

Australian/New Zealand Standard™

Safety of Power Transformers, Reactors, Power Supply units and combinations thereof

Part 2.5: Particular requirements and tests for transformers for shavers, power supply units for shavers and shaver supply units (IEC 61558-2-5 Ed 2, MOD)



AS/NZS 61558.2.5:2011

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-002, Safety of Household and Similar Electrical Appliances and Small Power Transformers. It was approved on behalf of the Council of Standards Australia on 15 September 2011 and on behalf of the Council of Standards New Zealand on 19 September 2011.

This Standard was published on 11 November 2011.

The following are represented on Committee EL-002:

Australian Industry Group
Australian Retailers Association
Business New Zealand
Consumer Electronic Suppliers Association, Australia
Consumers' Federation of Australia
Electrical Regulatory Authorities, Australia
Electrical Compliance Testing Association
Electrical consultants
Engineers Australia
Ministry of Business, Innovation and Employment, New Zealand
New Zealand Electric Fence Energizer Manufacturers' Standards Group

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

AS/NZS 61558.2.5:2011

Safety of Transformers, Reactors, Power Supply units and combinations thereof –**Part 2.5: Particular requirements and test for transformers for shavers, power supply units for shavers and shaver supply units****Foreword**

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-002 - Safety of Household and Similar Electrical Appliances and Small Power Transformers to supersede AS/NZS 61558.2.5:2003 and its amendments three years from the date of its publication. During this period it is anticipated that regulatory authorities will approve transformers for shavers, power supply units for shavers and shaver supply units to either standard.

This standard will run in parallel with AS/NZS 3194:1993 and its amendments from the date of its publication.

The objective of this Standard is to provide manufacturers, designers, regulatory authorities, testing laboratories and similar organizations with safety requirements for the design, manufacture and testing of transformers for shavers, power supply units for shavers and shaver supply units which can form the basis for approval by regulatory authorities.

This Standard incorporates Amendment No. 1 (November 2012). The changes required by the amendments are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected. Where an application date other than immediate is applicable to an amendment the date of application (DOA) and the date of withdrawal (DOW) if relevant, is indicated by the marginal bar against the part affected.

The text IEC 61558-2-5 Ed 2, prepared by IEC Technical Committee 96, was submitted to the Standards Australia/Standards New Zealand Combined Procedure (dual public comment and committee vote) for adoption of the IEC standard as a Standards Australia/Standards New Zealand joint standard.

This Standard is an adoption with national modifications of the second edition of IEC 61558-2-5, *Safety of transformers, reactors, power supply units and combinations thereof - Part 2-5: Particular requirements and test for transformers for shavers, power supply units for shavers and shaver supply units*. It has been varied as indicated to take account of Australian and New Zealand conditions.

This part 2 has to be used in conjunction with the latest edition of AS/NZS 61558.1 *Safety of Power Transformers, Power Supplies, Reactors and Similar Products – Part 1: General requirements and tests* and its amendments. It was established on the basis of the 2008 edition of that standard. Amendments and revisions of Part 1 have also to be taken into account and the dates when such changes become applicable will be stated in the relevant amendment or revision of Part 1.

The main changes consist of updating this part in accordance with AS/NZS 61558.1:2008, adding power supply units to the scope and adding additional requirements for shaver supply units taken from AS/NZS 3194.

This part 2 supplements or modifies the corresponding clauses of AS/NZS 61558.1 so as to convert it into the Australian/New Zealand Standard: *Safety requirements and test for transformers for shavers, power supply units for shavers and shaver supply units*.

When a particular subclause of Part 1 is not mentioned in this part 2, that subclause applies as far as is reasonable. When this standard states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

NOTE 1 The following numbering system is used:

- subclauses, tables and figures that are numbered starting from 101 are additional to those in Part 1;
- unless notes are in a new subclause or involve notes in Part 1, they are numbered starting from 101, including those in a replaced clause or subclause;
- additional annexes are lettered AA, BB, etc.;
- subclauses, notes and annexes that are additional to those in the IEC standard are prefixed with the letters AZ.

NOTE 2 The following print types are used:

- requirements: in roman type;
- *test specifications: in italic type;*
- notes: in small roman type.

Words in **bold** in the text are defined in Clause 3.

p NOTE 3 In this document, p is used in the margin to indicate instructions for preparing a consolidated version.

The essential safety requirements in AS/NZS 3820¹ that could be applicable to requirements for transformers for shavers, power supply units for shavers and shaver supply units are covered by this standard.

The national variations to the IEC 61558-2-5 Ed 2 form the Australian and New Zealand national variations for purposes of the IECEE scheme for recognition of results of testing to standards for safety of electrical equipment (the CB scheme).

¹ AS/NZS 3820 *Essential safety requirements for electrical equipment*

The text of the International Standard IEC 61558-2-5 Ed 2 was approved as a joint Australia/New Zealand Standard with the agreed national variations as given below.

AUSTRALIAN NATIONAL VARIATIONS

The following national variations to this Part 2 are additional to those listed in Annex ZZ to AS/NZS 61558.1.

2 Normative references

Add the following new normative references

- | | | | |
|---|----------------|------|---|
| p | BS 4573 | | <i>Specification for 2-pin reversible plugs and shaver socket-outlets</i> |
| | IECEE CEE 7 | 1963 | <i>Specification for plugs and socket-outlets for domestic and similar purposes</i> |
| | Mod 1: | 1973 | |
| | Mod 2: | 1974 | |
| | Mod 3 | 1975 | |
| | Mod 4 | 1983 | |
| | ANSI/NEMA WD 6 | 2002 | <i>Wiring Devices—Dimensional Specifications</i> |

8 Marking and other information

8.1 n) Add the following text.

- p indication of the protection code IP for **shaver supply units** with socket-outlets switched by insertion of plug pins, if higher than IPXXB or IP2X.

14 Heating

Replace the text by the following.

- p This clause of Part 1 is applicable except as follows:

14.301 The temperature rises of **shaver supply units** other than **transformers** for shavers and **power supply units** for shavers shall not exceed the maximum temperature rise values of AS/NZS 3100.

16 Mechanical strength

16.1 Replace the text by the following.

- p *Replacement:*

*For **shaver supply units**, compliance is checked by the test of 16.101 or by the test of clause 16.2.*

17 Protection against harmful ingress of dust, solid objects and moisture

Replace the text by the following.

- p This clause of Part 1 is applicable except as follows:

17.301 **Shaver supply units** shall provide the degree of protection against ingress of dust, solid objects and moisture in accordance with the classification of the **shaver supply units** and the IP classification marked on it.

Compliance is checked by the appropriate tests specified in IEC 60529.

The unit shall be mounted as in normal service according to the manufacturer's instructions using the relevant mounting screws.

*For **shaver supply units** with face plates that are intended to be removed (with or without the use of a tool) for inter-changeability, decoration or for painting or decorating, the tests shall be conducted with and without the face plate including clip-on covers, in position.*

17.301.1 *The tests for access to hazardous parts shall be applied to socket-outlet apertures and to mounting screws.*

17.301.2 *The tests for ingress of water shall be made both with and without a plug in the socket-outlet. One of the plugs specifically identified in 20.5 shall be used.*

*If for mounting flush or semi flush on a wall, the **shaver supply unit** shall be mounted on a vertical robust smooth wooden surface at least 15 mm thick.*

The upper edge of the wooden surface shall be chamfered towards the rear to ensure vertically falling water is not directed over the front surface.

The rear of the unit shall be sealed against entry of water.

*After the test the entry of water shall not interfere with correct operation or impair safety within the meaning of this standard and the **shaver supply unit** shall withstand the dielectric strength test of clause 18, except that the voltage shall be 1000V.*

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19 Construction

Add the following new subclauses.

- p **19.301** *Socket-outlets switched by insertion of plug pins (automatic switching) shall comply with the requirements of AS/NZS 3112 for socket-outlets switched by insertion of plug pin.*

A1

Compliance is checked as specified in 3.11 of AS/NZS 3112.

19.302 *The design and construction of a socket-outlet shall be such that it is not possible for any pin of a plug with which the socket-outlet may appropriately be used to touch a live contact except during normal insertion, with each pin entering or adjacent to the aperture for the appropriate contact.*

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Compliance is checked by application in turn, of each of the plugs listed in 20.5.

For socket-outlets with faceplates that are intended to be removed for interchangeability, this test shall be conducted with and without the faceplate in position.

20 Components

- p **20.4** *Add the following text to the addition.*

Switches shall comply with AS/NZS 3133.

20.5 *Replace the requirement by the following:*

- p Socket-outlets in the **output circuits of shaver supply units** shall accept the following types of two pin plugs in accordance with IEC/TR 60083 and shall not have a protective earthing contact

Figure 2.1(c) of AS/NZS 3112 (See IEC/TR IEC 60083 NZ 2);

American type — A 15 A, 125V, 2 pin parallel-blade, non-polarised plug, configured as shown in NEMA WD6 Figure 1-15 non polarized (See IEC/TR 60083 US 1 NEMA 1-15 non-polarized);

European type — A 2.5A, or 16A, 250V, 2-pin plug configured as shown in CEE 7; Standard sheets II, XVI and XVII (See IEC/TR 60083 FI 1, FI 4, FI 6);

United Kingdom shaver type — A 0.2A, 250V, 2-pin plug configured as shown in BS 4573 (See IEC/TR 60083 GB 6).

23 Terminals for external conductors

Replace the text by the following.

- p This clause of Part 1 is applicable except as follows:

23.1 *Addition:*

Alternatively other terminals may comply with AS/NZS 3100.

26 Creepage distances, clearances and distances through insulation

Replace the text by the following.

- p This clause of Part 1 is applicable except as follows:

26.2 *Addition:*

Pollution degree 2 is applicable.

NEW ZEALAND NATIONAL VARIATIONS

The following national variations to this Part 2 are additional to those listed in Annex ZZ to AS/NZS 61558.1.

2 Normative references

Add the following new normative references

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| | IECEE CEE 7 | 1963 | <i>Specification for plugs and socket-outlets for domestic and similar purposes</i> |
| | Mod 1: | 1973 | |
| | Mod 2: | 1974 | |
| | Mod 3 | 1975 | |
| | Mod 4 | 1983 | |
| | ANSI/NEMA WD 6 | 2002 | <i>Wiring Devices—Dimensional Specifications</i> |

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Add the following new subclauses.

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A1 *Compliance is checked by application in turn, of each of the plugs listed in 20.5.*

For socket-outlets with faceplates that are intended to be removed for interchangeability, this test shall be conducted with and without the faceplate in position.