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Australian Standard®

**Furniture—Assessment of the
ignitability of upholstered furniture**

**Part 1: Ignition source—
Smouldering cigarette**

[ISO Title: Furniture—Assessment of the ignitability of upholstered
furniture, Part 1: Ignition source—Smouldering cigarette]

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This Australian Standard was prepared by Committee TX/13, Burning Behaviour of Textiles and Textile Products. It was approved on behalf of the Council of Standards Australia on 10 August 1989 and published on 11 December 1989.

The following interests are represented on Committee TX/13:

Attorney-General's Department
Australian Assembly of Fire Authorities
Australian Confederation of Apparel Manufacturers
Australian Consumers Association
Australian Federation of Consumer Organizations Inc.
Australian Knitting Industries Council
Australian Retailers Association
Australian Wool Corporation
Australian Wool Testing Authority, Textile Testing
Carpet Institute of Australia
Consumer Affairs Bureau, Queensland
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Department of Business and Consumer Affairs, N.S.W.
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Australian Standard®

**Furniture—Assessment of the
ignitability of upholstered furniture**

**Part 1: Ignition source—
Smouldering cigarette**

First published as AS 3744.1—1989.

PREFACE

This Standard was prepared by the Standards Australia Committee on Burning Behaviour of Textiles and Textile Products under the direction of the Textile Standards Board. Of the organizations represented on this Committee, the CSIRO Division of Building, Construction and Engineering did not support the adoption of this Standard. While it is acknowledged that there may be questions about the repeatability and reproducibility of results obtained using this method, it has been adopted as an Australian Standard in recognition of its widespread use in other countries. This Standard is identical with and has been reproduced from ISO 8191/1—1987, *Furniture—Assessment of the ignitability of upholstered furniture, Part 1: Ignition source: smouldering cigarette*.

Statements expressed in mandatory terms in Notes are deemed to be a requirement of this Standard.

For the purposes of this Australian Standard, the ISO text should be modified as follows:

- (a) Substitute a point (.) for a comma (,) as a decimal marker.
- (b) Clause 8.1—delete options (c) and (d) and the word 'preferred' against option (b).
- (c) The references to other publications should be replaced by references to Australian Standards:

<i>Reference to international Standard</i>	<i>Australian Standard</i>
ISO	AS
139 Textiles—Standard atmospheres for conditioning and testing	1327 Standard environments for conditioning and testing plastics materials
	or
	2001.1 Methods of test for textiles Part 1: Conditioning procedures as appropriate.
8191 Furniture—Assessment of ignitability of upholstered furniture	3744 Furniture—Assessment of ignitability of upholstered furniture

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Furniture—Assessment of the ignitability of upholstered furniture—Part 1: Ignition source—Smouldering cigarette

0 Introduction

This part of ISO 8191 is one of a series of standards concerned with the ignitability of upholstered furniture using different ignition sources. The ignition source used in this part is a smouldering cigarette.

It is the intention to publish further parts utilizing a series of flaming ignition sources of increasing severity. Part 2 will use a gas flame representing a match equivalent flame as the first step in the series and it is anticipated that further parts will extend the range by using larger gas flames and either wooden cribs or filled paper bags.

1 Scope and field of application

This part of ISO 8191 lays down a method of test to assess the ignitability of material combinations, such as covers and fillings used in upholstered seating when subjected to a smouldering cigarette as an ignition source.

The tests measure only the ignitability of a combination of materials used in upholstered seating and not the ignitability of a particular finished item of furniture incorporating these materials. They give an indication of, but cannot guarantee, the ignition behaviour of the finished item of furniture.

2 Reference

ISO 139, *Textiles — Standard atmospheres for conditioning and testing*.

3 Definitions

For the purposes of this part of ISO 8191, the following definitions apply.

3.1 progressive smouldering: Exothermic oxidation, not accompanied by flaming, that is self-propagating, i.e. independent of the ignition source. It may or may not be accompanied by incandescence.

3.2 flaming: Undergoing combustion in the gaseous phase with the emission of light.

4 Criteria of ignition

4.1 Progressive smouldering ignition

For the purposes of this part of ISO 8191, all the following types of behaviour are considered to be progressive smouldering ignitions:

- a) any test assembly that displays escalating combustion behaviour so that it is unsafe to continue the test and requires active extinction;
- b) any test assembly that smoulders until it is essentially consumed within the test duration;
- c) any test assembly that smoulders to the extremities of the specimen, viz upper or lower margins, either side or to its full thickness, within the duration of the test;
- d) any test assembly that, on final examination, shows evidence of charring other than discoloration, for more than 100 mm in any direction apart from upwards from the nearest part of the original position of the source.

NOTE — In practice it has been found that there is usually a clear distinction between materials which may char under the influence of the ignition source but which do not propagate further (non-progressive combustion) and those where smouldering develops in extent and spreads (progressive combustion).

4.2 Flaming ignition

For the purposes of this part of ISO 8191, all the following types of behaviour are considered to be flaming ignitions:

- a) any test assembly that displays escalating combustion behaviour so that it is unsafe to continue the test and requires active extinction;
- b) any test assembly that burns until it is essentially consumed within the test duration;
- c) any test assembly on which any flame front reaches the lower margin, either side or passes through its full thickness within the duration of the test.

5 Principle

Subjecting an assembly of upholstery materials to a smouldering cigarette ignition source. The assembly is arranged to represent in stylized form a junction between a seat and back (or