

**Installation and equipment for liquefied natural gas
- Design and testing of marine transfer systems -
Part 2: Design and testing of transfer hoses**

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

Käesolev Eesti standard EVS-EN 1474-2:2009 sisaldab Euroopa standardi EN 1474-2:2008 ingliskeelset teksti.

Standard on kinnitatud Eesti Standardikeskuse 29.01.2009 käskkirjaga ja jõustub sellekohase teate avaldamisel EVS Teatajas.

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ICS 75.200

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Aru 10 Tallinn 10317 Eesti; www.evs.ee; Telefon: 605 5050; E-post: info@evs.ee

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English Version

Installation and equipment for liquefied natural gas - Design and testing of marine transfer systems - Part 2: Design and testing of transfer hoses

Installations et équipements de gaz naturel liquéfié -
Conception et essais des systèmes de transfert marins -
Partie 2: Conception et essais des tuyaux de transfert

Anlagen und Ausrüstung für Flüssigerdgas - Auslegung und
Prüfung von Schiffsübergabesystemen - Teil 2: Auslegung
und Prüfung von Übergabeschläuchen

This European Standard was approved by CEN on 1 November 2008.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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Management Centre: rue de Stassart, 36 B-1050 Brussels

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Foreword

This document (EN 1474-2:2008) 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of an identical text or by endorsement, at the latest by June 2009, and conflicting national standards shall be withdrawn at the latest by June 2009.

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 European Standard consists of 3 parts:

- EN 1474-1: *Installation and equipment for liquefied natural gas — Design and testing of marine transfer systems — Part 1: Design and testing of transfer arms*
- EN 1474-2: *Installation and equipment for liquefied natural gas — Design and testing of marine transfer systems — Part 2: Design and testing of transfer hoses*
- EN 1474-3: *Installation and equipment for liquefied natural gas — Design and testing of marine transfer systems — Part 3: Offshore transfer systems*

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, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and United Kingdom.

1 Scope

This European Standard gives general guidelines for the design, material selection, qualification, certification, and testing details for Liquefied Natural Gas (LNG) transfer hoses for offshore transfer or on coastal weather-exposed facilities for aerial, floating and submerged configurations or a combination of these. Whilst this European Standard is applicable to all LNG hoses, it is acknowledged that there may be further specific requirements for floating and submerged hoses.

The transfer hoses will be designed to be part of transfer systems (it means that they will be fitted with ERS, QCDC, handling systems, hydraulic and electric components etc.) To avoid unnecessary repetition, cross-references to EN 1474-1 and EN 1474-3, are made for all compatible items, and for references, definitions and abbreviations. Where additional references, definitions and abbreviations are required specifically for LNG hoses, they are listed in this European Standard.

Transfer hoses need to be durable when operating in the marine environment and to be flexible with a minimum bending radius compatible with handling and the operating requirements of the transfer system.

2 Normative references

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

EN 1474-1:2008, *Installation and equipment for liquefied natural gas — Design and testing of marine transfer systems — Part 1: Design and testing of transfer arms*

EN 1474-3:2008, *Installation and equipment for liquefied natural gas — Design and testing of marine transfer systems — Part 3: Offshore transfer systems*

EN ISO 1746, *Rubber or plastic hoses and tubings — Bending tests (ISO 1746:1998, including technical corrigendum 1:1999)*

EN ISO 7369, *Pipework — Metal hoses and hoses assemblies — Vocabulary (ISO 7369:2004)*

EN ISO 8330, *Rubber and plastic hoses and hoses assemblies — Vocabulary (ISO 8330:2007)*

EN ISO 9000, *Quality management systems — Fundamentals and vocabulary (ISO 9000:2005)*

EN ISO 9001, *Quality management system — Requirements (ISO 9001:2000)*

3 Terms, definitions and abbreviations

For the purposes of this document, the terms and definitions given in EN ISO 7369 and EN ISO 8330 apply.

NOTE 1 Exception to the above: for this document, the bending radii are measured from the centre line.

NOTE 2 For the purpose of this document **hose assembly** means the hose complete with end fittings, hose handling and lifting devices (pad eyes, collars, ...), as described in 4.1.1.

NOTE 3 For the purpose of this document, **[MAWP]** is defined in Clause 6 and Annex C.

NOTE 4 For the purpose of this document, **[D]** and **[ND]** are defined in Clause 6.