

Australian Standard™

**Methods of testing materials for
resistance to fungal growth**

**Part 4: Resistance of coated
fabrics and electronic boards
to fungal growth**

This Australian Standard was prepared by Committee CH/20, Resistance to Fungal Growth. It was approved on behalf of the Council of Standards Australia on 31 December 1998 and published on 5 March 1999.

The following interests are represented on Committee CH/20

Australian Association of Leather Industries
Australian Paint Manufacturers Federation
Australian Wool Research and Promotion Organization
CSIRO Forestry & Forest Products
Department of Defence (Australia)
Plastics and Chemicals Industry Association Incorporated
Surface Coatings Association Australia
The Textile Institute (Southern Australia Section):

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**Part 4: Resistance of coated
fabrics and electronic boards
to fungal growth**

Originated as AS 1157.4—1978.
Second edition 1999.

PREFACE

This Standard was prepared by the Standards Australia Committee CH/20, Resistance to Fungal Growth, to supersede AS 1157.4—1978.

This is Part 4 of a series of methods for assessing the resistance to fungal growth of a range of commonly used materials. The other Standards in the series are as follows:

AS

1157	Methods of testing materials for resistance to fungal growth
1157.1	Part 1: General principles of testing
1157.2	Part 2: Resistance of textiles to fungal growth
1157.3	Part 3: Resistance of cordage and yarns to fungal growth
1157.5	Part 5: Resistance of timber to surface fungal growth
1157.6	Part 6: Resistance of leather and wet 'blue' hides to fungal growth
1157.7	Part 7: Resistance of paper and paper products to surface fungal growth
1157.10	Part 10: Resistance of dried or cured adhesives and glues to fungal growth
1157.11	Part 11: Resistance of rubbers and plastics to surface fungal growth

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FOREWORD

Coated fabrics may be considered to be fabric bases coated on one or both sides with polymeric materials. Fungus may attack the textile base, affecting its colour and physical properties, or growth may occur on either or both surfaces of the material.

Section 1 describes the procedure for determining the resistance of the base fabric to attack by cellulolytic fungi and any change in strength due to such attack.

Section 2 describes the procedure for determining the resistance of the coated fabric to surface-growing fungi.

In addition to the coated fabrics, the fundamental structure of electronic boards has a structure containing cellulosic woven or non-woven fabrics immersed in polymeric materials. Fungus may attack this textile base affecting its function. Because of this textile base the electronic boards are generally susceptible to fungal growth.

For electronic boards, resistance to fungal attack is critical because the surface characteristics could be changed by the surface fungi. Section 2 of this method can be satisfactorily used to make this assessment.

STANDARDS AUSTRALIA

Australian Standard

Methods of testing materials for resistance to fungal growth

Part 4: Resistance of coated fabrics and electronic boards to fungal growth

SECTION 1 RESISTANCE OF TEXTILE
SUBSTRATE TO CELLULOLYTIC FUNGI**1.1 SCOPE**

This Section specifies procedures for determining the resistance of the textile substrate of coated fabrics to attack by cellulolytic fungi. Such growth may reduce the strength of the material without visible deleterious effect.

This Standard provides a laboratory test which is intended to provide severe, standardized assessment of fungal resistance under laboratory conditions. It does not include the testing of coated fabrics in the field which, although possible more severe, is much longer in duration and also more subjective.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS		
1157	Methods of testing materials for resistance to fungal growth	
1157.1	Part 1: General principles of testing	
2001	Methods of test for textiles	
2001.2.3	Method 2.3 Physical tests—Determination of breaking force and extension of textile fabrics	
2001.2.19	Method 2.19 Physical tests—Determination of bursting force of textile fabrics—Ball burst method	

1.3 PRINCIPLE

The test specimens are sterilized, inoculated with a spore suspension of *Chaetomium globosum* Kunze on the uncoated side of the fabric, or on the side with the lesser amount of coating, and incubated for 14 days. At the end of the incubation period the breaking or bursting force of the specimen is determined.

1.4 APPARATUS, TEST MEDIUM AND TEST ORGANISM**1.4.1 Apparatus**

The following apparatus is required:

- (a) As specified in the following appendices of AS 1157.1:
- (i) Leaching of test specimens Appendix A.
 - (ii) Preparing the test medium Appendix B.
 - (iii) Sterilizing the equipment Appendix C.
 - (iv) Sterilizing the test specimens Appendix D.
 - (v) Preparing the spore suspension Appendix E.

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