

GENERAL SPECIFICATION

CORROSION

GS EP COR 103

Design of cathodic protection of offshore floating structures
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1. Scope

This document defines the minimum requirements for the design, calculation methods, selection of equipment and alloy materials, installation and commissioning of cathodic protection of floating structures (FPSO, buoys, etc). Both external cathodic protection of the structures and internal protection of integrated tanks such as ballast, cargo, slop tanks and process tanks are covered.

Except if formally accepted in a written form by Company, cathodic protection shall be implemented using galvanic (or sacrificial) anodes.

Galvanic and impressed current cathodic protection systems are defined in the present document.

This document also defines the cathodic protection monitoring systems, gives the rules for anode distribution and the requirements to avoid negative influence induced on metallic structures by high potential alloy anodes (as magnesium alloy) or impressed current anodes.

The requirements of the present document are superseding those of the reference documents, which have to be used when necessary for further information. Recommendations from EN standards related to floating offshore structures shall be followed when they are not in conflict with those of the present document. Other recommendations and especially those from [DNV-RP-B401](#) have also to be used in complement.

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 supplements, is the latest revision published at the effective date of this document.

Reference	Title
DNV-RP-B101	Corrosion Protection of Floating Protection and Storage Units
DNV-RP-B401	Cathodic Protection Design
EN 12473	General principles of cathodic protection in sea water
EN 13173	Cathodic protection for steel offshore floating structures
IACS	Requirements concerning FIRE PROTECTION
ISO 15589-2	Petroleum and natural gas industries - Cathodic protection for pipeline transportation systems – Part 2 Offshore Pipelines

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Total General Specifications

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 COR 100	Design of cathodic protection of offshore structures
GS EP COR 101	Design of internal cathodic protection of equipment and storage tanks
GS EP COR 102	Design of cathodic protection of sealine by sacrificial anodes
GS EP COR 201	Supply of sacrificial anodes
GS EP COR 202	Monitoring systems for cathodic protection of offshore structures
GS EP COR 351	External protection of structures and equipment by painting - Floating structures
GS EP COR 501	Control of cathodic protection of submerged fixed structures
GS EP SPS 029	Metallic Materials for Subsea Production Facilities
GS EP STR 631	CALM buoy terminals
GS EP STR 652	F(P)SO - Steel hull design requirements

3. Qualification and Certification of Cathodic Protection specialists responsible for the design

Design of cathodic protection systems to be installed on floating structures shall be carried out exclusively by competent specialised personnel. The qualification of each of the specialists working on such design shall be demonstrated to Company before commencement of the job.

The requirement for personnel qualification is given in [GS EP COR 100](#).

4. External cathodic protection of floating structure

4.1 Preliminary assumptions

4.1.1 Definition of zones

The zones of the floating structures are defined in [EN 13173](#). Reference can also be made to [GS EP STR 652](#) for F(P)SO's and to [GS EP STR 631](#) for buoys.

4.1.2 Risers - Insulating joints - Appurtenances

Risers of sea lines are not electrically insulated from the floating unit. An exception may be when either the pipelines or the floating unit are cathodically protected by impressed current. In this case, a Project Particular Specification shall be established specifying the need for and the nature of the insulating joint and its location.