



Project:

Certificate Number: BIS 890079/1

Client: Reynold Valves Ltd., Mumbai.

Office: MUMBAI

Client's Order Request signed dated 28.5.98.
Number:

Date: 14.8.98

Order Status: COMPLETE

Inspection Dates
First: 28.5.98

Final: 10.8.98

This certificate is issued to Reynold Valves Ltd. Mumbai, to certify that the undersigned Surveyor attended their works at Boisar on 28 May, 1998 and subsequently for the purpose of witnessing Fire Safe Test of valve no. F20 to the following scope of inspection with satisfactory results.

DESCRIPTION:

Fire Safe Test of Cast Carbon Steel quarter turn ball valves no. F20 to API 607.

Size: 50mm

Class: 150

SCOPE OF INSPECTION:

1. Witnessing Fire Safe Test of valve as per API 607.

NOTE: For details of test results refer Manufacturer's Report No. FT22 duly endorsed


K. SWAMINATHAN.

Surveyor to Lloyd's Register

NOTICE: This certificate is subject to the terms and conditions overleaf, which form part of this certificate.

FORM LLOYD 001/98

LLOYD'S REGISTER INDUSTRIAL SERVICES (INDIA) PVT. LTD.
(An Associate Company of Lloyd's Register of Shipping)
Regd Office: 6A, Karg Sharda, Bandra Reclamation, Bandra (W), Mumbai - 401051

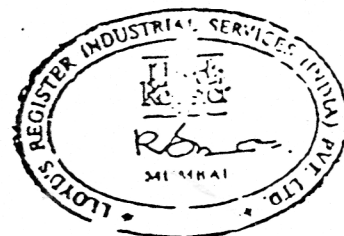


Reynold Valves Ltd

Fire-safe Test Report FT22

3.5 Actual Leakage Values

Leakage Description	Formula	Leakage Value (ml/min/NPS)	Permitted Value (ml/min/NPS)
Through Leakage during burn period	$w_1/((t_2-t_1)*NPS)$	7.95	100
External Leakage during burn and cool-down periods	$((h_1-h_3)*V-w_1-w_2)/((t_3-t_1)*NPS)$	5.37	25
Through Leakage during operational test	$w_3/((t_6-t_5)*NPS)$	0	20
External Leakage during operational test	$((h_4-h_5)*V-w_3)/((t_6-t_5)*NPS)$	7.84	25



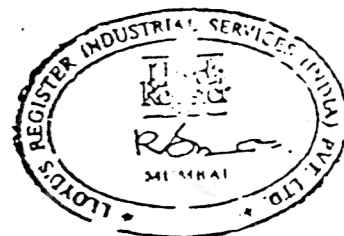


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KIND ATTN: Mr. SHARMA

सर्टिफिकेशन इंजीनियर्स इंटरनेशनल लिमिटेड

(इंजीनियर्स इंडिया लिमिटेड, भारत सरकार का उपक्रम, की सहायक कंपनी)

CERTIFICATION ENGINEERS INTERNATIONAL LTD.

(A wholly owned subsidiary company of ENGINEERS INDIA LIMITED, A Govt. of India Undertaking)

Head Office : Express Towers, 5th Floor, Nariman Point, Mumbai - 400 021.

Tel.: 91-22-2026081, 2025919 Fax : 91-22-2025103, 2029014

CERTIFICATE NO. 9308/FST/API607-4/KSP-2

11th October 2000

To,

M/s Reynold Valves Ltd.,
213, Ruby Industrial Estate,
Chincholi bunder Road,
Malad(West),
Mumbai-400 064.

Attn: Mr R.S. Parikh, Managing Director

Ref: Your request vide letter Ref. RVL/INSPEC/00-01 dated 18th Sept 2000.

This certificate is issued to M/s Reynold Valves Ltd., located at above address, to certify that the undersigned surveyor attended the works at J-182, MIDC, Tarapur on 04th October 2000 for the purpose of witnessing Fire Safe Test on the Ball Valve, described below, on behalf of CEIL:

Valve description : 2 piece, full bore Ball Valve, Cast Carbon Steel body with SS trim
Teflon renewable seats and Grafoil packing, flanged ends to
ANSI B16.5, Class 150 lbs.

Valve Size
4.0 Inch

Sr.No
FS 09

Mfr. Drg. No.
RVL/21FA/100mm Rev.0
dated 20.09.2000.

Reference Standard : API 607 - Fourth Edn. May 1993 / Vendor Test Proc. No. Nil
dated 04.10.2000.

Relevant readings, noted during the Fire Safe Test on 04th October 2000, have been duly endorsed for record, and is available with the vendor.

The test results were satisfactory against performance requirements at Section 4 of API 607 Fourth Edition.

THIS CERTIFICATE IS ISSUED WITHOUT ANY LIABILITY, IMPLIED OR OTHERWISE,
ON THE PART OF CEIL TOWARDS DESIGN/MANUFACTURE/TEST/SUPPLY OF
VALVE DESCRIBED ABOVE.

gvj

SENIOR MANAGER / SURVEYOR





DNV Id. No.:

Ref:- PUN/11/MK/451

Date:- 2011/12/01

DET NORSKE VERITAS

FIRE SAFE TEST CERTIFICATE

M/s. REYNOLD VALVES LTD.

J 182 MIDC TARAPUR,
BOISAR
DIST. THANE (MH)

Witnessed by surveyor of DET NORSKE VERITAS on 01st Dec. 2011, the fire safe testing of DN 200 mm # 150 FE Ball Valve, at your works.

FIRE TEST WITNESS REPORT

Description of valve tested :

Manufacturing standard	: API 608
Design	: Ball valve
Type	: 2 Piece
Size /Class	: DN 200MM / Class 150
Valve Sr. No.	: RVL/01
Heat No.	: 1295
Drawing. No.	: RVL/21FE/200MM REV. 0

Material of construction

1) Body / Side piece	: ASTM A 216 GR. WCB
2) Ball	: ASTM A 351 GR CF8
3) Body ring	: SS 304 sp. Wu with Grafoil fill
4) Seal Ring	: PTEF secondary metal to metal
5) Gland packings	: Grafoil

Fire safe testing is in accordance to API 607-2010 (6th Edition) and found the test results conforming to the required specifications. For further details please refer manufacturer's Doc. No: FS/DNV/20/11/01 dt. 1/12/2011.

Range Qualified:

This valve qualifies following sizes and class ratings as per API 607 – 2010 (6th Edition)

Size : DN 200 & Larger

Class : #150, #300



mk

M D KURADE

Surveyor of DET NORSKE VERITAS

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



DNV Id. No.:

Ref:- PUN/11/MK/452

Date:- 2011/12/01

DET NORSKE VERITAS

FIRE SAFE TEST CERTIFICATE

M/s. REYNOLD VALVES LTD.

J 182 MIDC TARAPUR,
BOISAR
DIST. THANE (MH)

Witnessed by surveyor of DET NORSKE VERITAS on 01st Dec. 2011, the fire safe testing of DN 25 mm # 800 S/W FCS Ball Valve , at your works.

FIRE TEST WITNESS REPORT

Description of valve tested :

Manufacturing standard	: API 608
Design	: Ball valve
Type	: 2 Piece
Size /Class	: DN 25 MM / Class 800
Valve Sr. No.	: RVL/04
Heat No.	: 395
Drawing. No.	: RVL/21SW/25MM REV. 0

Material of construction

1) Body / Side piece	: ASTM A 105
2) Ball	: SS 304
3) Body ring	: SS 304 sp. Wu with Grafoil fill
4) Seal Ring	: VIRGIN PTFE
5) Gland packings	: Grafoil

Fire safe testing is in accordance to API 607-2010 (6th Edition) and found the test results conforming to the required specifications. For further details please refer manufacturer's Doc. No: FS/DNV/20/11/02 dt. 1/12/2011.

Range Qualified:

This valve qualifies following sizes and class ratings as per API 607 – 2010 (6th Edition)

Size : DN 25 & Below

Class : #800, #900 , #1500.



M D KURADE
Surveyor of DET NORSKE VERITAS

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DNV Id. No.:

Ref:- PUN/11/MK/458

Date:- 2011/12/15

DET NORSKE VERITAS

FIRE SAFE TEST CERTIFICATE

M/s. REYNOLD VALVES LTD.

J 182 MIDC TARAPUR,
BOISAR
DIST. THANE (MH)

Witnessed by surveyor of DET NORSKE VERITAS on 15th Dec. 2011, the fire safe testing of DN 50 mm # 150 FE Ball Valve , at your works.

FIRE TEST WITNESS REPORT

Description of valve tested :

Manufacturing standard	: API 608
Design	: Ball valve
Type	: 2 Piece
Size /Class	: DN 50MM / Class 150
Valve Sr. No.	: RVL/03
Heat No.	: N587
Drawing. No.	: RVL/21FE/50MM REV. 0

Material of construction

1) Body / Side piece	: ASTM A 216 GR. WCB
2) Ball	: SS 304
3) Body ring	: SS 304 sp. Wu with Grafoil fill
4) Seal Ring	: PTEF secondary metal to metal
5) Gland packings	: Grafoil

Fire safe testing is in accordance to API 607-2010 (6th Edition) and found the test results conforming to the required specifications. For further details please refer manufacturer's Doc. No: FS/DNV/15/12/03 dt. 15/12/2011.

Range Qualified:

This valve qualifies following sizes and class ratings as per API 607 – 2010 (6th Edition)

Size : 50 NB & Below (65 , 80 ,100 NB)

Class : #150, #300



M D KURADE
Surveyor of DET NORSKE VERITAS

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



South Asia

FIRE TEST REPORT

Valve Type	Soft Seated Trunnion Mounted Ball Valve-2PC	Test Report No	IND/TUV-SUD/PUN/2020/RVV/FS-001
Size, NPS in inches	2" (DN 50)	Test Date	01-08-20
Pressure Class Rating	300#	Test Venue	M/s. Reynold Valves Ltd.
End Connection	Flanged End	Valve Manufacturer Details	M/s. Reynold Valves Ltd.
GA Drg No	RVL/31FE/50MM Rev.0		
Body Material	ASTM A351 Gr.CF8	Gear Box	NA
Body Seat Material	PCTFE	Gear Box MFGR Details	NA
Ball	SS 304	Model	NA
Stem	SS 304	Mechanical Advantage	NA
Stem Packing	Graphite	Gear Ratio	NA
Fire Test Specification	API 607 7th-Edition	Handwheel Diameter in mm	NA
Fire Test Pressure During Durn	35 psig	Valve Design Std	API 6D / ISO 17292 / ASME B16.34
Test Flow/Pressure Direction	Bi-Directional		
Valve Serial No:	ZFS001		

DETAILS	Test Pressure	Test Duration (minutes)	Water Volume tank sight gauge,mm 1mm=90ml	
			Initial level (I)	Final level (F)
2" FB #300 Trunnion Mounted Ball Valve	35 psig	30	600	523.33

PERFORMANCE

DETAILS	Leak rate (ml)		Comparsion in %, Actual Vs allowable leakage
	Actual	Allowable	
Allowable through seat leakage during burn period at 30 Min. (Low Test Pressure as per Cl. No.6.2, Table 1	120ml/ min	200 ml/ min.	60.00%
Allowable through seat leakage after cool down period at 05 Min. (Low Test Pressure as per Cl. No.6.4)	60ml/ min	80 ml/ min.	75.00%
Allowable External leakage during burn period at 30 Min. (Low Test Pressure as per Cl. No.6.3)	15ml/ min	50 ml/ min.	30.00%
Allowable External Leakage after Operational Test (High Test Pressure as per Cl. No.6.6)	25ml/ min	50 ml/ min.	50.00%

The Valve Test Report (VTR) prior to fire safe testing found OK. All Thermocouples, Temperature recording instruments and pressure monitoring devices were verified with valid calibration reports & OK. Temperature and pressure readings are within acceptable standard limits as per Fire safe test stds. Details Enclosed.

- Conclusion :1. The valve performance was normal throughout the test and meet the specification requirement fully.
2. The valve qualification range as per API 607/EN ISO 10497 as below.

Test Valve Details

Valve tested Size: NPS	2" (DN 50)
Valve tested Rating: Class	300

Qualification Range

Other valves qualified by NPS,DN, Class		
2" & BELOW; 2.5", 3", 4"	DN 50 & BELOW; DN65, DN80, DN 100	300# , 400# & 600#

Test conducted by :

Name	Signature
Mr. Milap Desai	

Test Witnessed by: TUV SUD South Asia

Name	Signature
Mr.Rahul Vangari	

Test Verified by & In charge of Fire Test:

Name	Signature
Mr. Milap Desai	



22
25/08/2020