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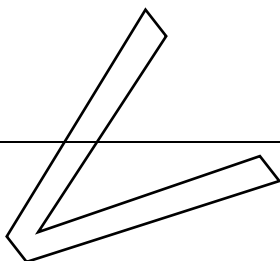
# NEN-EN 14919-1

Petroleum and natural gas industries -  
Cathodic protection of pipeline  
transportation systems - Part 1: On-land  
pipelines (ISO 15589-1:2003,MOD)

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English version

**Petroleum and natural gas industries - Cathodic protection of pipeline transportation systems - Part 1: On-land pipelines (ISO 15589-1:2003 modified)**

Industries du pétrole et du gaz naturel - Protection cathodique des systèmes de transport par conduites - Partie 1 : Conduites terrestres (ISO 15589-1:2003 modifiée)

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## **Explanatory Note**

ISO 15589-1:2003, developed within ISO/TC 67 SC 2, has been taken over as a European Standard prEN 14919-1 (ISO 15589-1:2003 modified).

The scope of ISO/TC 67/SC 2 is pipeline transportation systems for the petroleum and natural gas industries without exclusions. However in CEN, the scopes of CEN/TC 12 and CEN/TC 234 overlapped until 1995. This scope overlap caused problems for the parallel procedure for the above-mentioned items. The conflict in scope was resolved when both the CEN/Technical Committees and the CEN/BT took the following resolution :

**Resolution BT 38/1995:**

**Subject : Revised scope of CEN/TC 12**

**“BT endorses the conclusions of the coordination meeting between CEN/TC 12 “Materials, equipment and offshore structures for petroleum and natural gas industries” and CEN/TC 234 “Gas supply” and modifies the CEN/TC 12 scope, to read :**

**“Standardization of the materials, equipment and offshore structures used in drilling, production, refining and the transport by pipelines of petroleum and natural gas, excluding on-land supply systems used by the gas supply industry and those aspects of offshore structures covered by IMO requirement (ISO/TC 8).**

**The standardization is to be achieved wherever possible by the adoption of ISO Standards.”**

Resulting from Resolution BT 38/1995, "gas supply on land" has been excluded from the scope of ISO 15589-1:2003 for the European adoption by CEN/TC 12.

Equivalence with European Standards is provided in annex ZA.

## Foreword

The text of ISO 15589-1:2003 has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" of the International Organization for Standardization (ISO) and has been taken over as prEN 14919-1:2004 by Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries", the secretariat of which is held by AFNOR.

This document is currently submitted to the Unique Acceptance Procedure.

Annexes A, B and ZA are normative. Annexes C and D are informative.

This document includes a Bibliography.

ISO 15589-1 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, Subcommittee SC 2, *Pipeline transportation systems*.

PrEN 14919-1 consists of the following parts, under the general title *Petroleum and natural gas industries — Cathodic protection of pipeline transportation systems* :

- Part 1: *On-land pipelines*
- Part 2 : *Offshore pipelines*

Preview  
prEN 14919-1

## Introduction

Pipeline cathodic protection is achieved by the supply of sufficient direct current to the external pipe surface, so that the steel-to-electrolyte potential is lowered to values at which external corrosion is reduced to an insignificant rate.

Cathodic protection is normally used in combination with a suitable protective coating system to protect the external surfaces of steel pipelines from corrosion.

External corrosion control in general is covered by ISO 13623.

Users of this part of prEN 14919-1 should be aware that further or differing requirements may be needed for individual applications. This part of prEN 14919-1 is not intended to inhibit alternative equipment or engineering solutions to be used for the individual application. This may be particularly applicable where there is innovative or developing technology. Where an alternative is offered, any variations from this part of prEN 14919-1 should be identified.

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## 1 Scope

This part of prEN 14919-1 specifies requirements and gives recommendations for the pre-installation surveys, design, materials, equipment, fabrication, installation, commissioning, operation, inspection and maintenance of cathodic protection systems for on-land pipelines, as defined in ISO 13623, for the petroleum and natural gas industries.

This part of prEN 14919-1 is applicable to buried carbon steel and stainless steel pipelines on land. It can also apply to landfalls of offshore pipeline sections protected by onshore-based cathodic protection installations.

This part of prEN 14919-1 is also applicable to retrofits, modifications and repairs made to existing pipeline systems.

**NOTE** Special conditions sometimes exist where cathodic protection is ineffective or only partially effective. Such conditions can include elevated temperatures, disbanded coatings, thermal-insulating coatings, shielding, bacterial attack and unusual contaminants in the electrolyte.

## 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).

ISO 8044, *Corrosion of metals and alloys — Basic terms and definitions.*

ISO 13623, *Petroleum and natural gas industries — Pipeline transportation systems.*

ISO 13847, *Petroleum and natural gas industries — Pipeline transportation systems — Welding of pipelines.*

ASTM G 97<sup>1)</sup>, *Standard test method for laboratory evaluation of magnesium sacrificial anode test specimens for underground applications.*

## 3 Terms and definitions

For the purposes of this European Standard, the following terms and definitions given in ISO 8044 and the following apply.

### 3.1

#### **anode backfill**

material with a low resistivity, which may be moisture-retaining, immediately surrounding a buried anode, for the purpose of decreasing the effective resistance between the anode and the electrolyte and to prevent anode polarization

### 3.2

#### **bond**

metal conductor, usually copper, connecting two points on the same or on different structures, usually with the intention of providing electrical continuity between the points

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1) American Society for Testing and Materials, 100 Barr Harbour Drive, West Conshohocken, PA 19428-2959, USA.

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