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

GB/T 31593.4-2015

**Fire safety engineering -- Part 4: Selection of design fire
scenarios and design fires**

消防安全工程 第4部分：设定火灾场景和设定火灾的选择

(English Translation)

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Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and definitions
4 Symbol
5 2 Overview
6 Set Fire Scene
7 Set Fire
Appendix A (informative) of this section and the ISO/T S16733.2006 Number of control clauses
Annex B (informative) of this section and the ISO/T S16733.2006 technical differences and their causes
Annex C (informative) set the fire scene selection Application examples (multi-purpose indoor stadium fire)
Annex D (informative) set the fire scene selection example (Commodity warehouse fire)
Annex E (informative) Typical fire growth type
References

Foreword

GB/T 31593 "Fire Safety Engineering" is divided into nine sections.

- Part 1. Calculation of the assessment, verification and validation;
- Part 2. Type the required data and information;
- Part 3. Fire Risk Assessment Guidelines;
- Part 4. Setting fire scene and setting selection fire;
- Part 5. Calculation of fire plume requirements;
- Part 6. Calculation of the smoke layer requirements;
- Part 7. Calculation ceiling jet requirements;
- Part 8. Calculation of the opening airflow requirements;
- Part 9. Evacuation Evaluation Guide.

This section GB/T Part of 431,593.

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

This part redrafted law revision using ISO/T S16733.2006 "Fire Safety Engineering set fire scene and set fire Choice "(in English).

This part of ISO/T S16733.2006 compared to more adjustments in the structure, listed in Appendix A of this part of ISO/T S16733.

2006 reg number control list.

This part of ISO/T S16733.2006 technical differences exist compared to the terms of these differences have been involved through the air in the outside margin Singlet white vertical 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 of the ISO/T S16733.2006 made the following editorial modify.

- 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;
- Added Appendix A (informative), gives this part of the international standard reg number control the situation;
- Added Appendix B (informative), gives the corresponding 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.

This section is drafted. Tianjin Fire Research Institute of Ministry of Public Security, Ministry of Public Security of Sichuan Fire Research Institute, University of Science and Technology of China, China Construction Division Graduate School.

Introduction

Fire Safety Assessment needs to set the fire scene analysis, and by analyzing the results to determine performance-based design and test criterion set by the Degree of compliance. Set fire scenario is the basis for selection of fire safety assessment. To enable construction works to meet the fire safety objectives, fire scene the setting is essential.

Fire safety goals include life safety, property safety, environmental protection and the use of continuity, for each target, the available range of different Setting fire scene to assess the reasonableness of the test design.

Set the fire scene is selected, you need to describe the assumed characteristics of fire, the fire scenario as a basis for quantification. These assumptions fire Disaster feature called "setting fire." Needs analysis and goal setting fire fire safety engineering to adapt, and the need to generate conservative design Program.

Fire may develop from ignition to complete the development phase, the final decay until extinguished. Throughout the development of the fire, the usually ready Between variables to describe the change of setting fires, such as the rate of heat release and smoke generation rate.

This section provides a set of fire and set fire scene selection methods can be used to analyze the uncertainty of fire safety of construction projects, by Set fire scene and set fire the method chosen is credible and conservative.

To set the fire scene selection and fire safety design objectives to adapt, and can explain the occurrence likelihood and potential consequences of a fire scene.

Setting fires and fire safety should be chosen to adapt the design goals, and to ensure that combustible material that is credible and stringent fire conditions.

Fire Safety Engineering Part 4. Setting fire scene and setting selection fire

1 Scope

GB/T 31593 in this section provides a selection set fire scene and set fire approach.

This section applies deterministic analysis of fire safety in construction projects.

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 31592 Fire Safety Engineering General (GB/T 31592-2015, ISO 23932:2009, MOD) GB/T 31593.3-2015 Fire safety engineering - Part 3. Fire Risk Assessment Guidelines (ISO/T S16732.2005, MOD)

3 Terms and Definitions

GB/T 5907 and GB/T 31592 and defined by the following terms and definitions apply to this document.

Setting fire designfire Set fire to a fire scene assumed the characteristics of a quantitative description.

Note: A typical case is important fire parameters describe changes over time, such as heat release rate and the amount of toxic components to generate, while others described Important model input data, such as fire load density.

Set fire scenario designfirescenario A deterministic fire safety engineering analysis of the specific fire scenario adopted.

Note: Because of possible fire scenarios is very large, so it is necessary to select the most important scenes for analysis. Setting fire scene selection is set and fire safety Total goals adaptation, and can explain the possibility and consequences of a potential fire scenario.

Fire scene firescenario Fire on a qualitative description of the entire development process, which is described to determine the fire characteristics reflect the views and different from other fire might occur the key event of disaster.

NOTE: To define the fire scene is usually fire, growth, fully developed and decay phases, as well as the impact of various systems and environmental conditions of fire development process.

4 Symbol

The symbols used in this section are shown in Table 1.