Fire safety storage cabinets - Part 1: Safety storage cabinets for flammable liquids

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 14470-1:2023 sisaldab Euroopa standardi EN 14470-1:2023 ingliskeelset teksti.	This Estonian standard EVS-EN 14470-1:2023 consists of the English text of the European standard EN 14470-1:2023.
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 and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 05.07.2023.	Date of Availability of the European standard is 05.07.2023.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

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

ICS 13.220.40, 71.040.10

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 14470-1

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Supersedes EN 14470-1:2004

English Version

Fire safety storage cabinets - Part 1: Safety storage cabinets for flammable liquids

Armoires de stockage de sécurité incendie - Partie 1 : Armoires de stockage de sécurité pour liquides inflammables

Feuerwiderstandsfähige Lagerschränke - Teil 1: Sicherheitsschränke für brennbare Flüssigkeiten

This European Standard was approved by CEN on 14 May 2023.

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

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European foreword

This document (EN 14470-1:2023) has been prepared by Technical Committee CEN/TC 332 “Laboratory equipment”, 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of an identical text or by endorsement, at the latest by January 2024, and conflicting national standards shall be withdrawn at the latest by January 2024.

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 14470-1:2004.

The main changes compared to the previous edition are listed below:

a) Extension of the scope from an internal volume of not more than 1 m^3 to not more than 2 m^3;

b) Clause 3 “Terms and definitions” extended and clarified;

c) Deletion of the classification “Type 15”;

d) Clarifications in Clause 5 “Construction” by e.g. including the description for materials and surfaces, weight loads and the addition of openings for pipes, hoses and electrical cables;

e) Extension of Clause 7 “Information to be supplied”;

f) Extension of Clause 8 “Marking and labelling”;

g) Revision of the figures for temperature sensors in Annex A;

h) Annex B extended and clarified by including a small fire test;

i) Adding new Annex C “Mechanical and aerotechnical testing”.

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

According to the CEN-CENELEC Internal Regulations, the national standards organisations 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.

Introduction

This document describes the design and testing criteria for fire safety storage cabinets (also referred to as "cabinets" in this document) to be used in rooms to store flammable liquids in closed containers at normal room temperatures.

Primarily, this document covers the three major safety requirements for storage of flammable liquids, which are:

a) minimizing the fire risk associated with the storage of flammable substances and protection of the fire safety storage cabinet's content in the event of fire for a known (tested) minimum length of time (fire rating);

b) minimizing the amount of vapour released into the working environment;

c) retention of accidental spillage within the fire safety storage cabinet.

Testing of the fire safety storage cabinet (see a) above) under fire conditions is a normative part of this document and the procedures and interpretation of the tests are described in detail.

The fire test (see a) above) provides three categories of fire protection ratings. In practice the degree of fire protection/rating allows the user to select, depending on individual circumstances, a fire safety storage cabinet which will allow sufficient time for personnel to leave, and fire fighters to enter the room before it is likely to that the flammables stored turn a possible minor/extinguishable fire into an uncontrollable one. The methods of achieving b) and c) above are sufficiently flexible to allow for local/national needs.

Caution should be exercised when determining the appropriate cabinet fire rating when flammables having auto-ignition temperatures below 200 °C and/or having high vapour pressures at room temperature are involved. When such flammable materials are being stored, expert advice should be sought. Reference is made to national regulations concerning flammable liquids.

1 Scope

This document is a product specification, giving performance requirements for fire safety storage cabinets to be used for the storage of flammable liquids. It is applicable to cabinets with a total internal volume of not greater than 2 m^3, which can be free standing, restrained to a wall or mounted on plinth or castors.

This document does not apply to brick enclosures or walk-in storage rooms.

This document does not apply to any support frame or mechanism other than the base which is integral to the fire safety storage cabinet.

Requirements are given in respect of the construction of the fire safety storage cabinet and its capacity to resist fire conditions on the outside. A classification of fire safety storage cabinets is given, according to the level of fire resistance offered, and a type test is included, see Annex A.

The tests described in this document are type tests.

This document does not discriminate between different flammable liquids, which can have considerably different physical properties.

Attention is drawn to national regulations, which can apply with regard to the storage of flammable liquids.

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.

EN 1363-1:2020, *Fire resistance tests - Part 1: General requirements*

EN 13165, *Thermal insulation products for buildings - Factory made rigid polyurethane foam (PU) products - Specification*

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

EN 16121, *Non-domestic storage furniture - Requirements for safety, strength, durability and stability*

EN 16122, *Domestic and non-domestic storage furniture - Test methods for the determination of strength, durability and stability*

EN ISO 5167-1, *Measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full - Part 1: General principles and requirements (ISO 5167-1)*

EN ISO 7010, *Graphical symbols - Safety colours and safety signs - Registered safety signs (ISO 7010)*