

 GUJARAT GAS	QUALITY ASSURANCE PLAN FOR SUPPLY OF FLANGES		
CLIENT NAME		ITEM DETAIL	
PO NO & DATE		SIZE & CLASS	
DOCUMENT NO		GGL SPECIFICATION NO	
REV NO & DATE		PROJECT NAME	

SR NO	COMPONENT/PART AND OPERATIONS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE STANDARD/DOCUMENT	ACCEPTANCE CRITERIA/VALUES	FORMAT OF RECORDS	MFG.	TPIA/ CLIENT	REMARKS
A	RAW MATERIAL INSPECTION AND TESTING								
1	PIPE / PLATES	Chemical Properties (Carbon equivalent 0.40 max)	Per Heat	MoC standard/GGL Spec	MoC standard/GGL Spec	Foundry TC	P	R	
2		Mechanical Properties	Per Heat	MoC standard/GGL Spec	MoC standard/GGL Spec	Foundry TC	P	R	
3		Dimension and Visual	100%	MoC standard/GGL Spec	MoC standard/GGL Spec	Inspection Report 3.1	P	W	
B	IN PROCESS INSPECTION								
4	Forging	Reduction Rating	One / Size	MoC standard/GGL Spec	MoC standard/GGL Spec	Inspection Report 3.1	P	R	
5		Temperature during forging	One / Size	MoC standard/GGL Spec	MoC standard/GGL Spec	Inspection Report 3.1	P	R	
6		Forging Dimensions	One / Size	MoC standard/GGL Spec	MoC standard/GGL Spec	Inspection Report 3.1	P	R	
7	Forming	Forming Dimensions	One / Size	MoC standard/GGL Spec	MoC standard/GGL Spec	Inspection Report 3.1	P	R	
8	Heat Treatment Cycle & Normalizing	Visual inspection and review of Test Certificates	100%	MoC standard/GGL Spec	MoC standard/GGL Spec	Inspection Report 3.1 and Heat Treatment Charts	P	R	
9	Machining	Machining of forging & forming	100%	MoC standard/GGL Spec	MoC standard/GGL Spec	Dimension Report 3.1	P	R	
C	DESTRUCTIVE & NON-DESTRUCTIVE TESTING								
10	Mechanical Properties	1. Tensile Test 2. Elongation & Reduction area 3. Yield Strength	One / Heat	MoC standard/GGL Spec	MoC standard/GGL Spec	Inspection Report / 3.2 Certificate	P	W	Mention reference value as per the applicable MOC
11		Hardness Test	One / Heat	MoC standard/GGL Spec	MoC standard/GGL Spec	Inspection Report / 3.2 Certificate	P	W	Mention reference value as per the applicable MOC
12		Impact Test	One / Heat	MoC standard/GGL Spec	MoC standard/GGL Spec	Inspection Report / 3.2 Certificate	P	W	Mention temperature and reference value as per the applicable MOC
13	Non-destructive Testing (as applicable)	Ultrasonic Test of flanges & bevel ends	100%	ASME Section V Part-2 ASME Section VII Part-2	ASME Section V Part-2 ASME Section VII Part-2	Inspection Report / 3.2 Certificate	P	RW	10% W 100% R
14		Magnetic Particle Inspection (MPI) Dye Penetration Test (DPT) at Bevel Ends	100%	ASME Section V Part-2 ASME Section VII Part-2	ASME Section V Part-2 ASME Section VII Part-2	Inspection Report / 3.2 Certificate	P	RW	Quantum of random witness shall be as per the material qty.
D	COATING (AS APPLICABLE)								
15	Hot Dip Galvanization	Thickness of Zinc Coating	100%	ASTM A 153	ASTM A 153	Inspection Report / 3.2 Certificate	P	RW	10% W 100% R
16		Adherence of Zinc Coating	100%	ASTM A 153	ASTM A 153	Inspection Report / 3.2 Certificate	P	RW	Quantum of random witness shall be as per the material qty.
E	MARKING AND TAGGING								
17	Marking & Tagging	Visual Inspection & Dimensions	100%	MoC standard/GGL Spec	MoC standard/GGL Spec	-	P	RW	10% W 100% R
18		Visual inspection of Marking & Tagging	100%	MoC standard/GGL Spec	MoC standard/GGL Spec	Inspection Report / 3.2 Certificate	P	RW	Quantum of random witness shall be as per the material qty.
F	FINAL DOCUMENTATION								
19	Final Documentation	Review of Test Certificates & Supporting Documents	100%	As per GGL spec/Approved QAP	As per GGL spec/Approved QAP	Compliance Certificate	P	R	
20		Inspection Release Note	100%	As per GGL spec/Approved QAP	As per GGL spec/Approved QAP	Compliance Certificate / IRN 3.2	H	P	

Legend P - Perform, R - Review, W - Witness, RW - Random Witness, H - Hold, TPIA - Third Party Inspection Agency

**Notes:**

1	TPIA shall issue 3.1 for 150 # material and 3.2 certificate for higher pressure class as per EN 10204 as specified.
2	Above QAP covers requirement with reference to GGL specification, hence same shall be referred in conjunction with GGL valve specification/Data Sheet.
3	All measuring instruments/equipments shall be duly calibrated and shall have valid calibration certificates. Same shall be reviewed by TPIA.
4	FOR HEAT TREATMENT START & STOP TEMP. CHART SHALL BE SIGNED BY TPIA, ALSO POWER FAILURE LOG SHALL BE MAINTAINED.
5	REPAIR BY WELDING ON BODY (FORGE / CAST) NOT ACCEPTABLE.