GLIS™

Certificate No: GLIS/IN/AIVF/2022/04/FS-2122

GL Ref. No: 101-091-0202-04-0474

FIRE SAFE TEST CERTIFICATE

This certificate is issued to

Alka-Tech Industrial Valves & Fittings Co.

Shop No. 5, Victor SheltorBdlg., Mithagar Road, Kandarpada, Dahisar (W), Mumbai-400068, India.

to certify that at their request, the undersigned surveyor to GLIS (INDIA) Pvt. Ltd., attended at their designated works, 15 & 16, Jeenam Industrial Estate, Dhumal Nagar Waliv Road, Vasai (E), Thane-101208, India., on 18th April 2022, for the purpose of witness of fire safe test of Trunnion Mounted Ball Valve.

The scopes of Inspection & Approval are as below.:

STANDARD SPECIFICATION	**: API 607 7TH EDITION, JUNE 2016 / ISO 10497 : 2010**
TECHNICAL SPECIFICATION	
Design / Mfg. Standard	**: API 6D / ASME B 16.34**
Construction	**: TRUNION MOUNTED BALL VALVE (2PC) (FB)**
Size	**: DN 200 (8")**
Class	**: 600#**
Valve Serial No.	**: F632**
Valve Drg. No.	**: VC/GA/YBLV/FL/600/107; REV.00**
MATERIAL OF CONSTRUCTION	
Body/ Side Piece	**: ASTM A216 GR. WCB**
Ball	**: ASTM A351 GR. CF8M**
Stem	**: AISI 316**
Seat Ring	**: PEEK**
Gasket	**: SPW SS 316 GRAPHITE FILLER**
Gland Packing	**: FLEXIBLE GRAPHITE**
Stud & Nut	**: ASTM A193 GR. B7/ASTM A 194 GR.2H**

Conclusion: BALL VALVE, Sr. No. **F632** punched on flange had successfully passed fire safe test as per procedure outlined in **API 607 / ISO 10497** . This test results conforming with the specification.

Note : i) GLIS is to be notified of any changes to the design of this valve that may affect the Validity of this Certificate.
ii) All Product Liability rests with Manufacturer, in case of damages caused by defective or Non Conformity
iii) Gulf Lloyds does not accept any liabilities or claims arising due to this certificate.
iv) For gennunity check of this certificate pls. visit our registrar: *www.gulflloyds.info*

Other Sizes Qualified	**: 8" and Larger**
Other Pressure Class Qualified	**: 600#, 800#, 900#**

Date of Issue: 18-04-2022
Date of Expiry: 17-04-2025

Issued at:
Ahmedabad

GLIS
18.04.2022

Gulf Lloyds Industrial Services (India) Pvt. Ltd. GULF LLOYDS 1967 GLIS-IN-025

J.B. Bhavsar

Place | **Date** | **Sr. Inspection Engineer**

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FIRE SAFE TEST REPORT

Test Conducted at	Alka-Tech Industrial Valves & Fittings Co.		Report No. – Alka-FS-TMBV-2022-04 Date – 18.04.2022	
			Material of Construction	
Design Standard	ASME B16.34 ; API 6D		Body & Side Piece	ASTM A216 GR. WCB
Testing Standard	API 6D		Ball	ASTM A351 GR. CF8M
Fire safe test std.	API 607, 7th Edition, June 2016 / ISO 10497 : 2010			
Test Valve	8" (200 mm), FB, Class 600, 2-PIECE TRUNNION BALL VALVE		Stem	AISI 316
Range of Valve Covered	API 607, 7th Edition, June 2016	Size: 8" and Larger	Seat Ring	PEEK
		CLASS: 600, 800, 900	Bolting	ASTM A193 GR. B7/ ASTM A 194 GR.2H
Test Valve Drawing No	VC/GA/YBLV/FL/600/107; REV.00			
			Body Joint Seal (Gasket)	SPW SS 316 GRAPHITE FILLER
Test Serial No & Date	F632		Gland Packing	FLEXIBLE GRAPHITE
Valve Marking	Size, Pressure Class, Material		Burn Start Time	12:00:00 PM
Valve has passed all the required hydrostatic, air type and production pressure tests			Yes	

Time	Temperature ° C						Upstream Pressure Set At (Bar)	Remarks
	Flame Thermocouple			Calorimeter Thermocouple				
	T1	T2	Average	T3	T4	Average		
12:00:00	168	180	174	31	31	31	2.0	Burn Period Start
12:00:30	300	325	312.5	34	35	34.5	2.0	
12:01:00	580	560	570	76	78	77	2.0	
12:01:30	750	760	755	82	92	87	2.0	
12:02:00	770	780	775	98	100	99	2.0	Ensure Avg T1 & T2 = 750°C
12:02:30	781	786	783.5	108	117	112.5	2.0	
12:03:00	788	789	788.5	116	125	120.5	2.0	
12:03:30	795	809	802	124	132	128	2.0	
12:04:00	801	814	807.5	136	140	138	2.0	
12:04:30	809	823	816	158	178	168	2.0	
12:05:00	821	841	831	169	200	184.5	2.0	
12:05:30	846	863	854.5	178	240	209	2.0	
12:06:00	866	872	869	201	278	239.5	2.0	
12:06:30	872	888	880	244	302	273	2.0	
12:07:00	880	896	888	280	348	314	2.0	
12:07:30	887	902	894.5	305	380	342.5	2.0	
12:08:00	893	910	901.5	326	412	369	2.0	
12:08:30	901	912	906.5	342	484	413	2.0	
12:09:00	905	912	908.5	350	500	425	2.0	
12:09:30	905	918	911.5	356	526	441	2.0	

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FIRE SAFE TEST REPORT

Time	Temperature ° C						Upstream Pressure Set At (Bar)	Remarks
	Flame Thermocouple			Calorimeter Thermocouple				
	T1	T2	Average	T3	T4	Average		
12:10:00	911	921	916	394	540	467	2.0	
12:10:30	919	928	923.5	425	568	496.5	2.0	
12:11:00	920	934	927	461	600	530.5	2.0	
12:11:30	920	935	927.5	488	612	550	2.0	
12:12:00	928	942	935	535	640	587.5	2.0	
12:12:30	933	945	939	584	668	626	2.0	
12:13:00	933	945	939	610	676	643	2.0	
12:13:30	939	949	944	619	688	653.5	2.0	
12:14:00	942	948	945	632	695	663.5	2.0	
12:14:30	946	948	947	640	698	669	2.0	
12:15:00	946	950	948	656	700	678	2.0	Ensure Avg T3 & T4 =650°C
12:15:30	950	952	951	658	704	681	2.0	
12:16:00	950	952	951	674	710	692	2.0	
12:16:30	951	954	952.5	680	712	696	2.0	
12:17:00	951	955	953	682	715	698.5	2.0	
12:17:30	952	960	956	688	718	703	2.0	
12:18:00	952	961	956.5	690	720	705	2.0	
12:18:30	954	960	957	701	725	713	2.0	
12:19:00	954	960	957	706	728	717	2.0	
12:19:30	954	961	957.5	710	730	720	2.0	
12:20:00	954	961	957.5	714	726	720	2.0	
12:20:30	955	962	958.5	718	730	724	2.0	
12:21:00	955	964	959.5	720	732	726	2.0	
12:21:30	956	963	959.5	722	730	726	2.0	
12:22:00	956	964	960	724	730	727	2.0	
12:22:30	959	964	961.5	726	724	725	2.0	
12:23:00	958	970	964	710	720	715	2.0	
12:23:30	958	972	965	705	724	714.5	2.0	
12:24:00	959	971	965	700	715	707.5	2.0	
12:24:30	960	971	965.5	691	693	692	2.0	
12:25:00	960	972	966	688	690	689	2.0	
12:25:30	962	972	967	682	687	684.5	2.0	
12:26:00	962	973	967.5	682	683	682.5	2.0	
12:26:30	963	976	969.5	680	680	680	2.0	
12:27:00	961	976	968.5	680	672	676	2.0	

FIRE SAFE TEST REPORT

Time	Temperature ° C							Remarks
	Flame Thermocouple			Calorimeter Thermocouple			Upstream Pressure Set At (Bar)	
	T1	T2	Average	T3	T4	Average		
12:27:30	964	978	971	680	666	673	2.0	
12:28:00	964	978	971	650	680	665	2.0	
12:28:30	966	975	970.5	650	679	664.5	2.0	
12:29:00	970	975	972.5	630	678	654	2.0	
12:29:30	971	976	973.5	631	678	654.5	2.0	
12:30:00	971	975	973	632	678	655	2.0	Burn Period End
12:30:30	800	863	831.5	595	675	635	2.0	Start cool down
12:31:00	612	604	608	450	568	509	2.0	
12:31:30	500	516	508	382	472	427	2.0	
12:32:00	330	371	350.5	304	372	338	2.0	
12:32:30	240	222	231	269	305	287	2.0	
12:33:00	200	152	176	223	261	242	2.0	
12:33:30	164	110	137	178	200	189	2.0	
12:34:00	120	100	110	98	100	99	2.0	
12:34:30	102	92	97	50	46	48	2.0	
12:35:00	95	90	92.5	46	40	43	2.0	End Cool down
12:35:30	90	76	83	46	42	44	2.0	Start low pressure test
12:36:00	30	30	30	44	42	43	2.0	
12:36:30	30	30	30	44	42	43	2.0	
12:37:00	30	30	30	40	30	35	2.0	
12:37:30	30	30	30	40	30	35	2.0	
12:38:00	30	30	30	40	30	35	2.0	
12:38:30	29	29	29	40	30	35	2.0	
12:39:00	29	29	29	40	30	35	2.0	
12:39:30	29	29	29	40	30	35	2.0	
12:40:00	29	29	29	40	30	35	2.0	End low pressure test

HOD – Design & Development	HOD – Q.A/QC	TPI – GLIS (INDIA)	

FIRE SAFE TEST REPORT

OBSERVATIONS

Sr. No	Description		Values	Units
01	Water level reading of water reservoir, before Low pressure test	**(a)**	960	mm
02	Water level reading of water reservoir, end of cooling period	**(b)**	956	mm
03	Duration of total burning and cool down period	**(c)**	35	Minutes
04	Water vessel constant	**(d)**	114	ml / mm
05	Through seat leakage collected during burning period	**(e)**	350	ml
06	Through seat leakage during low pressure test	**(f)**	12	ml
07	External leakage during low pressure test	**(g)**	0	ml
08	External leakage after operation, valve at open position	**(h)**	0	ml

PERFORMANCE OF VALVE / RESULTS

Calculations

Sr. No	Description	Formula
01	Through seat leakage (Low Test Pressure) During burn period	= e / NPS
02	External Leakage (Low Test Pressure) During burn & cool down period. Valve in closed position	= $\{\frac{[(d \times (a-b)) - e] / c}{NPS}\}$ ml / inch / min
03	Through seat leakage (Low Test Pressure) – After cool down	= f / NPS
04	External leakage (Low Test Pressure) – After cool down, Valve in closed position	= g / NPS
05	External leakage – Valve in Open position after operational test.	= h / NPS

Results

Sr. No	Description	As per standard	Actual	Units
01	Through seat leakage (Low Test Pressure) During burn period	100	1.66	ml /inch /min
02	External Leakage (Low Test Pressure) During burn & cool down period. Valve in closed position	25	0.50	ml /inch /min
03	Through seat leakage (Low Test Pressure) – After cool down	40	0.4	ml /inch /min
04	External leakage – Valve in Open position after operational test.	25	0	ml /inch /min

SEAT & SEAL CONDITION AFTER TESTING
SEATS BURNT COMPLETELY & SEALS INTACT

CONCLUSION

Through seat leakage and external leakage are within allowable limits. Hence the test valve and the corresponding range of valves which are mentioned above are hereby qualified as Fire Safe Valves.