Petroleum, petrochemical and natural gas industries - Air-cooled heat exchangers (ISO 13706:2011)

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NATIONAL FOREWORD

See Eesti standard EVS-EN ISO 13706:2011 sisaldab Euroopa standardi EN ISO 13706:2011 ingliskeelset teksti.	This Estonian standard EVS-EN ISO 13706:2011 consists of the English text of the European standard EN ISO 13706:2011.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.12.2011.	Date of Availability of the European standard is 01.12.2011.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 27.060.30, 75.180.20

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 13706

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English Version

Petroleum, petrochemical and natural gas industries - Air-cooled heat exchangers (ISO 13706:2011)

Industries du pétrole, de la pétrochimie et du gaz naturel - Échangeurs de chaleur refroidis à l'air (ISO 13706:2011)

Erdöl- petrochemische und Erdgasindustrie - Luftgekühlte Wärmeaustauscher (ISO 13706:2011)

This European Standard was approved by CEN on 26 November 2011.

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

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Foreword

This document (EN ISO 13706:2011) 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 12 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” 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of an identical text or by endorsement, at the latest by June 2012, and conflicting national standards shall be withdrawn at the latest by June 2012.

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Endorsement notice

The text of ISO 13706:2011 has been approved by CEN as a EN ISO 13706:2011 without any modification.

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Introduction

It is necessary that users of this International Standard be aware that further or differing requirements can be needed for individual applications. This International Standard is not intended to inhibit a vendor from offering, or the purchaser from accepting, alternative equipment or engineering solutions for the individual application. This can be particularly applicable where there is innovative or developing technology. Where an alternative is offered, it is the responsibility of the vendor to identify any variations from this International Standard and provide details.

Petroleum, petrochemical and natural gas industries — Air-cooled heat exchangers

1 Scope

This International Standard gives requirements and recommendations for the design, materials, fabrication, inspection, testing and preparation for shipment of air-cooled heat exchangers for use in the petroleum, petrochemical and natural gas industries.

This International Standard is applicable to air-cooled heat exchangers with horizontal bundles, but the basic concepts can also be applied to other configurations.

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.

ISO 76, *Rolling bearings — Static load ratings*

ISO 281, *Rolling bearings — Dynamic load ratings and rating life*

ISO 286 (all parts), *Geometrical product specifications (GPS) — ISO code system for tolerances on linear sizes*

ISO 1081, *Belt drive — V-belts and V-ribbed belts, and corresponding grooved pulleys — Vocabulary*

ISO 1461, *Hot-dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods*

ISO 2491, *Thin parallel keys and their corresponding keyways (dimensions in millimetres)*

ISO 4183, *Belt drives — Classical and narrow V-belts — Grooved pulleys (system based on datum width)*

ISO 4184, *Belt drives — Classical and narrow V-belts — Lengths in datum system*

ISO 5287, *Belt drives — Narrow V-belts for the automotive industry — Fatigue test*

ISO 5290, *Belt drives — Grooved pulleys for joined narrow V-belts — Groove sections 9N/J, 15N/J and 25N/J (effective system)*

ISO 8501-1, *Preparation of steel substrates before application of paints and related products — Visual assessment of surface cleanliness — Part 1: Rust grades and preparation grades of uncoated steel substrates and of steel substrates after overall removal of previous coatings*

ISO 9563, *Belt drives — Electrical conductivity of antistatic endless synchronous belts — Characteristics and test method*

ISO 15156 (all parts), *Petroleum and natural gas industries — Materials for use in H_2S-containing environments in oil and gas production*

AGMA 6001[1)], *Design and Selection of Components for Enclosed Gear Drives*

ANSI/AGMA 6010, *Spur, Helical, Herringbone and Bevel Enclosed Drives*

ASME PTC 30[2)], *Air-Cooled Heat Exchangers*

ICC[3)], *International Building Code*

NACE MR0103[4)], *Materials Resistant to Sulfide Stress Cracking in Corrosive Petroleum Refining Environments*

NACE SP0472, *Methods and Controls to Prevent In-Service Environmental Cracking of Carbon Steel Weldments in Corrosive Petroleum Refining Environments*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
bank
one or more items arranged in a continuous structure

3.2
bare tube surface
total area of the outside surfaces of the tubes, based on the length measured between the outside faces of the header tubesheets

3.3
bay
one or more tube bundles, serviced by two or more fans, including the structure, plenum and other attendant equipment

NOTE Figure 1 shows typical bay arrangements.

3.4
critical process temperature
temperature related to important physical properties of a process stream

EXAMPLES Freezing point, pour point, cloud point, hydrate formation temperature and dew point.

3.5
cyclic service
process operation with periodic variation in temperature, pressure, and/or flowrate

3.6
exhaust air
air that is discharged from the air-cooled heat exchanger to the atmosphere

3.7
external recirculation
process that uses an external duct to carry recirculated air to mix with and heat the inlet air

1) American Gear Manufacturers' Association, 1500 King Street, Suite 201, Alexandria, VA 22314, USA.

2) American Society of Mechanical Engineers, Three Park Avenue, New York, NY 10016-5990, USA.

3) International Code Council Foundation, 10624 Indian Woods Drive, Cincinnati, OH 45242, USA.

4) NACE International, P.O. Box 218340, Houston, TX 77218-8340, USA.