



Exploration & Production

GENERAL SPECIFICATION

CORROSION

GS EP COR 201

Supply of sacrificial anodes

07	01/2012	General revision
06	01/2011	Info about bracelet anodes deleted
05	10/2009	Added requirement for maximum longitudinal bending
04	10/2008	Specification becomes limited to EP
00	02/2001	First issue
Rev.	Date	Notes

Owner: DEV/TEC

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1. Scope

The document defines the requirements regarding quality, inspection and guarantees to be met for the supply of sacrificial anodes for cathodic protection of offshore structures and/or containers.

The structures concerned are fixed structures (platforms, pipes, pile dolphins, landing stages, etc.), floating structures (buoys, barges, storage ships, etc.), and/or containers (tanks, vessels, exchangers).

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
ASTM D 1141	Specification for substitute ocean water
EN 10204	Metallic products - Types of inspection documents
ISO 8501-1	Preparation of steel substrates before application of paints and related products - Visual assessment of surface cleanliness - Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings

Professional Documents

Reference	Title
DNV-RP-B401	Cathodic Protection Design
NACE RP0387	Metallurgical and inspection requirements for cast galvanic anodes for offshore application
NACE TM0190	Impressed current test method for laboratory testing of aluminium anodes

Regulations

Reference	Title
Not applicable	



Codes

Reference	Title
Not applicable	

Other documents

Reference	Title
Not applicable	

Total General Specifications

Reference	Title
GS EP COR 401	Installation of anodes on submerged pipelines

3. Sacrificial alloys

3.1 Chemical composition

The type of sacrificial alloy is specified in the Job Specification enclosed with the invitation to tender.

The sacrificial alloys that shall be used are as follows, the compositions are given in mass percentage and show the acceptable limits of alloying components and pollutions compared to the base metal:

3.1.1 Magnesium alloy

3.1.1.1 Type M1

Mn	Al	Zn	Fe	Cu	Si	Pb	Ni	Others
0.25 min	5-7	2-4	0.005 max	0.08 max	0.3 max	0.03 max	0.003 max	0.3 max

3.1.1.2 Type M2

Mn	Al	Zn	Fe	Cu	Si	Pb	Ni	Others
0.5-1.5	0.05 max	0.03 max	0.03 max	0.02 max	0.05 max	0.01 max	0.002 max	--