
**Fire safety engineering — Active fire
protection systems —**

Part 1:
General principles

*Ingénierie de la sécurité incendie — Systèmes de protection active
contre l'incendie —*

Partie 1: Principes généraux



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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 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 92, *Fire safety*, Subcommittee SC 4, *Fire safety engineering*.

A list of all parts in the ISO 20710 series can be found on the ISO website.

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

Predicting fire behaviour is important for preventing and reducing losses due to fire. Evaluation of the performance of active fire protection systems based on the prediction of fire phenomena plays a direct part in reaching the goal of fire safety. Therefore, evaluating fire protection system performance, including system operating time and effectiveness, is important for an engineer, peer reviewer, Authority Having Jurisdiction (AHJ), fire officials and other stakeholders. It can also be useful for fire investigators to reconstruct and analyse actual fires.

The ISO 20710 series provides guidance on estimating the activation time and effectiveness of active fire protection systems when carrying out fire hazard assessments and performance-based fire safety designs for all of the abovementioned stakeholders.

This document includes information on methods for estimation, theories and data required. It also provides information on the purpose, configuration, activation procedure and functioning principles of active fire protection systems.

The methods of evaluation are hand calculation, computer fire modelling and performance testing. The objective of the ISO 20710 series is to provide guidance for performance estimation methods for analysing whether a selected system can achieve the desired performance in various environments.

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Part 1: General principles

1 Scope

This document provides information on the goal, scope, structure, contents and background of the different parts of the ISO 20710 series. The purpose of the ISO 20710 series is to provide information on active fire protection systems according to the design, implementation and maintenance described in ISO 23932-1. The ISO 20710 series is linked to the steps of the performance-based fire safety engineering design process described in ISO 23932-1.

This document is not intended as a detailed technical design guide but is intended to provide the guidance necessary for use of the ISO 20710 series by professionals who consider the active fire protection systems at each step presented in ISO 23932-1.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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

activation time

time interval from response by a sensing device until the suppression system, smoke control system, alarm system or other fire safety system is fully operational

[SOURCE: ISO 13943:2017, 3.15]

3.2

active fire protection system

AFPS

system or group of systems that require some amount of action to work in the event of a fire

Note 1 to entry: Actions may be manually operated, like a fire extinguisher or automatic, like a sprinkler.

3.3

ASET

available safe escape time

for an individual occupant, the calculated time interval between the time of ignition and the time at which conditions become such that the occupant is estimated to be incapacitated, i.e. unable to take effective action to escape to a safe refuge or place of safety

[SOURCE: ISO/TS 29761:2015, 3.1, modified — notes to entry removed.]