



National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 12838:2000

ICS 75.200

National Standards
Authority of Ireland
Dublin 9
Ireland

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

**INSTALLATIONS AND EQUIPMENT FOR
LIQUEFIED NATURAL GAS- SUITABILITY
TESTING OF LNG SAMPLING SYSTEMS**

*This Irish Standard was
published under the
authority of the National
Standards Authority of
Ireland
and comes into effect on:
June 9, 2000*

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

© NSAI 2000

Price Code K

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

EN 12838

NORME EUROPÉENNE

EUROPÄISCHE NORM

January 2000

ICS 75.200

English version

Installations and equipment for liquefied natural gas - Suitability testing of LNG sampling systems

Installations et équipements relatifs au gaz naturel liquéfié -
Essais d'aptitude à l'emploi des systèmes
d'échantillonnage du GNL

Anlagen und Ausrüstung für Flüssigerdgas -
Eignungsprüfung von Flüssigerdgas-Probenahmesystemen

This European Standard was approved by CEN on 3 December 1999.

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, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.



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

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Contents

Foreword.....	4
1 Scope	5
2 Normative references	5
3 Terms and definitions.....	5
4 Description of a continuous LNG sampling system	6
5 Description of a discontinuous LNG sampling system	6
6 Characteristics of the test rig	6
6.1 Description of the test rig	6
6.2 Measurement required	7
7 Suitability tests.....	7
7.1 General requirements of test performance	7
7.2 Operating procedure	8
7.3 Calculation of suitability criteria for the tested sampling system	8
8 Suitability criteria for the LNG sampling system.....	9
9 Test report	10
Annex A (informative) Continuous LNG sampling system	11
Annex B (informative) Discontinuous LNG sampling system	12
Annex C (informative) Thermodynamic conditions for the transformation of LNG into natural gas	13
C.1 General remarks.....	13
C.2 Example of characteristic points.....	14
Annex D (normative) Test rig	15
Annex E (normative) Means required to evaluate the test rig	16
E.1 General remarks.....	16
E.2 Measuring devices.....	16
E.3 Layout of measuring devices in test rig.....	16
Annex F (normative) Means required to evaluate a continuous LNG sampling system	18
F.1 General remarks.....	18
F.2 Measuring devices.....	18
F.3 Layout of measuring devices in the tested sampling system.....	18
Annex G (normative) Means required to evaluate a discontinuous LNG sampling system	20
G.1 General remarks.....	20
G.2 Measuring devices.....	20
G.3 Layout of measuring devices in the tested sampling system.....	20
Annex H (normative) Method of calculation of the accuracy of the test rig	22
H.1 Mean values of physical properties derived from the analysis of the reference gas	22
H.2 Calculation of the relationship of the physical property with time of the reference gas	22
H.3 Mean value of a physical property of the reference gas.....	22
H.4 Random error on a value of the reference gas	22
H.5 Random error on all values of the reference gas	23
H.6 Example of calculation	23
Annex J (normative) Method of calculation of the accuracy of a continuous LNG sampling system	25
J.1 Deviation in relation to reference gas, of the physical property X derived from gas analyses obtained with the tested sampling system	25
J.2 Random error of the tested sampling system	25
J.3 Systematic error of the tested sampling system.....	25
J.4 Statistical test on systematic error	25
J.5 Example of calculation	26

Annex K (normative)	Method of calculation of the accuracy of a discontinuous LNG sampling system	28
K.1	Calculation of the regression equation of the reference gas.....	28
K.2	Deviation of physical property X from regression equation	28
K.3	Random error of the tested sampling system	28
K.4	Systematic error of the tested sampling system.....	29
K.5	Statistical test on systematic error	29
K.6	Example of calculation	30

Foreword

This European Standard has been prepared by Technical Committee CEN/TC 282 "Installation and equipment for LNG", the secretariat of which is held by AFNOR.

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 July 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

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.

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](#)
-