



NSAI
Standards

Irish Standard
I.S. EN ISO 16904:2016

Petroleum and natural gas industries - Design and testing of LNG marine transfer arms for conventional onshore terminals (ISO 16904:2016)

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I.S. EN ISO 16904:2016

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National Foreword

I.S. EN ISO 16904:2016 is the adopted Irish version of the European Document EN ISO 16904:2016, Petroleum and natural gas industries - Design and testing of LNG marine transfer arms for conventional onshore terminals (ISO 16904:2016)

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EUROPEAN STANDARD

EN ISO 16904

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2016

ICS 75.180.01

Supersedes EN 1474-1:2008

English Version

**Petroleum and natural gas industries - Design and testing
of LNG marine transfer arms for conventional onshore
terminals (ISO 16904:2016)**

Industries du pétrole et du gaz naturel - Conception et
essais des bras de transfert de GNL sur des terminaux
terrestres conventionnels (ISO 16904:2016)

Erdöl- und Erdgasindustrie - Auslegung und Prüfung
von Schiffsverladearmen für Flüssigerdgas für
konventionelle landseitige Terminals (ISO
16904:2016)

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European foreword

This document (EN ISO 16904:2016) has been prepared by Technical Committee ISO/TC 67 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” in collaboration with 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of an identical text or by endorsement, at the latest by September 2016, and conflicting national standards shall be withdrawn at the latest by September 2016.

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Endorsement notice

The text of ISO 16904:2016 has been approved by CEN as EN ISO 16904:2016 without any modification.

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INTERNATIONAL STANDARD

**ISO
16904**

First edition
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Petroleum and natural gas industries — Design and testing of LNG marine transfer arms for conventional onshore terminals

*Industries du pétrole et du gaz naturel — Conception et essais des
bras de transfert de GNL sur des terminaux terrestres conventionnels*



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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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The committee responsible for this document is ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*.

Petroleum and natural gas industries — Design and testing of LNG marine transfer arms for conventional onshore terminals

1 Scope

This International Standard specifies the design, minimum safety requirements and inspection and testing procedures for liquefied natural gas (LNG) marine transfer arms intended for use on conventional onshore LNG terminals, handling LNG carriers engaged in international trade. It can provide guidance for offshore and coastal operations. It also covers the minimum requirements for safe LNG transfer between ship and shore.

Although the requirements for power/control systems are covered, this International Standard does not include all the details for the design and fabrication of standard parts and fittings associated with transfer arms.

This International Standard is supplementary to local or national standards and regulations and is additional to the requirements of ISO 28460.

This International Standard needs not be applied to existing facilities.

2 Normative references

The following referenced 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.

ISO 3452-1, *Non-destructive testing — Penetrant testing — Part 1: General principles*

ISO 4406, *Hydraulic fluid power — Fluids — Method for coding the level of contamination by solid particles*

ISO 9934-1, *Non-destructive testing — Magnetic particle testing — Part 1: General principles*

ISO 10474:2013, *Steel and steel products — Inspection documents*

ISO 10497, *Testing of valves — Fire type-testing requirements*

ISO 17636-1, *Non-destructive testing of welds — Radiographic testing — Part 1: X- and gamma-ray techniques with film*

ISO 17636-2, *Non-destructive testing of welds — Radiographic testing — Part 2: X- and gamma-ray techniques with digital detectors*

ISO 28460:2010, *Petroleum and natural gas industries — Installation and equipment for liquefied natural gas — Ship-to-shore interface and port operations*

IEC 60034-5, *Rotating electrical machines — Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) — Classification*

IEC 60079-0, *Explosive atmospheres — Part 0: Equipment — General requirements*

IEC 60079-1, *Explosive atmospheres — Part 1: Equipment protection by flameproof enclosures “d”*

IEC 60079-2, *Explosive atmospheres — Part 2: Equipment protection by pressurized enclosures “p”*

IEC 60079-5, *Explosive atmospheres — Part 5: Equipment protection by powder filling “q”*

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