

GENERAL SPECIFICATION

PIPELINES - RISERS

GS EP PLR 431

Real time radioscopy inspection
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01	10/2013	Revision after third party review of the specification
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Rev.	Date	Purpose of the revision

Owning entity: DSO/TEC	Managing entity: DSO/TEC/PLR
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1. Scope

This specification defines the Company's general requirements for inspection of seam or girth welds by real time radioscopy.

It applies to seamless pipes (SMLS), UOE/JCOE longitudinally welded pipes (SAWL) and spiral Submerged Arc Welded pipes in carbon steels grade L290M (X42M) up to Grade L485M (X70M) of [API SPEC 5L / ISO 3183](#) but also to duplex, super-duplex and clad pipes.

This Specification shall **always** be used in conjunction with a Project Particular Specification (PPS) detailing the additional tests and requirements or the possible modifications to the present specification, based on the particular design conditions of the Pipeline Project (see 4 of this specification).

No deviation from the requirements stated in the present specification shall be permitted unless prior written approval has been obtained from the HQ Pipeline and Riser department, the only authorized authority.

This specification is compliant with [DNV-OS-F101](#) requirements.

2. Reference documents

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

The order of precedence of the applicable documents shall be:

- The Purchase Order/Requisition
- The Project Particular Specification (PPS)
- The present General Specification
- The codes and standards in reference.

Applicable Codes and Standards which are to be used in conjunction with this specification are stated in paragraphs hereafter.

Unless otherwise specifically indicated in writing by the Company, the Supplier shall work in accordance with the requirements specified herein and the applicable requirements of the latest editions at date of Contract award of the referenced Codes and Standards, whenever requested in the present specification.

Where this specification states no overriding requirements, the referenced Codes and Standards shall apply in full.

Standards equivalent to those referred to herein shall not be substituted without the written approval of the Company. Approval of equivalent standards will not, in any way, remove responsibility from the Supplier to meet the requirements of the Standards referred to and amended herein, in the event of conflict.

The Supplier shall equip himself with copies of all the reference specifications referred to in this specification and shall make them readily available to all fabrication, testing and inspection personnel involved on the work.

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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 5L / ISO 3183	Specification for Line Pipe
ASTM E1255	Standard Practice for Radioscopy
ASTM E1411	Standard Practice for Qualification of Radioscopic Systems
ASTM E1416	Standard Test Method for Radioscopic Examination of Weldments
ASTM E1647	Standard Practice for Determining Contrast Sensitivity in Radioscopy
ASTM E2002	Standard Practice for Determining Total Image Unsharpness in Radiology
ASTM E2597	Standard Practice for Manufacturing Characterization of Digital Detector Arrays
DNV-OS-F101	Submarine pipeline systems
EN 12543-5	Non-destructive testing - Characteristics of focal spots in industrial X-ray systems for use in non-destructive testing - Part 5: Measurement of the effective focal spot size of mini and micro focus X-ray tubes
EN 13068 (All parts)	Non-destructive testing - Radioscopic testing - All parts
ISO 10893-7	Non-destructive testing of steel tubes - Part 7: Digital radiographic testing of the weld seam of welded steel tubes for the detection of imperfections
ISO 14001	Environmental management systems - Requirements with guidance for use
ISO 17636 (All parts)	Non-destructive testing of welds - Radiographic testing - All parts
ISO 19232 (Parts 1; 5)	Non-destructive testing - Image quality of radiographs - Parts 1; 5
ISO 6520-1	Welding and allied processes - Classification of geometric imperfections in metallic materials - Part 1: Fusion welding
ISO 9001	Quality management systems - Requirements
ISO 9712	Non-destructive testing - Qualification and certification of NDT personnel
ISO/TS 29001	Petroleum, petrochemical and natural gas industries - Sector-specific quality management systems - Requirements for product and service supply organizations

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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 PLR 205	Carbon steel, clad and lined pipe manufacturing for linepipe applications according to API SPEC 5L and DNV-OS-F101 (sweet and sour service, onshore and offshore)
GS EP PLR 425	Site welding of carbon steel pipelines (sweet and sour service, onshore and offshore) according to API STD 1104
GS EP PLR 426	Site welding of carbon steel and CRA pipelines (sweet and sour service, onshore and offshore) according to DNV-OS-F101

3. General

3.1 Definitions

Inspector	The Company's representatives or members from an Inspection Agency duly appointed by the Company and thus notified to the Supplier shall be referred to herein as the "Inspector".
MILL	The plants, mills, workshops, laboratories or other locations where the fabrication, inspection and testing of steel and pipes are to be performed complete or in part, shall be referred to herein as the "Mill".
Contract	The Purchase Order together with all material requisitions, specifications, etc., issued by the Company and/or purchaser and attached to the contract or the purchase order shall be referred to herein as the "Contract".
Approval	Authorization in writing given by the Company to the Supplier on a procedure or to proceed with the performance of a specific part of the work without releasing in any way the Supplier from any of its obligations to conform to the technical specifications, requisitions, etc., " <u>Approve</u> ", " <u>Approved</u> " and " <u>Approval</u> " shall be construed accordingly.
PPS	Used to designate the Project Particular Specification.
May	Used to indicate that a provision is optional.
Shall	Used to indicate that a provision is mandatory.
Should	Used to indicate that a provision is not mandatory but is recommended as good practice.

3.2 Quality Assurance/Quality Control

- The Supplier shall operate a Quality Assurance system in accordance with [ISO/TS 29001](#), [ISO 9001](#) and an environmental management system in accordance with [ISO 14001](#), approved by a recognized authority. The Quality Assurance Manual shall be submitted to Company.