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

GB/T 9978.1-2008

**Fire-resistance tests -- Elements of building construction -- Part
1: General requirements
(English Translation)**

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Table of Contents

Foreword...	3
1 Scope...	6
2 Normative References...	6
3 Terms and Definitions...	6
4 Symbols and Abbreviations...	9
5 Test Equipment...	10
6 Test Conditions...	18
7 Test Preparation...	21
8 Application of Instrumentation...	23
9 Test Method...	28
10 Performance Criteria...	31
11 Validity of the Test...	33
12 Expression of Test Results...	33
13 Test Report...	34

Foreword

GB/T 9978 "Fire-resistance Tests - Elements of Building Construction" is divided into the following parts.

- Part 1.general requirements;
- Part 2.calibration of furnace for fire resistance test;
- Part 3.commentary on test method and test data application;
- Part 4.specific requirements for load bearing vertical separating elements;
- Part 5.specific requirements for load bearing horizontal separating elements;
- Part 6.specific requirements for beams;
- Part 7.specific requirements for columns;
- Part 8.specific requirements for non-load bearing vertical separating

elements;

-- Part 9. specific requirements for non-load bearing ceiling elements;

...

This Part is Part 1 of GB/T 9978.

This Part modifies-adopts ISO 834-1.1999 "Fire resistance test - Elements of building construction - Part 1. General requirements" (English edition).

This Part was drafted according to ISO 834-1.1999. The comparison list of the chapter and article numbers in this Part and those in ISO 834-1.1999 is listed in Appendix A.

When referring to ISO 834-1.1999, some amendments were made in this Part. The relevant technical differences have been written in the text and marked by vertical line in the margin of relevant clauses. The technical differences and their causes are listed in Appendix B for reference.

Compared with ISO 834-1.1999, the following editorial changes were made in this Part;

-- "this Part of ISO 834" was modified as "this Part of GB/T 9978";

-- The comma "," acting as decimal point was replaced by the decimal point ".";

-- The foreword and introduction of international standard were deleted.

This Part replaces GB/T 9978-1999 "Fire-resistance Tests - Elements of Building Construction".

The main differences between this Part and GB/T 9978-1999 are as follows.

-- The specific contents of terms and definitions were added;

-- Type and requirements of thermocouple were modified;

-- Requirements of temperature deviation in furnace were modified;

-- Requirements of furnace pressure were modified;

-- Determination criteria were modified;

-- Informative Appendix A was added (see Appendix A);

-- Informative Appendix B was added (see Appendix B).

Appendix A and Appendix B of this Part are informative.

This Part was proposed by the Ministry of Public Security of the People's Republic of China.

This Part shall be under the jurisdiction of Subcommittee 8 on Fire Endurance of Building Elements of National Technical Committee on Fire Protection (SAC/TC 113/SC 8).

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The previous editions replaced by this Part are as follows.

-- GB/T 9978-1988, GB/T 9978-1999.

Fire-resistance tests - Elements of building
construction - Part 1. General requirements

1 Scope

This Part of GB/T 9978 specifies the test method for determining the fire resistance of various elements of construction when subjected to standard fire exposure conditions.

2 Normative References

The following standards contain provisions which, through reference in this Part of GB/T 9978, constitute the provisions of this Part. For dated reference, the subsequent amendments to (excluding correction), or revisions of these publications do not apply.

3 Terms and Definitions

The terms and definitions established in GB/T 5907 AND the following ones are applicable to this Part of GB/T 9978.

4 Symbols and Abbreviations

The following symbols and abbreviations are applicable to this Part of GB/T 9978.

5 Test Equipment

The test furnaces shall be designed to employ liquid or gaseous fuels and shall be capable of.

Two types of gap gauge, as shown in Figure 6, shall be available for the measurement of integrity. They shall be made of cylindrical stainless steel rod of $6\text{ mm} \pm 0.1\text{ mm}$ and $25\text{ mm} \pm 0.2\text{ mm}$ diameter. They shall be provided with insulated handles of suitable Length.

6 Test Conditions

The furnace shall be operated such that a pressure of 20 Pa is established at a position 100 mm below the underside of the test specimen or the notional ceiling level when testing beams.

The furnace shall be installed in a laboratory of sufficient size. The initial ambient temperature shall be recorded in the test.

7 Test Preparation

The test specimen shall be normally full size. When the specimen cannot be tested full size, the specimen size shall be in accordance with the test standard for the individual elements

8 Application of Instrumentation

Two pressure sensors shall be provided in the same horizontal plane but in different positions relative to the perimeter of the test specimen. One shall be