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## Fixed firefighting systems - Automatic sprinkler systems - Part 3: Guidance for earthquake bracing

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

<p>See Eesti standard EVS-EN 12845-3:2024 sisaldab Euroopa standardi EN 12845-3:2024 ingliskeelset teksti.</p> <p>Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.</p> <p>Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 01.05.2024.</p> <p>Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.</p>	<p>This Estonian standard EVS-EN 12845-3:2024 consists of the English text of the European standard EN 12845-3:2024.</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 01.05.2024.</p> <p>The standard is available from the Estonian Centre for Standardisation and Accreditation.</p>
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EUROPEAN STANDARD

EN 12845-3

NORME EUROPÉENNE

EUROPÄISCHE NORM

May 2024

ICS 13.220.20

Supersedes CEN/TS 17551:2021

English Version

## Fixed firefighting systems - Automatic sprinkler systems - Part 3: Guidance for earthquake bracing

Installations fixes de lutte contre l'incendie - Systèmes  
d'extinction automatiques du type sprinkleur -  
Partie 3 : Recommandation pour le contreventement  
parasismique

Ortsfeste Brandbekämpfungsanlagen - Automatische  
Sprinkleranlagen - Teil 3: Leitfaden für  
Erdbebensicherungen

This European Standard was approved by CEN on 8 April 2024.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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 United Kingdom.



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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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## European foreword

This document (EN 12845-3:2024) has been prepared by Technical Committee CEN/TC 191 “Fixed firefighting systems”, the secretariat of which is held by BSI.

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 November 2024, and conflicting national standards shall be withdrawn at the latest by November 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 CEN/TS 17551:2021.

In comparison with the previous edition, CEN/TS 17551:2021, the following technical modifications have been made:

- scope of the document has been adjusted;
- ambiguities in the body text have been redrafted;
- figures have been updated.

This standard is included in a series of European standards:

CEN/TS 14816, *Fixed firefighting systems — Water spray systems — Design, installation and maintenance*;

EN 671 (all parts), *Fixed firefighting systems — Hose systems*;

EN 12094 (all parts), *Fixed firefighting systems — Components for gas extinguishing systems*;

EN 12101 (all parts), *Smoke and heat control systems*;

EN 12259 (all parts), *Fixed firefighting systems — Components for automatic sprinkler and water spray systems*;

EN 12416 (all parts), *Fixed firefighting systems — Powder systems*;

EN 12845-1, *Fixed firefighting systems — Automatic sprinkler systems — Part 1: Design, installation and maintenance*;

EN 12845-2, *Fixed firefighting systems — Automatic sprinkler systems — Part 2: Design and installation of ESFR and CMSA sprinkler systems*;

EN 13565 (all parts), *Fixed firefighting systems — Foam systems*;

EN 14972 (all parts), *Fixed firefighting systems — Water mist systems*;

EN 17451, *Fixed firefighting systems — Automatic sprinkler systems — Design, assembly, installation and commissioning of pump sets*.

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.

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## Introduction

This document specifies requirements for earthquake protection of automatic sprinkler systems (see the EN 12845 series of standards) and can be applicable to other water based fixed manual or automatic fire fighting systems, according to local requirements. Requirements made herein are intended to greatly improve the likelihood that the fire protection systems will remain in working condition during and after an earthquake and minimize or prevent any potential water damage from fixed firefighting systems leakage due to an earthquake.

This document does not cover all legislative requirements. In certain countries, specific national regulations apply and take precedence over this document. Users of this document are advised to inform themselves of the applicability or non-applicability for this document by their national responsible authorities.

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## 1 Scope

This document specifies requirements for earthquake protection of automatic sprinkler systems in accordance with EN 12845:2015+A1:2019.

This document applies only to locations in earthquake zones in accordance with EN 1998-1:2004, 3.2.1<sup>1</sup> and the Nationally Determined Parameters.

**NOTE** The requirements in this document are based on the principle that certain peak ground acceleration values are considered as an earthquake which require special means. Attention is drawn to EN 1998-1:2004<sup>1</sup>, where a peak ground acceleration above 0,08 g (0,78 m/s<sup>2</sup>) is considered an earthquake risk. Additional characteristics, NDP and/or NCI can exist in some countries as well as national annexes.

The principles defined in this document can be applicable to other water based fixed manual or automatic fire fighting systems, according to local requirements.

## 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 1992-4, *Eurocode 2 — Design of concrete structures — Part 4: Design of fastenings for use in concrete*

EN 1998-1:2004<sup>1</sup>, *Eurocode 8: Design of structures for earthquake resistance — Part 1: General rules, seismic actions and rules for buildings*

EN 12845, *Fixed firefighting systems — Automatic sprinkler systems — Design, installation and maintenance*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1998-1:2004<sup>1</sup>, EN 12845 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

#### zone of influence

portion of the piping system reinforced by a single sway brace which is calculated on both risers and horizontal pipes

Note 1 to entry: Depending if related to a lateral or a longitudinal brace, it can include main distribution or distribution pipes and range pipes or main distribution or distribution pipes only (see 5.2.3.4, 5.2.3.5, 5.2.3.6).

### 3.2

#### seismic separation assembly

equipment of fittings, pipe, flexible pipe, and/or couplings that permits movement in all directions to accommodate seismic differential movement across building seismic separation joints

<sup>1</sup> As impacted by EN 1998-1:2004/AC:2009 and EN 1998-1:2004/A1:2013.