



Exploration & Production

GENERAL SPECIFICATION

Drilling & Wells

GS EP FP 334

Specification for Well screens Manufacturing

00	01/2012	First Issue
Rev.	Date	Notes

Owner: OPS/FP	Managing entity: OPS/FP
---------------	-------------------------



Contents

1. Scope	4
2. Reference documents.....	4
3. Quality Management requirements	5
3.1 Quality Assurance.....	5
3.2 Quality control.....	5
4. Contract Management.....	5
4.1 Project contract management	5
4.2 Purchase order management.....	5
4.3 Subcontract.....	6
5. Design & Product Qualification Requirements.....	6
5.1 General.....	6
5.2 Performance rating	7
5.3 Design verification.....	7
5.4 Design changes	8
5.5 Design validation.....	8
5.6 Design validation by scaling	8
6. Material.....	9
7. Manufacturing	9
8. Quality controls.....	9
8.1 Wire wrap and pre-pack screens slot size inspection	9
8.2 Mesh screens slot size inspection.....	9
8.3 NDE	9
9. Identification and marking.....	12
10. Protection	13
10.1 Protection during manufacture of equipment.....	13
10.2 Final protection	13
10.3 Protection of threads.....	13
11. Sub contracted items.....	14



12. Scope of Third Party Inspection	14
12.1 Third Party Inspection	14
12.2 Waiver / Derogation	14
13. Documentation requirements	14
13.1 Introduction	14
13.2 Product assembly drawing	14
13.3 Product Technical Data sheet	15
13.4 Delivery documentation.....	15
Bibliography.....	17



1. Scope

This document defines the requirements for Quality Assurance and Quality Control with respect to design, material, manufacturing, testing and final supply of non expandable well screens for the use within TOTAL.

2. Reference documents

The reference documents listed below form an integral part of this General Specification. Unless otherwise stipulated, the applicable version of these documents, including relevant appendices and supplements, is the latest revision published at the EFFECTIVE DATE of the CONTRACT.

Standards

Reference	Title
ISO 17824 :2009	Petroleum and natural gas industries – Downhole equipment – Sand screens
ISO TS 29001	Quality management system requirements for product & service Supply
ISO 14001	Environmental management systems — Requirements with guidance for use
NACE MR0175/ISO 15156	Material for use in H ₂ S containing environments in Oil & Gas Production
ASNT-SNT-TC-1A	Outlines for Qualification of Nondestructive Testing Personnel
ASME IX	Qualification Standard for Welding and Brazing Procedures, Welders, Brazers, and Welding and Brazing Operators
ISO 10005	Quality management systems - Guidelines for quality plans
ASTM E165	Standard Practice for Liquid Penetrant Examination for General Industry
ASME BPVC	Boiler And Pressure Vessel Code

Professional Documents

Reference	Title
API Q1	Quality management system requirements for product & service Supply

Regulations

Reference	Title
Not applicable	



Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
GS EP FP 330	Manufacturing Specification for new seamless OCTG carbon & low alloy material
GS EP FP 331	Seamless Carbon and low alloy OCTG Pipes purchased from stock

3. Quality Management requirements

3.1 Quality Assurance

The selected contractor/supplier/manufacture must be able to demonstrate conformity and be auditable to [ISO TS 29001](#), [API Q1](#), and [ISO 14001](#).

The selected contractor/supplier/manufacture and/or its Subcontractor(s)/Supplier(s) must be able to demonstrate conformity and be auditable to ISO/API standards related to materials to be delivered.

3.2 Quality control

In all respects to manufacturing and testing the contractor/supplier/manufacture shall provide a **Quality Control Plan** (QCP) to TOTAL for approval. Inside this QCP will be the agreed production / testing route and the third party inspection points for TOTAL. The QCP shall conform to [ISO 10005](#) and shall be submitted for approval prior any manufacturing.

4. Contract Management

4.1 Project contract management

At the time of tendering for a contract a flow diagram should be submitted for approval as part of the overall Quality management process.

4.2 Purchase order management

In the event of Direct Purchase Order award a flow diagram should be submitted for approval as



part of the overall Quality management process.

4.3 Subcontract

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

5. Design & Product Qualification Requirements

5.1 General

Design requirements shall include methods, assumptions and calculations, and shall include those criteria for size, test, working and operating pressures, materials, environment (temperature limits, chemical) and other pertinent requirements upon which the design is based. Design documentation shall be reviewed and verified by a qualified individual other than the individual who created the original design.

Equipments shall be manufactured to drawings and specifications that are substantially the same as those of the size, type and model of equipment which has passed the validation test.

The contractor/supplier/manufacture shall establish verified internal yield pressure, collapse pressure and minimum tensile strength, temperature limits, and rated working pressure, excluding end connections. The contractor/supplier/manufacture shall identify the critical component(s) of the product and the modes of stress. The contractor/supplier/manufacture shall calculate the stress level in the critical component(s) based upon the maximum loads in the design input requirements to determine those component(s) which are critically stressed. Critically stressed components are those which are stressed to 90% or greater of the minimum design yield strength of calculations, which shall include consideration of temperature limit effects and thermal cycles. Metal mechanical properties de-rating shall be in accordance with [ASME BVPC](#), Section II, Part D.

The design shall take into account the effects of pressure containment and pressure-induced loads. Specialized conditions, such as pressure testing with temporary test plugs, shall also be considered.

Component and subassembly identification and interchange ability shall be required within each contractor/supplier/manufacture's size, type and model, including working pressure rating of equipment. Additive dimension tolerances of components shall be such that proper operation of the equipment is assured. This requirement applies to supplier/manufacture assembled equipment and to replacement components or sub-assemblies.

The contractor/supplier/manufacture shall perform a **Failure Mode, Effects and Criticality Analysis (FMECA)** on the equipment in accordance with TOTAL requirements and with the relevant international standard.

FMECA shall be initiated as an integral part of the early design process (as soon as the concept is sufficiently detailed) and shall be periodically reviewed and updated to address any changes or deviations.

The objectives of FMECA shall be to:

- Identify simple failures modes and mechanisms that may lead to a fearful event.