

**SLOVENSKI STANDARD
oSIST prEN 17243:2018**

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Katodna zaščita notranjih površin kovinskih rezervoarjev, konstrukcij, opreme in cevovodov, ki vsebujejo morsko vodo

Cathodic protection of internal surfaces of metallic tanks, structures, equipment, and piping containing seawater

Kathodischer Schutz der inneren Oberflächen von metallischen Tanks, Strukturen, Ausrüstung und Rohrleitungen die Meerwasser enthalten

Protection cathodique des surfaces internes des réservoirs, ouvrages, équipements et tuyauteries métalliques contenant de l'eau de mer

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structures, equipment, and piping containing seawater**

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metallischen Tanks, Strukturen, Ausrüstung und
Rohrleitungen die Meerwasser enthalten

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European foreword

This document (prEN 17243:2018) has been prepared by Technical Committee CEN/TC 219 “Cathodic protection”, the secretariat of which is held by BSI.

This document is currently submitted to the CEN Enquiry.

Introduction

Metallic structures containing seawater or brackish waters are exposed to the risk of corrosion. Even when a coating is applied to reduce this risk, cathodic protection is usually used to ensure corrosion control during the design lifetime of the structure. This is especially important in the presence of galvanic couples between various metals and alloys, because corrosion is then concentrated to the less noble material.

Cathodic protection works by supplying sufficient direct current to the internal surface of the structures in contact with water in order to change the steel to electrolyte potential to values where the corrosion rate is insignificant.

The general principles and theoretical aspects of cathodic protection in seawater are detailed in EN 12473.

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1 Scope

This document specifies the requirements and recommendations for cathodic protection systems applied to the internal surfaces of metallic tanks, structures, equipment, and piping containing raw or treated seawater or brackish waters, to provide an efficient protection from corrosion.

Cathodic protection inside fresh water systems is excluded from this document. This is covered by EN 12499.

NOTE EN 12499 covers internal cathodic protection for any kind of waters, including general aspects for seawater; but excluding industrial cooling water systems. This document specifically details applications in seawater and brackish waters.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 12473, *General principles of cathodic protection in seawater*

EN 12496, *Galvanic anodes for cathodic protection in seawater and saline mud*

EN 12499, *Internal cathodic protection of metallic structures*

EN 13509, *Cathodic protection measurement techniques*

EN ISO 8044, *Corrosion of metals and alloys - Basic terms and definitions (ISO 8044)*

EN ISO 9606-1, *Qualification testing of welders - Fusion welding - Part 1: Steels (ISO 9606-1)*

EN ISO 15607, *Specification and qualification of welding procedures for metallic materials - General rules (ISO 15607)*

EN ISO 15609-1, *Specification and qualification of welding procedures for metallic materials - Welding procedure specification - Part 1: Arc welding (ISO 15609-1)*

3 Terms and definitions

For the purpose of this document, the terms and definitions given in EN ISO 8044 and EN 12473 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

3.1

anode redundancy factor

multiplier applied to the theoretical number of anodes to allow for anode damage and failures for ensuring that protection will continue to be achieved when one or more anodes are lost, without modifying the unit weight of anodes