

Certificate No : 624202107102

Date : July 10, 2021



API STANDARD 624 TEST CERTIFICATE
Type Testing of Rising Stem Valves Equipped with Graphite Packing
For Fugitive Emissions

This is to certify that the below mentioned valve has been inspected by Plasma & Vacuum Technologies and found to be satisfactory in accordance with the requirements of API 624, First Edition 2014.

Manufacturer: **Regent Flowchem Equipments Pvt. Ltd.**
Address: **Plot No. 92/7, Tarihal Industrial Estate, Hubballi - 580 026. Karnataka. India.**
Location of Test: Plasma & Vacuum Technologies, Plot No.17, Road 1-A, GIDC Kathwada, Ahmedabad 382430, India.

Product :	API 600 / ASME B16.34 Gate Valve, 6", 600#
Packing :	"Pacmaan" J. D. Jones & Co. (P) Ltd.
Body/Bonnet Material :	ASTM A216 Gr. WCB
Stem Material :	ASTM A276 TP 410
Test Fluid :	Methane
Test Pressure :	41.4 barG (~600 PSIG)
Test Temperature :	Ambient and at 260°C (~ 500°F)
Mechanical Cycle :	310 Cycles over 3 Temperature Cycles
Maximum Leakage :	50.7 PPM _v
Average Leakage :	23.0 PPM _v
Acceptance Criteria :	< 100 PPM _v maximum
Test Result :	PASS
Test Report No :	PVT/SD/FET/R/202107/ 07
Test Start Date :	July 8, 2021
Test End Date :	July 10, 2021

Valve Qualified : All valves of the same basic design as the test valve may be deemed to have been type tested, subject to the following additional limitation. For API 600 Valves, 6" (DN 150) Class 600 test valve qualifies all diameter from 2" (DN 50) through 8" (DN 200) in pressure class 300 & 600.

<p>Test Conducted by</p> <p align="center">  <i>Venkat N. Ramani</i> ASNT Level III (LT) 183918 Plasma & Vacuum Technologies </p>	<p>Test Witnessed</p> <p align="center">  <i>Venkat N. Ramani</i> TUV India </p>
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MANUFACTURING :

Custom - built Plasma & Vacuum Components and Assemblies

SERVICES :

Helium Leak Testing, Methane Leak Testing as per API & ISO-15848 Standards

Vacuum Brazing, Vacuum Heat Treatment, Calibration of Vacuum Gauges

Plot No. 17, Road 1 - A,

GIDC, Kathwada, Ahmedabad-382430.

Phone : +91 79-29705319, Fax : 079-29709216

Email : pvt@plasvac.com

Website : www.plasvac.com

Saes
getters

Representative of Saes Getters, Italy for Vacuum Pumps in India

API STANDARD 624 FUGITIVE EMISSIONS TEST REPORT

F/CR/10.2
Rev.No.00

Report No :	PVT/SD/FET/R/202107/ 07	Report Date :	July 10, 2021
Manufacturer :	Regent Flowchem Equipments Pvt. Ltd.	Valve Stem Type :	Rising
Valve - Type, Size, Class :	Gate Valve, 6", 600#	API / ASME Design Standard	API 600 / ASME B16.34
Packing Description : "Pacmaan" style NA- B3 + 707 low emission packing ring set. (2 No's braided end rings with 7 No's moulded intermediate rings).		Number of Rings : 9 nos OD : 60.0 mm, ID : 40.0 mm Thickness : 10.0 mm Stack Height : 90 mm Stuffing box depth : 90 mm	Body-Bonnet connection : SPW 316 + GRAFOIL
"Pacmaan" J. D. Jones & Co. (P) Ltd.		Gland follower exposed Length: 31 mm	Body/Bonnet Nut recommended torque : 550 Nm
Gland Nut recommended torque : 110 Nm		Gland Follower Insertion Depth : 1 mm	
Test Start Date :	July 8, 2021	Valve Selection : by Manufacturer, Selection Date : 17.06.2021	
Test Completion Date :	July 10, 2021	Selected by : QA/QC Dept. Regent Flowchem Equipments Pvt. Ltd.	

SUMMARY OF FUGITIVE EMISSIONS TEST DATA

Test Segment	Cycle	Methane Pressure (barG)	Temperature at Body (°C)	Temperature at Stem (°C)	Static Leak Measurement (PPMv)	Dynamic Leak Measurement (PPMv)	Remarks
Ambient Temperature	0	41.4	30	30	13.4	21.2	OK
	50	41.4	32	32	18.5		
Elevated Temperature	51	41.4	266	264	26.8	52.8	OK
	100	41.4	264	263	51.4		
Ambient Temperature	101	41.4	35	35	6.6	18.3	OK
	150	41.4	37	37	12.4		
Elevated Temperature	151	41.4	269	265	30.2	50.7	OK
	200	41.4	269	265	43.6		
Ambient Temperature	201	41.4	36	37	3.6	18.3	OK
	250	41.4	36	37	10.6		
Elevated Temperature	251	41.4	266	261	20.1	26.6	OK
	300	41.4	266	261	25.2		
Ambient Temperature	301	41.4	40	40	7.1	14.6	OK
	310	41.4	40	40	11.0		

Valve Serial No : 21-0382

Running Torque - First Cycle : 28 Nm, Last cycle : 20 Nm

FINAL REMARK : Pass (✓)

Pre-test Preparations & Adjustments : 1) Gland bolting, Body/Bonnet and Valve open-close torques were verified; 2) The air in the valve cavity was evacuated and purged with Helium prior to starting the testing; 3) The stem orientation was kept vertical; 4) External valve heating was designed, with heating coils and wrapped by Alumina wool; 5) Electrical Operation using wheel was set for cycling (opening and closing) the valves.

Notes : 1) The test valve was randomly selected; 2) The test medium was methane with purity > 97%; 3) The test was conducted in a safe, well ventilated and protected environment; 4) No packing adjustment was done during test. Running torques at the start and end were measured; 5) Methane Detector (Model TVA 2020, Thermofisher) was used for ambient monitoring; 6) Methane Detector (Model TVA 2020, Thermofisher) was used for methane leakage at gland and bonnet joint. The Probe was calibrated prior to each measurement using an external calibration gas with known Methane concentration.

Test Witnessed

Mr. D. Anand, HOD-QA
Regent Flowchem Equipments Pvt. Ltd.

Test Conducted by

Venkat N. Ramani
ASNT Level III (LT)
Plasma & Vacuum Technologies

Test Witnessed

Mr. Krishna Kalwad, TUV India Pvt. Ltd

