

GENERAL SPECIFICATION

PIPELINES – RISERS

GS EP PLR 151

Design of steel catenary riser systems

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1. Scope

This document - which supplements the **GS EP PLR 100** - defines the minimum requirements for the structural detail design specific to carbon steel catenary riser systems operated from floating production systems (application on deep water field developments). The steel catenary systems include a simple catenary and a wave/lazy wave catenary riser systems

Applicability

This specification is limited to the design of carbon steel catenary riser in sweet service conditions.

Titanium, composite catenary risers or SCR with a piggy back system are not within the scope of this document.

2. Reference documents

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

External Documents

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

Reference	Title
API RP 2A-WSD	Planning, Designing, and Constructing Fixed Offshore Platforms-Working Stress Design
BS 7910	Guide on methods for assessing the acceptability of flaws in metallic structures
DNV-OS-F101	Submarine Pipeline Systems
DNV-OS-F201	Dynamic Risers
DNV-RP-F204	Riser Fatigue

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Reference	Title
GS EP GEO 701	Geotechnical Design Considerations for Soil-Pipeline Interaction
GS EP PLR 100	Design, fabrication and testing of submarine bonded flexible pipes
GS EP EXP 311	Plant integrity - Minimum inspection requirements
GS EP SAF 021	Layout
GS EP SAF 261	Emergency Shutdown and Emergency Depressurisation (ESD & EDP)

3. General

3.1 Nomenclature and abbreviations

FPS	Floating Production Support
LF	Low Frequency
SCR	Steel Catenary Riser
TDA	Touch Down Area
TDP	Touch Down Point
TDZ	Touch Down Zone
TLP	Tension Leg Platform
VIV	Vortex Induced Vibration
WF	Wave Frequency
WSD	Working Stress Design

4. Design philosophy

4.1 Design code

The basic design code is the [DNV-OS-F201](#) with reference to [DNV-OS-F101](#) for material, testing and installation issues.

[DNV-RP-F204](#) shall be used for fatigue issues.

Adequate supporting documentation and validation of computational methodology by physical testing shall be supplied, demonstrating adherence to [DNV-OS-F201](#) and [DNV-OS-F101](#) requirements.