

AS/NZS 3130:1995

Australian/New Zealand Standard

**Approval and test specification—
Beauty therapy equipment**

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Australasian College of Dermatologists
 Australasian College of Physical Scientists and Engineers in Medicine
 Australian Chamber of Commerce and Industry
 Australian Federation of Aestheticians and Beauty Therapists
 The Institute of Biomedical Engineering (Australia)
 Lincoln School of Health Sciences
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Australian/New Zealand Standard

Approval and test specification— Beauty therapy equipment

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PREFACE

This Standard was prepared by the Joint Standards Australia/New Zealand Committee HT/27 on Safety of Beauty Therapy Equipment. It is a comprehensive revision of AS 3130—1988.

The Standard has been prepared as a supplementary document to the parent specification AS 3100, *Approval and test specification—General requirements for electrical equipment*. To facilitate application of the supplementary requirements of this Specification, the Clauses of this Standard have been listed in approximately the same order as those of AS 3100.

This Standard does not address any performance requirements for the variety of therapy equipment mentioned herein, nor is it intended to lend any support for the claimed efficacy of such equipment.

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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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Approval and test specification—Beauty therapy equipment**

1 SCOPE This Specification prescribes the safety requirements for beauty therapy equipment (as defined in Clause 4.1) intended for operation from supply mains or from battery supplies (internal or external).

It also includes devices intended for use by private individuals and by beauty and slimming clinics (i.e. non-medical agencies).

This Specification does not apply to:

- (a) Certain types of appliances falling within the scope of AS 3311 (NZS 6332).
- (b) Electromedical equipment, the requirements for which are specified in the AS/NZS 3200 series of Specifications, e.g. short wave therapy equipment (AS/NZS 3200.2.3), ultrasonic therapy equipment (AS/NZS 3200.2.5) and microwave therapy equipment (AS/NZS 3200.2.6).
- (c) Certain types of ultraviolet and infrared radiation skin treatment appliances for household use, the requirements for which are specified in AS 2635 and AS 3315 (NZS 6327).
- (d) Solarium equipment used for cosmetic purposes, the requirements for which are specified in AS 2635.
- (e) Flexible heating pads, the requirements for which are specified in AS 3149 and AS/NZS 3164.
- (f) Skin or hair care appliances, the requirements for which are specified in AS 3304 (NZS 6323).

2 APPLICATION

2.1 General requirements of AS 3100 This Specification shall be read in conjunction with AS 3100 and the appropriate provisions of that Standard shall apply to the construction of the equipment and to the insulation and safeguarding of parts which normally carry current.

2.2 Specific requirements of this Specification Equipment shall be deemed to comply with this Specification only if it complies with all the appropriate provisions of this Specification and passes the tests specified herein.

2.3 Requirements of other Specifications Electrical equipment and components, e.g. thermostats, switches, flexible cords, incorporated in equipment which are depended upon for safety, shall comply with appropriate requirements of any relevant Approval and Test Specifications unless such requirements are varied herein.

NOTES:

- 1 Approvals authorities may, at their discretion, accept a manufacturer's declaration or an endorsed test report in respect to the testing of the whole machine or any part thereof.
- 2 Beauty therapy equipment may also be required to comply with AS 3200.1 (NZS 6150), should such equipment be purchased for use by medically-trained personnel in their diagnosis or treatment of patients.

3 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS

- 1169 Minimizing of combustion hazards arising from the medical use of flammable anaesthetic agents
- 1200 Boilers and pressure vessels (known as the SAA Boiler Code)
- 1939 Degrees of protection provided by enclosures for electrical equipment (IP Code)
- 2030 The approval, filling, inspection, testing and maintenance of cylinders for the storage and transport of compressed gasses (known as the SAA Gas Cylinder Code)
- 2211 Laser safety
- 2635 Installation, maintenance and operation of solaria for cosmetic purposes
- 3580 Methods for sampling and analysis of ambient air
- 3580.6.1 Part 6.1: Determination of ozone—Direct reading instrumental method

AS/NZS

- 4173 Guide to the safe use of lasers in health care

NZS

- 4602 Low pressure copper thermal storage electric water heaters
- 4606 Storage water heaters
- 6335 Safety of household and similar electrical appliances—Particular requirements for instantaneous water heaters

APPROVAL AND TEST SPECIFICATIONS

AS

- 3100 General requirements for electrical equipment
- 3108 Particular requirements for isolating transformers and safety isolating transformers
- 3112 Plugs and socket outlets
- 3115 Motor-operated appliances
- 3116 Electric cables—Elastomer insulated—For working voltages up to and including 0.6/1 kV
- 3142 Electric water heaters
- 3147 Electric cables—Thermoplastic insulated—For working voltages up to and including 0.6/1 kV.
- 3149 Flexible electric heating pads
- 3161 Thermostats and energy regulators
- 3164 Approval and test specification—Electric blankets
- 3172 Electric cooking appliances for household use
- 3191 Electric flexible cords

AS/NZS

- 3200 Medical electrical equipment
 - 3200.1 Part 1: General requirements for safety (NZS 6150)
 - 3200.2.3 Part 2.3: Short-wave therapy equipment
 - 3200.2.5 Part 2.5: Ultrasonic therapy equipment
 - 3200.2.6 Part 2.6: Microwave therapy equipment
- 3304 Particular requirements for skin or hair care appliances (NZS 6323)

AS/NZS

- 3311 Particular requirements for massage appliances (NZS 6332)
- 3313 Approval and test specification—Particular requirements for appliances for heating liquids (NZS 6315)
- 3315 Particular requirements for ultra-violet and infra-red radiation skin treatment appliances for household and similar use (NZS 6327)

4 DEFINITIONS For the purpose of this Standard, the definitions given in AS 3100 and those below apply.

4.1 Beauty therapy equipment—equipment designed to be used by other than professionally trained medical personnel and designed for treatment and care of a person's skin and body, including the following types:

NOTE: This equipment is designed to be used by trained beauty therapists (e.g. in clinics) or for private use (e.g. in the home).

- (a) Equipment with high frequency outputs (i.e. ≥ 10 kHz) including equipment for heat-producing effects (including anti-bacterial).
- (b) Equipment with medium frequency outputs (i.e. ≥ 1 kHz < 10 kHz), including interferential outputs, for nerve and muscle stimulation.
- (c) Equipment with low frequency (i.e. < 1 kHz) outputs (e.g. faradic currents) for application such as nerve and muscle stimulators, electro-acupuncture and similar.
- (d) Equipment with extra-low voltage d.c. outputs (e.g. galvanic currents) designed to facilitate chemical changes by electrolytic action.
- (e) Equipment for epilation (hair removal).
- (f) Steam.
- (g) Suction and spray.
- (h) Lasers.
- (j) Magnetic.
- (k) Ozone.
- (l) Preparation equipment, e.g. wax pots.

4.2 Accessible conductive part—a part of electrically conductive material which, in normal use and without the use of a tool, can be touched with the standard test finger.

4.3 Class I equipment—equipment intended for connection to an external power supply in which protection against electric shock does not rely on basic insulation only, but which includes an additional safety precaution in that accessible conductive parts are connected to the earthing conductor in the fixed wiring of the installation in such a way that accessible conductive parts cannot become 'live' in the event of a failure of the basic insulation.

NOTES:

- 1 For equipment intended for use with a non-detachable supply flexible cord or cable, this additional safety precaution includes an earthing conductor as part of the flexible cord or cable and a supply plug with earthing contact.
- 2 For equipment intended for use with a detachable supply flexible cord, the additional safety precaution includes an appliance inlet socket with earthing contact.
- 3 The connection to the earthing conductor is regarded as an essential safety precaution against electric shock hazard.
- 4 For equipment intended for permanent connection to the power supply the additional safety precaution includes a terminal for the connection of the protective earthing conductor.
- 5 Class I equipment may have parts with double insulation or reinforced insulation, or parts operating at extra-low voltage.

4.4 Class II equipment— equipment intended for connection to an external power supply in which protection against electric shock does not rely on basic insulation only, but in which the safety factor is increased by double insulation or reinforced insulation, there being no provision for protective earthing or reliance upon installation conditions.

NOTES:

- 1 Class II equipment may have parts operating at extra-low voltage.
- 2 Class II equipment may have an enclosure made of insulating material or of accessible conductive material or of a combination of these.
- 3 Class II equipment may be provided with means for connection to earth for functional (as distinct from protective) purposes.

If Class II equipment is provided with a means for connection to earth for functional (as distinct from protective) purposes the conductor connected to the protective earth contact of the mains plug shall be used only as a functional earth and shall be coloured green and yellow.

The insulation of such functional earthing shall be double insulation or reinforced insulation from live parts.

The functional earth terminal of such equipment shall be marked so as to distinguish it from a protective earth terminal and additionally there shall be an explanation in the accompanying documents.

4.5 Class III equipment— equipment in which protection against electric shock relies on supply at safety extra-low voltage.

NOTES:

- 1 Class III equipment may have circuitry operating at voltages in excess of safety extra-low voltage.
- 2 Class III equipment should not be provided with means for the connection of a protective earth conductor, although it may be provided with means for connection to earth for functional (as distinct from protective) purposes.
- 3 The combination of isolated supply and the restricted voltage are regarded as an additional protective measure against electric shock hazard.

4.6 External power supply— the supply mains, external batteries, external convertors, generators, or transformers.

4.7 Client— recipient of the treatment or therapy provided by the equipment.

NOTE: For the purpose of this Standard, the term client does not include those seeking professional treatment for illness.

4.8 Shall— indicates that a requirement is mandatory.

4.9 Should— indicates a recommendation.

5 DESIGN AND CONSTRUCTION

5.1 General Beauty therapy equipment shall comply with AS 3100 and with Clauses 5.2 to 5.8 below.

5.2 Equipment with liquid or gas containers

5.2.1 Safeguards in case of liquid spillage Equipment which incorporates liquid containers or circulating liquids shall be constructed so that spillage of liquid, either in normal use or during filling or emptying procedures, will not affect the equipment to the extent that its safety is impaired.

5.2.2 Pressure release Equipment containing or utilizing liquids or gases under positive or negative pressure shall incorporate safeguards against the likelihood of build-up of dangerous pressure within the equipment.

NOTE: Attention is drawn to AS 1200 and AS 2030, which cover requirements for pressure vessels and gas cylinders respectively. Attention is also drawn to AS 1169

5.2.3 Water heaters Water heaters of all capacities shall comply with the particular Standard(s) applicable to the type of water heater, or to any other specification acceptable to the regulatory authority concerned.

NOTE: Particular Standards include AS 3142, AS 3172, AS 3313/NZS 6315, NZS 4602, NZS 4606 or NZS 6335.

5.3 Provision of overcurrent protection Equipment with outputs intended for electrical connection to the client shall incorporate an overcurrent protective device as specified below:

- (a) *Permanently wired equipment* Protective devices in all active supply conductors.
- (b) *Class I equipment connected by flexible cord* Protective devices in all live (i.e. active and neutral) supply conductors.
- (c) *Class II equipment connected by flexible cord* Protective devices in all active supply conductors except that in equipment designed for single-phase operation, only one protective device need be provided.

Where provided, fuses which are accessible externally shall comply with AS 3100 and be of a type which, during the removal or replacement of the fuse elements, do not allow contact with any exposed live parts by the standard test finger.

5.4 Identification of wiring The colour of the insulation of internal wiring and supply conductors shall comply with AS 3100.

5.5 Regulating devices and switches

5.5.1 General Regulating devices and switches shall comply with AS 3100 and with the requirements specified below.

5.5.2 Fixing of operator-actuated controls All operator-actuated parts shall be secured so that they cannot be readily pulled off or work loose during normal use.

Controls, the adjustment of which can affect the safety of the person being treated or the operator while the equipment is in use, shall be secured so that the indicator always corresponds with the position of the control. The indicator in this case refers to 'ON' or 'OFF' positions, scale markings or other indications of position.

Incorrect assembly of the indicating device to the relevant component, if the device and the component can be separated without the use of a tool, shall be prevented by an adequate construction.

NOTE: Where grub screws (set-screws) are used, precautions should be taken to prevent loosening or rotation. Where practicable, any grub screws (set-screws) shall seat into recesses or slots, or on a flat on a shaft.

Compliance shall be checked by inspection and the tests in Clause 10.5.

5.5.3 Limitation of movement Stops shall be provided on rotating or movable parts of controls where necessary to prevent damage to wiring and mechanical parts. Where sudden and unexpected change of control settings can present a hazard, stops shall also be provided to prevent an unexpected change of the controlled variable from maximum to minimum or vice versa.

NOTES:

- 1 Such stops should prevent the unintentional rotation of controls through the maximum and minimum positions.
- 2 Attention is drawn to the fact that a maximum output level which, if approached consciously, and slowly, may not be hazardous, it may constitute a hazard if applied unintentionally and suddenly.

5.5.4 Intermediate positions of switches It shall not be possible for a switch to be left in an intermediate position if such position could cause a hazard when the equipment is re-energized.