

Cathodic protection - External organic coatings for the corrosion protection of buried or immersed steel pipelines used in conjunction with cathodic protection - Tapes and shrinkable materials

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EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 12068:2001 sisaldab Euroopa standardi EN 12068:1998 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 18.06.2001 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 12068:2001 consists of the English text of the European standard EN 12068:1998.</p> <p>This document is endorsed on 18.06.2001 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala: This standard specifies the functional requirements and test methods for external organic coatings based on tapes or shrinkable materials to be used for corrosion protection of buried and immersed steel pipelines in conjunction with cathodic protection.</p>	<p>Scope: This standard specifies the functional requirements and test methods for external organic coatings based on tapes or shrinkable materials to be used for corrosion protection of buried and immersed steel pipelines in conjunction with cathodic protection.</p>
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ICS 23.040.99, 25.220.60

Võtmesõnad: adhesive tapes, buried pipes, cathodic protection, conformity tests, corrosion prevention, electrochemical corrosion, metal protection, operating requirements, organic coatings, quality, specifications, steel tubes, submerged construction, tests

ICS 23.040.99; 25.220.60

Descriptors: Cathodic protection, organic coatings, steel pipelines.

English version

Cathodic protection

**External organic coatings for the corrosion protection
of buried or immersed steel pipelines used in
conjunction with cathodic protection**

Tapes and shrinkable materials

Protection cathodique – Revêtements organiques extérieurs pour la protection contre la corrosion de tubes en acier enterrés ou immergés en conjonction avec la protection cathodique – Bandes et matériaux rétractables

Kathodischer Korrosionsschutz – Organische Umhüllungen für den Korrosionsschutz von in Böden und Wässern verlegten Stahlrohrleitungen im Zusammenwirken mit kathodischem Korrosionsschutz – Bänder und schrumpfende Materialien

This European Standard was approved by CEN on 1998-07-18.

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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

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

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

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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 February 1999, and conflicting national standards shall be withdrawn at the latest by February 1999.

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

This European Standard gives requirements for organic coatings based on tapes or shrinkable materials for corrosion protection of buried or immersed pipelines, used in conjunction with cathodic protection.

This European Standard has been taken over from WG 6 of CEN/TC 262/SC 2 "Cathodic Protection", the secretariat of which is held by DIN. There is a liaison between CEN/TC 262/SC 2/WG 6 and ECISS/TC 29/SC 4, to harmonize the standards prepared in both committees.

This is primarily a functional standard giving the requirements for the material properties necessary to ensure the function of the coating.

To ensure compatibility of the organic coatings with cathodically protected pipelines, tests of cathodic disbonding resistance at continuous operating temperature are specified. Test requirements are given for 23 °C but due to limited data available to WG 6 it is intended that values for higher temperatures will be established after five years.

Attention is drawn to the fact that degradation of the properties of a coating may occur following attack from microbiological matter. Work is to be undertaken in Europe to produce a suitable test method but this may take several years. It is considered that a burial in soil is the only satisfactory test method. The described test method is proposed for the interim period of five years.

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1 Scope

This standard specifies the functional requirements and test methods for external organic coatings based on tapes or shrinkable materials to be used for corrosion protection of buried and immersed steel pipelines in conjunction with cathodic protection.

It classifies coatings by increasing mechanical resistance and operating temperatures. Coatings for special installation conditions are also considered. A comprehensive classification of coatings in relation to functional requirements is defined. Tapes and shrinkable materials which meet the requirements of these classes can belong to various types defined in this standard.

This European standard is not applicable to special applications in off-shore and stress loads caused by frequent temperature changes.

Specifications of fillers are outside the scope of this European standard.

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.

prEN 1427

Petroleum products – Bitumen and bituminous binders – Determination of the softening point – Ring and ball method

EN ISO 527-3:1995

Plastics – Determination of tensile properties – Part 3: Test conditions for films and sheets (ISO/DIS 527-3:1995)

EN ISO 8503-2

Preparation of steel substrates before application of paints and related products – Surface roughness characteristics of blast-cleaned steel substrates – Part 2: Method for the grading of surface profile of abrasive blast-cleaned steel – Comparator procedure (ISO 8503-2:1988)

EN ISO 9000-1

Quality management and quality assurance standards – Guidelines for selection and use

EN ISO 9000-2

Quality management and quality assurance standards – Generic guidelines for the application of ISO 9001, ISO 9002 and ISO 9003

EN ISO 9001

Quality systems – Model for quality assurance in design/development, production, installation and servicing

EN ISO 9002

Quality systems – Model for quality assurance in production, installation and servicing

EN ISO 9003

Quality systems – Model for quality assurance in final inspection and test

ISO/DIS 188

Rubber, vulcanised – Accelerated ageing and heat resistance tests

ISO 1523

Paints, varnishes, petroleum and related products – Determination of flashpoint – Closed cup equilibrium method

ISO 2808

Paints and varnishes – Determination of film thickness

ISO 2811

Paints and varnishes – Determination of density

ISO 3251

Paints and varnishes – Determination of non-volatile matter of paints, varnishes and binders for paints and varnishes

ISO 3303:1990

Rubber- or plastics-coated fabrics – Determination of bursting strength

ISO 3801

Textiles – Woven fabrics – Determination of mass per unit length and mass per unit area

ISO 4591

Plastics – Film and sheeting – Determination of average thickness of a sample, and average thickness and yield of a roll, by gravimetric techniques (gravimetric thickness)

ISO 4593

Plastics – Film and sheeting – Determination of thickness by mechanical scanning

ISO 4626

Volatile organic liquids – Determination of boiling range

ISO 4892-1

Plastics – Methods of exposure to laboratory light sources – Part 1: General guidance

ISO 4892-2

Plastics – Methods of exposure to laboratory light sources – Part 2: Xenon-arc sources

ISO 5893

Rubber and plastics test equipment – Tensile, flexural and compression types (constant rate of traverse) – Description

ISO 7254

Paints and varnishes – Assessment of natural spreading rate – Brush application

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

3 Definitions

For the purposes of this standard, the following definitions apply :

3.1 external organic coatings

3.1.1 coating

One or several layers of materials applied to the pipe in the form of tapes (spiral or "cigarette" wrapping), shrinkable materials (as delivered or constituted just prior to application) or repair materials.

Coatings can consist of one or more basic types of coating materials as described in 3.2.

Primer(s) and/or filler(s) can be used in conjunction with these coating materials to improve adherence or facilitate application.

3.1.2. inner layer

Coating primarily constituted to protect the pipe surface from corrosion damage.

3.1.3 outer layer

Coating primarily constituted to protect the inner layer from mechanical stresses.