

GENERAL SPECIFICATION

Drilling & Wells

GS EP FP 334

Specification for Wells Screens Manufacturing
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02	12/2019	General revision - Covers all topics raised during Maersk Oil Gap Analysis
01	10/2015	Design, NDE and sub-contractor sections updates
00	01/2012	First Issue
Rev.	Date	Purpose of the revision

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1. Scope

This document defines requirements for Quality Assurance and Quality Control with respect to design, material, manufacturing, testing and final supply of wells screens equipment for the use within the Company.

Where applicable, the requirements in this documents are in addition to the minimum requirements and provisions of the referenced standards unless otherwise specified within this General Specification or the Company Purchase Order or Contract.

This General Specification applies to API wells sand-control screens. Memory-shaped screen products, expandable screens, and ceramic screens are not covered by this document.

2. Reference documents

The reference documents listed below form an integral part of this General Specification.

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External Documents

Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the effective date of this document.

Reference	Title
API SPEC 5CRA	Specification for Corrosion Resistant Alloy Seamless Tubes for Use as Casing, Tubing and Coupling Stock
API SPEC 5CT	Specification for Casing and Tubing
API SPEC 19SS	Sand Screens
API SPEC 20 SERIES	Supply Chain Management for Critical Materials and Processes used in Oil and Natural Gas Exploration and Production
API SPEC Q1	Specification for Quality Management System Requirements for Manufacturing Organizations for the Petroleum and Natural Gas Industry
ASME-BPVC-2017 Section II Part D	ASME Boiler and Pressure Vessel Code (BPVC), Section II - Materials - Part D: Properties (Customary)
ASME-BPVC-2019 Section IX	ASME Boiler and Pressure Vessel Code (BPVC), Section IX: Welding, Brazing and Fusing Qualifications
ASME-BPVC-2019 Section VIII, Division 1	Boiler and Pressure Vessel Code, Section VIII - Rules for Construction of Pressure Vessels – Division 1
ASNT SNT-TC-1A	Personnel Qualification and Certification in Nondestructive Testing
ASTM E165	Standard Practice for Liquid Penetrant Examination for General Industry
ISO 9712	Non-destructive testing - Qualification and certification of NDT personnel
ISO 10005	Quality management - Guidelines for quality plans
ISO 11960	Petroleum and Natural Gas Industries - Steel pipes for use as Casing or Tubing for wells
ISO 13678	Petroleum and natural gas industries - Evaluation and testing of thread compounds for use with casing, tubing, line pipe and drill stem elements
ISO 14001	Environmental management systems - Requirements with guidance for use
NACE MR 0175/ISO 15156	Petroleum and natural gas industries - Materials for use in H ₂ S-containing environments in oil and gas production

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Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published in the applicable yearly collection.

Reference	Title
GS EP FP 330	Specification for new seamless OCTG carbon & low alloy material Manufacturing
GS EP FP 331	Purchase from stock of Conductor Pipe and seamless OCTG in carbon, low alloy and corrosion-resistant material

3. Application

Well Sand-Control Screens supplied to Company under this General Specification shall be manufactured by a Company-approved Manufacturer. Approval is granted by the QAQC entity in D&W in HQ.

3.1 Waiver / Derogation

Any significant deviation from the requirements stipulated in this document shall be approved by the relevant HQ DSO Product Line, upon recommendation of the QAQC entity within D&W in HQ following the submission by the D&W entity of the subsidiary of a formal derogation request.

Should the equipment delivered by the Manufacturer not fulfill the requirements of this General Specification, and should the Manufacturer not be granted the derogation by the purchaser, then the Third-Party inspection representative will not accept the materials.

4. Glossary

BOM	Bill of Material
D&W	Drilling and Wells
FAT	Factory Acceptance Test
FMECA	Failure Mode, Effects and Criticality Analysis
FTA	Fault Tree Analysis
GRAL	General Rolling Action List: Continuous improvement process tracking system
GS	General Specification
HQ	Headquarters
ID	Internal Diameter
IQ-ALL	Integrity & Quality for ALL: Inspection and Vendor Management web application
NCR	Non-Conformance Report
NDE/NDT	Non-Destructive Examination / Non-Destructive Testing
OCTG	Oil Country Tubular Goods
OD	Outside Diameter

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PO	Purchase Order
PSL	Product Specification Level
PWHT	Post Welding Heat Treatment
QAQC	Quality Assurance & Quality Control
QCP	Quality Control Plan (also known as QP or ITP in some organizations)
QTC	Qualification Test Coupon
T&C	Threaded and Coupled
TPI	Third-Party Inspection

5. Purchase Requirements

The Purchaser should consult **the relevant Company standard** before selecting the contractor / supplier / manufacturer.

The contractor / supplier / manufacturer of well screens equipment shall be licensed to [API SPEC Q1](#) and [API SPEC 19SS](#).

When enquiring or placing orders for equipment to be manufactured in accordance with this Company specification, the Purchaser shall specify the following details as described in Section 5.1.

5.1 Requirements to be specified on Purchase Order / Enquiry

The following information, as a minimum, shall be described in the Purchase Order:

- I. Nominal Size (Bore)
- II. Rated Working pressure
- III. Temperature rating
- IV. Material Class
- V. Connection type (studded, bolted, weld neck, thread, etc.) with relevant details
- VI. Reference to this Company specification and relevant Company-approved quality plan with the given Vendor
- VII. Any already granted deviation from these general specification requirements
- VIII. Expected manufacturing Plant (informative only)
- IX. Quantity
- X. Delivery date and shipping instructions
- XI. Quality assurance requirements including contact details for inspection
- XII. Contact details (name + email of Vendor contact)

Depending on the type and planned operational use, the information below will be required:

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- I. Performance Requirements
- II. Sour service, [NACE MR 0175/ISO 15156](#), if applicable
- III. Electrical or, hydraulic or air feed-through connection if applicable
- IV. External Coating (paint)
- V. Drift (special if required)
- VI. Certification requirements

A copy of the Purchase Order shall be provided to Company QAQC entity in D&W at HQ and / or to Company affiliate QAQC entity (if any) for technical and quality review and TPI allocation.

5.2 Vendor Acknowledgement of the Purchase Order

Prior to the acknowledgement of the Purchase Order the Vendor shall:

- Ensure that the requirements from above Section 5.1 are fulfilled,
- Confirm that the manufacturing plant is qualified by Company for the ordered equipment.

If either of the above conditions cannot be fulfilled, the Vendor shall not acknowledge the Purchase Order and shall instead call for an amendment to the Company Purchaser.

Once the Purchase Order is acknowledged, the allocated Third Party Inspection Agency(ies) name(s) has(ve) to be communicated to the Vendor. If not done, the Vendor shall contact the Company QAQC entity in D&W in HQ and / or Company affiliate QAQC entity (if any), for clarification.

6. Quality Management Requirements

6.1 Quality Assurance

The selected contractor / supplier / manufacturer and / or its sub-contractor(s) / sub-supplier(s) shall be:

- able to demonstrate conformity and be auditable to [API SPEC Q1](#), [API SPEC 20 SERIES](#) and [ISO 14001](#).
- able to provide proof of license / certification to the API / ISO standards related to the equipment and materials to be delivered.
- auditable to ISO / API standards related to materials to be delivered

The requirements from this General Specification shall be followed as if it was an integral part of the PO. The PO shall specify the obligation to comply with this General Specification requirements.

6.1.1 Supplier Qualification

The selected contractor / supplier / manufacturer, as well as the manufacturing plant, shall be qualified by Company for the related equipment. If the manufacturing facility to which the Purchase Order is awarded is not qualified by Company, a qualification process has to be launched by Company's QAQC entity in D&W in HQ. Manufacturing shall not start prior to positive

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completion of the above qualification process or without specific mitigations duly approved by Company's QAQC in HQ. The Company QAQC entity in D&W in HQ and / or Company affiliate QAQC department (if any) reserves the right to conduct audits of suppliers in order to ensure the quality of the activity performed.

Should the manufacturing plant be deemed not suitable for Company production after the qualification process, the selected contractor / supplier / manufacturer shall either:

1. Close all corrective actions stemming from qualification audits and / or technical assessments in a timely manner before manufacturing commences in order to guarantee equipment integrity and adequate delivery time, OR
2. Propose an already Company-qualified alternative manufacturing route to insure delivery of equipment.

6.1.2 Sub-supplier Qualification

All subcontractors / sub-suppliers involved in manufacturing of COMPLETE assemblies items and equipment shall be QUALIFIED by Company.

All subcontractor / sub-suppliers involved in:

- Manufacturing of COMPLETE assemblies items and equipment.
- Material supply (forging and heat treatment facilities) of pressure containing parts.
- Pipe for pup joints (as per **GS EP FP 330** and / or **GS EP FP 331**).
- Control lines encapsulations.
- Welding.
- NDE/NDT.
- Assembly and sub-assembly, pressure testing and functional / stack-up test.
- Painting.

Shall be communicated to and accepted by the Company QAQC entity in D&W in HQ.

The Company QAQC entity in D&W in HQ reserves the right to audit any subcontractor / sub-supplier facility and / or inspect any equipment at any subcontractor / sub-supplier facility.

6.1.3 Sub-supplier Management

Any manufacturing subcontracted shall be the responsibility of the contractor / supplier / manufacturer who was awarded the contract / purchase order by Company. All dialogue if required between the contractor / supplier / manufacturer's subcontractor / sub-supplier and Company will be via the contractor / supplier / manufacturer.

The contractor / supplier / manufacturer is required to ensure compliance with this specification when ordering sub-assemblies or components from a sub-contractor / supplier / manufacturer.

6.2 Quality control

In all respects to manufacturing and testing, the contractor / supplier / manufacturer shall provide a Quality Control Plan (QCP) to Company for approval. Inside this QCP will be the