



**NSAI**  
Standards

Irish Standard  
I.S. EN 1473:2016

# Installation and equipment for liquefied natural gas - Design of onshore installations

**I.S. EN 1473:2016**

*Incorporating amendments/corrigenda/National Annexes issued since publication:*

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## National Foreword

I.S. EN 1473:2016 is the adopted Irish version of the European Document EN 1473:2016, Installation and equipment for liquefied natural gas - Design of onshore installations

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EUROPEAN STANDARD

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May 2016

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English Version

## Installation and equipment for liquefied natural gas - Design of onshore installations

Installations et équipements de gaz naturel liquéfié -  
Conception des installations terrestres

Anlagen und Ausrüstung für Flüssigerdgas - Auslegung  
von landseitigen Anlagen

This European Standard was approved by CEN on 4 March 2016.

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 CEN-CENELEC Management Centre or to any CEN member.

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<b>Contents</b>	<b>Page</b>
European foreword.....	7
Introduction .....	8
1 Scope.....	9
2 Normative references.....	9
3 Terms and definitions .....	13
4 Safety and environment.....	18
4.1 General.....	18
4.2 Environmental impact.....	19
4.3 Safety general .....	20
4.4 Hazard assessment.....	24
4.5 Safety engineering during design and construction.....	30
4.6 Safety during operation .....	33
5 Jetties and marine facilities.....	34
5.1 General.....	34
5.2 Siting .....	34
5.3 Engineering design .....	34
5.4 Safety .....	35
6 Storage and retention systems.....	35
6.1 General.....	35
6.2 Types of tank.....	35
6.3 Types of containment .....	36
6.4 Design principles.....	37
6.5 General design rules .....	39
6.6 Foundations .....	40
6.7 Operating instruments.....	40
6.8 Pressure and vacuum protection .....	42
6.9 Bund walls and impounding area for single and double containment.....	43
6.10 Safety equipment.....	45
6.11 Tank piping .....	46
6.12 Distance between tanks.....	46
6.13 Commissioning and decommissioning.....	47
6.14 Testing.....	47
7 LNG pumps.....	47
7.1 General.....	47
7.2 Materials.....	48
7.3 Specific requirements.....	48
7.4 Inspection and testing .....	48
8 Vaporization of LNG .....	48
8.1 General requirements .....	48
8.2 Design conditions.....	50
8.3 Vaporiser requirements .....	50
9 Pipe-work.....	50
9.1 General.....	50
9.2 Piping systems.....	50

9.3	Rules for design.....	52
9.4	Pressure tests.....	53
9.5	Piping components.....	53
9.6	Valves.....	56
9.7	Relief valves.....	56
9.8	Thermal insulation.....	57
9.9	Pipe rack/pipe way.....	61
9.10	Corrosion.....	61
10	Reception/send out of natural gas.....	61
10.1	Metering.....	61
10.2	Gas quality.....	62
10.3	Odourizing.....	62
11	Boil off recovery and treatment plants.....	62
11.1	General.....	62
11.2	Boil off collection system.....	63
11.3	System of gas return to tanker(s) or to export terminal.....	63
11.4	Boil off gas recovery.....	64
11.5	Gas compressor.....	64
11.6	Flare/vent.....	64
12	Auxiliary circuits and buildings.....	66
12.1	Electrical equipment.....	66
12.2	Lightning and earthing.....	67
12.3	Cathodic protection.....	68
12.4	Warning lights.....	68
12.5	Sea water supply.....	68
12.6	Gas contaminant removal plant.....	68
12.7	Instrument air.....	68
12.8	Fuel (utility) gas.....	69
12.9	Nitrogen system.....	69
12.10	Buildings.....	70
13	Hazard management.....	70
13.1	Inherent safety.....	70
13.2	Passive protection.....	72
13.3	Security.....	73
13.4	Incident detection and signalling.....	74
13.5	Emergency Shutdown System.....	75
13.6	Active protection.....	76
13.7	Other requirements.....	80
14	Control and monitoring systems.....	81
14.1	General description.....	81
14.2	Process control system.....	81
14.3	Safety control system.....	82
14.4	Access control system.....	84
14.5	Anti-intrusion system.....	84
14.6	CCTV.....	84
14.7	Jetty and marine monitoring and control.....	84
14.8	Communications.....	85
14.9	Environmental monitoring and control.....	85
15	Construction, commissioning and turnaround.....	85
15.1	Quality assurance and quality control.....	85

## EN 1473:2016 (E)

15.2	Acceptance tests .....	85
15.3	Preparation at start-up and shutdown.....	85
16	Preservation and corrosion protection .....	86
16.1	Painting.....	86
16.2	Cathodic protection.....	87
17	Training for operations .....	87
18	Pre-operational marine training.....	87
Annex A (normative) Thermal radiation threshold values.....		88
A.1	Heat radiation from LNG fires.....	88
A.2	Heat radiation from flare or ignited vent stack .....	89
Annex B (normative) Definitions of reference flow rates.....		91
B.1	General.....	91
B.2	$V_T$ (heat input) .....	91
B.3	$V_L$ (fluid input).....	91
B.4	$V_O$ (over filling).....	91
B.5	$V_F$ (flash at filling).....	91
B.6	$V_R$ (LNG recirculation by a submersible pump).....	92
B.7	$V_A$ (variation in atmospheric pressure) .....	92
B.8	$V_V$ (control valve failure) .....	93
B.9	$V_I$ (heat input in the course of a fire).....	93
B.10	$V_D$ (fluid suction) .....	93
B.11	$V_C$ (compressors suction) .....	93
B.12	$V_B$ (roll-over).....	94
Annex C (informative) Seismic classification.....		95
C.1	Introduction .....	95
C.2	Some basic principles .....	95
C.3	Example of safety approach after SSE.....	95
C.4	Example of classification for SSE .....	96
Annex D (normative) Specific requirements for LNG pumps.....		97
D.1	Introduction .....	97
D.2	Design.....	97
D.3	Inspection .....	97
D.4	Testing.....	98
D.5	Declared values.....	100
D.6	Marking.....	100
D.7	Particular requirements for submerged pumps and related cables.....	101
D.8	Vertical external motor pumps.....	102



<b>Annex E (normative) Specific requirements for LNG vaporizers .....</b>	<b>103</b>
<b>E.1 Operating parameters/declared performance.....</b>	<b>103</b>
<b>E.2 Water stream vaporizers: Open rack type (ORV) .....</b>	<b>103</b>
<b>E.3 Water stream vaporizers : Closed type (STV).....</b>	<b>105</b>
<b>E.4 Intermediate fluid vaporizers (IFV).....</b>	<b>106</b>
<b>E.5 Submerged combustion type vaporizers (SCV) .....</b>	<b>106</b>
<b>E.6 Ambient air vaporizers (AAV).....</b>	<b>108</b>
<b>Annex F (normative) Criteria for the design of pipes .....</b>	<b>109</b>
<b>Annex G (informative) Description of the different types of onshore LNG installations.....</b>	<b>111</b>
<b>G.1 LNG liquefaction plant .....</b>	<b>111</b>
<b>G.2 LNG receiving terminals.....</b>	<b>111</b>
<b>G.3 LNG peak shaving plants .....</b>	<b>112</b>
<b>G.4 LNG satellite plants .....</b>	<b>112</b>
<b>G.5 LNG bunkering stations.....</b>	<b>112</b>
<b>Annex H (informative) Definition of different types of LNG tanks.....</b>	<b>113</b>
<b>H.1 General .....</b>	<b>113</b>
<b>H.2 Spherical storage tank .....</b>	<b>113</b>
<b>H.3 Cryogenic concrete tank.....</b>	<b>113</b>
<b>Annex I (informative) Frequency ranges .....</b>	<b>116</b>
<b>Annex J (informative) Classes of consequence.....</b>	<b>117</b>
<b>Annex K (informative) Levels of risk .....</b>	<b>118</b>
<b>K.1 General .....</b>	<b>118</b>
<b>K.2 Acceptability criteria.....</b>	<b>118</b>
<b>Annex L (informative) Typical process steps of liquefaction .....</b>	<b>120</b>
<b>L.1 Introduction.....</b>	<b>120</b>
<b>L.2 Treatment of natural gas/extraction of acid gases .....</b>	<b>120</b>
<b>L.3 Natural gas treatment/dehydration .....</b>	<b>122</b>
<b>L.4 Treatment of natural gas/removal of mercury .....</b>	<b>123</b>
<b>L.5 Natural gas liquefaction unit.....</b>	<b>124</b>
<b>Annex M (informative) Odourant systems .....</b>	<b>129</b>
<b>M.1 Odourants in general.....</b>	<b>129</b>
<b>M.2 Odourant systems requirements.....</b>	<b>129</b>
<b>M.3 Odourant handling.....</b>	<b>130</b>
<b>M.4 Odourant injection .....</b>	<b>130</b>
<b>M.5 Odourant leakage .....</b>	<b>131</b>
<b>M.6 Safety of personnel.....</b>	<b>131</b>

**EN 1473:2016 (E)**

**Bibliography..... 132**

## **European foreword**

This document (EN 1473:2016) 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 November 2016, and conflicting national standards shall be withdrawn at the latest by November 2016.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1473:2007.

In comparison with EN 1473:2007, the following changes have been made:

- the scope definition has been modified to cover interfaces and limits with floating solutions, plants refurbishing, renovation and expansion, and to better complement EN 14620;
- some requirements were revisited, such as tank containment types, new air vaporizer and sections that were subject to questions from the 2007 version;
- terms and definitions were adjusted to cope with new market development;
- the normative references were updated.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, Former Yugoslav Republic of Macedonia, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

## **EN 1473:2016 (E)**

### **Introduction**

The objective of this European Standard is to give functional guidelines for on-shore LNG installations. It recommends procedures and practices that will result in safe and environmentally acceptable design, construction and operation of LNG plants.

It need not be applied retrospectively, but application is recommended when major modifications of existing installations are being considered.

This standard is also recommended for debottlenecking, revamping and plant life extension in the limits that will be defined by the local Authorities. The appliance of the European Directives to the existing facilities is part of the limits to be defined together with the local Authorities.

In case of plant expansion, this European Standard is applicable for the new facilities. The application of these recommendations for the tie-ins and connections to the existing facilities will be defined by the local Authorities. The limits of such application should consider the practicality of such appliance. In the same way the limits of the European Directives appliance will be accurately defined with the local Authorities.

## 1 Scope

This European Standard gives guidelines for the design, construction and operation of all onshore liquefied natural gas (LNG) installations for the liquefaction, storage, vaporization, transfer and handling of LNG.

This European Standard is valid for plants with LNG storage at pressure lower than 0,5 barg and capacity above 200 t and for the following plant types:

- LNG liquefaction installations (plant), between the designated gas inlet boundary limit, and the outlet boundary limit which is usually the ship manifold and/or truck delivery station when applicable; feed gas can be from gas field, associated gas from oil field, piped gas from transportation grid or from renewables;
- LNG regasification installations (plant), between the ship manifold and the designated gas outlet boundary limit;
- peak-shaving plants, between designated gas inlet and outlet boundary limits;
- the fixed part of LNG bunkering station.

A short description of each of these installations is given in Annex G.

Floating solutions (FPSO, FSRU, SRV), whether off-shore or nearby shore, are not covered by this European Standard even if some concepts, principles or recommendations could be applied. However, in case of berthed FSRU with LNG transfer across the jetty, the following recommendations apply for the jetty and topside facilities if the jetty is located within 3 000 m from the shore line.

In case of FSU type solution, the on-shore part is covered by these standard recommendations.

This standard is not applicable for installations specifically referred or covered by other standards, e.g. LNG fuelling stations, LNG road or rail tankers and LNG bunkering vessels.

The plants with a storage inventory from 50 t up to 200 t with tanks at a pressure higher than 0,5 barg are covered by EN 13645.

## 2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 809, *Pumps and pump units for liquids — Common safety requirements*

EN 1092-1, *Flanges and their joints — Circular flanges for pipes, valves, fittings and accessories, PN-designated — Part 1: Steel flanges*

EN 1127-1, *Explosive atmospheres — Explosion prevention and protection — Part 1: Basic concepts and methodology*

EN 1474 (all parts) *Installation and equipment for liquefied natural gas — Design and testing of loading/unloading arms*

EN 1514-1, *Flanges and their joints — Dimensions of gaskets for PN-designated flanges — Part 1: Non-metallic flat gaskets with or without inserts*

EN 1591 (all parts), *Flanges and their joints — Design rules for gasketed circular flange connections*

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