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CATHODIC PROTECTION OF SUBMARINE PIPELINES

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English version

Cathodic protection of submarine pipelines

Protection cathodique des canalisations sous marines

Katodischer Korrosionsschutz für unterseeische Rohrleitungen

This European Standard was approved by CEN on 7 March 2001.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
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Foreword

This European Standard has been prepared by Technical Committee CEN/TC 219 "Cathodic Protection", the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by October 2001, and conflicting national standards shall be withdrawn at the latest by October 2001.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

Cathodic protection, together with a corrosion protection coating, is usually applied to protect the external surface of submarine pipelines from corrosion due to sea water or saline mud.

The corrosion protection coating is applied on the external surface of the pipeline to insulate the steel surface from the aggressive environment into which the pipeline is surrounded.

The cathodic protection ensures the protection of the areas of the pipeline which are directly exposed to the aggressive marine environment due to damage or defects in the coating.

The cathodic protection supplies sufficient direct current to the external surfaces of the pipeline to reduce the pipe to electrolyte potential to values where there is insignificant corrosion.

The general principles of cathodic protection are detailed in EN 12473.

1 Scope

This European Standard establishes the general criteria and recommendations for the design, installation, monitoring and commissioning of the cathodic protection systems for submarine pipelines.

This standard is applicable to all grades of carbon manganese steel and to stainless steel pipelines; it covers all types of sea water and seabed environments encountered in submerged conditions.

The cathodic protection of short lengths of submarine pipelines and their branches, which are directly connected to cathodically protected onshore pipelines, are outside of the scope of this standard (see EN 12954:2001).

The cathodic protection of risers is included in this standard only if they are insulated from the supporting structure. The cathodic protection of the risers in direct electrical contact with the supporting structure is included in EN 12495.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 12473:2000, *General principles of cathodic protection in sea water.*

EN 12495, *Cathodic protection for fixed steel offshore structures.*

prEN 12496:1996, *Sacrificial anodes for cathodic protection in sea water.*

EN 12954:2001, *Cathodic protection of buried or immersed metallic structures - General principles.*

EN ISO 8044, *Corrosion of metals and alloys – Basic terms and definitions (ISO 8044:1999).*

3 Terms and definitions

For the purposes of this European Standard the terms and definitions in EN ISO 8044 and the following apply: