

ICS 13.220.01
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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 31540.4-2015

**Fire safety engineering guide -- Part 4: Detection, activation and
suppression**

(English Translation)

Issued on: May 15, 2015

Implemented on: August 1, 2015

Issued by: Standardization Administration of China

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Foreword

GB/T 31540 "Fire Safety Engineering Guide" is divided into the following sections.

--- Part 1. Performance-based design application;

--- Part 2. fire, smoke generation and development;

--- Part 3. Structural Response and indoor fires spread outside;

--- Part 4. detection, and fire started;

This section GB/T Part of 431,540.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses redrafted law revision using ISO/T R13387-7.1999 "Fire Safety Engineering Guidelines detection, start-up and fire." this part of ISO/T R13387-7. in 1999, compared with more structural adjustment, listed in Appendix A of this section and ISO/T R13387-7. reg number control list 1999.

This part of ISO/T R13387-7.1999 technical differences exist compared to the terms of these differences has been involved through its outer margin Vertical single line blank position (I) have been marked, in Appendix B gives the corresponding list of technical differences and their causes.

For ease of use and compliance with the requirements of the relevant standards prepared, this section also made the following editorial changes.

--- Deleted international standards foreword, preface redrafted;

- Modify the introduction of international standards, as a part of this introduction;
- International standard "this International Standard" be replaced by "this section";
- The International Standard some punctuation modified to comply with the Chinese habit of punctuation;
- Delete references;
- Added Appendix A (informative), gives this part of the international standard reg number control the situation;
- Added Appendix B (informative), gives a technical difference between this part and the international standards and reasons.

This section presents the People's Republic of China Ministry of Public Security.

This part of the National Standardization Technical Committee on Fire Building Fire Safety Engineering at the Technical Committee (SAC/TC113/SC13) Centralized.

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Introduction

Use and management of buildings through various detection device discovery and control of fire, so that the buildings meet safety standards, and reducing Fire damage.

This part of GB/T 31540.1 specified in a variety of active fire fighting facilities Subsystem 4 building set in the analysis and evaluation.

Subsystem 4 can be used to calculate various fire detection time, the operating time of fixed fire extinguishing devices and other fire control it means the response time of fire smoke. Calculation process requires the use of a subsystem, 3 is set according to the fire scene and provided Given fire scenario calculated fire smoke temperature, concentration and flow rate.

The reference to the relevant part of the Fire Code, ISO/TC21 fixed fire extinguishing system related standards, combined with setting a fire scene when using these standards do engineering judgment, to assess the effect of different fire fighting equipment fire heat release rate.

This section also uses engineering methods important output (detection time, start time and extinguishing system performance) was evaluated subsystem 4 Assessment and details the physical and chemical processes need to be considered in the evaluation process, evaluation methods, and evaluate information needed to assess the conclusions.

Fire Safety Engineering Guidelines Part 4. detection, and fire started

1 Scope

GB/T 31540 provisions of this part of the engineering analysis of building automatic fire facilities for automatic fire detection alarm system Computation time and automatic fire extinguishing system start-up time, and to assess the effectiveness of automatic fire extinguishing system.

This section does not consider the impact of human intervention on the probe, and start the fire.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 5907 (all parts) Fire Vocabulary GB/T 31540.1 Fire Safety Engineering Guide Part 1. Performance of Application Design (GB/T 31540.1-2015, ISO/T R13387-1, MOD) GB 50084 sprinkler system design specifications

3 Terms and Definitions

GB/T 5907 defined by the following terms and definitions apply to this document.

Start time activationtime from the sensor to respond to the fire extinguishing system, smoke control system, alarm system or other time interval fire protection system prior to full operation.

The actual water density actualdistributiondensity; ADD Nozzle to spray water flow rate has a certain heat release rate of the combustible surface.

Spray mouth agentoutlet Media Outlet location sprinkler, fire control devices or other fixed fire extinguishing system.

Control sprinklers control-modesprinkler by making the fuel becomes wet way to limit the A spray head type (such as plain nozzle or spray nozzle) the spread of fire.

Normal head conventionalsprinkler So that 40% to 60% of the total amount of water sprayed down sprinklers.

Detection time the time required to detect fire automatically or manually from a fire to occur.