



National Standards Authority of Ireland

STANDARD

I.S. EN 13636:2004

ICS 23.020.10
77.060

National Standards
Authority of Ireland
Dublin 9
Ireland

Tel: (01) 807 3800
Fax: (01) 807 3838

**CATHODIC PROTECTION OF BURIED
METALLIC TANKS AND RELATED PIPING**

*This Irish Standard was
published under the
authority of the National
Standards Authority of
Ireland
and comes into effect on:
October 26, 2004*

**NO COPYING WITHOUT NSAI
PERMISSION EXCEPT AS
PERMITTED BY COPYRIGHT
LAW**

© NSAI 2004

Price Code M

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

EN 13636

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2004

ICS 23.020.10; 77.060

English version

Cathodic protection of buried metallic tanks and related piping

Protection cathodique des réservoirs métalliques enterrés
et conduites associées

Kathodischer Korrosionsschutz von unterirdischen
metallinen Tankanlagen und zugehörigen Rohrleitungen

This European Standard was approved by CEN on 3 November 2003.

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.

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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Contents

Page

Foreword	5
1 Scope.....	6
2 Normative references	6
3 Terms and definitions.....	8
4 Criteria for cathodic protection	9
5 Prerequisites for the application of cathodic protection	9
5.1 General	9
5.2 Electrical continuity	10
5.3 Electrical separation	10
5.4 External coating	10
6 Base data for design	11
6.1 General.....	11
6.2 Neighbouring structures	11
6.3 Soil environment	11
6.4 Tank and piping data	11
6.4.1 General.....	11
6.4.2 Stored medium	12
7 Design and prerequisites	12
7.1 Structure materials	12
7.2 Electrical separation.....	13
7.2.1 General.....	13
7.2.2 Isolating devices	13
7.2.3 Temporary connections	13
7.2.4 Permanently connected electrical equipment	13
7.3 Explosion hazard prevention	14
7.3.1 General.....	14
7.3.2 Electrical equipment installation.....	14
7.3.3 Isolating joints.....	14
7.4 Other equipment	15
7.4.1 Test station	15
7.4.2 Coupons.....	16
7.4.3 Mechanical connections including flanges.....	16
7.4.4 Sleeve pipe	16
7.4.5 Wall entries	16
7.4.6 Drainage station	16
7.4.7 Local earthing systems	16
7.5 Galvanic anode systems	16
7.5.1 General.....	16
7.5.2 Materials.....	17
7.5.3 Location	17
7.5.4 Connection of anodes to the structure.....	17
7.6 Impressed current systems	17
7.6.1 General.....	17
7.6.2 Components	17
7.7 Cables.....	18
7.8 Interference.....	19
8 Installation of cathodic protection systems.....	19
8.1 General.....	19

8.2	Installation of cables.....	20
8.2.1	General.....	20
8.2.2	Cable connections to structures.....	20
8.3	Installation of structures to be protected.....	21
8.3.1	Buried structures.....	21
8.3.2	Above-ground structures.....	21
8.3.3	Isolating joints.....	21
8.4	Anodes.....	22
8.4.1	General.....	22
8.4.2	Galvanic anodes.....	22
8.4.3	Impressed current anodes.....	22
8.5	Impressed current station.....	23
8.5.1	Location.....	23
8.5.2	Electrical installation.....	23
8.6	Test stations, measuring points and coupons.....	23
8.7	Bondings and drainage stations.....	23
8.8	Labelling.....	23
8.9	Installation checks.....	24
8.10	As-built documentation.....	24
9	Commissioning.....	24
9.1	Preliminary checking.....	24
9.2	Start-up.....	25
9.3	Verification of the cathodic protection effectiveness.....	25
9.4	Determination of relevant measuring points.....	25
9.5	Commissioning documents.....	26
10	Inspection and maintenance.....	26
10.1	General.....	26
10.2	Inspection.....	26
10.2.1	General.....	26
10.2.2	Functional checks of equipment.....	27
10.2.3	Structure measurements.....	27
10.2.4	Inspection intervals.....	27
10.2.5	Inspection report.....	29
10.3	Maintenance.....	29
10.3.1	Cathodic protection equipment.....	29
10.3.2	Instrumentation.....	29
Annex A	(informative) Electrical separation between the structure to be cathodically protected and the general earthing system.....	30
A.1	Isolation of electrical equipment.....	30
A.2	Electrical equipment of protection class II or III (double isolation).....	31
A.3	Fault current breaker with local earthing system.....	32
A.4	Isolating transformer.....	33
A.5	Example with d.c. decoupling unit.....	34
Annex B	(informative) Groundbed data.....	35
B.1	General considerations.....	35
B.2	Type of groundbed.....	35
B.2.1	General.....	35
B.2.2	Remote located groundbed.....	35
B.2.3	Close located groundbed.....	35
B.3	Anode type.....	36
B.3.1	High-silicon cast iron anodes.....	36
B.3.2	Mixed-metal oxide anodes.....	37
Annex C	(informative) Extract of pr EN 50162.....	38
Annex D	(informative) Determination of inspection interval.....	39
D.1	General.....	39
D.2	Complexity of the cathodic protection system.....	39

EN 13636:2004 (E)

D.3	Coating imperfections	39
D.4	Environmental conditions	40
D.5	Susceptibility to damage by lightning or mechanical impact	41
D.6	Risk of personal injury, environmental pollution or damage to property that could be caused by leakage of stored medium.....	41
	Bibliography	42

This is a free preview. Purchase the entire publication at the link below:

[Product Page](#)

-
- [Looking for additional Standards? Visit Intertek Inform Infostore](#)
 - [Learn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation](#)
-