

 <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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项目名称: 福建古雷 150 万吨/年乙烯及下游深加工联合体项目 Project Name: Fujian Gulei 1.5MMTA Ethylene and Downstream Deep Processing Complex Project			
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管道材料招标文件




碳钢埋弧焊管

Bidding documents for piping material
Carbon Steel Submerged Arc Welding Pipes

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<p>地下管道设计说明</p> <p>UG Piping Design Description</p>	<p>SFP-0012-00-HQC-UGP-MRI-0002</p>

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1 DEFINITION 定义

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

此碳钢埋弧焊管的供货要求涵盖了关于福建古雷 150 万吨/年乙烯及下游深加工联合体项目询价及采购的明确要求。

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订单的一部分。

2 SCOPE OF VENDOR'S SUPPLY 供货商范围

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.

供货商的范围还包括此规定所包括的设计，制造，装配，检验，测试等所必需的劳动，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提及的文档，国际标准，国家规定，工业标准及当地（项目建设所在地）法律法规等。

The certification and documents of original manufacture shall be provided for approval if the supplier is an agency.

如果是代理商报价，钢管生产商的资质及证明需要提交供买方审核。

3 DESIGN REQUIREMENTS 设计要求




3.1 General 总则

The specification covers minimum technical requirements for procurement of Carbon Steel Welded Pipes to be used for the project.

此规定涵盖了本项目所用碳钢焊制钢管的最低技术要求。

Any requirements not covered by this specification are left to the Manufacturer and should be officially approved by purchaser.

本规定未涉及到的其他要求由制造商负责并通过买方的正式认可。




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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.


所有材料的设计、制造、检验、试验和安装都应执行此规定中提及的文件、国际标准，中国国家标准、行业标准及地方法规：

TSG D0001	Safety Technology Supervision Regulation for Industrial Pressure Pipe 压力管道安全技术监察规程—工业管道
GB/T 20801	Pressure Piping Code - Industrial Piping 压力管道规范—工业管道
GB50316	Design Code for Industrial Metallic Piping 工业金属管道设计规范
SH/T 3059	Specification for Piping Material Design Selection in Petrochemical Engineering 石油化工管道设计器材选用通则
GB 50236	Code for construction of field equipment, industrial pipe welding engineering 现场设备，工业管道焊接工程施工规范
GB 50683	Code for acceptance of field equipment, industrial pipe welding engineering 现场设备、工业管道焊接工程施工质量验收规范
GB/T 222	Permissible Tolerances for Chemical Composition of Steel Products 钢的化学分析用试样取样法及成品化学成分允许偏差
GB/T 223	Methods for chemical analysis of iron, steel and alloy 钢铁及合金化学分析方法
GB/T 2102	Acceptance, packing, marking and quality certification of steel pipe 钢管的验收、包装、标志和质量证明书
GB/T 12716	Pipe threads with the thread angle of 60 degrees 60° 密封管螺纹
HG/T 20553	Selection series of steel pipe size for chemical piping 化工配管用无缝及焊接钢管尺寸选用系列
SH/T 3405	Series of steel pipe size in petrochemical engineering 石油化工钢管尺寸系列
GB/T 3091	Welded steel pipes for low pressure liquid delivery 低压流体输送用焊接钢管
SY/T 5037	Spiral submerged arc – welded steel pipe for pipelines for low pressure fluid service 低压流体输送管道用螺旋缝埋弧焊钢管
GB/T 8163	Seamless steel tubes for liquid service 输送流体用无缝钢管
GB 5310	Seamless steel tubes and pipes for high pressure boiler 高压锅炉用无缝钢管
GB 3087	Seamless steel tubes for low and medium pressure boiler 低中压锅炉用无缝钢管

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GB 6479	Seamless steel tubes for high-pressure for chemical fertilizer equipment 高压化肥设备用无缝钢管	
GB/T 9711	Petroleum and natural gas industries - Steel pipe for pipeline transportation systems 石油天然气工业管线输送用钢管	
GB/T 14976	Stainless steel seamless pipes for fluid transport 流体输送用不锈钢无缝钢管	
GB/T 12771	Welded stainless steel pipes for liquid delivery 流体输送用不锈钢焊接钢管	
API 5L	Specification for Line Pipe 管线规定	
ASME B16.25	Butt-welding Ends 对焊端	
ASME B31.3	Process Piping 工艺管线	
ASME B1.20.1	Pipe Threads, General Purpose (Inch) 通用的管螺纹(英制)	
ASME B16.25	Buttwelding Ends 对接焊接端	
ASME B36.10M	Welded and Seamless Wrought Steel Pipe 焊接及无缝钢管	
ASTM (various)	American Society for Testing Materials 美国试验及材料协会	
ASTM A53	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 无锌层及热镀锌焊接与无缝钢管	
ASTM A106	Seamless Carbon Steel Pipe for High-Temperature Service 高温用碳钢无缝管	
ASTM A672	Electric-Fusion-Welded Steel Pipe for High-Pressure Service at Moderate Temperatures 中温高压用电融焊钢管	
ASTM A333	Seamless and Welded Steel Pipe for Low-Temperature Service and Other Applications with Required Notch Toughness 低温设备用无缝和焊接钢管	
ASTM A335	Seamless Ferritic Alloy-Steel Pipe for High-Temperature Service 高温用铁素体合金无缝钢管	
ASTM A671	Standard Specification for Electric-Fusion-Welded Steel Pipe for Atmospheric and Lower Temperatures 常温和低温用电熔焊管	
ASTM A691	Carbon and Alloy Steel Pipe, Electric-Fusion-Welded for High-Pressure Service at High Temperatures 高温高压用电熔焊碳钢、合金钢管	

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

其他所有相关标准、规范和规定表示在材料汇总表（MTO）的材料描述或其参考文件中。

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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.

对于此规定与其他参考规定，标准，规范中的不符之处，均应提交买方并进行澄清。

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:

如各文档中的要求产生矛盾，各文档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)
国际规范和行业标准等

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

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。

Technical deviation is shown in attachment 3

技术偏差表见附件 3

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4 TECHNICAL REQUIREMENTS 技术要求

4.1 General 通用要求

- 1) Unless otherwise specified, the chemical composition and mechanical properties of piping material shall conform to relative International codes and Chinese National standard

除非特别规定，管子所用材料的化学成分及力学性能应符合相应的国际标准和国内标准的要求。

- 2) Unless otherwise noted, ASTM pipes shall conform to ASME B31.3(GB pipes GB/T20801) as applicable. All materials, design, and fabrication of pipe including examination and testing shall in accordance with the minimum requirements and limitations of ASME B31.3(GB pipes GB/T20801) as applicable; this includes any maximum temperature limitation for a material or rule governing the use of a material at a low temperature. In addition to these codes, mill pipes shall conform to the applicable standards stated herein.

若无其它规定，美标管子应符合适用的 ASME B31.3(国标管子 GB/T20801)。所有美标管子材料、设计及制造，包括其检验及试验等均应按要求符合 ASME B31.3(国标管子 GB/T20801)中规定的最低要求及限定条件；上述要求包括对某一材料规定的最高温度限定条件或涉及低温条件下的材料使用规则。除这些规范外，管子还应符合本文所述的适用标准。

- 3) All material shall be new material with all surface clean and free from defects, weld spatter, arc strike, rust, dirt, sand, scale, paint or any other foreign substance.

所有材料都应当是新材料，表面清洁，没有缺陷，焊渣，锈迹，沙粒，油脂或其它异物。

- 4) The steel used for pipes should be killed.

钢管用钢必须为镇静钢。

- 5) The steel plate used for welded pipe should be 100% Ultrasonic test as per relative standards.




作为原材料使用的钢板材料，质量证明文件中应有超声波检测结果。否则应根据相关材质规范中的要求进行 100%超声波复检，其对比样人工缺陷深度为壁厚的 8%，且不得大于 1.5mm。

- 6) Weld repairs of deflections are not acceptable.

原材料及管子本体的缺陷不允许采用焊接方式修补。

- 7) The Carbon content of the carbon steel pipes should be not larger than 0.23%.

碳钢钢管的碳含量不得大于 0.23%

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The following formula shall be used to calculate the Carbon Equivalent (CE) for all carbon steel:

碳钢碳当量按以下公式计算:

$$CE = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15} \leq 0.45\% \quad (1)$$

$$CE = C + \frac{Mn}{6} \leq 0.43\% \quad (2)$$

The Carbon Equivalent (CE) shall be calculated by formula 1 except for C-Mn steel, where it shall be according to formula 2.

若材料为 C-Mn 钢, 按式 (2) 计算; 其它按照式 (1) 计算。

- 8) When there are 'IMPT' requirements in the description of MTO, The raw material plate of the pipe should be offline normalized steel plate. The impact test of the base metal, weld metal and heat-affected zone, moreover Impact test method, sampling method, acceptance standard shall be performed (Low Temperature carbon steel: -46 Degree C, Carbon steel: -29 Degree C) as per ASME B31.3 or relevant standards. And approved by purchaser.

对于料单描述中标有“IMPT”要求的碳钢及低温碳钢焊制钢管, 其钢管的原材料钢板均要求为离线正火钢板。且要求成品钢管的焊缝、母材及热影响区均需通过 (碳钢-29 摄氏度, 低温碳钢-46 摄氏度) 下的冲击试验, 相应的冲击试验方法, 取样方法, 验收标准应参照 ASME B31.3 及相应材料标准的要求。并经过买方的批准。

- 9) Weld seam of welded pipe shall have straight seam. Spiral welded pipe shall not be allowed.

For the welded pipe which outside diameter not more than 1422mm, only single longitudinal seam in each length is acceptable and girth joint is not allowed.




For the welded pipe which outside diameter greater than 1422mm, two longitudinal seams in each length or girth joint are allowed, but it is not acceptable when two longitudinal seams and girth joint are produced in signal pipe.

所有焊接钢管焊缝应为直焊缝, 螺旋焊是不允许的。

钢管外径 $\phi \leq 1422\text{mm}$ 的焊制钢管, 仅允许单条纵向焊缝且不允许出现环焊缝对接;

- 10) The supplier provides all the wall thickness mm $\leq 13(\frac{1}{2} \text{ "})$ 1 $\frac{1}{4}$ chromium welded pipe, the minimum tensile strength need $\leq 490 \text{ MPa}$ (71 Ksi) (must provide written proof). Otherwise, all of the above 1 $\frac{1}{4}$ chrome pipe should be in accordance with the requirements listed in table 331.1.1 ASME B31.3 for heat treatment.

供货商提供的所有壁厚 $\leq 13 \text{ mm}$ ($\frac{1}{2} \text{ "}$) 的 1/4 铬焊管, 其最小拉伸强度需要 $\leq 490 \text{ MPa}$ (71 Ksi) (需提供书面证明)。否则, 所有上述 1/4 铬管材应按照 ASME B31.3 中表 331.1.1 的要求进行热处理。

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- 11) Galvanized pipes shall be coated by hot-dip galvanizing process. Electroplating process is prohibited. All threads on galvanized steel pipe shall be cut after galvanizing.

所有镀锌钢管应当采用热浸镀锌工艺将管子内外表面镀锌，不允许采用电镀锌工艺。镀锌管的螺纹端应在镀锌后进行加工。

- 12) The galvanized pipes should be satisfied with the requirements of 5.9 GB/T 3091-2015.

钢管热浸镀锌的质量要求应遵循 GB/T 3091-2015 5.9 条的相关规定

- 13) Carbon steel pipe with a wall thickness greater than 19.05mm shall be heat treated, after forming, in accordance with ASME B31.3 or GB50316.

壁厚>19.05mm 的碳钢管，在加工成型和焊接后均应根据 ASME B31.3 或 GB 50316 进行热处理。

4.2 Dimension 尺寸

- 1) Outside diameters and wall thickness of pipes shall be in accordance with the standards indicated in the pipes' descriptions which provided in the MTO (material take-off). The information provided in the description is not enough to specified the pipes' outside diameter and thickness, ASME B36.10M, ASME B36.19M for ASTM series or CHINESE standard HG/T 20553 Ia and GB/T17395 series 1 or SH/T 3405 are priority. Other OD series standard must be approved by the buyer.

管子的外径及壁厚应按照 MTO（材料表）中钢管描述中给定的标准。当给定的标准无法确定钢管的外径及壁厚时，按照 ASTM 标准生产的钢管应满足 ASME B36.10M/ASME36.19M 的要求，按照国标牌号生产的钢管应满足 HG/T 20553 (Ia) 系列、GB/T17395 1 系列或 SH/T 3405 标准的要求。执行其他外径系列标准必须经过买方书面认可；

- 2) The allowance tolerance of outside diameter and wall thickness shall conform to the standards indicated in the pipes' descriptions which provided in the MTO (material take-off) and the relative International or Chinese National standard GB.

管子外径，壁厚公差应遵循 MTO（材料表）中钢管描述中指定的标准及其相关的国际、国内标准要求。




- 3) Outside diameters 外径

- ① The pipes must be delivery in accordance with the specified diameter *.And the permissible variations in outside diameters shall not be more than± 0.5%OD **.

管子应按照指定的外径*供货，允差**为±0.5% 的指定外径。

*Plus five phrase to 0.001 inches (0.025mm).

*四舍五入到 0.001 英寸(0.025mm)。

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** The permissible variations in outside diameters shall be the minimum value of the specified in the relative standards and 0.5%OD.

** 管子的外径公差应为标准中规定的数值与±0.5%指定外径中较小的数值。

- ② Any section of the pipe ovality may not exceed the nominal diameter of 1% except DN>1200 and D/t >75. The ovality for DN>1200 and D/t >75 shall be not exceed 1.5%.

当 DN≤1200 并且 D/t≤75 时，管子的任何截面的椭圆度不得超过公称直径的 1%。

当 DN>1200 并且 D/t>75 时，管子的任何截面的椭圆度不得超过公称直径的 1.5%。

- ③ 大口径管子的外径公差应不低于下表要求：

Scope 范围 (mm)	400≤DN <750	750≤DN <1250	1250≤DN <1650	1650≤DN <2500	2500≤DN ≤3000
Permissible variations in circumference 周长允差(mm)	±5	±7	±9	±11	±13

4) Wall thickness 壁厚

The wall thickness at any point shall not be more than 10% mm over or -0.3mm under the nominal wall thickness.

焊制钢管壁厚负公差最大-0.3mm，正公差最大+10%t（t 为名义壁厚）。

5) Tolerance of Butt welding ends 对焊端偏差




Steel pipe groove end processing deviation internal diameter size does not exceed ±2mm. Measurement methods: internal diameter = -2*t outer diameter (theoretical wall thickness).

钢管坡口端加工后内径尺寸的偏差不允许超过±2mm。测量方法：内径=外径-2*t（理论壁厚）。

6) Delivery length 供货长度

The length of each pipe should be from 6M to 12M. The difference of the pipes in the package should be not larger than 1M. The pipe length 5.5M~6M are accepted but the quantity of the pipe should be not larger than 5% of each lot and the total length of the delivery pipe should be larger than the length required at least 1M but the quantity should be not larger than 1piece. Unless Approved by purchaser, the joints of the pipes are not permitted.

钢管供货长度 6M~12M，包装中每捆钢管长度级差小于 1M。每种规格钢管，只允许有不超过该订货批次的 5%为 5.5M~6M 的短管。且实际到货长度比料单中的长度至少

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长 1M.。但每种钢管不得多于一支，除非买方认可，钢管中间不允许有任何形式的连接。
(**)

4.3 Weld 焊接

Welded items shall be fabricated to comply with ASME B31.3 requirements.

焊接应遵循 ASME B31.3 的相关要求。

Except for automatic welding process with no addition of filler metal in the welding operation, the Vendor shall submit the following documents to purchaser for approval, together with his bid:

除无填料自动焊接工艺，供货商应在标书中提供以下文件供买方审核。

- WPS's - Welding Procedure Specifications 焊接工艺评定
- PQR's - Procedure Qualification Records 焊接工艺评定记录
- WPQ's - Welder Performance Qualifications 焊工评定

1) Welding Procedure Specification "WPS"焊接工艺评定

WPS shall be written on the ASME form or approved equal.

WPS应以ASME或相当的规范认可的格式

All filler metals shall be shown according to the AWS classifications.

所有填充金属的种类应根据AWS分类列出

2) Procedure Qualification Record "PQR" 焊接工艺评定记录

Each PQR shall be witnessed by an independent and recognized authority.

每一份焊接工艺评定应通过独立的第三方组织进行见证及认证

Existing PQR's shall be accepted only if in agreement with all requirements of the project.

已评定的焊接工艺评定记录应满足项目的所有要求




All documentation shall be written in the official project language.

所有文件应以项目认可的语言书写。

If PQR's are written in a different language, a copy of the same with an attached translation in the official language may be accepted.

如果焊接工艺评定记录以不同的语言进行书写，一份附带的项目认可语言的翻译附件也被认可。

If all or part of the supply is subordered or subcontracted, each vendor or subvendor shall submit the relevant documentation to purchaser for approval.

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如果部分部件由分供方提供，每个供货商或分供商应提交相关的文件供买方审核。

When an impact test is required for base materials, all the PQR's shall provide an impact test on weld metal and heat affected zone, even if not required by the applicable code.

即使相关规范中没有要求，只要基材金属需要进行冲击试验，焊接工艺评定记录中应提供所有的焊缝金属及热影响区的冲击试验。

3) Welder Performance Qualification "WPQ" 焊工评定

Each WPQ shall be witnessed by an independent authorized authority.

每一份焊工评定应通过独立的第三方组织进行见证及认证

Existing WPQ's shall be accepted only if in accordance with the applicable project code.

已存在的焊工评定应得到项目的认可。

4.4 End Preparation 端部处理

1) Welding end preparation shall be Bevel end (BE) accordance with the requirement in ASME B16.25 Fig. 2 (a) or Fig. 3 (a).

坡口端的要求按 ASME B16.25 Fig. 2 (a) 或 Fig. 3 (a)的要求

2) Threaded end (TE) shall be provided with National Standard Pipe Taper (NPT) conforming to ASME B1.20.1 or GB/T12716.

螺纹端应按 ASME B1.20.1 或 GB/T12716 NPT 螺纹进行加工。

4.5 Marking and Color coding 标记及色标

Marking and Color coding is shown in attachment 5 标记和色标见附件 1




4.6 Heat Treatment 热处理

1) The heat treatment shall be performed according to the requirements of relative material and pipe standards

管子成型后的热处理工艺应遵循所对应的材质或钢管标准。

4.7 Surface Treatment 表面处理

Surface of the steel pipes shall be protected as per the requirements of the chapter 9 of this file, the protect proposal should be approved by purchaser and according to the relative standards or manufacture standards.

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钢管的表面，应根据相关标准及厂商标准涂覆有临时性涂层以避免运输及储存过程中腐蚀。厂商标准的临时性涂层的涂覆方案应报请买方批准并满足本文件第9章的要求。

4.8 Pipe anti-corrosion 管道防腐

All buried metallic piping shall be protected against corrosion. Three-layer Fusion Bonded Epoxy-Polyethylene Coating (3PE) shall be applied for underground carbon steel pipe. The primer is epoxy powder coating, the middle layer is adhesive, and the outer layer is polyethylene.

所有埋地金属管道均应采取防腐蚀措施，地下碳钢管应采用三层聚乙烯缠带（3PE），底层为环氧粉末涂料，中间层为胶粘剂，外层为聚乙烯。

All corrosion protection of the pipeline shall be completed before delivery, and the corrosion protection form of the pipeline shall be determined according to MTO

管道所有防腐均在出厂前完成，根据 MTO 确定管道的防腐形式。

5 PERFORMANCE GUARANTEE 质量保证

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 9001:2008.

卖方应具有质量管理体系以确保其产品满足此规定及 ISO9001: 2008 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 ISO9001 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 ISO9001 质量认证证书

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

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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 ISO9001 行为的权利。

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 right of quality audit.

卖方应注意：ISO9001 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 备品备件及专用工具

Vendor shall furnish special tools and appurtenances necessary for the installation, maintenance and/or operation of pipes 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。

7 RESPONSIBILITIES AND OBLIGATIONS 责任与义务

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

供货商的责任与义务：所有材料设计、制造、检验和安装应满足本规定要求。

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

买方的意见在任何情况下不能免除供货商的责任。

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.

买方对于指示说明中的误解或遗漏不承担任何责任，包括供货商满足合同的所有行为。


8 INSPECTION AND TESTING 检验及试验

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) All pipes prepared for purchaser inspection shall have passed a preliminary

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inspection made by the Manufacturer's Quality Control Department.

所有供买方检验的管子应先经过制造商质检控制部门的检验。

- 3) 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.

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。

- 4) 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。

- 5) 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。

- 6) The NDE and Hydrostatic test should be performed by the same manufacture and recorded in the manufactures' certifications. Case the vendor cannot meet these requirements, an individual proposal and clarify should be attached in the technical bid for buyers' approval.

管子水压试验及无损检测应优先在钢管的生产商处完成并统一记录于质保证书中。当由于的钢管生产商原因无法在质保书中同时进行体现时，供货商应在其技术投标文件中清楚的表明并提出相应的解决方案供买方进行审核。

8.2 Material Inspection 材料检验

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

材料的化学成分，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

Surfaces shall be sound, clean and free of flaws, cracks, ridges and others defects judged unacceptable by the Inspector and/or as per the applicable standards.

管子表面应当圆滑清洁，无缺陷，裂纹,皱折及其它异物。是否符合要求应由买方检验人员决定，或根据相关标准。

8.4 Dimension Inspection 尺寸检验

Tolerances in dimensions shall be according to the relevant Codes, Standards and Specifications.

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尺寸公差应满足相应标准，规范及规定的要求

In particular, the following shall be checked:

下列尺寸应被检验：

- Thickness 厚度
- Diameters 外径
- Bevel-threaded Dimensions 坡口及螺纹的尺寸
- Roundness 椭圆度
- Straightness 弯曲度

8.5 Marking Inspection 标记检验

Marking shall comply with Para 4.4.5 of this specification.

标记检验应根据本规定第 4.4.5 章进行检验

8.6 Non-Destructive Examination (NDE)无损检测

The extent and the criteria of NDE (ET, UT) for welded steel pipes shall be determined according to the requirements of codes mentioned in this specification.

焊制钢管无损检验(ET, FT, UT)的内容及原则应根据本规定涉及的标准规范的要求。

Abbreviation: ET : Eddy current examination 涡流检验
 FT : flux leakage examination 漏磁检验
 UT : Ultrasonic Test 超声波检验
 PT : Liquid Penetrant Test 渗透试验
 MT : Magnetic Particle Test 磁粉检验



As a rule, for fabricated welded steel pipes, all the pipes should be inspected by 100% NDE, it cannot be substituted by hydrostatic test. The selection of the NDE method shall be submitted in the technical bids for purchasers' approval.

对于工厂制作的焊制钢管，所有的钢管需要经过 100%的无损检测（NDE）。其取样原则，试验方法，验收标准应满足本规定及 MTO 中相关标准规定的要求或附加要求.并且不可使用管子水压试验替代无损探伤。

8.7 Hydrostatic Test 水压试验

A hydrostatic test shall be carried out on each pipes, hydrostatic test pressure shall be according to the relevant Codes, Standards and Specifications.

每根管子应根据相关标准规范全部进行水压试验。

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8.8 Examination Of Heat Treatment 热处理检验

The examination of heat treatment process shall be performed in accordance with applicable standards.

热处理工艺的检验应根据相关标准

8.9 Other Test 其他检验

As a rule, the substituted flattening test by bending test is forbidden.

禁止采用弯曲试验代替压扁试验。

The examination of tension test, hardness test, intergranular corrosion test (*) shall be performed in accordance with applicable standards.

拉伸试验, 硬度测试, 及晶间腐蚀试验 (*) 应根据相关规范进行检验。

(*) As a rule, for all stainless pipes, two intergranular corrosion test shall be performed per lot.

(*) 不论标准是否要求, 所有不锈钢材质的钢管需要根据相应材料规范的附加要求及验收标准每批进行两组晶间腐蚀试验。

When the circle Welds are used, the Orientation of Test Specimens should be both directions. That means, each test should be two groups, Longitudinal Test and Tangential Test, as possible as it can.

当焊管中间采用环焊缝时, 所有标准中要求进行试验的取样方向应为两个方向, 也就是说, 垂直于原材料轧制方向与平行于原材料轧制方向各取一组进行试验。这两组试验的结果均应满足相关标准的要求并提供相应的报告。

9 OTHER SPECIAL REQUIREMENTS 其他特殊要求

9.1 External protection, transportation and shipment 外防护, 运输及保护

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

除非特殊指定, 为防止运输, 储存过程重的腐蚀和损坏, 下列措施应被采用:

- 1) In general, all pipes shall be thoroughly cleaned of all debris, trash, weld spatter, loose mill scale, tools and foreign matter and dried in preparation for shipment
一般而言, 所有管材在运输前均应进行彻底的清洁, 去除碎片, 焊渣, 杂质等
- 2) Pipes shall be protected to withstand ocean/road transit and extended periods of

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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.

管子应采取相应措施进行保护，保护措施应能抵挡海路及陆路运输所可能遇到的各种腐蚀，并最小维持到场储存 18 个月，卖方应采取相应措施应对储存运输时可能遇到的各种不利环境：如潮湿，雨天，沙尘，海洋等。

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

管子外表面应采取相应的可除去的措施如，凡士林，油脂等进行防锈处理。管子的内表面防锈处理按照制造厂标准。

- 4) 管子端部应采用木质或厚实的塑料盖板或坡口保护器+帆布封头保护的方式进行保护。
- 5) Austenitic stainless steel pipes shall be protected from chloride attack during shipment or storage.

奥氏体不锈钢在运输及储存过程中应采取适当的措施保护以避免氯离子腐蚀。

- 6) For large diameter pipes ($DN \geq 1400$), in particular when thin wall manufactured($D/t \text{ ratio} \geq 100$), Vendor shall provide suitable reinforcements to avoid buckling and ends ovalisation.

大口径 ($DN \geq 900$) 薄壁管(外径/壁厚 ≥ 70)，必须提供适当加固，避免弯曲及端部变形。

10 ATTACHMENT 附件:

10.1 Attachment 1: Vendor's documents requirements 供货商文件要求

10.2 Attachment 2: Inspection and test programe 检验及试验计划 (ITP)



10.3 Attachment 3: Technical deviation list 技术偏差表



10.4 Attachment 4: MTO for Carbon Steel Submerged Arc Welding Pipes 碳钢埋弧焊管材料表

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附件 1: **VENDOR'S DOCUMENTS REQUIREMENTS** 供货商文件要求

DOC. CODE 文件代码	DOCUMENTS & DRAWINGS DESCRIPTION 文档及图纸描述	FOR BID 用于投标	FIRST ISSUE 初版			FINAL ISSUE 最终提交	NOTES 备注
			QTY. OF PRINTS 数量及种类	ISSUE DATE 提交日期	PURPOSE 目的	QTY. OF PRINTS 数量及种类	
	<u>DEVIATION AND CLARIFICATION</u> 偏差及澄清						
	Technical Deviation List 技术偏差表	3C					(1)
	<u>SHIPPING INFORMATION</u> 运输信息						
	Net Weight, Gross Weight and Measurement 净重、毛重及度量单位	3C	4W	FI	3C	20+2E+6C	
	Packing, Knockdown and Transportation Procedure 包装、运输、装卸程序	3C	4W	FI	3C	20+2E+6C	
	<u>SPARE PARTS, SPECIAL TOOLS AND OPERATIONAL CONSUMABLE</u> 备品备件, 专用工具及操作消耗品						
	Construction and Commissioning Spare Parts List (if any) 施工, 开车备件表 (如果有)	3C	4W	FR	3C	20+2E+6C	
	Capital Spare Parts List 重要备件清单						
	2 years Operating Spare Parts List (if any) 2 年操作备件清单 (如果有)	3C	4W	FR	3C+E	20+2E+6C	
	Special Tool List (if any) 专用工具清单 (如果有)	3C	4W	FR	3C	20+2E+6C	
	<u>DOCUMENT AND DRAWING</u> 文件及图纸						
	Vendor's Document and Drawing List 供货商的文件及图纸目录	3C	4W	FI	3C	20+2E+6C	
	Material list of Supply 供货材料清单	3C	4W	FR	3C	20+2E+6C	(3)
	Copy of ISO 9001 certificate ISO 9001 证书复印件	3C					(1)
	Copy of " manufacture license of	3C					

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		 中国寰球工程有限公司 CHINA HUANGQIU CONTRACTING & ENGINEERING CO., LTD.					
管道材料招标文件 Bidding documents for piping material		SFP-0012-00-HQC-UGP-MRI-0002					
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		QTY. OF PRINTS 数量及种类	ISSUE DATE 提交日期	PURPOSE 目的	QTY. OF PRINTS 数量及种类	QTY. OF PRINTS 数量及种类	
	special equipment –pressure piping, Peoples Republic of China” (if vendor is Chinese company) 中华人民共和国特种设备生产许可证-压力管道（如果供货商是国内厂商）						(1) (6)
	Technical introduction 技术介绍	3C					(7)
	Vendor's Quality Manual 供货商质量手册	3C					
	Product Catalogue 供货商产品样本	3C					(4)
	Reference list 业绩表	3C					(5) (10)
	Equipments list 设备清单	3C					(8)
	Sub-suppliers List 分供货商清单	3C	4W	FI	3C	20+2E+6C	(10)
	Material sub-order specification 原材料采购规范	3C	4W	FR	3C		
	Raw Material Certificate 原材料材质证明		4W	FR	3C	20+2E+6C	(2)
	Manufacturing Schedule 生产计划	3C	4W	FI	3C		
	Rust Prevention Procedure (with Data Sheet) and Preservation Procedure at Construction Site 施工现场防锈及保存程序（附相关数据表）	3C	4W	FR	3C	20+2E+6C	
	Packing list 装箱单		4W	FI	3C	20+2E+6C	
	Test and Inspection Procedure (including NDE Procedure, Pressure Test Procedure, Performance Test Procedure, FAT Procedure, etc., where applicable) 检验及试验程序（如果需要，应包括无损检测程序，压力试验程序，性能试验程序，FAT 程序等。）		4W	FR	3C	20+2E+6C	
	Heat Treatment Procedure 热处理程序	3C	4W	FR	3C	20+2E+6C	

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	Welder List and Certification 焊工资质证书及名单(仅针对焊管)	3C	4W	FI	3C		
	NDE Personnel List 无损检测人员名单	3C	4W	FR	3C		
	Welding Procedure Specifications (WPS) & Procedure Qualification Record (PQR) with weld map (if any) 焊接程序及质量评定报告(针对焊管, 如果有), 应备有拍片记录		4W	FR	3C	20+2E+6C	(9)
	Welding Procedure Qualification Test Procedure (if any) 焊接质量测试程序(针对焊管, 如果有)		4W	FI	3C		
	Inspection and Test Plan 检验及试验计划	3C	4W	FR	3C	20+2E+6C	
	Test and Inspection Report 检验和试验报告	3C	4W	FR	3C	20+2E+6C	




GENERAL NOTES:

总注:

- (a) Definitions定义: W = Week, M = Month W = 周, M = 月, C = Xerox copy, C = 纸质文件, R = Reproducible copy, R = 复印件 O = Original, O = 原件 E = Electronic File E = 电子文件, FI = For information, FI = 条件版 FR = For review FR = 审核版
- (b) Vendor will be responsible for paying all charges for submitting documents when mailing.
供货商递交文件时所产生的费用由供货商自理

NOTES (See the last column for each number): 注(见最后一列):




- (1) Must be submitted to HQC, if not, the vendor will be declined. 必须提交项, 如不提交, 将导致技术废标。
- (2) To be submitted for the material required with certificate, 应提交所需材料的证明文件
- (3) Material list of Supply shall conform to Material Requisition, including item code, material description, size, quantity and weight.
供货材料清单应与询价文件一致, 包括元件代码、材料描述、尺寸、数量和重量。
- (4) The Product Catalogue which provided by vendors should be certified by the local laws and including the productions which are quoted.
供货商的产品样本应为法人或其代表人认可的样本, 并能够包含本次投标所需的技术参数(产品尺寸, 承压能力, 材质或选用依据等技术资料)。对样本中不包含的本次投标所需的产品种类与技术参数范围部分, 供货商应对其进行书面说明并与样本一同作为投标资料提供。
- (5) For all supplied products, Reference List should include P.O. No., type, size, material, quantity, date of supply, final owner, relative personnel's name and phone number, etc. The references should be the

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same type of products and running well during the latest 5 years by the owner's approval.

供货商提供的业绩应为在最近5年内业主认可并运行良好的中国大陆石油化工装置上（包括大型乙烯，聚丙烯，LNG，煤化工等装置）使用的相同产品的业绩，业绩表应包括所提供产品的订单号、品种、规格、材料、数量、供货时间、最终用户名称、联系人及电话等。业绩清单中的单个业绩应附有供货合同复印件（寰球签订的合同除外），且供货合同中其符合本次招标范围的相同产品数量占总合同数量的50%以上，单笔合同订单额超过50万。




- (6) 供货商提供的压力管道元件制造许可证复印件应包括压力管道元件制造许可证，制造许可明细表复印件及鉴定评审机构出具的鉴定评审报告复印件等，即含国家相应机构出具的，能够清楚表示供货商制造压力管道元件的产品许可制造品种规格范围的文件。
- (7) 供货商提交的技术及生产工艺介绍应包含其生产能力，生产工艺的详细介绍。
- (8) 设备清单中应包含以下信息：设备型号，设备能力（包括用于生产及检验的技术参数范围），设备制造日期，制造及检验的精度范围，数量等相应信息。
- (9) **To be included weld repair procedure.**
应包括相应的补焊程序。
- (10) **Must be submitted. When agents bid, reference should be theirs and sub-suppliers List should be manufacturers list.**
必须提交。如果代理商投标，则业绩为代理商供货业绩，分供货商清单为生产厂清单。
- (11) **The vendor's documents shall be provided in accordance with the requirements of HQC. If the owner has other requirements, the owner's requirements shall prevail.**
供货商文件要求按照HQC要求提供，业主方如有其他要求，应以业主要求为准。

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附件2：INSPECTION AND TEST PLAN 检验及试验计划

CRITICALITY RATING: 重要性等级	INSPECTION LEVEL: 检验级别	4	MR CODE: MR 请购文件号
VENDOR: 供货商	INSPECTION AUTHORITY: 检验机构		
REMARKS 备注:			
1.0	SCOPE 适用范围		
<p>This Inspection and test plan is an engineering document which defines for each type of equipment/bulk material: 本检验和试验计划是整个工程文件的一部分，定义了每种设备/散装材料的类型：</p> <ul style="list-style-type: none"> The type and extent of Contractor and Owner/Owner Representative involvement in each phase of fabrication, control and testing requiring an inspection 在制造、质量控制和检验各环节，承包商和业主/业主代表参与检验的类型和范围均需制定检验计划 The Suppliers contractual obligations, in accordance with applicable Project General Purchase Conditions 供货商合同范围内的义务需要符合《项目通用采购条件》 <p>Note: The inspection and test plan of BUYER may under no circumstances be used as a substitute for the Suppliers Quality Control Plan 注：买方的本检验和试验计划在任何情况下都不能替代供货商质量控制计划。</p>			
2.0	DEFINITION OF BUYER INVOLVEMENT 买方参与检验的控制点定义		
<p>The nature of BUYER involvement is indicated against each activity of fabrication and testing by means of the letters, H, W and R the meaning of which is the following: 在产品的制造、检验和试验过程中，买方按照字母 H、W 和 R 定义的形式参与检验和试验，H、W 和 R 字母的含义如下：</p> <p>H: (Hold) Point 停止点 The Supplier cannot carry out the specified controls and tests without Inspector attendance. 检验人员不在现场时，供货商不得进行指定的工序和试验活动 Consequently, the attendance to witnessing is mandatory. The Supplier must notify BUYER by fax of the dedicated inspection activity at least fifteen (15) days in advance. 因此，为保证买方检验人员出席检验和试验现场，供货商在进行相应的检验和试验活动前，必须至少提前 15 天以传真的方式通知买方。 The Supplier cannot deviate from this rule unless written approval has been given by involved operating center. 除非得到买方的书面许可，供货商不得违反本条的规定。</p> <p>W: (Witness) 见证点 The Supplier must notify to BUYER of the dedicated inspection activity at least fifteen (15) days in advance. BUYER representative witnessing is not mandatory, but optional. When a percentage value is indicated (i.e. W 10%) the inspection activities will be witnessed on spot basis as per percentage indicated. If BUYER representative do not elect to be present, the Supplier may proceed with his own inspection, provided controls and tests records are made available to Inspector for review 在 W 见证点，供货商在进行相关的检验和试验活动前，必须提前至少 15 天通知买方。 买方检验人员的现场见证是可选的而非必须的。当给出一定的百分比时（如 W10%），检验和试验活动应根据规定的百分比进行现场见证。 如买方检验人员选择不进行现场见证时，供货商应按其自身的相关程序进行检验和试验活动，并向买方检验人员提供该检验和试验记录，供买方检验人员进行审查评阅。</p> <p>R: (Review) – Review of Documents 文件评阅 The Supplier has either to submit to Inspector for comments the documents required prior to the performance of the dedicated activity or to transmit or make available for the review of Inspector the results of the controls and tests conducted, as the case may be. 供货商在进行相应检验和试验前，应向买方检验人员提交相关的文件，供买方检验人员进行审查评阅。也可以根据实际情况，经买方的书面许可，向买方检验人员提供检验和试验的结果以备审查评阅。</p>			

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<p>3.0</p>	<p>SUPPLIER'S FABRICATION AND QUALITY CONTROL PLAN 供货商的制造和质量控制计划</p> <ul style="list-style-type: none"> The Supplier must issue a Fabrication and Quality Control Plan for each equipment/bulk material. 供货商必须针对每一台设备/散装材料编制制造及质量控制计划。 The Supplier's Fabrication and Quality Control Plan is a document which defines in a chronological manner the list of the operations of fabrication, controls and tests in accordance with his own "know-how" and with the requirements specified in Material Requisition. 供货商的制造和质量控制计划应按照设备的制造、检验和试验工序顺序，依据供货商的实际能力和订单的特定要求进行编制。 Following information shall be clearly specified against each operation: <ul style="list-style-type: none"> Reference documents (drawings, procedures, etc.) Acceptance criteria (code, etc.) Recording documents for controls and tests Involvement of the Quality Control department of the Supplier and/or his sub-supplier 供货商的制造和质量控制计划必须清晰地包含以下内容： <ul style="list-style-type: none"> 所引用的文件（如图纸，程序文件等） 验收标准（如标准规范、工程规定等） 质量控制、检验和试验的记录文件 进行质量控制、检验和试验的供货商（或其分包商）的质量控制部门 <p>This Supplier's Fabrication and Quality Control Plan will have to include all inspection activities defined in Inspection and Test Plan as well as all inspection activities scheduled by the Independent Inspection Authority and/or the Client 供货商的制造及质量控制计划除包含买方、独立检验机构（或业主）计划内的所有检验活动外，还必须包含检验、试验计划中的其它所有活动。</p> <ul style="list-style-type: none"> For equipment of inspection levels 1, 2 and 3, the Supplier's Fabrication and Quality Control Plan will have to be submitted compulsory to BUYER for comments before the pre-inspection meeting is held. 对于检验级别为 1、2、3 的设备，供货商必须在预检验会议前，向买方提交制造和质量控制计划供审查审阅。
<p>4.0</p>	<p>INSPECTION RELEASE CERTIFICATE 检验放行单</p>
	<p>This document issued by BUYER inspector, permits the Vendor to proceed with the packing and to notify the shipment 检验放行单由买方检验人员签发，用于准许供货商进行设备包装，供货商接到运输放行单后方可进行设备运输。</p>

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CLASS: 类型	PIPING 管道	INSPECTION LEVEL: 检验级别	4						
STAGE 阶段	ACTIVITIES DESCRIPTION 检验活动描述	INSPECTION LEVEL 检验级别					REQ. OF CERTIF.	APPLICABLE DOCUMENTS AND REMARKS 适 用文件及备注	
		1	2	3	4	5			
Before fabrication 制造前	Pre-inspection Meeting 预检验会议		H	H					
	Suborders Check 分包订单检查		R	R	R	R	-	①	
	N.D.E. operators qualifications 无损检测人员的资格		R	R	R	R	YES 提供		
	Welders and N.D.E. operators qualifications 焊工和无损检测人员的资格		R	R	R	R	YES 提供	②	
	Welding consumable certificates 焊接消耗品的质量证书		R	R	R	R	YES 提供	②	
	Material test certificates 材料检测证书		R	R	R	R	YES 提供		
	Inspection of sub-ordered components 外协零部件的检测		W	W			-	③	
During Fabrication 制造期间	Raw Material check 原材料复检 (Chemical analysis, UT, Mechanical test, 化学分析, UT, 力学性能试验等)		R	R	R	R	YES 提供		
	Final N.D.E. 最终无损检测		W	R	R	R	YES 提供		
	Chemical analysis 化学分析		W		W 2%	R	YES 提供		
	Mechanical test on products 机械性能试验		W		W 2%	R	YES 提供		
	Hardness check 硬度检测		W 10%	R	R	R	YES 提供		
	Impact test 冲击实验		W	R	R	R	YES 提供	④	
	Heat treatment check 热处理检验		W	W	R	R	YES 提供		
Final Test 最终检测	Hydrogen resistance Test (Metallographic test or Tensile test) 抗氢蚀试验评定		W	R	W 2%	R	YES 提供	④	
	Visual test 外观检验		W 10%	W 2%	W 2%	W	-		
	Dimensional check 尺寸检测		W 10%	W 2%	W 2%	R	-		
	Pressure test 压力试验		W 10%	W 2%	W 2%	R	YES 提供		
	Marking and color code check 标记和色标检测		W 10%	W 2%	W 2%	R	-		
	Positive Material Identification (P.M.I.) 材料光谱分析鉴别		W	R	R	R	YES 提供	⑤	
	External coating check 外部涂层检测		W 10%	W 2%	W 2%	R		⑥	
Documentation 竣工文件	Surface and end protection check 表面和端部保护检测		W 10%	W 2%	W 2%	R			
	Final inspection book 最终检测报告		H	H	H	H	-	⑤	

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NOTES:

- ①: For main materials and/or activities complete with all the technical attachments
对主要材料、零部件及其技术附件进行检查
- ②: Only for Welded Pipes.
仅针对焊接钢管
- ③: To verify correct marking against certificates, surface condition, thickness, etc.
对质量证书、表面质量和厚度等标示的正确性进行查证
- ④: If any
如果买方有相应要求
- ⑤: As per technical / supply specification and project specification
按照技术/供货规定及项目规定
- ⑥: Not applicable for S.S steel.
对于不锈钢材质，不适用。

Note: if the owner's requirements are higher than above requirements, the owner's requirements shall be followed: BIG_00-0000-000-PI-020-105 Document Requirement for Piping Material Manufacturing and Inspection

说明：如业主规定高于此规定，按照业主规定执行

BIG_00-0000-000-PI-020-105 Document Requirement for Piping Material Manufacturing and Inspection

 <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>管道材料招标文件</p> <p>Bidding documents for piping material</p>	<p>SFP-0012-00-HQC-UGP-MRI-0002</p>

附件 3: TECHNICAL DEVIATIONS LIST 技术偏差表

THE OFFER WILL NOT BE TAKEN INTO CONSIDERATION IF THIS FORM IS NOT COMPLETED BY THE VENDOR.

若不能确认这个技术偏差表，该供货商将不予以考虑。

Are there deviations in vendor offer? Yes not
 供货商所供货品与规定要求是否有偏差? 是 否

(Check pertinent answer)

(诚信回答)

List of deviations (exception and addition requested by the vendor) from specifications standards and/or drawings

与标准、规定和/或图纸的偏差清单（供货商附加要求除外）

No. 序号	Spec. No. and Para. No. 规定的文件号 和条款编号	Specification Requirement 规定要求的内容	Vendor Proposed Clarification, Exception & Deviation 供货商要求的澄清条款、 例外条款及偏差	Reason 理由

VENDOR NAME:

VENDOR




SIGNATURE:

供货商名称:

供货商签字:

DATE:

日期:

 SABIC FUJIAN SABIC FUJIAN Petrochemicals Co., Ltd. 福建中沙石化有限公司	 中国寰球工程有限公司北京分公司 CHINA HUANGQIU CONTRACTING & ENGINEERING (BEIJING) CO.,LTD.
	 中国寰球工程有限公司 CHINA HUANGQIU CONTRACTING & ENGINEERING CO., LTD.
管道材料招标文件 Bidding documents for piping material	 SFP-0012-00-HQC-UGP-MRI-0002

附件 4: MTO for Carbon Steel Submerged Arc Welding Pipes 碳钢埋弧焊管材料表

	Code	Type	Spec	DN1 (in)	DN2 (in)	ItemCode	Description	QTY	Unit	Remark
	FW	PIP	M92AD3U	32	32	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	40.5	m	3PE COATING
	FW	PIP	M92AD3U	28	28	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	3619.8	m	3PE COATING
	FW	PIP	M92AD3U	24	24	PPPSP0409	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 10.0 mm	2447.7	m	3PE COATING
	FW	PIP	M92AD3U	20	20	PPPSP0385	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.8 mm	10978	m	3PE COATING
	FW	PIP	M92AD3U	18	18	PPPSP0385	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.8 mm	1069.9	m	3PE COATING
	FW	PIP	M92AD3U	16	16	PPPSP0385	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.8 mm	1354	m	3PE COATING
	FW	PIP	M92AD3U	14	14	PPPSP0405	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.0 mm	3216.3	m	3PE COATING
	FW	PIP	M92AD3U	12	12	PPPSP0405	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.0 mm	139.3	m	3PE COATING
	FW	PIP	M92AD3U	10	10	PPPSP0384	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 7.1 mm	1096.3	m	3PE COATING
	FW	PIP	M92AD3U	8	8	PPPSP0384	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 7.1 mm	2115.9	m	3PE COATING
	FW	PIP	M92AD3U	6	6	PPPSP0384	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 7.1 mm	693	m	3PE COATING
	IWL	PIP	M91AD3U	36	36	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	25	m	3PE COATING
	CWS	PIP	M91AD3U	120	120	PPPSP1382	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 25.0 mm	17.9	m	3PE COATING
	CWS	PIP	M91AD3U	100	100	PPPSP1382	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 25.0 mm	105.8	m	3PE COATING
	CWS	PIP	M91AD3U	96	96	PPPSP0406	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 22.2 mm	110.8	m	3PE COATING

	Code	Type	Spec	DN1 (in)	DN2 (in)	ItemCode	Description	QTY	Unit	Remark
	CWS	PIP	M91AD3U	88	88	PPPSP0391	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 20.0 mm	155.3	m	3PE COATING
	CWS	PIP	M91AD3U	84	84	PPPSP0391	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 20.0 mm	48	m	3PE COATING
	CWS	PIP	M91AD3U	80	80	PPPSP1365	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 19.05 mm	661.9	m	3PE COATING
	CWS	PIP	M91AD3U	72	72	PPPSP0390	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 17.5 mm	417.7	m	3PE COATING
	CWS	PIP	M91AD3U	64	64	PPPSP0389	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 16.0 mm	44.1	m	3PE COATING
	CWS	PIP	M91AD3U	56	56	PPPSP0388	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 14.2 mm	478.4	m	3PE COATING
	CWS	PIP	M91AD3U	48	48	PPPSP0408	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 12.5 mm	193.3	m	3PE COATING
	CWS	PIP	M91AD3U	44	44	PPPSP0408	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 12.5 mm	7.9	m	3PE COATING
	CWS	PIP	M91AD3U	40	40	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	282.7	m	3PE COATING
	CWS	PIP	M91AD3U	36	36	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	55.1	m	3PE COATING
	CWS	PIP	M91AD3U	30	30	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	10	m	3PE COATING
	CWS	PIP	M91AD3U	28	28	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	421.5	m	3PE COATING
	CWS	PIP	M91AD3U	26	26	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	9.5	m	3PE COATING
	CWS	PIP	M91AD3U	24	24	PPPSP0409	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 10.0 mm	16.3	m	3PE COATING
	CWS	PIP	M91AD3U	20	20	PPPSP0385	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.8 mm	308.8	m	3PE COATING

	Code	Type	Spec	DN1 (in)	DN2 (in)	ItemCode	Description	QTY	Unit	Remark
	CWS	PIP	M91AD3U	18	18	PPPSP0385	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.8 mm	0.8	m	3PE COATING
	CWS	PIP	M91AD3U	14	14	PPPSP0405	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.0 mm	104.5	m	3PE COATING
	CWS	PIP	M91AD3U	10	10	PPPSP0384	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 7.1 mm	361	m	3PE COATING
	CWS	PIP	M91AD3U	8	8	PPPSP0384	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 7.1 mm	30	m	3PE COATING
	CWS	PIP	M91AD3U	6	6	PPPSP0384	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 7.1 mm	40	m	3PE COATING
	CWR	PIP	M91AD3U	100	100	PPPSP1382	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 25.0 mm	38	m	3PE COATING
	CWR	PIP	M91AD3U	96	96	PPPSP0406	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 22.2 mm	35	m	3PE COATING
	CWR	PIP	M91AD3U	88	88	PPPSP0391	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 20.0 mm	290.2	m	3PE COATING
	CWR	PIP	M91AD3U	84	84	PPPSP0391	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 20.0 mm	60.3	m	3PE COATING
	CWR	PIP	M91AD3U	80	80	PPPSP1365	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 19.05 mm	681.8	m	3PE COATING
	CWR	PIP	M91AD3U	72	72	PPPSP0390	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 17.5 mm	415.2	m	3PE COATING
	CWR	PIP	M91AD3U	64	64	PPPSP0389	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 16.0 mm	439.7	m	3PE COATING
	CWR	PIP	M91AD3U	56	56	PPPSP0388	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 14.2 mm	65.05	m	3PE COATING
	CWR	PIP	M91AD3U	48	48	PPPSP0408	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 12.5 mm	137.4	m	3PE COATING
	CWR	PIP	M91AD3U	44	44	PPPSP0408	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 12.5 mm	4.9	m	3PE COATING

	Code	Type	Spec	DN1 (in)	DN2 (in)	ItemCode	Description	QTY	Unit	Remark
	CWR	PIP	M91AD3U	40	40	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	271	m	3PE COATING
	CWR	PIP	M91AD3U	36	36	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	51.9	m	3PE COATING
	CWR	PIP	M91AD3U	30	30	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	8	m	3PE COATING
	CWR	PIP	M91AD3U	28	28	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	2.9	m	3PE COATING
	CWR	PIP	M91AD3U	26	26	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	6.3	m	3PE COATING
	CWR	PIP	M91AD3U	24	24	PPPSP0409	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 10.0 mm	24.6	m	3PE COATING
	CWR	PIP	M91AD3U	20	20	PPPSP0385	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.8 mm	47.3	m	3PE COATING
	CWR	PIP	M91AD3U	14	14	PPPSP0405	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.0 mm	169.3	m	3PE COATING
	CWR	PIP	M91AD3U	10	10	PPPSP0384	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 7.1 mm	361	m	3PE COATING
	CWR	PIP	M91AD3U	8	8	PPPSP0384	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 7.1 mm	30	m	3PE COATING
	CWR	PIP	M91AD3U	6	6	PPPSP0384	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 7.1 mm	40	m	3PE COATING
	CRW	PIP	M91AD3U	104	104	PPPSP1382	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 25.0 mm	430	m	3PE COATING
	CRW	PIP	M91AD3U	88	88	PPPSP0391	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 20.0 mm	600	m	3PE COATING
	EWV	PIP	M91AD3U	32	32	PPPSP0387	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWH, Ej=0.80, BE 10.0 mm	3517	m	3PE COATING
	EWV	PIP	M91AD3U	14	14	PPPSP0405	PIPE, GB/T 21835(1), GB/T 3091-Q235B, ERW, Ej=0.85, BE 8.0 mm	24	m	3PE COATING

	Code	Type	Spec	DN1 (in)	DN2 (in)	ItemCode	Description	QTY	Unit	Remark
	EWW	PIP	L93AD3U	56	56	PPPSP4658	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWL, Ej=1.0, BE 14.2 mm	600	m	3PE COATING
	EWW	PIP	L93AD3U	48	48	PPPSP4657	PIPE, GB/T 21835(1), SY/T 5037-Q235B, SAWL, Ej=1.0, BE 12.5 mm	360	m	3PE COATING