AS 2005.40—1989
IEC 269–4 (1986)

Australian Standard®

Low voltage fuses—Fuses with enclosed fuse–links

Part 40: Supplementary requirements for fuse–links for the protection of semiconductor devices

[IEC title: Low–voltage fuses, Part 4: Supplementary requirements for fuse–links for the protection of semi–conductor devices]

This Australian Standard was prepared by Committee EL/6, Industrial Switchgear and Controlgear. It was approved on behalf of the Council of Standards Australia on 10 February 1989 and published on 18 August 1989.

The following interests are represented on Committee EL/6:

Australian–British Chamber of Commerce

Australian Electrical and Electronic Manufacturers Association

Bureau of Steel Manufacturers of Australia

Electrical Contractors Association of Australia

Electricity Supply Association of Australia

Independent Electrical Switchboard Manufacturers Association

Institution of Engineers, Australia

Railways of Australia Committee

Water Board, Sydney

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PREFACE

This Standard was prepared by the Standards Australia Committee on Industrial Switchgear and Controlgear as Part 40 of the AS 2005 series: *Fuses with enclosed fuse–links* (*up to and including 1000* V *a.c. and 1500* V *d.c.*).

It is to be read in conjunction with AS 2005, *Part 10: General requirements* (AS 2005.10). Other parts in course of preparation are proposed supplementary requirements for–

(a) fuses for use by authorized persons (fuses mainly for industrial application) (AS 2005.20);

(b) fuses for use by authorized persons (fuses mainly for industrial application) – Standardized fuse systems–

  (i) Fuses with fuse–links with blade contacts (AS 2005.21.1);

  (ii) Fuses with fuse–links for bolted connections (AS 2005.21.2);

  (iii) Fuses with compact dimensions (AS 2005.29); and

(c) fuses for use by unskilled persons (fuses mainly for household and similar application) (AS 2005.30).

This Standard is identical with and has been reproduced from IEC 2694(1986), *Low–voltage fuses, Part 4; Supplementary requirements for fuse links for the protection of semiconductor devices*. Thus it does not have the same format as AS 2005.10.

The requirements of this Standard establish the characteristics of semiconductor fuse–links such as rated values, temperature rises in normal service, power dissipation and time/current characteristics. In this way the requirements of this Standard should ensure that fuse–links having the same dimensions may be used to replace other fuse–links with similar characteristics.

For the purpose of this Standard the text of IEC 2694 is to be amended as follows:

(i) References to IEC Publications are to be replaced by reference to Australian Standards as follows:

Reference to IEC Publication	*Appropriate Australian Standard*
ISO	AS
Standard 3 Series of preferred numbers	2752 Preferred numbers and their use
IEC	
269 Low–voltage fuses	2005 Fuses with enclosed fuse–links (up to and including 1000 V a.c. and 1500 V d.c.)
269–1 Part 1(1968): General requirements	2005.10 Part 1: General requirements
Part 2A (1975 First supplement: Appendix A: Exam–ples of standardized fuses for industrial applications	—
Part 3A (1978) First supplement: Appendix A: Exam–ples of standardized fuses for domestic and similar applications	—

(ii) Reference to IEC 269–1 tables and figures to be replaced by references to the clauses, tables and figures of AS 2005.10 as follows:

IEC 269–1 references	*Appropriate AS 2005.10 references*
Table I	Clause 5.2
Table II	Table 5.1
Table III	Table 5.2
Table IV	Table 7.1
Table V	Table 7.2
Table VI	Table 7.3
Table VII A	Table 8.1 (A)
Table VII B	Table 8.1 (B)
Table VII C	Table 8.1 (C)
Table VIII	Table 8.2
Table IX	Table 8.3
Table X	Table 8.4
Table XI	Table 8.5
Table XII A	Table 8.6 (A)
Table XII B	Table 8.6 (B)

IEC 269–1 references (cont.)	*Appropriate AS 2005.10 references (cont.)*
Figure 1	Figure 5.1
Figure 2	Figure 5.2
Figure 3	Figure 5.3
Figure 4	Figure 8.1
Figure 5	Figure 8.2
Figure 6	Figure 8.3
Figure 7	Figure 8.4
Figure 8	Figure 8.5

(iii) The following Note is to be inserted in Clause 6.2:

NOTE: Manufacturers making a statement of compliance with this Australian Standard on a product, or on packaging or promotional material related to that product, are advised to ensure that such compliance is capable of being verified.

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Further information on product certification and the suitability of this Standard for certification is available from Standards Australia's Quality Assurance Services, 1 The Crescent, Homebush, NSW 2140.

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NOTE: The numbering of the clauses in this Standard is identical to that in AS 2005.10. Clauses of AS 2005.10 that apply without amendment are not repeated in this Standard.

STANDARDS AUSTRALIA

Australian Standard
Low voltage fuses—Fuses with enclosed fuse-links

Part 40: Supplementary requirements for fuse-links for the protection of semi-conductor devices

1. **General**

Fuse-links for the protection of semiconductor devices shall comply with all requirements of IEC Publication 269-1, if not otherwise indicated hereinafter, and shall also comply with the supplementary requirements laid down below.

1.1 *Scope*

These supplementary requirements apply to fuse-links for application in equipment containing semiconductor devices for circuits of rated voltages up to 1000 V a.c. or circuits of nominal voltages up to 1500 V d.c. and also, in so far as they are applicable, for circuits of higher nominal voltages.

Notes 1. — Such fuse-links are commonly referred to as "semiconductor fuse-links".

2. — In most cases, a part of the associated equipment serves the purpose of a fuse-base. Owing to the great variety of equipment, no general rules can be given; the suitability of the associated equipment to serve as a fuse-base should be subject to agreement between the manufacturer and the user. However, if separate fuse-bases or fuse-holders are used, they should comply with the appropriate requirements of IEC Publication 269-1.

1.2 *Object*

The object of these supplementary requirements is to establish the characteristics of semiconductor fuse-links in such a way that they can be replaced by other fuse-links having the same characteristics, provided that their dimensions are identical. For this purpose, this standard refers in particular to:

1.2.1 The following characteristics of fuses:

a) their rated values;

c) their temperature rises in normal service;

d) their power dissipation;

e) their time-current characteristics;

f) their breaking capacity;

g) their cut-off current characteristics and their I^2t characteristics;

h) their arc voltage limits.

1.2.2 Type tests for verification of the characteristics of fuses.

1.2.3 The markings on fuses.

1.2.4 Availability and presentation of technical data (see Appendix B).