

Australian/New Zealand Standard™

Low-voltage fuses

Part 1: General requirements



S t a n d a r d s Australia



STANDARDS
NEW ZEALAND
Pākehua Aotearoa

AS/NZS 60269.1:2000

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Australian/New Zealand Standard™

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Part 1: General requirements

Originated as AS 2005.1—1977.
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL/7, Power Switchgear to supersede AS 2005.10–1988.

The objective of this Standard is to provide requirements to establish the characteristics of low-voltage fuses, or parts of low-voltage fuses, in such a way that they are interchangeable as far as their dimensions are concerned.

This Standard is Part 1 of a series which, when complete, will consist of the following:

AS/NZS

60269	Low-voltage fuses
60269.1	Part 1: General requirements (this Standard)
60269.2.0	Part 2.0: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application)
60269.2.1	Part 2.1: Supplementary requirements for fuses for use by authorized persons (fuses mainly for industrial application)—Sections I to V: Examples of types of standardized fuses
60269.3.0	Part 3.0: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications)
60269.3.1	Part 3.1: Supplementary requirements for fuses for use by unskilled persons (fuses mainly for household and similar applications)—Sections I to IV
60269.4.0	Part 4.0: Supplementary requirements for fuse-links for the protection of semiconductor devices
60269.4.1	Part 4.1: Supplementary requirements for fuse-links for the protection of semiconductor devices—Sections I to III

For supplementary requirements according to the specific conditions of use or application, this Standard is intended to be read in conjunction with the appropriate Standards in the series.

This Standard is identical with and has been reproduced from IEC 60269-1:1998 *Low-voltage fuses Part 1: General requirements*.

This Standard differs from AS 2005.10—1988 in the following ways:

- (i) All variations to IEC 60269-1 for Australian conditions have been removed.
- (ii) Specifies characteristics and tests for “gD” and “gN” fuse-links, which were not part of AS 2005.10—1988.
- (iii) Table 4 specifies temperature rise limits for both spring-loaded and bolted contacts. The equivalent table (7.1) of AS 2005.10—1988 specified one set of generic temperature rise limits and maximum temperatures for contacts.
- (iv) Includes EMC requirements not present in AS 2005.10—1988.
- (v) Test sequences and the number of samples to be tested is different in some tests.

Specific attention is drawn to the difference in temperature rise limits of contacts specified in Table 4. Values in AS 2005.10—1988 were limited to a maximum temperature rise of 70 K for silver and nickel-plated contacts, limiting the maximum temperature of these contacts to 110°C. This Standard removes this limitation for silver-plated contacts and allows a temperature rise of 80 K for nickel-plated contacts.

A reference to an International Standard identified in the Normative References Clause by strikethrough (~~example~~) is replaced by a reference to the Australian or Australian/New Zealand Standard(s) listed immediately thereafter and identified by shading (example). Where the struck-through referenced document and the referenced Australian or Australian/New Zealand Standard are identical, this is indicated in parenthesis after the title of the latter.

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/New Zealand Standard’.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

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

CONTENTS

Clause	<i>Page</i>
1 General	1
1.1 Scope and object	1
1.2 Normative references	2
2 Definitions	3
2.1 Fuses and their component parts	3
2.2 General terms	5
2.3 Characteristic quantities	6
3 Conditions for operation in service	9
3.1 Ambient air temperature (T_a)	9
3.2 Altitude	10
3.3 Atmospheric conditions	10
3.4 Voltage	10
3.5 Current	10
3.6 Frequency, power factor and time constant	10
3.7 Conditions of installation	10
3.8 Utilization category	11
3.9 Discrimination of fuse-links	11
4 Classification	11
5 Characteristics of fuses	11
5.1 Summary of characteristics	11
5.2 Rated voltage	12
5.3 Rated current	12
5.4 Rated frequency (see 6.1 and 6.2)	12
5.5 Rated power dissipation of a fuse-link and rated power acceptance of a fuse-holder	12
5.6 Limits of time-current characteristics	13
5.7 Breaking range and breaking capacity	15
5.8 Cut-off current and I^2t characteristics	15
6 Markings	16
6.1 Markings of fuse-holders	16
6.2 Markings of fuse-links	16
6.3 Marking symbols	17
7 Standard conditions for construction	17
7.1 Mechanical design	17
7.2 Insulating properties	18
7.3 Temperature rise, power dissipation of the fuse-link and power acceptance of the fuse-holder	18

	<i>Page</i>
Clause	
7.4 Operation.....	19
7.5 Breaking capacity	20
7.6 Cut-off current characteristic.....	21
7.7 I^2t characteristics	21
7.8 Overcurrent discrimination of fuse-links.....	21
7.9 Protection against electric shock	22
7.10 Resistance to heat	22
7.11 Mechanical strength	22
7.12 Resistance to corrosion	22
7.13 Resistance to abnormal heat and fire	22
7.14 Electromagnetic compatibility	22
8 Tests.....	23
8.1 General.....	23
8.2 Verification of the insulating properties.....	28
8.3 Verification of temperature rise and power dissipation	29
8.4 Verification of operation.....	32
8.5 Verification of the breaking capacity.....	35
8.6 Verification of the cut-off current characteristics.....	41
8.7 Verification of I^2t characteristics and overcurrent discrimination	41
8.8 Verification of the degree of protection of enclosures.....	42
8.9 Verification of resistance to heat.....	42
8.10 Verification of non-deterioration of contacts	42
8.11 Mechanical and miscellaneous tests	42
Figure 1 Diagram illustrating the means of verification of the time-current characteristic, using the results of the tests at the "gate" currents (example).....	47
Figure 2 Overload curve and time-current characteristic for "a" fuse-links	48
Figure 3 General presentation of the cut-off characteristics for a series of a.c. fuse-links ...	49
Figure 4 Typical diagram of the circuit used for breaking capacity tests (see 8.5)	50
Figure 5 Interpretation of oscillograms taken during the a.c. breaking-capacity tests (see 8.5.7).....	51
Figure 6 Interpretation of oscillograms taken during the d.c. breaking-capacity tests (see 8.5.7).....	52
Figure 7 Glow-wire and position of the thermocouple.....	53
Figure 8 Test apparatus (example)	54
Annex A (informative) Measurement of short-circuit power factor	55
Annex B (informative) Calculation of pre-arcing I^2t values for "gG", "gM", "gD" and "gN" fuse-links.....	58
Annex C (informative) Calculation of cut-off current-time characteristic.....	59
Annex D (informative) Effect of change of ambient temperature or surroundings on the performance of fuse-links.....	63

NOTES

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Low-voltage fuses**
Part 1: General requirements

Any IEC table, figure or passage of text that is struck-through is not part of this Standard. Any Australian/New Zealand table, figure or passage of text that is added (and identified by shading) is part of this Standard.

1 General**1.1 Scope and object**

This standard is applicable to fuses incorporating enclosed current-limiting fuse-links with rated breaking capacities of not less than 6 kA, intended for protecting power-frequency a.c. circuits of nominal voltages not exceeding 1 000 V or d.c. circuits of nominal voltages not exceeding 1 500 V.

Subsequent parts of this standard, referred to herein, cover supplementary requirements for such fuses intended for specific conditions of use or applications.

Fuse-links intended to be included in fuse-switch combinations according to IEC 60947-3 should also comply with the following requirements.

NOTE 1 – For "a" fuse-links, details of performance (see 2.2.4) on d.c. circuits should be subject to agreement between user and manufacturer.

NOTE 2 – Modifications of, and supplements to, this standard required for certain types of fuses for particular applications – for example certain fuses for rolling stock, or fuses for high-frequency circuits – will be covered, if necessary, by separate standards.

NOTE 3 – This standard does not apply to miniature fuses, these being covered by IEC 60127.

The object of this standard is to establish the characteristics of fuses or parts of fuses (fuse-base, fuse-carrier, fuse-link) in such a way that they can be replaced by other fuses or parts of fuses having the same characteristics provided that they are interchangeable as far as their dimensions are concerned. For this purpose, this standard refers in particular to:

- the following characteristics of fuses:
 - a) their rated values;
 - b) their insulation;
 - c) their temperature rise in normal service;
 - d) their power dissipation and acceptance;
 - e) their time/current characteristics;
 - f) their breaking capacity;
 - g) their cut-off current characteristics and their I^2t characteristics.
- type test for verification of the characteristics of fuses;
- the marking of fuses.