AS/NZS 1660.5.6:2005

Australian/New Zealand Standard™

Test methods for electric cables, cords and conductors

Method 5.6: Fire tests—Test for vertical flame propagation for a single insulated wire or cable

STANDARDS AUSTRALIA

STANDARDS NEW ZEALAND
Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-003, Electric Wires and Cables. It was approved on behalf of the Council of Standards Australia on 5 April 2005 and on behalf of the Council of Standards New Zealand on 15 April 2005.
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Australian Electrical and Electronic Manufacturers Association
Australian Industry Group
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Method 5.6: Fire tests—Test for vertical flame propagation for a single insulated wire or cable

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-003 Electric Wires and Cables to supersede AS/NZS 1660.5.6:1998, *Test methods for electric cables, cords and conductor*, Method 5.6: *Fire tests—Test for combustion propagation.* It is one of a set of fire tests for electric cables included in the AS/NZS 1660 series.

The objective of this Standard is to set out a method of test for resistance to vertical flame propagation for a single vertical electrical insulated conductor or cable, or optical fibre cable, under fire conditions.

This Standard adopts the content of IEC 60332-1, *Tests on electric and optical fibre cables under fire conditions,* Part 1: *Test for vertical flame propagation for a single insulated wire or cable* (all Parts). While this Standard is technically equivalent to the IEC Standards, it has been structured to include all three Parts of IEC 60332-1 in the one Australian/New Zealand Standard. This has been necessary due to the fact that AS/NZS 1660.5.6 is referenced as such in a number of other Standards. It was not possible to accommodate a further division within the Standards numbering system adopted by Standards Australia.

An error was detected in the original IEC drawing of Figure 1 that could not be corrected. The IEC acknowledged that the tolerance of the vertical dimension in Figure 1 should read '±25' and that the tolerance given for the same dimension in the text of Clause 2.2.2 is correct and takes precedence over that shown in the drawing.

The technical content of AS/NZS 1660.5.6 and IEC 60332-1 is aligned as follows:

IEC 60332-1 Part	**AS/NZS 1660.5.6 Section**
1: Apparatus	2
2: Procedure for 1 kW pre-mixed flame	3
3: Procedure for determination of flaming droplets/particles	4

This Standard differs from the 1998 version in that it has adopted the technical contents of IEC 60332-1 (all Parts).

The term 'informative' has been used in this Standard to define the application of the appendix to which it applies. An 'informative' appendix is only for information and guidance.

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

CONTENTS

Page

SECTION 1 SCOPE AND GENERAL
1.1 SCOPE 4
1.2 REFERENCES 4
1.3 DEFINITIONS 4

SECTION 2 APPARATUS
2.1 GENERAL 5
2.2 TEST APPARATUS 5

SECTION 3 PROCEDURE FOR 1 kW PRE-MIXED FLAME
3.1 GENERAL 7
3.2 TEST APPARATUS 7
3.3 PROCEDURE 7
3.4 EVALUATION OF TEST RESULTS 8

SECTION 4 PROCEDURE FOR DETERMINATION OF FLAMING DROPLETS/PARTICLES
4.1 GENERAL 11
4.2 TEST APPARATUS 11
4.3 PROCEDURE 11
4.4 EVALUATION OF TEST RESULTS 12

APPENDICES
A RECOMMENDED PERFORMANCE REQUIREMENTS FOR SECTION 3 13
B RECOMMENDED PERFORMANCE REQUIREMENTS FOR SECTION 4 14

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard

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SECTION 1 SCOPE AND GENERAL

1.1 SCOPE

This Standard specifies the test apparatus and procedure for testing the resistance to vertical flame propagation for a single vertical electrical insulated conductor or cable, or optical fibre cable, under fire conditions. It also specifies a test procedure for assessment of falling flaming droplets/particles when a single vertical electrical insulated conductor or cable, or optical fibre cable, is subjected to defined fire conditions.

1.2 REFERENCES

The following documents are referred to in this Standard:

AS/NZS
4695 Fire hazard testing of electrotechnical products
4695.2.40 Part 2.40: Test methods—Diffusion type and premixed flame test methods

60695 Fire hazard testing
60695.4 Part 4: Technology concerning fire tests
60695.11.2 Part 11.2: Test flames—1kW nominal pre-mixed flame—Apparatus, confirmatory test arrangement and guidance

IEC
60332 Tests on electric and optical fibre cables under fire conditions
60332-2-2 Part 2-2: Test for vertical flame propagation for a single small insulated wire or cable—Procedure for diffusion flame

ISO
187 Paper board and pulps—Standard atmosphere for conditioning and testing and procedure for monitoring the atmosphere and conditioning of samples

1.3 DEFINITIONS

For the purpose of this Standard the following definitions apply. The definitions are taken from AS/NZS 60695.4.

1.3.1 Ignition source

Source of energy that initiates combustion.

1.3.2 Char

Carbonaceous residue resulting from pyrolysis or incomplete combustion.

1.3.3 Flame debris

Matter flowing or separating from the specimen during the test procedure and falling below the initial lower edge of the specimen, continuing to flame as it falls, and igniting the filter paper beneath.