SLOVENSKI STANDARD
SIST EN ISO 14224:2016

01-december-2016

Nadomešča:

SIST EN ISO 14224:2007

Petrokemična industrija ter industrija za predelavo nafte in zemeljskega plina - Zbiranje in izmenjava podatkov o zanesljivosti in vzdrževanju opreme (ISO 14224:2016)

Petroleum, petrochemical and natural gas industries - Collection and exchange of reliability and maintenance data for equipment (ISO 14224:2016)

Erdöl-, petrochemische und Erdgasindustrie - Sammlung und Austausch von Zuverlässigkeits- und Wartungsdaten für Ausrüstungen (ISO 14224:2016)

Industries du pétrole, de la pétrochimie et du gaz naturel - Recueil et échange de données de fiabilité et de maintenance des équipements (ISO 14224:2016)

Ta slovenski standard je istoveten z: EN ISO 14224:2016

ICS:

75.180.01	Oprema za industrijo nafte in zemeljskega plina na splošno	Equipment for petroleum and natural gas industries in general

SIST EN ISO 14224:2016 **en,fr,de**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN ISO 14224

October 2016

ICS 75.180.01; 75.200

Supersedes EN ISO 14224:2006

English Version

Petroleum, petrochemical and natural gas industries - Collection and exchange of reliability and maintenance data for equipment (ISO 14224:2016)

Industries du pétrole, de la pétrochimie et du gaz naturel - Collecte et échange de données de fiabilité et de maintenance des équipements (ISO 14224:2016)

Erdöl-, petrochemische und Erdgasindustrie - Sammlung und Austausch von Zuverlässigkeits- und Wartungsdaten für Ausrüstungen (ISO 14224:2016)

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

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Ref. No. EN ISO 14224:2016 E

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European foreword

This document (EN ISO 14224:2016) 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 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by April 2017, and conflicting national standards shall be withdrawn at the latest by April 2017.

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.

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Endorsement notice

The text of ISO 14224:2016 has been approved by CEN as EN ISO 14224:2016 without any modification.

INTERNATIONAL STANDARD

ISO 14224

Third edition
2016-09-15

Corrected version
2016-10-01

Petroleum, petrochemical and natural gas industries — Collection and exchange of reliability and maintenance data for equipment

Industries du pétrole, de la pétrochimie et du gaz naturel — Collecte et échange de données de fiabilité et de maintenance des équipements

Reference number
ISO 14224:2016(E)

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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. www.iso.org/directives

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

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

This third edition cancels and replaces the second edition (ISO 14224:2006), which has been technically revised. The main changes are:

— Clause 3 — several new definitions;

— Clauses 8 and 9 — changes in some figures and tables;

— Annex A — new equipment classes;

— Annex B — associated new and aligned failure modes;

— Annex C — some changes and new subclauses, e.g. C.3.4 and C.7;

— Annex D — new subclause D.5;

— Annex E — new KPIs;

— Annex F — alignment with ISO/TR 12489:2013.

This corrected version of ISO 14224:2016 incorporates various editorial corrections.

Introduction

This International Standard has been prepared based on the previous edition (ISO 14224:2006), experience gained through its use, and know-how and best practices shared through the international development process.

In the petroleum, petrochemical and natural gas industries, great attention is being paid to safety, availability, reliability and maintainability of equipment. The industry annual cost of equipment unavailability is very large, although many plant owners have improved the availability of their operating facilities by addressing this challenge. A stronger emphasis has recently been put on cost-effective design and maintenance for new plants and existing installations among more industrial parties. In this respect, data on failures, failure mechanisms and maintenance related to these industrial facilities and its operations have become more important. It is necessary that this information is used by, and communicated between, the various parties and its disciplines, within the same company or between companies. Various analysis methodologies are used to estimate the risk of hazards to people and environment, or to analyse plant or system performance. For such analyses to be effective and decisive, equipment reliability and maintenance (RM) data are vital.

These analyses require a clear understanding of the equipment's technical characteristics, its operating and environmental conditions, its potential failures and its maintenance activities. It can be necessary to have data covering several years of operation before sufficient data have been accumulated to give confident analysis results and relevant decision support. It is necessary, therefore, to view data collection as a long-term activity, planned and executed with appropriate goals in mind. At the same time, clarity as to the causes of failures is key to prioritizing and implementing corrective actions that result in sustainable improvements in availability, leading to improved profitability and safety.

Data collection is an investment. Data standardization, when combined with enhanced data-management systems that allow electronic collection and transfer of data, can result in improved quality of data for reliability and maintenance. A cost-effective way of optimizing data requirements is through industry co-operation. To make it possible to collect, exchange and analyse data based on common viewpoints, a standard is required. Standardization of data collection practices facilitates the exchange of information between relevant parties e.g. plants, owners, manufacturers and contractors throughout the world.

Petroleum, petrochemical and natural gas industries — Collection and exchange of reliability and maintenance data for equipment

1 Scope

This International Standard provides a comprehensive basis for the collection of reliability and maintenance (RM) data in a standard format for equipment in all facilities and operations within the petroleum, natural gas and petrochemical industries during the operational life cycle of equipment. It describes data collection principles and associated terms and definitions that constitute a "reliability language" that can be useful for communicating operational experience. The failure modes defined in the normative part of this International Standard can be used as a "reliability thesaurus" for various quantitative as well as qualitative applications. This International Standard also describes data quality control and assurance practices to provide guidance for the user.

Standardization of data collection practices facilitates the exchange of information between parties, e.g. plants, owners, manufacturers and contractors. This International Standard establishes requirements that any in-house or commercially available RM data system is required to meet when designed for RM data exchange. Examples, guidelines and principles for the exchange and merging of such RM data are addressed. This International Standard also provides a framework and guidelines for establishing performance objectives and requirements for equipment reliability and availability performance.

Annex A contains a summary of equipment that is covered by this International Standard.

This International Standard defines a minimum amount of data that is required to be collected, and it focuses on two main issues:

— data requirements for the categories of data to be collected for use in various analysis methodologies;

— standardized data format to facilitate the exchange of reliability and maintenance data between plants, owners, manufacturers and contractors.

The following main categories of data are to be collected:

a) equipment data, e.g. equipment taxonomy, equipment attributes;

b) failure data, e.g. failure cause, failure consequence;

c) maintenance data, e.g. maintenance action, resources used, maintenance consequence, down time.

NOTE Clause 9 gives further details on data content and data format.

The main areas where such data are used are the following:

1) reliability, e.g. failure events and failure mechanisms;

2) availability/efficiency, e.g. equipment availability, system availability, plant production availability;

3) maintenance, e.g. corrective and preventive maintenance, maintenance plan, maintenance supportability;

4) safety and environment, e.g. equipment failures with adverse consequences for safety and/or environment.

This International Standard does not apply to the following:

i. data on (direct) cost issues;