GUJARAT GAS	QUALITY ASSURANCE PLAN FOR FILTER	QAP No.:	PROJECT :FILTER
		DATE:	
GUJARAT GAS LIMITED	P.O. NO. :	MANUFACTURE'S NAME & ADDRESS:	

SR No	Component & Stage	Characteristic	Type of Check	Quantam of Check	Reference Standard/ Documents	Acceptance Standard / Documents	Format of Records	Inspection By			Remarks
								M	TPA	CLIENT	
1	**Drawings & Calculations**										
1.1	P & ID, GAD, BOM, QAP, Technical Datasheet, FAT ,SAT	Complete Skid	Submittals	100%	Technical Spec. and Datasheets	Approved Datasheet	Mfrs Format	P	RF	A	
2	**Incoming Material Identification of Broughtout Items**										
2.1	Ball valves, Globe valves & Check Valves		Chemical test	Per heat No							
			Physical Test (tensile,yield ,elongation& Hardness)	Per heat No							
		Material TC for valves	Impct Test	Per heat No	ASTM 370	**1)-Ball Valve- Below 2"** I)- BODY-ASTM A 350 Gr. LF2 II) Ball & STEM- ASTM A479 Gr. SS 316/ASTM A 351 CF8M+ 80 micron ENP **2)-Ball Valve- 2" and above** I)Body for 300# - ASTM A 352 Gr. LCB / LCC,ASTM A 350 Gr. LF2 II) Ball & STEM- ASTM A479 Gr. SS 316/ASTM A 351 CF8M+ 80 micron ENP **3)-Globe Valve-** I)- BODY& BONNET- ASTM A 350 Gr. LF2 – for Operating pressure 49 bar-g II)DISC & STEM-ASTM A 479 SS 316	Inspection Report 3.1	P	R	R	
		Dimension- Size, Rating,	Visual, Measurement	100%	Approved Datasheet	)- Ball Valve: a)- Below 2" as per BS 17292 b)- Above 4" as per API 6D 2)-Globe valve:0.5-15" As per BS 15761	Inspection Report 3.1	P	R	R	--
		RT for casting	Test	100%	ASME B16.34 Appendix 1	ASME B16.34 Appendix 1	Inspection Report	P	R	R	
		UT for Forging	Test	100%	ASME B16.34 Appendix 1	ASME B16.34 Appendix 1	Inspection Report	P	R	R	

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	Ball valves, Globe valves & Check Valves	Hydro Body Test	Leak Test	100%	Approved datasheet/API6D/API 598	1.5 x Design Pressure For 800# = 207 kg/cm2 For 300# = 73.5 kg/cm2 Holding Time shall be as per the standard	Inspection Report 3.1	P	R	R	
		Hydro seat test	Leak Test	100%	Approved datasheet/API6D/API 598	1.1 x Design Pressure For 800# = 151.8 kg/cm2 For 300# = 53.9 kg/cm2 Holding Time shall be as per the standard	Inspection Report 3.1	P	R	R	
		High Pressure closer seat test	Leak Test	100%	Approved datasheet/API6D/API 598	Approved datasheet/API6D/API 598	Inspection Report 3.1	P	R	R	
		LOW PRESSURE (AIR) CLOSER(SEAT) TEST AT 7 KG/CM²	Leak Test	100%	Approved datasheet/API6D/API 598	at 7 kg/cm2 pressure Holding Time shall be as per the standard	Inspection Report 3.1	P	R	R	
		Back seat test	Leak Test	100%	Approved datasheet/API6D/API 598	Approved datasheet/API6D/API 598	Inspection Report 3.1	P	R	R	Not Applicable for Check Valves
		High Pre. Pneumatic Shell Test	Leak Test	100%	Approved datasheet/API6D/API 598	1.1 x Design Pressure For 800# = 151.8 kg/cm2 For 300# = 53.9 kg/cm2 Holding Time shall be as per the standard	Inspection Report 3.1	P	R	R	
		External Leak test at 7 kg/cm2	Leak test	100%	Approved datasheet/API6D/API 598	at 7 kg/cm2 pressure Holding Time shall be as per the standard	Inspection Report 3.1	P	R	R	
		Fire Safe Test	Type Test	100%	Approved datasheet/API6D/API 598 API 6FA	Approved datasheet/API6D/API 598 API 6FA	Inspection Report 3.1	P	R	R	
		Double Block & Bleed Test for 4" and above		100% for TMBV	Approved datasheet/API6D/API 598	Approved datasheet/API6D/API 598	Inspection Report 3.1	P	R	R	
		Anti Static Test (as Applicable)		100%	Approved datasheet/API6D/API 598	Direct current <12V and resistance on dry valves shall not exceed 10 ohms	Inspection Report 3.1	P	R	R	
		Operational Torque Test (As applicable)		100%	Approved datasheet/API6D/API 598	Breakaway torque or thrust shall not exceed 360 N (80 lbf)	Inspection Report 3.1	P	R	R	
		Functional Inspection (Open/Close Operation for flange end valves)	MINIMUM 10 CYCLES	100%	ASME B 16.34/ API 598	ASME B 16.34/API 598	Inspection Report	P	W	V	
		Hydrotest before installation in skid at skid supplier premise (Flange End Valves)		100%	Approved datasheet/API6D/API598	1.5 x Design Pressure For 800# = 207 kg/cm2 For300# = 73.5 kg/cm2 Holding Time shall be as per the standard	Inspection Report	P	W	V	
		Hydrotest before installation in skid at skid supplier premise (Pup end & Screwed end Valves in as welded and as screwed condition respectively on pipe spools)		100%	Approved datasheet/API6D/API598	For300# = 73.5 kg/cm2 Holding Time shall be as per the standard	Inspection Report	P	W	V	

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2.2	PG/DPG/TG	Calibration, Accuracy, Range, Size, End connection)	Visual, Measurement Checks	100%	As per Approved Datasheet	As per Approved Datasheet	Inspection Report 3.1	P	R	R	--
2.3	Pipe, Pipe Fitting, Flanges for Interconnecting Piping & Fastners	Material TC, Size & Dimension	Chemical test	Per heat No	ASTM 370,ASME B 16.20 & B16.5 ASTM A320 & ASTM A194	As per GGL PMS and Datasheet	Inspection Report 3.1	P	R	R	
			Physical Test (tensile,yield,elongation &hardness)	Per heat No							
			Impact test	Per heat No							
2	Gaskets	Material TC	Chemical test & Physical Test	Per heat No	As per GGL Data sheet/Specification	As per drawing and Data sheet	Inspection Report 3.1	P	R	R	
		Size & Dimension	Visual, Measurement	100%							

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4	Welding, NDT & Testing for Interconnecting Piping										
4.1	WPS / PQR	Welders Qualification & Welding	Welders Qualification & Welding	100%	ASME Sec. IX, Article II, follow QW200.1, QW482 for WPS & QW 483 for PQR or API 1104	As per ASME SEC. IX//ASME B 31.8	WPS / PQR	P	R	R	
4.2	Liquid Penetrant Examination (DPT)	On Fillet Welds	Surface Weld Defects	100%	ASME Sec V	ASME SEC.31.3	Internal Inspection Report	P	R	R	
4.3	Radiography Test	To identify internal surface defects	Soundness of weld	100%	ASME Sec V	ASME SEC.31.3	Interpretation Report - Review of report	P	R	R	
4.4	Hydro Testing of Interconnecting Piping	Hydro test of weld joints	Strength of weld joints	100%	1.5 times of Design Pressure for 4 hrs	For 150#: 28.5 kg/cm2 Holding time: 4 Hours	Inspection Report	P	W	V	

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5	**Final Inspection of Skid Assembly**										
5.1	Final Dimensional/ Visual Inspection	Complete Skid	Visual Inspection	100%	Approved P&ID & GAD	Approved Drawings	Test Reports	P	W	V	--
5.2	Painting	1) Surface preperation: as per SA 2.5 2) Galvanizing as per ASTM A 153 3) Check Total DFT at Random Location	Visual & Final DFT measurement	100%	Surface preperation Visual & DFT Check as per Approved Painting Spec.	Surface Preperation as per GGL approved Painting Procedure Hot Deep Galvanized & Painting as per GGL Approved paint procedure	Inspection Reports	P	W	V	--
5.3	Verification of Material from approved vendor of equipments	Each Material (valves,,Piping ,fittings & Filter)	Approved Vendor	100%	Approved Vendor List of GGL	Approved Vendor List of GGL	Inspection	P	V	V	
6	**Final Documentation:**										
6.1	Design & Calculation, Material compliance report as per EN 10204 3.1 , Calibration Certificate, GAD & P & ID, Final FAT report,NDT reports,Hydro & Pneumatic report,Test certificate of ,PSV	History docket	Verification of records	100%	Approved specification	As per approved specification	History Docket	P	R	R	

M : Manufacturer; P : Performer; W : Witness ; R : Review ; A: Approval; RW: Random Witness ; V : Verification

Prepared By:	Reviewed By:	Approved By: