

Quality Assurance Plan (QAP) for Ball Valve (CGD - EN 10204 3.2 Certification)

This QAP outlines the inspection and testing activities. For EN 10204 3.2, specific stages will require the involvement of the authorized inspection body.

Project: CGD Project for Bikaner and. Churu

Equipment: Ball Valve (Underground/Aboveground)

Standard: EN 10204 3.2 Certification, CGD Specifications, API 6D, ASME B16.34, etc.

Manufacturer: [Manufacturer Name]

Client/End User:[CGD Company Name]

Inspection Agency: [Name of Authorized Inspection Body for EN 10204 3.2]

S. No.	Activity / Description	Reference Document / Standard	Acceptance Criteria	Responsibility (Manufacturer)	Witness Point (W) / Hold Point (H) - Client	Witness Point (W) / Hold Point (H) - Inspection Agency (EN 10204 3.2)	Record / Document
1. Material Control							
1.1	Review of Raw Material MTCs	EN 10204 3.2, ASTM/ASME Material Specs.	MTCs confirm chemical composition & mechanical properties as per design. Traceability maintained.	QC Manager	W	H (Essential for 3.2)	Material Certificates (EN 10204 3.2 from material supplier), Material Traceability Records

1.2	Incoming Material Inspection	Manufacturer's Incoming Inspection Procedure	Visual check for damage, quantity verification, correct material identification.	QC Inspector	W	-	Incoming Material Inspection Report
2. Manufacturing Process							
2.1	Machining Inspection	Approved Drawings, ASME B16.34, API 6D	Dimensional accuracy, surface finish, bore concentricity.	Production/QC	W	-	In-process Inspection Report
2.2	Welding Procedure Qualification Record (WPQR) Review	ASME Sec. IX, API 6D	Valid WPQR for all welding processes.	Welding Engineer/QC	W	H (if welding is critical)	WPQR, PQR
2.3	Welder Qualification Record (WQR) Review	ASME Sec. IX	Valid WQR for all welders involved.	Welding Engineer/QC	W	-	WQR

2.4	Non-destructive Testing (NDT) - Radiography (RT) / Ultrasonic Testing (UT)	ASME B16.34, API 6D, ASME Sec. V	As per acceptance criteria of relevant standard.	NDT Level II/III	H	W/H (Depends on criticality and scope agreed with IA)	NDT Reports (RT/UT Films & Interpretation Reports)
2.5	NDT - Magnetic Particle Testing (MPT) / Liquid Penetrant Testing (LPT)	ASME B16.34, API 6D, ASME Sec. V	As per acceptance criteria of relevant standard.	NDT Level II	W	-	MPT/LPT Reports
2.6	Hardness Testing	NACE MR0175 (if sour service), ASTM E18	Hardness within specified limits.	QC Inspector	W	-	Hardness Test Report
3. Assembly & Testing							
3.1	Sub-assembly Inspection	Approved Drawings	Correct assembly, proper fitting of components.	Production/QC	W	-	Assembly Inspection Report
3.2	Hydrostatic Shell Test	API 6D, ASME B16.34, CGD Spec.	No visible leakage at specified pressure and duration.	QC Inspector	H	H (Essential for 3.2)	Hydrostatic Test Report/Certificate
3.3	Hydrostatic Seat Test	API 6D, CGD Spec.	No visible leakage past seat at specified pressure and duration.	QC Inspector	H	H (Essential for 3.2)	Hydrostatic Test Report/Certificate

3.4	Low Pressure Pneumatic Seat Test (Gas Test)	API 6D, CGD Spec.	Bubble-tight seal at low pressure.	QC Inspector	H	H (Essential for 3.2)	Pneumatic Test Report/Certificate
3.5	Functional Test (Operating Torque)	API 6D, Manufacturer's Spec.	Smooth operation, torque within specified limits.	QC Inspector	W	W	Functional Test Report
3.6	Fire Safe Test (if applicable)	API 607 / API 6FA	As per standard requirements (external leakage).	QC Inspector	H (if required by CGD)	W	Fire Safe Test Report
3.7	Fugitive Emission Test (if applicable)	ISO 15848-1/API 622	Leakage rate within specified limits.	QC Inspector	W (if required by CGD)	W	Fugitive Emission Test Report
4. Coating / Painting							
4.1	Surface Preparation Inspection	Coating Standard (e.g., SSPC, ISO 8501-1)	Specified cleanliness and roughness profile.	QC Inspector	W	-	Surface Preparation Report
4.2	Coating Application Inspection (FBE for UG, Paint for AG)	Coating Manufacturer's TDS, CGD Spec.	Uniform application, no runs, sags, holidays.	QC Inspector	W	-	Coating Application Report

4.3	Coating Thickness Measurement	Coating Standard (e.g., ISO 19840)	Dry Film Thickness (DFT) within specified range.	QC Inspector	H	W	DFT Report
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4.4	Holiday Detection (for FBE)	ASTM G62, NACE RP0490	No holidays detected.	QC Inspector	H	W	Holiday Detection Report
4.5	Adhesion Test (for FBE)	ASTM D4541 (Pull-off) / ISO 2409 (Cross-cut)	Adhesion strength meets requirements.	QC Inspector	W	W	Adhesion Test Report
5. Final Inspection & Documentation							
5.1	Final Visual Inspection	Approved Drawings, API 6D, CGD Spec.	General appearance, nameplate data, conformity to drawings, proper lubrication, protection.	QC Inspector	W	W	Final Inspection Report
5.2	Documentation Review & Compilation	EN 10204 3.2, CGD Spec., ITP	All required certificates and reports available, endorsed by Inspection Agency.	QC Manager	H	H (Final sign-off by IA for 3.2)	Final Documentation Dossier (including EN 10204 3.2 Certificate)

5.3	Packing & Marking Inspection	Packing Procedure, Shipping Markings	Proper packing for protection during transit, clear and correct marking.	Dispatch/QC	W	-	Packing List, Dispatch Report
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Notes:

- **EN 10204 3.2:** This requires the active involvement of an independent authorized inspection body throughout the manufacturing process, especially at "Hold Points." They will review material certificates, witness key tests, and ultimately endorse the final certificate.
- **Flexibility:** This is a template. Specifics may vary based on valve design, size, pressure class, and CGD requirements.
- **WPS/PQR & NDT Personnel Certifications:** Ensure that all welding procedures (WPS) are qualified (PQR) and all welders and NDT personnel are certified to the relevant codes (e.g., ASME, ASNT). Copies of these certifications will be part of the documentation.