AS/NZS 1660.5.5:2005

Australian/New Zealand Standard™

Test methods for electric cables, cords and conductors

Method 5.5: Fire tests—Circuit integrity

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 4 April 2005 and on behalf of the Council of Standards New Zealand on 8 April 2005.
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Test methods for electric cables, cords and conductors

Method 5.5: Fire tests—Circuit integrity

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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 1660.5.5:1998, *Test methods for electric cables, cords and conductors*, Method 5.5: *Fire tests—Circuit integrity under fire conditions.* 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 test methods that will define the ability of cables to maintain circuit integrity under defined fire conditions.

This Standard adopts the content of IEC 60331*, Tests on electric cables under fire conditions—Circuit integrity* (all Parts). While this Standard is technically equivalent to the IEC Standards, it has been structured to include all six Parts of IEC 60331 in the one Australian/New Zealand Standard. This has been necessary due to the fact that AS/NZS 1660.5.5 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.

The technical content of AS/NZS 1660.5.5 and IEC 60331 is aligned as follows:

IEC 60331 Part	AS/NZS 1660.5.5 Section
11: Apparatus–Fire alone at a flame temperature of at least 750°C	2
12: Apparatus–Fire with shock at a temperature of at least 830°C	3
21: Procedures and requirements–Cables of rated voltage up to and including 0.6/1.0 kV	4
23: Procedures and requirements–Electric data cables	5
25: Procedures and requirements–Optical fibre cables	6
31: Procedures and requirements for fire with shock–Cables of rated voltage up to and including 0.6/1.0 kV	7

This Standard differs from the 1998 edition as follows:

(a) The technical content of IEC 60331 (all Parts) has been adopted.

(b) A test is now included for low-voltage power and control cables required to maintain circuit integrity when subjected to fire and shock.

(c) The range of cables covered by the test for fire alone is now extended to data and optical fibre cables.

As this Standard adopts the contents of an International Standard a full point should be substituted for a comma when referring to the decimal point in Figures 2, 7, 8 and D1.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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S E C T I O N 1 S C O P E A N D G E N E R A L

1.1 SCOPE

This Standard specifies the test apparatus, the test procedure and the performance requirements to be used for testing cables of rated voltages up to 0.6/1.0 kV, data cables and optical cables which are required to maintain circuit integrity when subject to fire alone. The test condition is based upon a flame with a controlled heat output corresponding to a temperature of a least 750°C.

It also covers testing of cables of rated voltages up to 0.6/1.0 kV when subject to fire and mechanical shock where the test condition is based upon a flame with a controlled heat output corresponding to a temperature of a nominal 850°C. This method is intended for use when testing cables of greater than 20 mm overall diameter.

1.2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

60269 Low voltage fuses
60269.3.1 Part 3.1: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and applications)-Sections I to IV: Examples of types of standardized fuses

IEC

60584 Thermocouples
60584-1 Part 1: Reference tables

60793 Optical fibres
60793-1-4 Part 1: Generic specification–Section 4: Measuring method for transmission and optical characteristics

61034 Measurement of smoke density of cables burning under defined conditions
61034-1 Part 1: Test apparatus

1.3 DEFINITIONS

For the purpose of this Standard, the following definition applies:

1.3.1 Circuit integrity

Ability to continue to operate in the designated manner whilst subjected to a specified flame source for a specified period.

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