

 <p>SABIC FUJIAN SABIC FUJIAN Petrochemicals Co., Ltd. 福建中沙石化有限公司</p>		 <p>中国寰球工程有限公司北京分公司 CHINA HUANQIU CONTRACTING & ENGINEERING (BEIJING) CO., LTD.</p>	
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中低压蝶阀招标文件

Bidding documents for butterfly

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1. DEFINITION 定义

This supply specification for the Butterfly Valves covers specific purchase conditions relating to the request for inquiry or purchase order for the Fujian Gulei 1.5MMTA Ethylene and Downstream Deep Processing Complex Project.

此蝶阀的供货要求涵盖了福建古雷 150 万吨/年乙烯及下游深加工联合体项目询价及订货相关的采购要求。

These requirements supplement the purchase descriptions and shall be part of the inquiry and purchase order.

这些要求补充了采购描述并应作为询价及采购的一部分。

2. SCOPE OF VENDOR'S SUPPLY 厂商供货范围

The scope shall include all labour, supervision, transportation, material, tools, supplies and services required to design, fabricate, assemble, inspect, test, pack and load the materials in accordance with this specification.

厂商供货的范围还包括此规定所包括的设计, 制造, 装配, 检验, 测试等所必需的人工, 管理, 运输, 原材料, 工具等服务。

All material design, manufacture, inspection, testing and installation shall be performed in accordance with the applicable documents, international codes, CHINESE national codes, industry standards, and local statutory regulations mentioned in this specification.

所有材料的设计, 检验, 试验及安装还应遵循本规定中所涉及的文件, 国际规范, 国家标准, 行业标准及当地法律、法规等。

3. DESIGN REQUIREMENTS 设计要求

3.1 GENERAL 总则

The specification covers minimum technical requirements for procurement of butterfly valves to be used for the project.

此规定涵盖了本项目所用蝶阀的最低要求。

For the valves covered by this specification, vendors shall provide drawings, dimensions and weights.

本规定涉及到阀门, 制造商应提供图纸, 尺寸和重量。

Dimensions are in millimeters, masses in kilograms.

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尺寸单位以 MM 计，质量单位以千克计。

Any dimensional requirements not covered by this specification are left to the Manufacturer.

本规定未包含的尺寸要求由制造商负责。

Any other requirements not mentioned in this specification should be left to be approved by purchaser.

本规定未涉及到的其他要求由制造商处理并经买方的正式认可。

3.2 APPLICABLE SPECIFICATION AND CODES 规定及标准

All material design, manufacture, inspection, testing and installation shall be performed in accordance with the applicable documents, international codes, CHINESE national codes, industry standards, and local statutory regulations mentioned in this specification.

所有材料设计，制造，检验，测试和安装都应当遵循适用的文件，国际规范，中国规范，工业标准和这里提到的当地法规。

ASME B16.10	Face to Face and End to End Dimensions of Valves 阀门结构尺寸
ASME B16.25	Butt-welding Ends 对焊端
ASME B16.34	Valves -Flanged, Threaded, and Welding End 法兰、螺纹和焊接连接的阀门
ASME B16.47	Large Diameter Steel Flanges (NPS26 to NPS60) 大直径钢制法兰(NPS26 to NPS60)
ASME B16.5	Pipe Flanges and Flanged Fittings 管道法兰及法兰附件
API 598	Valve Inspection and Testing 阀门的检查和试验
API 609	Butterfly Valves: Double Flanged, Lug- and Wafer-Type 双法兰蝶阀和凸耳一对夹式蝶阀
MSS-SP-25	Standard Marking System for Valves, Fittings, Flanges and unions 阀门，元件，法兰及活接头用标准标记系统
ASTM (various)	American Society for Testing Materials 美国试验及材料协会

And all others codes, standards and specifications indicated in the DESCRIPTION of MTO, or in any reference document.

和所有在描述及材料表中所列的其他规定，标准，规范及参考文件。

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Editions and/or issue dates of Codes, Standards and Specifications shall be the latest, unless otherwise specified.

除非特别指定，所应用的标准规范均为最新版。

Any conflict between the various requirements within, or attached to, this specification and the reference Codes, Standards and Specifications, shall be brought to purchaser attention for clarification.

3.3 PRIORITY OF THE DOCUMENTATION 文档的权威性

In cases of conflict, the order of precedence for requisition documents shall be as follows:

如各文件中的要求产生矛盾，各文件的权威性应以下列顺序确定：

(1) The Purchase Order

采购订单

(2) Material Requisition

请购文件

(3) Purchaser's Specification (or engineering specification)

买方规定（或工程规定）

(4) International Codes and Industrial Standards (e.g. ASME, ASTM, etc)

国际规范和工业标准等

If the Vendor discovers any inconsistency or conflict within the documents comprising this specification and/or material requisition, the Vendor shall notify Purchaser in writing.

如卖方发现本规定中的要求与规范，请购文件及规定相矛盾的地方，应书面通知买方。

3.4 DEVIATIONS AND ALTERNATIVES 偏离及替换

The Vendor shall notify Purchaser any deviations/ conflicts from the requisition that the vendor may propose/ discover. The details of the deviations/ conflicts must be specified in the TECHNICAL DEVIATION LIST (refer to the attachment)

若卖方的供货有与此请购单中要求不一致处，应填写偏离表并将此偏离表附在其报价中。技术偏离表见附件 3。

4. TECHNICAL REQUIREMENTS 技术要求

4.1 General 通用要求

1) Unless otherwise specified, the pressure temperature rating of valve body shall conform to ASME B16.34, and the minimum thickness of valve body shall conform to

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the manufacturing standards listed in the valves specification. If valves are limited by the seal materials, vendor will clearly precise the limits. Temperature limitations shall be marked on the nameplates.

除非特别指定，阀体的温度-压力等级应按照 ASME B16.34，最小厚度按阀门描述中所列的制造标准的要求。如果阀门要求对密封材料有限制，供货商应明确在标书中表述这些限制，并在铭牌上注明使用温度限制。

2) Butterfly valves shall be designed and manufactured according to API 609.

蝶阀应根据 API 609 进行设计制造。

3) When specified, fire safe test shall be carried out according to API 607.

当特殊注明时，防火试验根据 API 607 进行。

4) Stem for butterfly valves shall be of blow-out-proof type. Stem retention shall not depend on the packing gland.

蝶阀和阀杆应为顶部防吹出型设计。阀杆的防吹出结构不应依赖于上压盖格兰。

5) All the soft seated butterfly valves shall be fire safe design and anti-static design.

所有软座蝶阀应配备防火及防静电装置。

6) Lever operated valves shall be capable of being locked with padlocks in the full open and full closed positions.

手轮操作阀门应具有在全开及全关位置进行锁定的装置。

7) Non-metallic parts and elements which usually include such items as packing, injection sealant material and lubricants shall be suitable for the service.

非金属部件和附件，例如填料，注射式密封剂，润滑剂等应与流体相配。

8) If valves are required with a hardness differential between seating surfaces, the disc seating surface shall be the “softer” material.

如果在阀门的密封面间需要硬度差，阀板的密封面应为“较软的”材料。

9) Unless otherwise specified, thread of body-connector bolt shall in accordance with the standard ASME B1.1. Any change shall be subject to purchaser’s approval.

除非特别制定，阀体连接螺栓用螺纹应根据 ASME B1.1。任何替代方案应争得买方同意。

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10) All flanged valves shall have integral type flange, Valves with flanges welded to the body are not accepted.

所有法兰式阀门应为整体法兰式，不接受焊接法兰式阀体。

11) Every valve which provided by vendor should be working well during the temperature-pressure range which specified in ASME B16.34 and ASME B31.3 ,including operated abilities at maximum DP. The welding efficient during designation of valves should be 0.75 maximum. The most weakness location of the stem should be outside the valve.

供货商提供的每一台阀门在 ASME B31.3 规定的其阀体材质允许使用的温度范围内，应能在 ASME B16.34 规定的允许温度-压力范围内正常工作，包括在全差压条件下的操作动作。阀门设计中角焊缝强度系数最大为 0.75。ASME B16.34 规定的允许温度-压力范围内阀门在最大压差下，阀杆的最小横截面应能承受操作扭矩。阀门设计还应考虑足够的安全裕量和操纵机构的最大输出扭矩。阀杆的最薄弱部分应位于阀体之外的可视范围内。

4.2 Material 材料

1) Unless otherwise specified, the chemical composition and mechanical properties of cast valves material shall conform to relative ASTM standard.

除非特别规定，铸制阀门所用材料的化学成分及力学性能应符合相应的 ASTM 标准的要求。

2) The material used for valves body and the parts must be new material with no adult.

用于阀门阀体及阀门部件的材料必须为新材料。严禁采用工业废钢等回收材料。

3) Welding repairs is not permitted unless official approved by purchaser.

除非经过了买方的书面认可，否则不允许任何形式的补焊。

4) Use of asbestos is strongly forbidden in any parts of the valves.

阀门的部件不允许使用任何含有石棉的制品。

5) Unless specifically required, Copper or Copper Alloy material, including brass or bronze, shall not be used in the construction of any valve, including internal and external parts.

除非特殊需要，阀门的内件及外件结构中不得使用铜及铜合金，包括黄铜及青铜。

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6) The material for the stuffing box, yoke flanges shall be same as or similar to the valve body.

阀门的密封函，压盖法兰应与阀体材质相当。

7) Unless otherwise specified, austenitic stainless steel, Monel, and nickel alloy valves shall have trim, gland bolts and nuts, and yoke bolting of the same nominal chemistry as the body.

除非特别说明，奥氏体不锈钢，蒙奈尔合金及镍合金阀门的阀芯，阀盖螺栓，阀轭螺栓应与阀体具有同样的化学性能。

8) Austenitic stainless steel material shall be supplied in the solution-annealed condition, and stainless steel valves should be carried out by pickling passivation after heat treatment.

奥氏体不锈钢材料需在固溶状态交货，不锈钢阀门阀门热处理后应进行酸洗钝化。

9) Material imperfections and leakage shall not be repaired by peening, plugging, cementing or sealing.

具有缺陷及裂纹的材料不允许采用修补，堵塞，粘接，密封等方式进行修补。

10) The packing shall be non-corrosive and in case of valves in oxygen service shall be free from any corrosion inhibitors.

阀门填料应对阀门无腐蚀，如果阀门用于氧气介质，应不含有任何缓蚀剂。

11) When specified, graphite packing shall be pure graphite (99.8% mini) with corrosion inhibitor.

当特殊指明时，纯石墨填料石墨含量应最小为 99.8% 并含有缓蚀剂。

12) Unless otherwise specified, stem seals shall be a graphite, braided packing. Where TFE [Teflon (polyetra-fluoroethylene)] or PTFE packing is specified in the material description, Graphite is not permitted in PTFE packing.

除非特殊指定，阀杆密封应采取缠绕石墨填料。如果描述中指定为 TFE 或 PTFE 填料，填料中应不含石墨。

13) Material imperfections and leakage shall not be repaired by peening, plugging, cementing or sealing.

具有缺陷及裂纹的材料不允许采用堵塞，粘接，密封等方式进行修补。

4.3 Dimension 尺寸

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Face-to-face dimensions of wafer, lug and double flange type butterfly valves shall be in accordance with API 609 and the standards indicated in MTO, the structure design should consider the space of 1.0D nut.

对夹，支耳和双法兰式蝶阀的结构尺寸应根据 API 609 或 MTO 中指定的标准，结构设计应考虑放置 1.0D（厚型）螺母的空间。

其中双法兰式短型中 CL.300 蝶阀面到面尺寸应根据 API 609 表 3（c）中 300 磅级（d）所列数值，即 ISO5752 基本系列 14.

4.4 End Preparation 端部

Flanged ends : ASME B16.5 standards As per Valve rating

法兰端 : 根据阀门的公称压力等级按照 ASME B16.5

4.5 Bolting 螺栓

Lug-type valves shall be delivered with full length threaded bolt holes.

支耳式阀门应提供全长带螺纹通孔。

Where recessed tapped holes are necessary because the body design does not allow through bolting, vendor shall supply these required bolting, the setting bolts for threaded body holes shall be cap screw type (machine bolt) and supplied by Vendor.

当阀体不允许使用全长带螺纹通孔时，供货商应提供所需的相应螺栓。通螺纹孔使用的应为拧入式螺栓并由供货商提供。

Cap screws shall be semi-finished heavy hex bolt conforming to ASME B18.2.1 and threaded full length with a flat end.

拧入式螺栓应为 ASME18.2.1 中“semi-finished”形式，平头全螺纹重六角螺栓
Materials of cap screws and other bolting of valve shall be as follows:

拧入式螺栓的材质和阀门所用螺栓应满足下表:

Valve's body material Bonnet bolts & nuts material

Carbon steel A193 Gr.B7 / A194 Gr.2H Al-killed carbon steel A320 Gr.L7 / A194 Gr.7 Cr-Mo steel (1Cr- 1/2Mo) A193 Gr.B16 / A194 Gr.7 Cr-Mo steel (21/4Cr-1Mo)
A193 Gr.B16 / A194 Gr.7

Stainless steel A193 Gr.B8 cl.2 / A194 Gr.8 or manufacturer's
standard subject to purchaser's approval

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4.6 Valve Operation 阀门操作

1) Hand-wheel Operated Valves 手轮操作阀门

2) Hand-wheel operated valves shall be furnished with suitable operating lever, unless otherwise specified.

除非特别指定，手轮操作阀门应配有适当的操作机构。

3) Hand-wheel operated valves shall be capable of being locked with padlocks in the full open and full closed positions.

手轮操作阀门应具有在全开及全关位置进行锁定的装置。

4) Manual Gear Operators for Valves.

齿轮操作。

5) Gear operators shall be bevel gear type. Gear operators shall be supplied complete with hand-wheel and position indicator. Hand-wheel shall be parallel to the valve stem and to the flow. It shall be suitable to rotate 90 degrees.

齿轮操作应为“bevel gear type”，并应配有手轮及位置指示装置，手轮应与阀杆及流体流向平行并可进行 90 度旋转。

6) Gear operators shall be totally enclosed, weather proof type, packed with a suitable lubricant.

齿轮传动机构应为全天候封闭型，并应配有适当的润滑措施。

7) The operation force at the half opening position by the hand-wheel or lever shall not exceed 35Kgf.

阀门位于半开位置时，其操作力矩不得大于 35 公斤力。

4.7 Marking ,Painting and Color 标记，涂漆和色标

1) As a minimum the valve identification shall be as follow:

阀门至少应被标记上以下各项：

Marking conform to MSS-SP-25

按 MSS-SP-25 进行标记

ITEMCODE

元件代码

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Above information shall be stamped on a rust resistant stainless steel tag securely wired to the body or gland bolting of the valve or hand-wheel of valves or other appropriate location.

以上信息应被标记于防锈不锈钢牌上并系于阀门适当的位置上。

The metal tag shall not be wired to bolt holes of the flange.

金属牌不允许系于法兰的螺栓孔上。

2) The flow arrow should be marked on the valve body if the valve is the uni-directional valves.

对于阀门的安装流向有要求的，阀体上应清楚的标识出安装的流向。

3) Painting may be in accordance with manufacturer's standard subject to purchaser's approval. Vendor shall submit painting procedure and paint specification.

供货商应提供涂漆规范，经过买方许可用于阀门涂漆，卖方提供的涂漆程序及涂漆规定应按照以下要求：

a) Paint on alloy as per the temperature 600 degree C.

合金钢使用涂漆最高耐温 600℃。

b) Paint on carbon steel as per temperature 300 degree C.

碳钢使用涂漆最高耐温 300℃。

4) All the pipes shall be color coded as per the engineering specification HQBJ-Opc-64-2006-2017 and 22388-0000-64-SPC-004_A00.

所有管子应由供货商按照 HQBJ-Opc-64-2006-2017 及 22388-0000-64-SPC-004_A00_管道材料色标统一规定的要求进行涂刷色标。

5) The color of the valves should be according to the table followed.

阀门的表面色应按照下表规定：

No. 序号	Name 名称	Surface Color 表面色	Ral Color Card Ral 色卡
阀门阀体	灰铸铁、可锻铸铁		
	Ductile Cast Iron 球墨铸铁	Silvery 银	7001

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	Carbon Steel 碳素钢	Medium Gray 中灰	7040
	Alloy Steel 合金钢	Medium Phthalein Blue 中酞兰	5019
1 Valve Body	Cast Iron and Forge	Black 黑	9005
2 Handwheel and Handle 阀门手轮、手柄	Steel Valve 钢制阀门	Sea Blue 海兰	5005
	Cast Iron Valve 铸铁阀门	Scarlet 大红	3020

5. PERFORMANCE GUARANTEE 性能保证

Vendor shall establish, document, implement and maintain a quality management system (QMS) as a means of ensuring that its product conforms to specified requirements including the requirements of ISO 9001.

卖方应具有质量管理体系以确保其产品满足此规定及 ISO 9001 的要求。

Vendor shall submit its “Quality Manual” or “Proposed Quality Plan” complying with the requirements of ISO 9001 with its proposal for Purchaser’s evaluation.

卖方应提交符合 ISO 9001 要求的质量手册及质量控制计划供买方进行评估。

When Vendor submits the “Proposed Quality Plan”, Vendor shall define and document how Purchaser’s requirements for quality will be met, and to be submitted within one month after the Placement of Order, to Purchaser for review and approval.

卖方应于订单下达后，提交质量控制计划并应定义如何满足买方的质量要求，供买方审核和认可。

When Vendor is obtaining a certification of approval for its QMS to be complied with the ISO 9001 by a certification body accredited by nationally recognized accreditation body, Vendor shall submit to Purchaser a copy of the “Certificate of Approval”.

卖方应提交由国家认可的认证机构认证的 ISO 9001 质量认证证书。

The vendor is fully responsible for the quality assurance of their sub-vendor's activities.

卖方应对其分供应商的行为全权负责。

Purchaser reserves the right to audit the vendor against the ISO 9001.

买方保留审查卖方违反 ISO 9001 行为的权利。

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It shall be noted that certification under ISO 9001 does not exempt the vendor from the requirement for the submission of the manual and Purchaser's/ Company's right of quality audit.

卖方应注意：ISO 9001 无法免除卖方需要满足买方质量审查的要求。 Vendor should have a HSE policy statement and management plan. 卖方需具备 HSE 的政策声明及管理计划。

If vendor is Chinese company, the vendor must submit the “manufacture license of special equipment –pressure piping, Peoples Republic of China”.

如卖方为国内制造厂商，则必须提供“中华人民共和国特种设备制造许可证(压力管道)。”

6. SPARE PARTS AND SPECIAL TOOLS 备件及特殊工具

Vendor shall furnish special tools and appurtenances necessary for the installation, maintenance and/or operation of valves covered by the specification, if any.

如果需要，卖方应提供相关规定要求的安装，维护及操作所必须的特殊工具等。

These shall be easily identifiable and shall be supplied in a lockable steel cabinet.

特殊工具应装备于可锁的钢制工具箱内。

Vendor shall supply 2 years operating spare parts for construction and commissioning.

供货商应提供用于施工及试车两年内的备件。

Vendor shall also provide a list and documentation of such special tools and spare parts.

供货商还需提供备件和特殊工具的清单。

7. RESPONSIBILITIES AND OBLIGATIONS 责任与职责

For Vendor, all material design, manufacture, testing and installation shall meet the requirement in this specification.

对卖方，所有材料的设计，制造，试验及安装应满足本规定的要求。

Purchaser's comments do not relieve in any case Vendor from his responsibilities.

无论什么情况，买方的注释注解无法减轻卖方的责任。

Purchaser will not be held responsible of any consequence out coming from misinterpretation or missing respect of here indicated instructions, there including any action should be required on Vendor' side to fully comply with his contractual obligations.

买方对于卖方对于本规定规定条款的误解及推理，及其产生的行为不负任何责任。

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8. INSPECTION AND TESTING 检验试验

8.1 General 总则

1) Vendor shall conduct shop tests and inspections in accordance with approved INSPECTION AND TEST PLAN.

卖方应根据买方认可的检验试验计划进行检验及试验。

2) Unless additional inspection is specified in the material requisition, inspection and test shall be as a minimum, in accordance with API 598.

除非材料要求的附加测试，材料测试及检验应以 API 598 为最低要求。

3) All valves prepared for purchaser's inspection shall have passed a preliminary inspection made by the Manufacturer's Quality Control Department.

所有供买方检验的阀门应先经过制造商质检控制部门的检验。

4) All inspection, examination and tests, and workmanship of individual piping material shall comply with the basic requirements of the applicable material and specifications, except as modified or as added in this specification.

材质的所有检验试验应完全符合相关规定及材料标准，除非本规定特殊指明。

5) Manufacturing data and records, such as mill test reports or certificates, radiographs, results of the other non-destructive examinations, visual examinations, and records of dimensional inspection shall be available for examination by purchaser and/or it's representative.

所有的检验数据及记录例如车间试验报告，射线探伤及其他无损检验结果，外观检验记录，尺寸检验记录等都应备案以备买方或其代表的检查。

6) "Material Test Report" shall mean the original material manufacturer's, mill's, or foundry's test report. Such reports shall state the specification to which the material complies, the heat, lot, or melt identification number, the heat treatment (if any) and the results of chemical analysis, mechanical and nondestructive testing.

“材料测试报告”应包括原材料制造厂及测试报告。在这些报告中，应该表明材料因该遵循的详细说明，炉号、批号以及熔炼号，热处理（如果有），以及表明化学分析，机械性能以及无损检测的结果。

7) The purchaser's Inspector reserves the right to carry out any check test in order to verify the certified values in case of doubt or dispute concerning the results obtained. If the results not according to the specifications; test costs shall be at the Vendor's charge.

对于卖方提供的检验数据，买方检验人员保留利用任何检验以验证卖方提供的检验数据真实性，若检验数据不满足本规定的要求，检验费用由卖方承担。

8.2 Material Inspection 材料检验

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Chemical and mechanical characteristics, diagrams of any heat treatment shall be according to those provided in the relevant Codes, Standards and Specifications.

材质的化学成分，力学性能，热处理曲线应满足相关标准，规范及规定的要求。

8.3 Visual Inspection 外观检验

Visual inspection shall be performed according to API 598. Non-destructive devices shall be used to check the performance of valve components (trim hardness, machining etc.).

外观检验根据 API 598。无损检测装置应被用于检验阀门部件的性能（阀芯硬度，机加工面等）

8.4 Dimensional Inspection 尺寸检验

Main dimensions of the valves shall be verified and founded according to the relevant codes, standards and /or specifications. (I.e. flanges, bore diameter, face-to-face dimensions, et.).

阀门的主要尺寸应根据相关规范进行检验和核实（例如，法兰，阀门内径，结构尺寸等）

8.5 Marking Inspection 标记检验

Marking shall comply with Para 4.8 of this specification.

标记应根据本规范 4.8 节进行检验。

8.6 Non-Destructive Examinations (NDE) 无损检测

1) Non-destructive examination of valves shall be performed in accordance with the requirements of the following Table1, as a minimum, when not specifically agreed:

（100 in Table 1）

除非特殊情况，阀门的无损检测应至少根据表 1 所列进行检测：（表列为 100%）

Table 1 表 1

Steel Materials 材料	Cast Valves 铸造阀门		Forged Valves 锻制阀门
	RT Note (1),(2),(3),(6)	MT or PT Note (1),(2),(4) ,(5)	MT or PT Note (1),(2),(4) ,(5)
Carbon Steel	Class 1500 & over	Class 1500 & over	Class 1500 & over
1Cr-0.5Mo Steel	Class 900 & over	Class 600 & over	Class 600 & over
2.25Cr-1Mo Steel	Class 900 & over	Class 600 & over	Class 600 & over
Al-killed Carbon Steel	Class 900 & over	Class 600 & over	Class 600 & over
3.5Ni Steel	Class 900 & over	Class 600 & over	Class 600 & over
Austenitic Stainless L	Class 900 & over	Class 600 & over	Class 600 & over

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Austenitic Stainless	M	Class 900 & over	Class 900 & over	Class 900 & over
Austenitic Stainless	H	Class 900 & over	Class 600 & over	Class 600 & over

Notes:

(1) In general, besides this table, examination of valves shall be executed on 10% from one lot, minimum 1 valve, selected by the Purchaser inspector.

除此表外，每批阀门的无损检测应至少按 10% 执行，至少一个，由买方检验人员选定。

(2) Lot means the valves of same size, same rating and same valve type which are produced from same heat of material.

每批阀门指同种类，尺寸，压力等级 同炉批材质的阀门。

(3) RT shall be required for all critical area specified in ASME B16.34, par.8.3.1.

对重要区域的射线探伤应根据 ASME B16.34, par.8.3.1.

(4) MT or PT shall be required for all accessible interior and exterior surfaces including bevel surfaces of butt-welding end and all welds of body and bonnet.

所有可测试的内外表面，包括坡口端，对焊端，及阀体和阀帽上的焊点

(5) PT instead of MT is acceptable when MT is not feasible.

当磁粉试验无法进行时，可使用渗透试验代替。

(6) UT may be applied instead of RT with Purchaser's approval.

经过买方认可，可使用超声波探伤代替射线探伤。

Abbreviation:

RT :Radiographic Test 射线探伤 MT :Magnetic Particle Test 磁粉试验 UT :Ultrasonic Test 超声波探伤

PT :Liquid Penetrant Test 渗透试验

L :Low Temperature Service (below-46 deg.C) 低温工况（低于-46）

M :Medium Temperature Service (-46 deg.C to 427 deg.C) （正常工况 -46-427）

H :High Temperature Service (above 427 deg.C)高温工况（高于 427）

2) In addition to above, 100% radiographic examination and 100% liquid penetrant examination shall be applied to "butt-welding end" of cast valve which will be connected with site piping by welding.

除上表所列外，铸制阀门用于现场焊接的对焊端应进行 100%射线探伤及 100%渗透试验

3) Non-destructive examination for valves of weld construction shall be performed in accordance with the requirements of Table 2.

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焊接结构的阀门的无损检测应按表 2 执行。

Table 2 表 2

Inspection 检测手段	Groove Weld 坡口焊	Fillet Weld (2) 角焊
RT	100% (1)	-
MT or PT	100% (3)	100% (3)

Notes:

(1) Where radiography is impractical, other appropriate non-destructive examination, such as UT shall be done, in general.

当无法进行射线探伤时，可使用其他方式的无损检测方式，例：超声波探伤。

(2) Fillet weld includes socket and seal welds, and attachment for slip-on flanges and branch reinforcement.

角焊缝包括承插焊和密封焊，平焊法兰及开孔补强。

(3) Liquid penetrant inspection shall be performed for both root pass and final weld surface.

液体渗透试验包括最终的焊接的根部及表面。

4) Weld-deposited seating surface (such as 13% Cr, stellite alloy overlay) shall be performed 100% PT.

堆焊的密封面（例如 13Cr, Stellite 合金）应进行 100% 渗透检测。

5) If a defective valve is found, all the remaining valves of the same lot shall be examined at the vendor's expense.

如果查出 1 个不合格的阀门，同批的其他阀门由供货商负责全部复检并提供相关材料备查。

8.7 PMI (POSITIVE MATERIAL IDENTIFICATION) 材料鉴定

A positive material identification shall be performed on all the valves except low temperature carbon steel and carbon steels.

除碳钢及低温碳钢材质外，所有材料必须逐个进行 PMI 成分验证分析。

8.8 Pressure Test and Leakage Test 压力测试及泄漏测试

Unless additional inspection is specified in the material requisition, inspection and test shall be as a minimum, in accordance with API 598.

测试可以按最低要求测试，遵循 API 598 要求，除非有附加测试要求。

Prior to pressure testing, all internal valve components shall be cleaned. External surfaces shall be unpainted and free of scale, weld spatter and other foreign matter.

压力测试之前，阀门内件应清洁，阀门外表面应不涂漆并无剥落，焊渣及其他杂质。

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All pressure tests and leak tests shall be conducted only after completion of the required welding and heat treatments.

所有的压力测试及泄漏测试应于完成必须的焊接及热处理后进行。

Valves shall be operated (open/close) several times before to pass the required closure tests.

在阀门进行关闭试验前应开启/关闭数次。

New gaskets shall be installed in valve body parts that were opened for any reason during the course of testing. Ring joint gaskets may be reused, if undamaged, only where joint did not leak during testing.

在测试过程中，不论什么原因打开阀门，阀体部件间的垫片均应使用新垫片。环形垫可以重新使用，但必须保证其完好且在测试过程中不泄漏。

Any valve gland packing or stem seal that leaked during testing shall be replaced with new material following thorough drying of the gland and packing cavity. Shell and seat hydrostatic testing shall then be repeated for these valves.

在测试过程中填料密封和阀杆密封泄漏的阀门应经过彻底干燥后更换新材料。并重做阀体及密封面的水压试验。

The test fluid used for hydrostatic testing shall be hydraulic oil or an emulsion of water with a water soluble oil to prevent rust.

为防锈，水压试验用测试流体应为水溶性油，或油状水溶液。

The hydrostatic test water for austenitic steel valves shall have the total chloride content less than 25 ppm.

用于奥氏体不锈钢阀门的水压试验用水氯离子含量不得大于 25ppm.

After testing, all components, especially valve body cavities, are to be thoroughly dried prior to preparation for packing and shipping.

经过测试的阀门，在包装运输前必须经过彻底的干燥，特别是阀腔。

9. OTHER SPECIAL REQUIREMENTS 其他要求

9.1 External Protection and Shipment 保护及运输

Unless otherwise specified, the following measure to prevented corrosion and mechanical damage during transportation, shipment and storage shall be performed:

除非特别指定，下列运输，储存步骤应被遵守以防止腐蚀和机加工面的损坏：

1) In general, valves shall be supplied in a clean and dry condition free from foreign matter like dirt, metal chips etc. Stainless steel parts shall have a bright finish.

总的来说，阀门应到货时应干净，干燥，无污垢，金属碎屑等异物，不锈钢阀门应具有光泽。

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2) Valves shall be protected to withstand ocean/road transit and extended periods of storage at the job site for a minimum period of 18 months. Materials shall be protected to safeguard against all adverse environments, such as: humidity, moisture, rain, dust, sand, mud, salt, air, salt spray and seawater.

阀门应采取适当措施保护以承受海路/陆路运输并能储存至少 18 个月。材质应采取适当措施保护以应对各种不利环境因素。例如：潮湿，雨季，沙尘，泥浆，盐分较高的环境等。

3) The valves shall be supplied in "full closed" position

阀门应处于全关位置供货。

4) Rust protection for machined surfaces shall be coated with a removable varnish, strippable products, or protected with grease. Rust protection for inside of valves shall be performed according to the manufacturer's standard.

机加工面应覆盖可除去的保护剂或油脂防锈。阀门内件防锈根据制造厂标准。

5) End of valves shall be coated by wood or heavy duty plastic cap cover.

阀门端部应用木质或厚实的塑料盖板保护。

6) Austenitic stainless steel valves shall be protected from chloride attack during shipment or storage.

奥氏体不锈钢阀门在运输及储存过程中应防止氯离子侵蚀。

10. ATTACHMENT 附件：

附件 1. 缩写词

缩写词	英文	中文
1 PCS	1 PIECES	1 片式
2 PCS	2 PIECES	2 片式
3 PCS	3 PIECES	3 片式
BB	BOLTED BONNET	螺栓连接阀盖
BC	BOLTED COVER	螺栓阀盖
BE	BEVELLED END	坡口端
BS	BELLOW SEAL	波纹管密封
CHECK VALVE PISTON H	CHECK VALVE PISTON HORIZONTAL	止回阀 柱塞式 水平安装
CHECK VALVE PISTON V	CHECK VALVE PISTON VERTICAL	止回阀 柱塞式 垂直安装
CL	CLASS	公称压力
CON.	CONCENTRIC	同心
CR	CHLOROPRENE RUBBER	氯丁橡胶
CS	CARBON STEEL	碳钢
DBFLG	DOUBLE FLANGED	双法兰
DEG	DEGREE	度数
DFL	DOUBLE FLANGED LONG PATTERN	双法兰长型
DFS	DOUBLE FLANGED SHORT PATTERN	双法兰短型

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DO-DISC	DOUBLE DISC	双闸板
DO-OFFSET	DOUBLE OFFSET	双偏心
DOUBLE END STUDS/STYLE 1 HEX. NUT		双头螺柱/1 型六角头螺母
D-PL	DUAL PLATE	双板
DSAW	DOUBLE SUBMERGED ARC WELDING	双面埋弧焊
ECC.	ECCENTRIC	偏心
EFW	ELECTRIC FUSION WELDING	电熔焊
EPDM	ETHYLENE PROPYLENE DIENE MONOMER	三元乙丙橡胶
ERW	ELECTRIC RESISTANCE WELDING	电阻焊
EX	EXTENDED BONNET	加长阀盖
FB	FULL BORE	通径
FF	FLAT FACE	全平面
FFTBE	FLAT FACE THRU-BOLTED END	螺栓贯穿全平面
FGE	FEMALE GROOVED END	内沟槽端
FKM	FLUORORUBBER	氟橡胶
FL	FLOATING BALL	浮动球
FS	FIRE SAFE	防火
FTE	FEMALE THREADED END	内螺纹端
FULL THRD	FULL THREADED	全螺纹
F-WDG	FLEXIBLE WEDGE	弹性闸板
GALV.	GALVANIZED	镀锌
GASK	GASKET	垫片
Gen manu	GENERIC MANUFACTURER	制造厂标准
GRAP.	FLEXIBLE GRAPHITE	柔性石墨
GTAW	GAS SHIELDED TUNGSTEN ARC WELDING	钨极气体保护焊
HEX	HEXAGONAL	六角形
HF	HARD FACE	表面硬化
HP	HIGH PERFORMANCE	高性能
HQ STD	HUANQIU STANDARD	寰球标准
IMPT	IMPACTED	冲击试验
S-OFFSET	SINGLE OFFSET	单偏心
SP	SHORT PATTERN	短型
SPR-L	SPRING LOADED	弹簧加载
SR	SHORT RADIUS(R=1D)	短半径(R=1D)
SS	STAINLESS STEEL	不锈钢
STL	STELLITE	司太莱钨铬硬质合金
SW	SOCKET WELDED	承插焊端
S-WDG	SOLID WEDGE	刚性闸板
T.E	TOP ENTRY	顶装式
TB	THREADED BONNET	螺纹连接阀盖
THD,THRD	THREADED	螺纹
Thermiculite		高温固利特(蛭石)
THK	THICKNESS	厚度

 <p>SABIC FUJIAN SABIC FUJIAN Petrochemicals Co., Ltd. 福建中沙石化有限公司</p>	 <p>中国寰球工程有限公司北京分公司 CHINA HUANGQIU CONTRACTING & ENGINEERING (BEIJING) CO.,LTD.</p>
	 <p>中国寰球工程有限公司 CHINA HUANGQIU CONTRACTING & ENGINEERING CO., LTD.</p>
<p>中低压蝶阀招标文件 Bidding documents for butterfly</p>	<p>SFP-0012-00-HQC-UGP-MRI-0008</p>

TRN	TRUNNION	固定球
TR-OFFSET	TRIPPLE OFFSET	三偏心
UB	UNION BONNET	螺纹压盖式阀帽
VEN	VENTURI	文丘里式
VLV	VALVE	阀门
WB	WELDED BONNET	焊接阀盖
WC	WELDED COVER	焊接阀盖
WN	WELDING NECK	带径对焊
WU	WELDED,ULTRASONIC	焊制, 超声探伤
WX	WELDED,RADIOGRAPHY	焊制, 射线探伤
XB	ASBESTOS RUBBER	石棉橡胶
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	美国国家标准学会
API	AMERICAN PETROLEUM INSTITUTE	美国石油协会
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	美国机械工程师协会
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS	美国材料试验协会
BS	BRITAIN STANDARD	英国标准
ISO	INTERNATIONAL ORGANISATION FOR	国际标准组织
	MANUFACTURERS STANDARDIZATION SOCIETY OF THE	美国阀门和管件制造商标准化

附件 2: 中低压蝶阀材料表

	Code	Type	Spec	DN1 (in)	DN2 (in)	ItemCode	Description	QTY	Unit	Remark
	FW	旋球阀	M92AD3U	28	28		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR,PN16,DO-OFFSET,RF,Gear	18	pc	阀门配套螺栓螺母
	FW	旋球阀	M92AD3U	24	24		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR,PN16,DO-OFFSET,RF,Gear	11	pc	阀门配套螺栓螺母
	FW	旋球阀	M92AD3U	20	20		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR,PN16,DO-OFFSET,RF,Gear	51	pc	阀门配套螺栓螺母
	FW	旋球阀	M92AD3U	18	18		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR,PN16,DO-OFFSET,RF,Gear	7	pc	阀门配套螺栓螺母
	FW	旋球阀	M92AD3U	16	16		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR,PN16,DO-OFFSET,RF,Gear	10	pc	阀门配套螺栓螺母

	Code	Type	Spec	DN1 (in)	DN2 (in)	ItemCode	Description	QTY	Unit	Remark
	FW	旋球阀	M92AD3U	14	14		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR,PN16,DO-OFFSET,RF,Gear	17	pc	阀门配套螺栓螺母
	FW	旋球阀	M92AD3U	12	12		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR,PN16,DO-OFFSET,RF,Gear	1	pc	阀门配套螺栓螺母
	FW	旋球阀	M92AD3U	10	10		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR,PN16,DO-OFFSET,RF,Gear	10	pc	阀门配套螺栓螺母
	FW	旋球阀	M92AD3U	8	8		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR,PN16,DO-OFFSET,RF,Gear	12	pc	阀门配套螺栓螺母
	IWL	VCHQ	M91AD3U	36	36	PVCDA0344	CHECK VALVE D-PL, GB/T 12221, JB/T 8937, HG/T 20592(A), GB/T 12229-WCB, 13Cr, PN16, LUG, RFTBE	1	pc	阀门配套螺栓螺母
	IWL	VBFY	M91AD3U	36	36	PVYAD0043	旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR,PN16,DO-OFFSET,RF,Gear	1	pc	阀门配套螺栓螺母

	Code	Type	Spec	DN1 (in)	DN2 (in)	ItemCode	Description	QTY	Unit	Remark
	IWL	VALVE	L91PE0	20	20		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR, PN16,DO-OFFSET,RF,Gear	1	pc	阀门配套 螺栓螺母
	RUD	VALVE	L91PE0	16	16		旋球阀 ROTATING BALL VALVE,GB/T 12221,GB/T 12238,HG/T 20592(A),GB12229-WCB,阀体WCB,阀板WCB+密封面堆焊D507不锈钢,浮动阀座 QT450+密封面堆焊304不锈钢(结构为侧装式),双重密封,阀轴2Cr13,轴套铜基自润滑轴套,轴密封NBR, PN16,DO-OFFSET,RF,Gear	1	pc	阀门配套 螺栓螺母