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ARVUTUSMEETODID

Refrigerating systems and heat pumps - Pressure relief devices and their associated piping - Methods for calculation (ISO 24664:2024)

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>See Eesti standard EVS-EN ISO 24664:2024 sisaldab Euroopa standardi EN ISO 24664:2024 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.12.2024.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN ISO 24664:2024 consists of the English text of the European standard EN ISO 24664:2024.</p> <p>This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.</p> <p>Date of Availability of the European standard is 18.12.2024.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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ICS 27.080, 27.200

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EUROPEAN STANDARD

EN ISO 24664

NORME EUROPÉENNE

EUROPÄISCHE NORM

December 2024

ICS 27.080; 27.200

Supersedes EN 13136:2013+A1:2018

English Version

Refrigerating systems and heat pumps - Pressure relief devices and their associated piping - Methods for calculation (ISO 24664:2024)

Systèmes de réfrigération et pompes à chaleur - Dispositifs de limitation de pression et tuyauteries associées - Méthodes de calcul (ISO 24664:2024)

Kälteanlagen und Wärmepumpen - Druckentlastungseinrichtungen und zugehörige Leitungen - Berechnungsverfahren (ISO 24664:2024)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

This document (EN ISO 24664:2024) has been prepared by Technical Committee ISO/TC 86 "Refrigeration and air-conditioning" in collaboration with Technical Committee CEN/TC 182 "Refrigerating systems, safety and environmental requirements" the secretariat of which is held by DIN.

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 2025, and conflicting national standards shall be withdrawn at the latest by June 2025.

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

This document supersedes EN 13136:2013+A1:2018.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

Any feedback and questions on this document should be directed to the users' national standards body/national committee. A complete listing of these bodies can be found on the CEN website.

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, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Endorsement notice

The text of ISO 24664:2024 has been approved by CEN as EN ISO 24664:2024 without any modification.

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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 document 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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This document was prepared by Technical Committee ISO/TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 1, *Safety and environmental requirements for refrigerating systems*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 182, *Refrigerating systems, safety and environmental requirements*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

This document is based on EN 13136:2013+A1:2018 and applicable parts of ISO 4126-1:2013, ISO 4126-2:2018 and ISO 21922:2021.

It is suited to the specific requirements, and includes the data, of refrigerating systems. It provides means of satisfying the pressure relief devices requirements of EN 378-2:2016 and ISO 5149-2:2014.

This document is a preview generated by EVS

Refrigerating systems and heat pumps — Pressure relief devices and their associated piping — Methods for calculation

1 Scope

This document describes the calculation of:

- mass flow for sizing pressure relief devices for parts of refrigerating systems;
- discharge capacities for pressure relief valves and other pressure relief devices in refrigerating systems including the necessary data for sizing these when relieving to atmosphere or to part of the refrigerating system at lower pressure;
- the pressure loss in the inlet and outlet lines of pressure relief valves and other pressure relief devices and includes the necessary data.

This document specifies the requirements for selection of pressure relief devices to prevent excessive pressure due to internal and external heat sources, the sources of increasing pressure (e.g. compressor, heaters, etc.) and thermal expansion of trapped liquid.

NOTE The term "refrigerating system" used in this document includes heat pumps.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 4126-1:2013/Amd 1:2016, *Safety devices for protection against excessive pressure — Part 1: Safety valves*

ISO 4126-2:2018, *Safety devices for protection against excessive pressure — Part 2: Bursting disc safety devices*

ISO 21922:2021, *Refrigerating systems and heat pumps — Valves — Requirements, testing and marking*

EN 13501-1:2018, *Fire classification of construction products and building elements — Part 1: Classification using data from reaction to fire tests*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 21922:2021, ISO 4126-1:2013/Amd 1:2016, and ISO 4126-2:2018 and the following apply.

ISO and IEC maintain terminology databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

refrigerant

fluid used for heat transfer in a refrigerating system

Note 1 to entry: A refrigerant absorbs heat at a low temperature and a low pressure of the fluid and rejects it at a higher temperature and a higher pressure of the fluid, usually involving changes of the phase of the fluid.