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ISO 9239–1:2002

Australian Standard™

Reaction to fire tests for floorings

Part 1: Determination of the burning behaviour using a radiant heat source

Standards Australia

This Australian Standard was prepared by Committee FP-018, Fire Safety. It was approved on behalf of the Council of Standards Australia on 28 March 2003 and published on 16 May 2003.

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Australasian Fire Authorities Council

Australian Building Codes Board

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Australian Institute of Building

Australian Wool Testing Authority

Building Research Association of New Zealand

Bureau of Steel Manufacturers of Australia

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee FP-018, Fire Safety. After consultation with stakeholders in both countries, Standards Australia and Standards New Zealand decided to develop this Standard as an Australian Standard rather than an Australian/New Zealand Standard.

This Standard is identical with and has been reproduced from ISO 9239–1:2002, *Reaction to fire tests for floorings,* Part 1*: Determination of the burning behaviour using a radiant heat source*.

Statements expressed in mandatory terms in notes to tables, figures or clauses are deemed to be requirements of this Standard.

As this Standard is reproduced from an international Standard, the following applies:

(a) Its number does not appear on each page of text and its identity is shown only on the cover and title page.

(b) In the source text 'this International Standard' should read 'this Australian Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

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FOREWORD

The text of EN ISO 9239-1:2002 has been prepared by Technical Committee CEN/TC 127 "Fire safety in buildings", the secretariat of which is held by BSI, in collaboration with Technical Committee ISO/TC 92 "Fire safety".

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of an identical text or by endorsement, at the latest by July 2002, and conflicting national standards shall be withdrawn at the latest by December 2003.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

INTRODUCTION

The measurements in this test method provide a basis for estimating one aspect of fire exposure behaviour of floorings. The imposed radiant flux simulates the thermal radiation levels likely to impinge on the floor of a corridor whose upper surfaces are heated by flames or hot gases or both, during the early stages of a developing fire in an adjacent room or compartment under wind-opposed flame spread conditions.

The test specimen is placed in a horizontal position below a gas-fired radiant panel inclined at 30°where it is exposed to a defined heat flux. A pilot flame is applied to the hotter end of the specimen. The test principle is illustrated in Figure 1. Following ignition, any flame front which develops is noted and a record is made of the progression of the flame front horizontally along the length of the specimen in terms of the time it takes to spread to defined distances. If required, the smoke development during the test is recorded as the light transmission in the exhaust stack.

The results are expressed in terms of flame spread distance versus time, the critical heat flux at extinguishment and smoke density versus time.

Safety warning:

The possibility of a gas-air fuel explosion in the test chamber should be recognized. Suitable safeguards consistent with sound engineering practice should be installed in the panel fuel supply system. These should include at least the following:

— a gas feed cut-off which is immediately activated when air and/or gas supply fail;

— a temperature sensor or a flame detection unit directed at the panel surface that stops fuel flow when the panel flame goes out.

Attention is drawn to the possibility that toxic or harmful gases may be produced during exposure of the specimens. In view of the potential hazard from products of combustion, the exhaust system should be designed and operated so that the laboratory environment is protected from smoke and gas. The operator should be instructed to minimize his exposure to combustion products by following sound safety practice, for example ensuring that the exhaust system is working properly, wearing appropriate clothing including gloves, etc.

NOTES

AUSTRALIAN STANDARD

Reaction to fire tests for floorings
Part 1:
Determination of the burning behaviour using a radiant heat source

1 Scope

This European Standard specifies a method for assessing the wind-opposed burning behaviour and spread of flame of horizontally mounted floorings exposed to a heat flux radiant gradient in a test chamber, when ignited with pilot flames. Annex A gives details of assessing the smoke development, when required.

This method is applicable to all types of flooring e.g. textile carpet, cork, wood, rubber and plastics coverings as well as coatings. Results obtained by this method reflect the performance of the flooring, including any substrate if used. Modifications of the backing, bonding to a substrate, underlay or other changes of the flooring may affect test results.

This European Standard is applicable to the measurement and description of the properties of floorings in response to heat and flame under controlled laboratory conditions. It should not be used alone to describe or appraise the fire hazard or fire risk of floorings under actual fire conditions.

Information on the precision of the test method is given in annex B.