	76	828	858	843	846	845	825	828	826.5	
50	24.5	76	76	835	860	847.5	854	864	848	830	839	
51	25.0	76	76	840	865	852.5	860	870	850	825	837.5	
52	25.5	76	76	845	865	855	867	856	854	820	837	
53	26.0	76	76	853	864	858.5	878	854	856	815	835.5	
54	26.5	76	76	869	870	869.5	889	840	862	800	831	
55	27.0	76	76	874	874	874	895	832	869	784	826.5	
56	27.5	76	76	880	876	878	901	821	870	768	819	
57	28.0	76	76	890	877	883.5	880	820	845	774	809.5	
58	28.5	76	76	884	880	882	875	820	840	728	784	
59	29.0	76	76	888	882	885	868	814	832	701	766.5	
60	29.5	76	76	896	880	888	850	802	826	680	753	
61	30.0	76	76	870	874	872	814	784	815	658	736.5	
62	30.5	76	76	640	740	690	745	762	768	654	711	
63	31.0	76	76	600	701	650.5	700	715	680	648	664	
64	31.5	76	76	574	651	612.5	640	665	625	623	624	
65	32.0	76	76	486	612	549	580	556	548	587	567.5	
66	32.5	76	76	421	490	455.5	474	423	520	480	500	
67	33.0	76	76	315	415	365	328	312	426	402	414	
68	33.5	76	76	245	361	303	297	254	305	288	296.5	

**WITNESS BY:**

INSPECTOR TUV NORD INDIA  
KRIHNA KALWAD



APPROVED BY  
H.DAGRAM



TESTED BY KFEL HUBLI  
M.L.DHUTL

