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TESTING
CNAS L3110

TEST REPORT

Reference No.	:	WTX23D10218931Z002
Applicant	:	GlobTek, Inc.
Address	:	186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer	:	GlobTek, Inc.
Address	:	186 Veterans Dr. Northvale, NJ 07647 USA
Product Name	:	Blades-R
Model(s)	:	R-SAA-3
Total pages	:	69 pages
Standards	:	☒ AS/NZS 3105:2014+A1:2017 ☒ AS/NZS 3112:2017+A1:2021 ☒ AS/NZS 3100:2022
Date of Receipt sample	:	2023-10-18
Date of Test	:	2023-10-18 to 2023-11-15
Date of Issue	:	2024-03-05
Test Result	:	**Pass**

Remarks:
The results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

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Clause	Requirement - Test	Result - Remark	Verdict

Test item description .....: Blades-R

Trademark .....: GlobTek, Inc.

Model and/or type reference .....: R-SAA-3

Serial number .....: N/A

Rating(s).....: N/A

General product information:
The product with models R-SAA-3 is Power supply with detachable AU plug and connector.
The maximum ambient temperature specified by manufacturer is 40°C.
Difference between models:
1.Australian standard plug provided in the equipment has been tested according to AS/NZS 3112:2017+A1:2021.
2.For models with non-detachable plug, the plug in part is fixed to the enclosure and the plug portions (incorporate pins) are moulded together with enclosure that effectively prevents any disintegration or conductive parts remaining in the socket. For models with detachable plug, the plugs are fixed with enclosure by mechanical method that effectively prevents any disintegration or conductive parts remaining in the socket.
3.Product covered by this report only is plug portion part of switching mode power supply

Name and address of factory (ies):

1: GlobTek, Inc. 186 Veterans Dr. Northvale, NJ 07647 USA
2. GlobTek (Suzhou) Co., Ltd Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou,JiangSu 215021, China

Summary of testing:
The samples are tested in accordance with AS/NZS 3105:2014+A1:2017 used in conjunction with AS/NZS 3100:2017+A1:2017+A2:2019+A3:2020.
Part 1: Additional requirement according to AS/NZS 3105:2014+A1:2017(Page 3-19);
Part 2: Additional requirement according to AS/NZS 3100:2022(Page 20-45);
Part 3: Additional requirement according to Appendix J of AS/NZS 3112: 2017+A1: 2021 (Page 46-66);
Part 4: Additional requirement connector on detachable plug part with adaptor has been tested with the appliance according to IEC 60320-1:2021see report WTX23D10218931Z001;
Part 5: Photo documentation (Page 67).

2	COMPLIANCE WITH STANDARDS		P
2.1	General requirements of AS/NZS 3100		P
	This Standard shall be read in conjunction with AS/NZS 3100, and the appropriate provisions of AS/NZS 3100 shall apply to the construction of the EPOD and its insulation and the safegurading of parts which normally carry current.		P
2.2	Specific requirements of this Standard		--
	An EPOD shall be deemed to comply with this Standard only if it complies with all the requirements of this Standard and passes the tests specified herein.		P
2.3	Requirements of other Standards		--
	Components incorporated in an EPOD, which are depended upon for safety, shall comply with the appropriate requirements of the relevant Australian or Joint Australian/New Zealand Standards.		P

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5	DESIGN AND CONSTRUCTION		P
5.1	Current rating		P
	The current rating of any outlet facility shall be not greater than that of the plug or appliance inlet, nor greater than the current-carrying capacity of the power supply cord or flexible cable.		P
5.2	Mechanical strength		--
	The enclosing case of the EPOD, or of any reeling or coiling arrangement, shall be of robust construction and adequate mechanical strength, and shall comply with Clause 8.4.		P
5.3	Insulating material		--
	The insulating portions of an EPOD shall consist of either-		--
	(a) insulating material having properties not inferior to those specified in AS 3121(NZS/AS 3121) for insulating mouldings having a temperature class of 60℃ and in addition, complies with Clause 8.9 of this Standard; or		P
	(b) ceramic material of a type such that, after immersion in water for 48 h and after all visible drops of water have been removed from the surface by means of a clean dry cloth, it will not have increased in mass by more than 2%.		N/A
	INSULATING MATERIALS TEST IN ACCORDANCE WITH AS 3121: 2002		--
5.4	Power supply cord and outgoing flexible cords		--
	Any power supply cord or outgoing flexible cords provided shall-		--
	(a) comply with the relevant requirements of AS/NZS 3191, AS/NZS 60227 and AS/NZS 60245;		N/A
	(b) be a 3-core ordinary duty or heavy duty type;		N/A
	(c) have conductors with a cross-sectional area of not less than 1 mm2; and		N/A
	(d) for a power supply cord, comply with Clause 6.3.		N/A
5.5	Outlet facilities		N/A
5.5.2	Socket-outlets, cord extension sockets or connectors		N/A
5.5.2	Socket-outlets		N/A
	An EPOD may be provided with one or more socket-outlets-		N/A
	(a) complying with the relevant requirements of AS/NZS 3112 except that on the plane of the socket-outlet faceplate		N/A
	(i) the minimum distance from the edge of any live-pin aperture to the edge of the faceplate shall be 13.7 mm; and		N/A
	(ii) the maximum distance by which the faceplate, within the distance specified in Item (i), is below the plane shall be 3 mm; and		N/A
	(b) each intended to accommodate a three-pin flat-pin plug conforming to AS/NZS 3112.		N/A
	No part of the EPOD, including any switch in any position, shall project more than 8.6 mm from the		N/A

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	surface of the socket-outlet face, within the shaded area shown in Figure 1, except in the case of socket-outlets with special design features such as those that provide protection from dust, weather or mechanical damage.		
	There shall be no projections in the area defined by the dimension R21.6 shown in Figure 1.		N/A
	For EPODs incorporating more than one socket-outlet, the centre-to-centre distance between adjacent socket-outlets shall be greater than 44 mm.		N/A
5.5.3	Cord extension sockets		--
	An EPOD shall be provided with one or more cord extension sockets each rated up to 10A complying with the relevant requirements of AS/NZS 3120.		N/A
	For EPODs incorporating cord extension sockets, individual cord anchorages shall be provided for each outgoing flexible cord at the body of the EPOD, however where just two cord extension sockets terminate to an EPOD body the junction described in Clause 2.5 may alternatively be used.		N/A
5.5.4	Connectors and appliance outlets		P
	An EPOD may be provided with one or more connectors or appliance outlets each rated up to 10 A which shall comply with the relevant requirements of AS/NZS 60320.1 for connectors or AS/NZS 60320.2.2 for appliance outlets for Class I equipment.		P
	For EPODs incorporating connectors, individual cord anchorages shall be provided for each outgoing flexible cord at the body of the EPOD, however where just two connectors terminate to the body of the EPOD the junction described in Clause 4.6 may alternatively be used.		N/A
5.5.5	Terminals		N/A
	EPODs shall not be provided with terminals as an outlet facility.		N/A
5.5.6	Lampholders		N/A
	Any EPOD, except for those provided with a Junction, may incorporate one or more lampholders provided the following requirements are met:		N/A
	(a) The maximum connected lamp load shall not exceed 10% of the EPOD rating.		N/A
	(b) Any lamp shall be protected by a substantial guard or enclosure that cannot be removed without the use of a tool. This does not preclude the use of a hinged cover intended to allow lamp replacement.		N/A
	(c) Any lampholder shall be of the all-insulated type as defined in AS/NZS 3100. Where a bayonet cap lampholder is provided, it shall comply with the relevant requirements of		N/A

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	AS/NZS 3117 or AS/NZS 61184. Where an Edison screw lampholder is provided, it shall comply with the relevant requirements of AS/NZS 3140 or AS/NZS 60238.		
	Any lampholders provided shall be controlled by a Category 1 switch but the 'OFF' position need not be marked.		N/A
5.5.7	Overcurrent protection		--
	Any EPOD having any combination of three or more outlet facilities, or an outlet facility rated in excess of 10 A shall be provided with manually resettable trip-free or cycling tripfree overcurrent protection having a current rating not exceeding the rated current of the device and which complies with Clause 8.5, except where the means of overcurrent protection is a miniature overcurrent circuit-breaker complying with the relevant requirements of AS/NZS 3111 or AS/NZS 60898.1.		N/A
	Not more than one outlet facility rated in excess of 10 A shall be incorporated in an EPOD.		N/A
	Fuses shall not be used as a means of overcurrent protection. Fuses shall not be accessible without the use of a tool and shall not be of a type which is replaceable without the use of a tool.		N/A
5.5.8	Outlet switching		N/A
5.5.8.1	Switching requirements for EPODS		N/A
	EPODs shall be provided with manually-operated switching of the outlet facilities, which shall be within 0.9 m of every outlet facility, if they are—		N/A
	a) fitted with a plug and power supply cord, the length of which exceeds 1.8 m, as described in Clause 6.1(a);		N/A
	b)provided with a means of connection described in Clause 6.1(b); or		N/A
	c) fitted with a plug connector described in Clause 6.1(c) and a power supply cord, the length of which exceeds 1.8 m.		N/A
	For the purpose of this Clause, the length of the supply cord for an EPOD fitted with or without a junction shall be the maximum total length from the plug face to the cord entry point of any outlet facility		N/A
	These switching arrangements shall be one of the following:		--
	i) A switch or a miniature overcurrent circuit breaker or a cord-line switch which controls all outlet facilities and which is rated at not less than the current rating of the EPOD		N/A
	ii) A switch controlling each outlet facility or socket-outlet provided each switch is rated at not less than the current rating of the outlet facility or socket-outlet it controls. An EPOD with only one outlet facility or socket-outlet, with or without any lampholder as described in Clause 5.5.6 need not be provided with a switching arrangement.		N/A

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5.5.8.2	Requirements for switches in EPODS		N/A
	All switches shall be multi-pole and shall be of one of the following types—		N/A
	a) a switch conforming with AS/NZS 3133 when tested in the EPOD. Where a switch controls socket-outlets, the switch shall conform with Clauses 3.11 and 3.14.9 in AS/NZS 3112:2011 except it shall be a Category 1 switch and the ON position need not be marked. Where operated by the insertion and withdrawal of a plug, the switch shall be operated only by a live pin of the plug and need only open one live conductor;		N/A
	B) a miniature overcurrent circuit breaker conforming with AS/NZS 3111 or AS/NZS 60898.1; or		N/A
	c) a cord-line switch conforming with AS/NZS 3127 and located in the supply flexible cord at a distance not exceeding 1.8 m from the EPOD.		N/A
	Appliance switches conforming with AS/NZS 61058.1 may not satisfy this requirement.		N/A
5.6	Requirements for reeling or coiling arrangement		N/A
5.6.1	Over-temperature protection		N/A
	A reeling or coiling arrangement may be incorporated with an EPOD provided with outlet facilities described in Clause 4.5.1.1.		N/A
	Where a non-dectachable reeling or coiling arrangement is incorporated, the power supply cord shall not reach an excessive temperature caused by being operated at rated load in the fully wound position.		N/A
	Compliance with this requirement may be achieved by special cooling techniques or by over-temperature protection.		N/A
	Compliance shall be checked by the test of Clause 8.3 and 8.6, except where an interlock switch is used that prevents the energizing of outlets unless the power supply cord is fully extended. Such an interlock switch shall comply with the relevant requirements of AS 3133.		N/A
	Alternatively, a mechanical interlock may be provided whereby it is not possible to insert a plug into any socket-outlet unless the power supply cord is fully extended.		N/A
	Where an over-temperature protection device is provided, it shall be-		N/A
	(a) protected against mechanical damage; and		N/A
	(b) of the non-self-resetting thermal cut-out type that does not require replacement of a part.		N/A
5.6.2	Entry for power supply cord into reeling or coiling arrangement		N/A
	Any non-detachable reeling or coiling arrangement shall be capable of passing the test of Clause 8.8.		N/A
5.7	Earthing continuity		P
	All EPODs shall provide earthing continuity between the earthing pin of the plug or appliance		P

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	inlet and the earthing contact of each outlet facility and any exposed metal, in accordance with the requirements for earthing facilities stated in AS/NZS 3100.		
	The earthing of any exposed metal or the earthing continuity of outlet facilities shall not rely solely on-		P
	(a) contact through the revolving axle of the cable reel; or		N/A
	(b) a single brush or single spring-loaded revolving contact.		N/A
6	MEANS OF CONNECTION		P
6.1	General		P
	Every EPOD shall be provided with facilities for connection to the supply by either		N/A
	(a) a power supply cord and plug; or		N/A
	(b) a Group 1 appliance inlet of the appropriate rating and complying with AS/NZS60320.1, or a Group 2 appliance inlet complying with AS/NZS 60320.1 and which is of a type that will only accept a cord extension socket complying with AS/NZS 3120 and intended for use with a three-pin, flat-pin plug conforming to AS/NZS 3112.		N/A
	(c) a plug connector complying with AS/NZS 60320.2.2		N/A
	d) Integral or detachable plug portions in accordance with Appendix J of AS/NZS 3112.		P
6.2	EPODs with integral pins for insertion into socket-outlets		P
	The plug portion of EPODs with integral pins for insertion into socket-outlets shall comply with the requirements for equipment with integral pins for insertion into socket-outlets in accordance with AS/NZS 3112.		P
	EPODs with integral pins for insertion into socket-outlets shall have no more than two outlet facilities.		P
7	THERMOSTAT OR ENERGY REGULATOR		--
	Any thermostat or energy regulator incorporated shall comply with this Standard. In addition it shall be tested for compliance with AS/NZS 3161 or IEC 60730 series with respect to the endurance test only.		N/A
8	POWER SUPPLY CORD ASSEMBLY		N/A
8.1	Plug		N/A
	The plug shall		N/A
	(a) have a pin configuration for a three-pin, flat-pin plug conforming to AS/NZS 3112;		N/A
	(b) be connected to the power supply cord in accordance with the configuration specified in AS/NZS 3112; and		N/A

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	(c) comply with the relevant requirements of AS/NZS 3112.		N/A
8.2	Power supply cord attachment		N/A
	The power supply cord shall be assembled with the EPOD by one of the following methods:		N/A
	(a) Type X attachment.		N/A
	(b) Type Y attachment.		N/A
	(c) Type Z attachment.		N/A
	Where a Junction is used, the power supply cord shall be assembled with Type Z attachment. This requirement shall also apply to the method of assembly of the outlet facility flexible cords.		N/A
8.3	Length of power supply cord		--
	The minimum length of the power supply cord shall be 0.9 m, and the maximum shall be as shown in Table 1, except that longer lengths with larger conductor areas may be used for the purpose of limiting voltage drop, provided that the voltage drop is not greater that 5% of the supply voltage when the device is operated at a rated current.		N/A
8.4	Length of flexible cords when cord extension sockets or connectors are used		--
	The requirements of Clause 6.3 shall apply to the power supply cord.		N/A
	The length of the outgoing flexible cord from the point of exit of the cord from the junction or the body of the EPOD to its associated outlet facility shall be not more than 0.9 m.		N/A
8.5	Polarization		--
	The EPOD shall be constructed so that the polarity of the aperture configuration of any socket-outlet or cord extension socket corresponds to that of the plug pins and, when viewing the mating face of the socket-outlet, shall be earth, active, neutral, in a clockwise direction.		N/A
	The terminals of the plug and any outlet facility shall be connected to the appropriate conductor identified by the following colours of insulation:		N/A
	(a) Active—brown.		N/A
	(b) Neutral—light blue.		N/A
	(c) Earth—green/yellow.		N/A
	NOTE: For heavy-duty flexible cord, the colours red and black are acceptable for active and neutral respectively.		N/A
9	MARKING		N/A
9.1	General		N/A
	The EPOD shall be marked in accordance with the relevant requirements of AS/NZS 3100, except that the rating shall be marked in both watts and amperes. It shall also be marked to indicate that the total load connected is not to exceed the rating of the device.	Component part	N/A
	Where a lampholder is provided and there is a		N/A

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	restriction on the wattage of lamp that may be inserted, the maximum wattage of the lamp shall be marked. This form of marking shall be similar to 'MAXIMUM LAMP RATING WATTS'.		
	Unless the EPOD is ,marked with a degree of IP33 or greater, it shall be marked "for indoor use only"		N/A
9.2	Additional marking requirements for EPODs incorporating a reeling or coiling arrangement		N/A
	The following additional marking for EPODs incorporating a reeling or coiling arrangement shall be made in durable lettering not less than 3 mm in height and in a colour in contrast with that of the material of the reeling or coiling enclosure: DO NOT OPERATE UNLESS CORD FULLY UNREELED		N/A
	This additional marking shall be on the face or faces adjacent to the socket-outlets.		N/A
9.3	Location of marking		P
	The marking shall be clearly discernible from the outside of the EPOD. In addition, the rating and the marking specified in Clause 7.1 indicating that the total load is not to exceed the rating of the EPOD shall be clearly visible when the EPOD is in its normal position of use.	Located on the surface of plug holder and the surface of connector.	P
9.4	Instruction		--
	For EPODs provided with a Junction, an instruction shall be provided according to 'Equipment with Type X, Y and Z attachments' stated in AS/NZS 3100.		P
10	TESTS		P
10.1	General		P
	The EPOD shall pass the tests prescribed in Table 2, such tests being carried out in the order stated herein.	See the appended table	P
	When performing the insulation resistance test or the high voltage test, any surge voltage limiting component, (e.g. voltage dependent resistor), may be disconnected during the test.		P
10.2	Test of cord anchorage		--
	The test of cord anchorage shall be carried out in accordance with the requirements for 'cord anchorage' stated in AS/NZS 3100. For EPODs provided with outgoing flexible cords, this test shall also be applied to each cord anchorage required by Clause 4 for the outgoing flexible cord.		N/A
	In addition, for EPODs provided with a junction, the tests shall be repeated by applying pulls in turn to each combination of flexible cords including the power supply cord		N/A

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	terminated at the junction. The tests shall be applied to each combination in the same plane and the pulls to each combination shall be made at an angle of 180°.		
	At the conclusion of the test the junction shall show no damage likely to impair the safety of the EPOD.		N/A
10.3	Temperature rise during normal operation	See appended table 10.3	P
10.3.1	General		P
	EPODs without a control or conditioning function shall comply with Clause 10.3.2. EPODs with a control or conditioning function shall comply with Clause 10.3.3.	EPODs without a control function	P
10.3.2	Test 1		P
	The EPOD shall be operated at 10 A or rated current, whichever is the greater, and arranged in accordance with the marked operating instructions or warning label. Where a lampholder is provided, the lamp used for this test shall be of the maximum wattage marked on the EPOD or, in the absence of such marking, the lamp shall be of the highest wattage that can be accommodated. For a fluorescent lamp, a reference lamp complying with AS/NZS 61347.2.8 shall be used.		P
	If the marking set out in Clause 9.2 is not marked on EPODs incorporating a non-detachable reeling or coiling arrangement, this test shall be carried out with the power supply cord fully reeled or coiled.		P
	The temperature of materials and insulation, measured when temperatures are stable, shall not exceed the relevant values given for temperature rises of components and insulating material given in Table 5.7, 'Maximum temperature rise', in AS/NZS 3100. Any overload or overcurrent protection shall not operate.		P
10.3.3	Test 2		P
	The EPOD shall be connected to a supply at marked voltage and operated at marked output and at any marked duty cycle until steady state conditions are reached.		N/A
	The test shall be carried out at a power factor appropriate to any equipment with which the EPOD is marked in accordance with Clause 9.1(b), or in the absence of such marking, at a lagging power factor between 0.75 and 0.8. Prior to being connected to the output of the EPOD under test, an adjustable load shall be connected directly to a 240 V, 50 Hz supply, and configured to obtain the required rated output wattage/current at the nominated power factor. The load shall then	0.75	N/A

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	be transferred to the EPOD under test and applied without change to its configuration.		
	The temperature of any material or insulation which may be exposed to excessive temperature during operation of the EPOD shall be measured throughout the test.		N/A
	If the marking requirement of Clause 9.2 is not marked on an EPOD incorporating a reeling or coiling arrangement, this test is carried out with the flexible cord fully reeled or coiled.		N/A
	The temperature of materials and insulation measured when temperatures are stable shall not exceed the relevant values given for temperature rises for components and insulating material given in Table 5.7, 'Maximum temperature rise', in AS/NZS 3100:2009. Any overload or overcurrent protection shall not operate.		N/A
10.4	Mechanical strength		P
10.4.1	General		--
	Control devices having a mass of up to 500 g shall comply with Clauses 10.4.2 and 10.4.3.	20g	P
	Control devices having a mass greater than 500 g shall comply with Clause 10.4.3.		N/A
10.4.2	Up to 500 g		P
	Control devices having a mass of up to 500 g shall be tested as follows:		P
	(a) The device shall be released from a clamp, in an attitude likely to cause the most damage, so as to fall freely through a distance of 750 mm onto a steel plate not less than 5 mm thick which is supported on a concrete surface. The steel plate shall have a surface area not less than the projected area of the device when supported in the clamp.		P
	(b) Step (a) shall be repeated four times making five tests in all.		P
	On completion of these tests, the external body of the control device shall not be damaged to such an extent that the standard test finger specified in AS/NZS 3100 can touch live parts.		P
10.4.3	Impact hammer test		N/A
	A separate sample of the control device, not subjected to any previous tests, shall be tested in accordance with the requirements for mechanical strength of AS/NZS 60335.1.		N/A
10.5	Overload test		P
	The control device shall be connected to supply at marked voltage and subjected to the following overload conditions:		P
	(a) Any control device which is fitted with a thermal cut-out shall be subjected to the	Without thermal cut-out	P

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	maximum overload conditions attainable in service which can be applied without causing the thermal cut-out to operate.		
	(b) Any control device which is not fitted with a thermal cut-out shall be subjected to overload conditions which are 15 percent above marked load.		N/A
	The test shall continue for 4 h or until temperatures become substantially stable, whichever is the lesser period.	1h10min (substantially stable)	P
	During the test— (i) the temperature limits for insulating materials specified in AS/NZS 3100 shall not be exceeded by more than 35℃; and	See appended table 10.5	P
	(ii) no condition that gives rise to any other hazard shall prevail.		P
10.6	Overcurrent protection		N/A
10.6.1	General		N/A
	EPODs provided with outlet facility overcurrent protection in accordance with Clause 4.5.3 shall comply with the tests specified in Clauses 8.5.2 and 8.5.3.		N/A
	These tests shall not be conducted on EPODs incorporating overcurrent protection in the form of a miniature overcurrent circuit-breaker complying with AS/NZS 3111 or AS/NZS 60898.1.		N/A
10.6.2	Test 1		--
	The EPOD shall be operated at 13.75 ±0.15 A or 137.5 ±1.5% of rated current, whichever is the greater, in an ambient temperature of 23℃ ±2℃ in a draught-free environment. The overcurrent protection shall operate to interrupt the load current within 2 h.		N/A
10.6.3	Test 2		--
	The EPOD shall be operated at 600 ±10% rated current in a draught-free environment. The overcurrent protection shall operate to interrupt the load current within 5 s.		N/A
	Immediately following the overcurrent protection test, Tests 1 and 2 of Table 2 shall be repeated, and the device shall comply with the specified requirements of the tests.		N/A
10.7	Over-temperature protection (abnormal operation)		--
	The over-temperature protection test is conducted only on those EPODs incorporating a reeling or coiling arrangement and not incorporating an interlock that would prevent the energizing of any outlet facility until the power supply cord is fully extended.		N/A
	For the purpose of this test, the EPOD shall have the power supply cord wound onto the reel or coiled in layers so as to obtain the most onerous condition.During the process, thermocouples shall be fixed to the sheath of the central core in		N/A

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	each layer so as to approximately align at the 12 o'closk position of the cable reel or coil after 0.5m of the power supply cord has been unwound. The device shall be operated at 10 A or rated current, whichever is the greater, and rated voltage.		
	When steady conditions have been reached, or at any time during six successive operations of the non-self-resetting thermal cut-out, the temperature of the sheath of the power supply cord shall not, at any point, exceed 100℃ and there shall be neither emission of flames, smoke or molten material, nor exposure of live parts.		N/A
10.8	Abnormal operation		N/A
10.9	Additional tests for integrally moulded EPODs and EPODs provided with a Junction		N/A
	Integrally moulded EPODs, EPODs with multiple cord outlets and EPODs provided with a junction shall comply with 'Tests on non-rewireable plug and flexible cord' stated in AS/NZS 3112 where reference to the 'non-rewireable plug' shall be taken to be the EPOD.		N/A
10.10	Test of cord entry (for devices incorporating a non-detachable reeling or coiling arrangement)		N/A
	The test of cord entry involves the withdrawal and retraction of the power supply cord in four different directions, four times each, so that a total of 16 withdrawals and retractions are carried out.		N/A
	The power supply cord shall be withdrawn to its full length through the cord opening at 90° to the normal entry of the power supply cord. The power supply cord shall then be left in a free state and retracted in the normal manner. This operation shall then be performed another three times.		N/A
	This procedure shall be repeated at three more locations around the periphery of the cord entry of the EPOD. The locations shall be progressively spaced at 90°, 180° and 270°, from the first location.		N/A
	On completion of this test the cable sheath shall show no visible damage.		N/A
10.11	Determination of ignitability and combustion propagation		P
	The EPOD shall comply with the requirements for resistance to fire in accordance with AS/NZS 3100 Annex A.	See the appended table	P
	The glow-wire test temperature 'T' shall be 850℃.		P
	for any styrenic material or any material of an undeclared type, the test temperature 'T' shall be 960℃.		N/A
	Any overcurrent protective device shall be subjected to the glow-wire test with a test temperature of 960℃.		N/A
10.12	Resistance to heat test		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Overload protection devices other than those conforming with AS/NZS 3111 or AS/NZS 60898.1, shall conform with the requirements for resistance to heat in accordance with AS/NZS 3100, Appendix B. The minimum temperature shall be 160°C ±2°C		N/A
	However, for parts of the overload protection device of thermoplastic material providing supplementary insulation or reinforced insulation, the test shall be made at a temperature of 25°C ±2°C plus the maximum temperature rise determined during the tests of Clause 10.6, if this is higher		N/A

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Clause	Requirement - Test	Result - Remark	Verdict

8.3.1 of AS/NZS 3100	TABLE: Test No. 1 - Insulation resistance test			P
Insulation resistance test (500 VDC):				
Between:		required (MΩ)	Resistance (MΩ)	--
a). Between live parts and internal metal parts;		≥1	--	N/A
b). Between live terminals and the case, frame, or exposed metal parts;		≥1	>100MΩ	P
c). between live parts and external metal parts;		≥1	--	N/A
d). Between live parts and a flexible electrode applied to non-conductive parts normally handled in service; and supplementary insulation		≥10	>100MΩ	P
e). through supplementary insulation		≥10	>100MΩ	P

8.4 of AS/NZS 3100	TABLE: Test No. 2 - Electric strength test		P
Electric strength:			
Between:		Test voltage (V a.c.)	--
a) between live parts and internal metal parts;		1250	N/A
b) between live parts and the case, frame, or exposed metal parts;		3750	P
c) between live parts and external metal parts		3750	N/A
d) between live parts and a flexible electrode applied to non-conductive parts normally handled in service;		3750	P
e) through supplementary insulation		2500	P

8.5 of AS/NZS 3100	TABLE: Test No. 3 - Earthing connection test	P
Test current (1.5In or 25 A, whichever is the greater):		
Measured resistance (Ω): (Required resistance Max. 0.1 Ω)	--	

10.2	TABLE: Test No. 4 - Cord anchorage test	N/A
Pull (N): 65 Torque (Nm): 0.1 (according to Table 8.6 of AS/NZS 3100)	Test result	
Displacement of flexible cable, mm (required ≤2mm)	--	
There shall be not appreciable strain at the electrical connections	--	

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Clause	Requirement - Test	Result - Remark	Verdict

8.7 of AS/NZS 3100	TABLE: Test No. 5 - Screw threads and fixings	N/A

Test requirements	Test result
Threaded fastenings of metal in metal or thermosetting plastic or wood, or the like.	--
- 10 times (screw Ø / torque Nm)	--
- 5 times (screw Ø / torque Nm)	--
Section area of conductor (mm^2)	--
Threads of the screwed component and its fixing shall not strip, insulating material shall not crack, nor shall there be any other failure which would render the screwed component non-reusable.	--

10.3	TABLE: Test No. 6 - temperature rise		P
Test current: 10A.a.c.			--
Cross sectional area: 1,0 mm^2			--
Parts	Max. temperature rise (K)	Result (K)	--
Terminal L of plug	45	36.6	P
Terminal N of plug	45	35.7	P
Enclosure outside	60	11.7	P
Ambient	Ref.	24.2℃	--

8.3.2 of AS/NZS 3100	TABLE: Test No. 7 - Leakage current test	N/A

Between any pole of supply and accessible metal parts and metal foil in contact with accessible surfaces of insulating material, connected together:

Type of equipment	Required (mA)	Measured (mA)
Power switch ON:		
Line and enclosure covered with metal foil	0.25	
Neutral and enclosure covered with metal foil	0.25	
Power switch OFF:		
Line and enclosure covered with metal foil	0.25	
Neutral and enclosure covered with metal foil	0.25	

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Clause	Requirement - Test	Result - Remark	Verdict

8.3.1 of AS/NZS 3100	TABLE: Test No. 8 - Insulation resistance test		P
Insulation resistance test (500 VDC):			
Between:	required (MΩ)	Resistance (MΩ)	--
a). Between live parts and internal metal parts;	≥1	--	N/A
b). Between live terminals and the case, frame, or exposed metal parts;	≥1	>100MΩ	P
c). between live parts and external metal parts;	≥1	--	N/A
d). Between live parts and a flexible electrode applied to non-conductive parts normally handled in service; and supplementary insulation	≥10	>100MΩ	P
e). through supplementary insulation	≥10	>100MΩ	P

8.4 of AS/NZS 3100	TABLE: Test No. 9 - Electric strength test		P
Electric strength:			
Between:	Test voltage (V a.c.)		--
a) between live parts and internal metal parts;	1250		N/A
b) between live parts and the case, frame, or exposed metal parts;	3750		P
c) between live parts and external metal parts	3750		N/A
d) between live parts and a flexible electrode applied to non-conductive parts normally handled in service;	3750		P
e) through supplementary insulation	2500		P

10.4.2	TABLE: Test No. 10 - Drop test	P
Requirement		Test result
After 5 times of drops, the sample shall not be damaged to such an extent that the standard test finger can touch live parts.		OK

10.4.3	TABLE: Test No. 10 - Impact hammer test	P
Requirement (with an impact energy 0.5+0.05N.m)		Test result
After the test, the specimen shall show no damage within the meaning of this standard, and it shall not be possible to touch live parts.		OK

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Clause	Requirement - Test	Result - Remark	Verdict

10.5	TABLE: Test No. 11 – overload test			P
Test current:				--
Cross sectional area: N/A				--
Parts		Max. temperature rise (K)	Result (K)	--
Enclosure outside		95	15.4	P
Ambient		--	18.6℃	P

8.3.1 of AS/NZS 3100	TABLE: Test No. 15 - Insulation resistance test			P
Insulation resistance test (500 VDC):				
Between:		required (MΩ)	Resistance (MΩ)	--
a). Between live parts and internal metal parts;		≥1	--	N/A
b). Between live terminals and the case, frame, or exposed metal parts;		≥1	>100MΩ	P
c). between live parts and external metal parts;		≥1	--	N/A
d). Between live parts and a flexible electrode applied to non-conductive parts normally handled in service; and supplementary insulation		≥10	>100MΩ	P
e). through supplementary insulation		≥10	>100MΩ	P

8.4 of AS/NZS 3100	TABLE: Test No. 16 - Electric strength test		N/A
Electric strength:			
Between:		Test voltage (V a.c.)	--
a). Between live parts and internal metal parts;		1250	N/A
b). Between live terminals and the case, frame, or exposed metal parts;		3750	P

22.16 of AS/NZS 60335.1	TABLE: Test No. 19 - Automatic cord reels		N/A
Test requirements		Test result	
The test is carried out 6 000 times at a rate of approximately 30 times per minute or at the maximum rate allowed by the construction of the cord reel if this is less. After the test, the cord and cord reel are inspected.		--	
Electric strength test			-
Between:		Test voltage (V a.c.)	--
Between the conductors of the cord connected together and metal foil wrapped around the cord.		-	-

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Clause	Requirement - Test	Result - Remark	Verdict

10.11	TABLE: Test No. 20 - Glow wire test				P
Tested parts	Test temperature (°C)	Ignition of tissue paper?	Scorching of pinewood board?	Visible flame ?	Extinguish within 30 s after removal of the glow wire?
Plastic of Plug	850	No	No	No	0s
Plastic enclosure	650	No	No	No	0s

Needle-flame test:				N/A
Tested parts	Test flame 30s ± 1s	Ignition of the specified layer or wrapping tissue?	Visible flame?	Extinguish within 30s after removal of the needle flame?
--	--	--	--	--

10.12	TABLE: Test No. 22 - Resistance to heat test		N/A
Tested parts	Test temperature (°C)	impression diameter (mm)	allowed impression diameter (mm)
--	--	--	2,0

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Clause	Requirement - Test	Result - Remark	Verdict
3	**DESIGN AND CONSTRUCTION**		P
3.1	General		P
	All equipment shall comply with the provisions of this Standard in respect of selection of materials, design, and construction, and with the tests specified herein.		P
	The selection and application of materials, and the design and construction of all equipment shall be such as will ensure, as far as is reasonably possible and		P
	economically practicable, that when the equipment is standing, supported, or fixed in a normal position and operating in a normal manner, and account being taken of ordinary wear and tear and other depreciating factors that can reasonably be anticipated, no person will be exposed to risk of injury or electric shock, and there will be no unwarrantable risk of fire either		P
	(a) through the functioning of the equipment under conditions required by its use at rated loading; or		N/A
	(b) Through the mechanical or electrical failure of any material or of the equipment itself or of any part thereof.		P
	This Standard does not, in general, take into account the use of equipment by young children or infirm persons without supervision, or playing with the equipment by young children.		P
3.2	Equipment to be suitable for conditions of use		P
	All equipment shall be of a type, design, and construction that will enable it to be installed in		P
	accordance with the National Wiring Rules and will provide protection against mechanical and electrical failure which can reasonably be expected to result from mechanical failure, or from exposure to weather, water or dampness, corrosive fumes, dust, steam, oil, high temperature or any other deleterious influences to which it will be exposed under the conditions of its use.		N/A
	Non-hygroscopic insulating materials shall be used where required in individual Standards. In other cases, hygroscopic materials may be used for insulation, provided that the materials are suitably impregnated or treated if liable to exposure to dampness. The position and fixing of the insulation shall be such as will maintain creepage distances and clearances		N/A
	during the normal life of the equipment. In general, timber shall not be acceptable as an insulating		N/A
	material except that it may be recognized in special cases where a particular grade is used		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	for a specific purpose.		
3.3	Selection of materials and parts		P
	Any material or part used in, or in the construction of, any equipment shall comply with any specific requirements set out in respect thereto in this Standard or in an individual Approval and test specification dealing with such materials or parts.		P
	Where any standard prescribes,for or in any equipment, the use of a particular kind of material or part, a material or part of another kind may be used instead, provided that its use will not introduce any risk of electric shock or fire and will not render the equipment less resistant to mechanical or electrical		N/A
	failure than would the use of a material or part of the kind prescribed.		P
3.4	Selection of components		P
	Any component part that is used in or in the construction of any equipment and which is depended upon for safety shall comply with the appropriate requirements of any relevant individual Approval and test specification.		P
3.5	Workmanship		P
	All fabrication and construction shall be carried out in a thoroughly workmanlike fashion complying with the appropriate requirements of this Standard and the generally accepted principles of sound and safe practice.		P
3.6	Fuses		N/A
3.7	Identification of wiring		N/A
3.8	Regulating devices and switches		N/A
3.8.1	Fixing and mounting		N/A
3.8.2	Visual indications of positions		P
3.8.3	Voltage and current limitation		P
3.8.4	Switches for transportable machinery		N/A
3.8.5	Switches		N/A
3.8.6	Electronic regulating devices and switches		N/A
3.9	Socket-outlets		N/A
	Socket-outlets shall not be permitted in equipment intended for connection by flexible cord except in the following circumstances:		--
3.10	Equipment intended to be supported by contacts of socket-outlets		P
	Equipment having integral pins for insertion into socket outlets shall comply with Appendix J of AS/NZS 3112.	comply with Appendix J	P
3.11	Static charge in equipment		N/A
3.12	Control methods		P
3.13	Stability		N/A
	Freestanding equipment intended to be used on a surface such as a floor or a table shall have adequate stability and shall be tested in accordance with Clause 8.14.		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
3.14	Equipment connected to supply by a plug		P
	Equipment intended to be connected to the supply mains by means of a plug shall be constructed so that in normal use there is no risk of electric shock from charged capacitors when the pins of the plug are touched.		P
	The equipment is supplied at rated voltage.		P
	The voltage shall not exceed 34 V.		P
3.15	Capacitors		N/A
	Capacitors in appliances or accessories likely to be permanently subjected to the supply voltage and used for radio interference suppression or for voltage dividing shall comply with IEC 60384-14. If they have to be tested, they are tested in accordance with Annex G.		N/A
3.16 (A1:2017)	Varistors		N/A
	Varistors connected to live parts incorporated in equipment shall comply with the following requirements. NOTE Varistors connected to live parts are those connected between phases (between actives and betweenactives and neutral) and those connected between phases and earth (actives to earth) and neutral to earth		N/A
	a). MOVs shall comply with IEC 61051-2. The characteristics as defined within IEC 61051-1 for any such varistor shall be at least:		N/A
	Lower category temperature: -10°C; Duration 2 h (Test A IEC 60068-2-1);		N/A
	Upper category temperature: +85°C; Duration 1 000 h (Test B IEC 60068-2-2);		N/A
	Damp heat steady state severity: Duration 21 days; Temperature (40 ± 2) °C; Relative Humidity (85 ± 3)% (Test Cab IEC 60068-2-78);		N/A
	Over voltage category II.		N/A
	b). MOVs shall have a maximum continuous voltage rating of:		N/A
	at least 1.25 times the rated voltage of the accessory or;		N/A
	at least 1.25 times the upper voltage of the rated voltage range.		N/A
	c). The body of the varistor shall have a flammability classification of at least V-1 in accordance with IEC 60695-11-10.	V-0	N/A
	d). Accessories shall be protected against sudden failure of MOVs by:		N/A
	a fuse having a current rating not exceeding 10 A and a breaking capacity of not less than 1500 A. The fuse being connected in series with the varistor; or		N/A
	a protective device connected in series with the		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	varistor. The protective device varistor combination shall be subjected to a short-circuit test, with the varistor short-circuited.The short-circuit test is carried out by connecting the equipment to a supply source at the rated voltage of the equipment. If the equipment has a rated voltage range the supply source shall be at the upper voltage of the rated voltage range. The supply source shall have a prospective short-current of at least 1500 A at the test voltage.The circuit can be closed at any angle of the voltage		
	e). Equipment shall be protected against gradual failure of any varistor. Compliance is checked by the test of clause 8.15.9.		N/A
	f). A varistor shall not be connected to protective earth except in series with a Gas Discharge Tube (GDT) provided that the GDT complies with the following:clause.		N/A
	the electric strength test for basic insulation; and		N/A
	the external CLEARANCE and CREEPAGE DISTANCE requirements for basic insulation. Note: Communication and Telecommunications (ICT) components in equipment such as telephone, data and TV aerial connections, with varistors connected only to the protective earth, the requirements for varistors of the relevant ITC standard apply.		N/A
	Compliance is checked by inspection, measurement and test.		N/A
3.17 (A2:2019)	Incorporated power supplies	.	N/A
3.17.1	General	Considered in end product.	N/A
	Incorporated power supplies supplying Universal Serial Bus (USB) outlets shall comply with one of the following:		N/A
	(a)the appropriate part of the AS/NZ 61558 series of standards; or (b)AS/NZS 60950.1:2015; or (c)AS/NZS 62368.1:2017.		N/A
3.17.2 (and A3:2020 CL 3.17.2)	Single Fault Conditions		N/A
	In addition to conforming with 3.17.1 (b) or (c), for incorporated power supplies under single fault conditions, the output voltage of the power supply shall not have increased by more than 3 V or 10 % of the nominal rated output voltage, whichever is higher.		N/A
	Incorporated power supplies that can deliver a range of different nominal output voltages via negotiation with the connected device shall be tested at each of the output voltages that can be		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	negotiated with the connected device.		
	The output voltages under single fault conditions are measured with the output supply unloaded. Transient voltages of less than 1s are ignored provided the transient voltages are below 120 V Peak.		N/A
3.17.3	Temperature Consideration		N/A
	In addition to conforming to 3.17.1 (a), (b) or (c), the assembly (of an electrical accessory and the incorporated power supply) shall conform to the following temperature rise test:		N/A
	-Tested in accordance with the relevant end product standard with the loads applied to the power supply and the end product connected simultaneously. The load for the power supply is its rated load.		N/A
	Temperature limits of this standard or the relevant end product standard shall not be exceeded, whichever is more unfavourable.		N/A
3.17.4 (and A3 :2020 CL 3.17.4)	Over voltage category		N/A
	a.Incorporated power supplies in equipment in the installation wiring shall comply as overvoltage Category III equipment in accordance with relevant Power Supply Standards. For example socket outlets and switch panels. b.Incorporated power supplies in all other equipment supplied from the installation wiring shall comply as overvoltage Category II equipment in accordance with relevant Power Supply Standards.		N/A
3.17.5	Capacitors Bridging Reinforced Insulation:		N/A
	For overvoltage Category II accessories, accessible conductive parts separated by double or reinforced insulation from live parts may be bridged by a single Y1 capacitor with qualification approval in accordance with IEC 60384-14 (Clause 3.4.2 - Qualification Approval).		N/A
	For overvoltage Category III equipment and overvoltage Category II equipment other than accessories, if double or reinforced insulation separating accessible conductive parts from live parts is bridged by capacitors, at least two Y1 capacitors shall be used.		N/A
3.17.6	Determination of Ignitibility and Combustion Propagation		N/A
	Incorporated power supplies shall conform to the Ignitibility and Combustion Propagation requirements of this standard and the relevant end product standard whichever is more		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	onerous.		
4	**PROTECTION AGAINST MECHANICAL AND ELECTRICAL FAILURE**		P
4.1	Prevention of short-circuit and arcing		P
4.1.1	General		P
	All terminals, contacts and other live parts shall be so arranged that short-circuit or destructive arcing cannot take place, and that no part other than an easily replaceable contact can be appreciably damaged by an		P
	Holes for fixing screws shall be so placed that no short- circuit or arcing can occur when the screws are in		N/A
4.1.2	Segregation of internal wiring		N/A
	Where extra-low voltage and low voltage equipment wiring is within the one enclosure and the extra-low voltage wiring or parts connected thereto are accessible to the standard test finger, either of the following requirements or a combination thereof, shall		N/A
	(a) The extra-low voltage wiring and associated connections shall be effectively separated from low voltage wiring by means of rigidly fixed screens or		N/A
	(b) The extra-low voltage wiring and exposed parts shall be insulated for the highest voltage and so arranged or fixed that bare extra-low voltage parts		N/A
	Parts of one voltage system provided with basic insulation shall not come into contact with live parts of other systems.		N/A
4.1.3	Creepage distances and clearances for appliances		P
	Creepage distances and clearances shall be not less than the values in shown in Table 4.1.		P
4.1.4	Additional requirements for appliances		N/A
4.1.4.1	General		N/A
	The requirements in Clauses 4.1.4.2 to 4.1.4.5 are		N/A
4.1.4.2	Printed circuit boards		N/A
	Conductive patterns of printed circuit boards; permitted		N/A
	Further reduction permitted where appliance complies		N/A
4.1.4.3	Distances through insulation		N/A
	The distance through insulation shall be not less than 1.0		N/A
4.1.4.4	Insulation in sheet form		N/A
	The requirement in Clause 4.1.4.3 does not apply if the insulation is applied in thin sheet		--
	(a) for supplementary insulation, consists of at least two layers and each of the layers withstands the electric strength test of Clause 8.4 for supplementary insulation;	Number of layers:	N/A
	(b) for reinforced insulation, consists of at least three layers and any two layers together	Number of layers:	N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	withstand the electric strength test of Clause 8.4 for reinforced insulation.		
4.1.4.5	Supplementary insulation and reinforced insulation		N/A
	The requirement in Clause 4.1.4.3 does not apply if the supplementary or reinforced		--
	(a) The maximum temperature rise determined during the tests of Clause 8.15 does not exceed the value		N/A
	(b) The insulation, after having been conditioned as specified, withstands the electric strength test of Clause 8.4 both at the temperature occurring in the oven and		N/A
4.2	Mechanical protection of conductors and cables		N/A
4.2.1	General		N/A
	All conductors and cables shall be of such a type or be so located or protected that mechanical or electrical failure is not likely to occur.		N/A
4.2.2	Adjacent material		N/A
	All material immediately adjacent to or in contact with a conductor shall not cause abrasion.		N/A
4.2.3	Passage for conductors		N/A
	Where conductors and cables (including flexible cables and flexible cords) are to be threaded through tubes or channels or passed through openings formed in metal work, the tubes, channels or openings shall be of ample size.		N/A
4.2.4	Protection near moving parts		N/A
	Equipment wiring near moving parts shall be so located or arranged as to guard against the possibility		N/A
	of abrasion of the conductor, or its insulation, braiding or sheathing.		N/A
4.2.5	Unprotected conductors with fibrous insulation		N/A
	Fibrous insulated cables, which are defined as 'unprotected' in AS 3158 shall be used only where they can be installed without damage.		N/A
4.3	Terminals and connecting facilities for supply conductors		N/A
4.3.1	Connecting facilities required		N/A
	All equipment shall be provided with facilities for the connection of supply conductors in one of the following forms		--
	(a) Terminals.		N/A
	(b) Contact pins or spring contacts.		N/A
	(c) Connection of the conductors, flexible cord or flexible cable to internal leads, terminals, lugs or the like, by crimping or other similar suitable devices		N/A
	Twist-on connectors with suitable metal inserts may be used for live conductors but shall not be used for earthing connections.		N/A
	(d) Soldering may be used		N/A
	(i) for Type X attachments in equipment having		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	a rated input not exceeding 250 W; and		
	(ii) for Type Y and Type Z attachments;		N/A
	and shall comply with Clause 4.3.5.		N/A
	No portable equipment shall be provided with facilities for the connection of more than one supply flexible cord, unless permitted in an individual Approval and test specification.		N/A
	Any equipment intended for permanent connection to fixed wiring shall be provided with terminals asspecified in Item (a).		N/A
4.3.2	Design and construction of terminals		N/A
	All terminals shall be inherently corrosion-resistant and shall be so designed and proportioned that a connection made thereto will not loosen or overheat under normal conditions of use.		N/A
	All terminals shall be so designed that the conductors connected thereto can be rigidly and effectively clamped between metal surfaces and shall comply with Clause 4.6.1.		N/A
	Terminals shall be either securely fixed in position within a terminal box or enclosure, or so arranged that movement of the connections is limited by location.		N/A
	Screws of tunnel-type terminals and other clamping devices, which are intended to clamp directly onto		N/A
	conductors, shall be so shaped and finished that strands of the conductor are not likely to be severed.		N/A
	Aluminium conductors shall not be clamped directly by screws in tunnel-type terminals other than special types.		N/A
	Indirect clamping by means of suitable ferrules, plates and the like shall be acceptable.		N/A
	In general, a self-tapping screw shall not be used as a terminal screw for conductors.		N/A
	Die-cast terminal blocks made from zinc-base alloy shall not be used.		N/A
	Terminals provided for direct connection to fixed wiring shall be so designed and located as to permit the supply cables to be connected in accordance with one of the following methods:		N/A
	(a) Soldered into a cable-socket of appropriate size.		N/A
	(b) Clamped in a terminal or binding post.		N/A
	(c) Terminated in an approved solderless tag or terminating device.		N/A
4.3.3	Location of terminals		N/A
	The live terminals shall be within a terminal box or an enclosure, and shall be grouped together.		N/A
	Earthing terminal, if any, shall be either within the terminal box or enclosure or on the external surface of the equipment.		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	In equipment, except for those which have Type Y or Type Z attachment, the terminal box or enclosure shall be such as will allow access to the terminals and replacement of the flexible cord without dismantling the equipment.		N/A
4.3.4	Terminal arrangements		N/A
	Except for equipment that is provided with a Type Y or Type Z attachment, the following provisions shall apply:		N/A
	(a) The arrangement of the terminals shall be such as will allow the supply flexible cord or flexible cable to be disconnected and replaced without removing any internal wiring or connections from the terminals.		N/A
	(b) The clamping of the supply conductor at a terminal shall be independent of the clamping of any internal lead at that terminal.		N/A
	(c) Screwless terminals that require special preparation of the conductors shall not be acceptable.		N/A
4.3.5	Soldered connections		N/A
	Where facilities for soldered connections are provided, they shall comply with the following requirements:		N/A
	(a) The soldering terminals, lugs or the like shall be so designed that the conductors are held in position independently of the soldering.		N/A
	(b) They shall be so located and arranged as to minimize the likelihood of insulation being bridged by excess solder.		N/A
4.3.6	Prevention of slipping or spreading of conductors		N/A
	All terminals shall be of a form that will prevent slipping or spreading of conductors or conductor strands.		N/A
	Except for equipment with Type Y or Type Z attachments, a device shall not be acceptable as a means of preventing spreading of conductor strands on the terminals of portable equipment, unless it can be readily re-used when connection of the supply flexible cord is renewed.		N/A
	The requirement is not applicable to connections made in equipment with Type Y or Type Z attachment.		N/A
4.3.7	Earthing conductors		N/A
	Where the equipment includes an earthing terminal, provision shall be made to ensure that when correctly wired the connection is made without the earthing conductor of the flexible cord being held or pressed against live terminals or other live parts.		N/A
4.3.8	Conductors and terminals not to be stressed		N/A
	All conductors shall be so supported and		N/A

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	connected that there will be no undue mechanical stress on either the conductors or the terminals to which they are connected.		
4.3.9	Temperature at terminals		N/A
	The terminals shall be so placed, arranged and ventilated that any conductors or cables will not be liable to be exposed to temperatures in excess of those permissible for the conductor.		N/A
	Where temperature conditions are such as will require the use of connecting cables of heat-resisting type, prominent marking shall be provided adjacent to the terminals to indicate the type of connecting cable necessary.		N/A
	For terminals for the connection of supply flexible cords to portable equipment, the temperature rises, in general, shall not exceed 50 °C. (to allow the connection of flexible cords having maximum operating temperature of 75° C) except under the circumstances covered by Footnote h to Table 5.7, which allows a higher operating temperature.		N/A
4.3.10	Access to terminal devices		N/A
	Terminal devices shall not be accessible without the aid of a tool, even if their live parts are not accessible.		N/A
4.4	Flexible cord and connecting plug		N/A
4.4.1	When required		N/A
	Any portable equipment having a rating not exceeding 20 A shall be provided with a supply flexible cord.		N/A
	Such flexible cord need not be provided for equipment intended for direct insertion into a socket-outlet, or incorporating a Group 3 appliance inlet, or a Group 2 appliance inlet.		N/A
	The flexible cord shall		N/A
	(a) comply with AS/NZS 3191;		N/A
	(b) unless varied in the individual Approval and test specification, have a length of not less than		N/A
	(i) 0.9 m for table top or bench mounted equipment; or		N/A
	(ii) 1.8 m for other equipment;		N/A
	(c) unless varied in the individual Approval and test specification, be not less than		N/A
	(i) if elastomer insulated, ordinary duty sheathed flexible cord; or		N/A
	(ii) if polyvinyl chloride insulated		N/A
	(A) for equipment having a mass not exceeding 3 kg, light duty sheathed flexible cord; or		N/A
	(B) for equipment having a mass exceeding 3 kg, ordinary duty sheathed flexible cord;		N/A
	(d) be of the appropriate current rating;		N/A
	(e) be correctly wired to a plug of appropriate type complying with AS/NZS 3112 or alternatively, for equipment with a rating not exceeding 600 W, with a plug socket adaptor complying with AS/NZS		N/A

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	(f) be correctly connected to a connector of appropriate type if the equipment incorporates an appliance inlet or be correctly connected to terminals of the equipment;		N/A
	(g) incorporate an earthing conductor where the equipment has earthing facilities; and		N/A
	(h) not incorporate an earthing conductor where the equipment is of the double-insulated type. Power supply cords shall have a nominal cross-sectional area not less than those given in Table 4.4.		N/A
4.4.2	Warning notice		N/A
	Any equipment with a current rating above 10 A but not exceeding 20 A, and which is intended for connection by flexible cord and plug to a socket-outlet, shall have a prominent and durable notice affixed.		N/A
4.5	Supply connection and external flexible cables and cords		N/A
4.5.1	General		N/A
	Where a supply flexible cord or supply flexible cable is to be connected directly to equipment the facilities shall, in addition to complying with Clause 4.3, comply with this Clause.		N/A
	Power supply cords shall be assembled with the equipment by one of the following methods:		--
	(a) Type X attachment.		N/A
	(b) Type Y attachment.		N/A
	(c) Type Z attachment.		N/A
	For equipment not covered by an individual Approval and test specification, Type Y or Type Z attachments may be provided in the following circumstances:		--
	(i) Where sealing or encapsulation provides an essential safety feature such as waterproofing or avoidance of tampering with adjustments.		N/A
	(ii) In all other cases where the replacement of the flexible cord or flexible cable by the user of the equipment is not intended or is unlikely.		N/A
4.5.2	Provision for entry of flexible cord		N/A
	The equipment shall include provision for entry of the flexible cord or cable within its protective covering or sheath.		N/A
4.5.3	Cord anchorage		N/A
	All equipment intended for connection by means of a flexible cord or flexible cable shall be provided with a saddle, grip, tortuous path or other suitable means and shall comply with the test specified in Clause 8.6.		N/A
	Where cord anchorage is obtained by means of a screw bearing on the sheathing of a flexible cord, the assembly shall be such that in no way will it damage		N/A

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	the flexible cord when correctly applied nor shall it loosen in service. The screw shall		N/A
	(a) be made of suitable insulating material;		N/A
	(b) have a nominal diameter not less than that of the aperture for the flexible cord; and		N/A
	(c) be so shaped as not to damage the flexible cord.		N/A
	The cord anchorage shall be capable of accommodating a flexible cord of size and type appropriate to the equipment.		N/A
4.5.4	Protection of supply flexible cord		N/A
	Porcelain beads, heat-resistant sleeving, tubing, taping or the like on supply flexible cords shall not be accepted as providing insulation or protection.		N/A
	The equipment shall include provision for guarding the supply flexible cord against damage from internal moving parts.		N/A
4.5.5	Interconnection cables and cords		N/A
	Facilities for the connection of detachable and non- detachable interconnection flexible cables or cords shall comply with the requirements for the supply cable or cord, except that		N/A
	(a) Connectors and appliance inlets used for the interconnection flexible cable or cord shall not be interchangeable.		N/A
	(b) The cross-sectional area of the conductors of the interconnection flexible cable or cord is determined on the basis of the maximum current.		N/A
4.6	Joints and connections		P
4.6.1	Joints and insulation		P
	Insulation is required on joints or connections, the		P
	Joints and connections shall utilize materials and forms of construction that will avoid deterioration or loss of		P
	Insulating materials which may shrink or deform in service such as to cause loss of contact pressure not be used;		N/A
	- suitably treated or proofed to prevent such		N/A
	- metallic parts have sufficient resiliency to compensate for such shrinkage or deformation and to retain		N/A
	Stranded conductors shall not be consolidated by lead- tin soldering where they are subject to contact pressure,		N/A
	clamping means is so designed that there is no risk of bad contact due to cold flow of the solder.		N/A
4.6.2	Soldered joints		P
	Soldered joints shall be made without the use of fluxes containing corrosive substances.		P
4.6.3	Limitations of soldered joints		N/A
	Soft-soldered joints and soft soldering shall not be used for the connection of conductors where the temperature of the joint is likely to exceed 120 °C in normal operation.		N/A

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4.6.4	Joints and connections in lighting fittings		N/A
	No joint or connection shall be made within a lighting fitting except in a space incorporated for the purpose.		N/A
4.6.5	Solderless joints		N/A
	The attachment of conductors by crimped or similar forms of solderless pressure joints shall be made only with the use of the appropriate attaching tools.		N/A
4.6.6	Cascading of adaptors		N/A
	Two-way quick-connect tab and receptacle adaptors and the like shall not be cascaded.		N/A
4.7	Strength of screw threads and fixings		P
4.8	Space-threaded and thread-cutting screws		N/A
4.9	Direct connection to fixed wiring		N/A
4.10	Mechanical strength		P
	Equipment shall have adequate mechanical strength.		P
	Compliance is checked by inspection and, if necessary, by the test of Clause 8.8.		P
4.11	Degree of protection (IP classification)	IPX0	P
	Where the equipment is marked to classify it as having a specified degree of protection, the equipment shall comply with the appropriate requirements of AS 60529.		P
	For equipment assigned with a second characteristic numeral greater than 0, the equipment shall then withstand the tests of Clause 8.4.		N/A
4.12	Equipment incorporating batteries		N/A
5	**PROTECTION AGAINST RISK OF ELECTRIC SHOCK**		P
5.1	Guarding of live parts		P
	No contact with live parts using test finger of fig.8.10.		P
	No contact with live parts using test pin with force of 10N through openings in enclosures giving access to preset		P
	Covers relied upon to prevent inadvertent personal contact with live parts shall be fixed that a tool is		P
	A slot that will accept a coin is regarded as intended to accommodate a tool for the purpose of this Clause.		N/A
	The opening or removal of cover or component shall not expose live parts to inadvertent personal contact.		N/A
	If manufacturers instruct user to remove covers or components for maintenance, this shall not expose live		N/A
	Metal cover or casing enclosing live parts shall be of a strength sufficient to ensure that it cannot be deformed		N/A
	Edison-type screw lampholders shall be provided with adequate shielding facilities appropriate to the type of		N/A
5.1.1	Class II construction		P

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	Class II equipment and class II constructions adequated protection against accidental contact with basic insulation and metal parts separated from live parts by basic insulation only.	Class II equipment, Class II construction	P
	Only possible to touch parts separated from live parts by double insulation or reinforced insulation.		P
5.2	Insulation of live parts		P
5.2.1	General		P
	Live parts of electrical equipment shall be adequately insulated and supported and shall comply with the following:		P
	(a) Clauses 8.3 and 8.4 of this Standard.		P
	(b) Any specified requirements for insulation thickness.		P
5.2.2	Separation of live parts from non-current-carrying conductive parts		P
	The support and insulation of every live part shall be such as will ensure that no live part can make contact		P
	with any non-current-carrying conductive part exposed to personal contact.		P
5.2.3	Equipment wiring		N/A
5.2.3.1	General requirements		N/A
	Where equipment wiring is insulated in order to comply with Clauses 5.1, 5.2.1 and 5.2.2, such insulation shall be of a grade appropriate to the voltage. Insulants covered by this Standard shall comply with		N/A
	(a) The thickness requirements of Clauses 5.2.3.2 or 5.2.3.3; or		N/A
	(b) The thickness requirements of AS/NZS 3191.		N/A
	For other insulation electric strength test shall be made between the conductor and metal foil wrapped around the insulation, a test voltage of 2000 V being applied for 15 min.		N/A
	Where the equipment wiring is in the form of a cable it shall comply with the relevant Approval and test specification except as provided in Clauses 5.2.3.2 and 5.2.3.3.		N/A
5.2.3.2	Specific requirements – PVC insulation		N/A
	Specific requirements for wiring with PVC insulation are as follows:		N/A
	(a) For internal equipment wiring and accessible		N/A
	equipment wiring not subject to flexing or damage, the following shall apply: (i) General Insulation of internal equipment wiring of 250 V grade shall have an average aggregate thickness of not less than 0.5 mm, and in no case shall the minimum aggregate thickness at any point be less than 0.35 mm.		N/A
	(ii) Flexible cords with V70, V75 and V90 insulants may have a maximum operating temperature of 80 °C, 95 °C and 100 °C.		N/A
	(b) Accessible equipment wiring subject to flexing or external equipment wiring of shall have an		N/A

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	average aggregate thickness of not less than 0.8mm, and the minimum thickness not less than 0.6 mm.		
5.2.3.3	Specific requirements – fibrous insulation		N/A
	The thickness of 250 V grade fibrous insulation for internal, accessible and external equipment wiring shall comply with AS 3158 or AS/NZS 3191, as appropriate.		N/A
5.2.4	Arrangement of equipment wiring		N/A
	Precautions shall be taken in the support and fixing of equipment wiring to ensure that live parts, cannot become exposed to personal contact.		N/A
	Attachment of one conductor to another by tying, lacing, clipping, or the like, is regarded asa satisfactory means of fixing and support.		N/A
5.3	Earthing facilities		N/A
5.3.1	Exposed metal parts to have means of earthing		N/A
	If equipment includes any exposed metal parts, then all such exposed metal parts shall be in good electrical contact with each other, and the equipment shall be provided with a common earthing facility.		N/A
	For combination gas-electric equipment, the main metallic gas pipe shall be bonded to the earthing terminal of the equipment.		N/A
	The coating of metal parts with porcelain enamel is not acceptable alone as justification of absence of earthing of such parts.		N/A
	Flexible metallic conduit or tubing shall not be relied upon for earthing purposes.		N/A
5.3.2	Method of making the earth connection		N/A
	Facilities for earthing shall take one of the following forms:		--
	(a) A terminal suitable for the attachment of an earthing conductor.		N/A
	(b) The earthing contact of an appliance inlet.		N/A
	(c) Other approved means.		N/A
	A constructional bolt, stud, or screw may be used as the earthing terminal if all the following conditions are observed:		--
	(i) The earthing conductor can be removed from the terminal without in any way reducing the effectiveness of the bolt, stud or screw.		N/A
	(ii) The removal of any covers, likely to be removed in obtaining access to terminals, shall not disturb or reduce the effectiveness of the earthing connection.		N/A
	(iii) The bolt, stud or screw is not used for fixing the equipment in position.		N/A
5.3.3	Design and construction of earthing terminal		N/A
	The earthing terminal shall be capable of accommodating an appropriate internal earthing conductor and a supply earthing conductor of the size required by the National Wiring Rules.		N/A
	The current-carrying capacity of any earthing		N/A

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	terminal shall be not less than that of the earthing conductors to be connected.		
5.3.4	Resistance of earthing connection		N/A
	The resistance between the earthing facility and any exposed metal parts shall not exceed 1 Ω for readily accessible exposed metal parts that rotate, reciprocate or oscillate continuously, and 0.1 Ω in all other cases, when tested in accordance with Clause 8.4.		N/A
5.3.5	Printed conductors The printed conductors of printed circuit boards shall not be used to provide earthing continuity in hand-held equipment		N/A
	They may be used to provide earthing continuity in other equipment if at least two tracks are used with independent soldering points.		N/A
5.4	Equipment with double insulation		P
5.4.1	Equipment may be accepted as having double insulation only if it complies with Clause 5.4 and is capable of passing the tests prescribed herein.		P
	In addition, the following forms of construction are considered as acceptable:		P
	(a) Equipment having metal parts that can be touched and that are separated from live parts by insulation equivalent to double insulation.		N/A
	(b) Equipment having metal parts which are intentionally connected to live parts through an impedance which is designed to preserve the appropriate level of safety.		N/A
5.4.2	Supplementary insulation		N/A
	Supplementary insulation shall consist of suitable non-hygroscopic insulating materials and shall comply with the test requirements specified in Clause 8.4.3.		N/A
	Any supplementary insulation in the form of coverings, linings and the like shall be securely fixed in position.		N/A
	In the event of failure of the basic insulation, the effectiveness of the supplementary insulation shall not be impaired.		N/A
5.4.3	Basic insulation		N/A
	Basic insulation shall consist of suitable material possessing adequate mechanical strength and shall comply with the test requirements specified in Clause 8.4.3.		N/A
5.4.4	Reinforced insulation		N/A
	A single layer of insulation may be accepted as affording equivalent protection under the following conditions:		N/A
	(a) The single layer of reinforced insulation shall be of non-hygroscopic insulating material possessing adequate mechanical strength.		N/A
	(b) The insulation shall be suitable for the particular application.		N/A
	(c) Precautions shall be taken to guard against the accidental bridging of the insulation by metal or		N/A

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	partially conducting material.		
	(d) The insulation shall comply with the test requirements specified in Clause 8.4.3.		N/A
5.4.5	External metal parts		N/A
	The equipment shall have no external metal other than the parts listed in Items (b) to (d) of Clause 2.1.23 (the definition for exposed metal.)		N/A
5.4.6	Detachable covers		N/A
	The removal of any covers without the use of tools shall not expose to personal contact		N/A
	live parts; metal parts separated from live parts by basic insulation; or		N/A
	(c) the surface of basic insulation.		N/A
	Exposure of such parts due to the removal of a lamp from a lampholder shall not be a cause for rejection in terms of this requirement.		N/A
	Accessible or external equipment wiring that complies with Clause 5.2.3.2 (b) is deemed to comply with this Clause.		N/A
5.4.7	Arrangement of equipment wiring		N/A
	Precautions shall be taken in the support and fixing of equipment wiring.		N/A
	(a) Live parts, including any one conductor that may become detached, cannot come into contact with either supplementary insulation or external.		N/A
	(b) Basic insulation cannot come into contact with external metal parts.		N/A
	(c) Basic insulation cannot become exposed to personal contact by protruding through an opening.		N/A
5.4.8	Insulation of internal wiring		N/A
	The average aggregate thickness of basic insulation between any two live conductors and between any live conductor and supplementary insulation shall be not less than 0.5 mm.		N/A
	The average aggregate thickness of supplementary insulation shall be not less than 0.6 mm.		N/A
	The aggregate thickness of insulation at any point shall be not less than 0.35 mm and 0.44 mm for basic and supplementary insulation respectively.		N/A
	Notwithstanding the requirements of this Clause, insulation thickness complying with AS/NZS 3191 is deemed to be satisfactory.		N/A
	For appliances, the requirements of Clause 4.1.4.3 are not applicable to the insulation of internal wiring complying with AS/NZS 3191.		N/A
5.4.9	Openings in external metal walls		N/A
	Where a flexible cord or other conductor passes through an external metal wall, a substantial insulating bush shall be securely fixed in the opening.		N/A
5.4.10	Radio interference suppression devices		N/A
	No radio interference suppression device shall be connected between live parts and external metal		N/A

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	parts of double-insulated equipment.		
5.5	Extra-low voltage equipment		N/A
	Clauses 5.1, 5.2 and 5.3 shall not apply to equipment rated at extra-low voltage, except that d.c. equipment rated above 50 V shall be capable of withstanding the high voltage test specified in Clause 8.4.		N/A
5.6	Switches in portable heating appliances		N/A
5.7	Temperature rises for components and insulating material		N/A
	The temperature rises of components and of electrical insulating materials used in the construction of electrical equipment shall not exceed the values specified in Table 5.7 when tested in accordance with Clause 8.12.		N/A
5.8	Fault-indicating devices		N/A
	Any device, other than a circuit-interrupting device, intended to indicate to the user that a fault exists in equipment, shall be so designed and constructed that a defect in the fault-indicating device itself shall not		N/A
5.9	Fixing of handles, knobs, or the like		N/A
6	**RESISTANCE TO HEAT, FIRE AND TRACKING**		P
6.1	General		P
	This Section applies only to equipment designated 'attended' or 'unattended' in a particular Approval and test specification.		P
	For particular Approval and test specifications that do not designate equipment as 'attended' or 'unattended' the requirements of Annex A apply.		P
6.2	Resistance to heat		P
	External parts of non-metallic material, parts of insulating material supporting live parts including connections, and parts of thermoplastic material providing supplementary or reinforced insulation, shall be sufficiently resistant to heat.		P
	Compliance is checked, if required, by Footnote to Table 5.7 and by Footnote to Table 8.15.10, using thetest of Paragraph B2, Annex B.		P
	For external parts: ball-pressure test (1 h, 75 °C)		P
	After the test: diameter of impression ≤2 mm (mm) :	Enclosure: 0.5mm	P
	For part supporting live parts: ball-pressure test (1 h, 125 °C)		P
	After the test: diameter of impression ≤2 mm (mm) . :	Sleeve on live Pin: 0.5 mm Plug pin: 0.6mm	P
6.3	Resistance to fire		P
	Parts of non-metallic material shall be resistant to ignition and spread of fire.		P
	Compliance is checked by the tests of Paragraph B3, Annex B.		P
	Alternatively, compliance may be checked as specified in Clause 30.2 of AS/NZS 60335.1.		N/A
7	**MARKING**		P
7.1	Information to be marked		P
	All equipment shall be marked with the following information:		P

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	(a) The name or registered trade name or mark of the manufacturer or of the responsible vendor.	GlobTek, Inc.	P
	(b) The operating voltage and the rating in amperes or loading in watts or volt-amperes.	3.1A	P
	Single phase equipment shall be at least 230 V and for polyphase equipment at least 400 V or a rated voltage range that includes 230 V and 400 V.	230-240V	P
	(c) Where the use of equipment is limited either by its own nature or by the nature of any component such as d.c., a.c., phases, frequency.	~	P
	(d) Where a manufacturer or responsible vendor markets a number of different types each shall be marked with the catalogue number, type number or name.	R-SAA-3	P
	e) If applicable, designation for degree of protection against moisture including any pressure, heador time.		N/A
	(f) If compliance depends upon the operation of a replaceable thermal link or fuse link, the reference number identifying the link shall be marked.		N/A
	Where abbreviations or symbols are used, the following shall apply:		P
	Name or unit Abbreviation or symbol		P
	Volt V	V	P
	Ampere A	A	P
	Watt W (kW for kilowatt)	W	P
	Cycles per second Hz	Hz	P
	Direct current d.c or Alternating current a.c or	~	P
	The numerical value of the frequency and the number of phases may be coupled with the alternating current abbreviation or symbol.		N/A
	Not with standing the requirements of an individual Approval and test specification, the following requirements shall apply:		P
	Alternating current or 'a.c.' shall be acceptable for designating equipment intended for operation on a.c. Any marking required shall be expressed in SI units.		P
7.2	Method of marking Marking required under Items (a), (b), (c), (d), (e) and		P
	(f) of Clause 7.1 shall be legible, indelible, and shall be made either on the equipment itself or on a nameplate securely fixed thereto.		P
	Adhesive metallic labels shall not be fixed in locations where, if they become detached, they may readily touch live parts or bridge insulation.		N/A
	Nameplates incorporating a durable surface finish, shall be regarded as indelible.		N/A
	Where marking is by adhesive non-metallic labels, surface transfers, painting, silk-screening, printing with etching dyes or similar means, the marking shall be sufficiently durable for its purpose.		N/A
	The marking of fixed equipment shall be clearly discernible from the outside after the equipment		N/A

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	has been fixed as in normal use, but, if necessary, after removal of a cover.		
	The marking of other equipment shall be clearly discernible from the outside, if necessary, after removal of a cover; for portable equipment, the removal of this cover shall not require the use of a tool.		P
	Indications for switches, thermostats, thermal cut-outs and other control devices shall be placed in the vicinity of these components.		N/A
7.3	Double marking		N/A
	If any equipment is to be marked with its load in watts and is marked with more than one voltage but only one wattage, then the marked wattage shall correspond to the wattage measured at the highest marked voltage.		N/A
7.4	Marking of earth connections		N/A
	The provisions of this Clause shall apply to all equipment except that which has a Type Z attachment		N/A
	The earthing terminal of any equipment shall be identified by means of the word 'earth' or the letter 'E' or the international earth symbol, viz.,  or any combination thereof.		N/A
	For equipment arranged only for direct connection to fixed wiring of an installation		N/A
	(a) the earthing terminal need not be marked if its function is clearly evident.		N/A
	(b) if the earthing terminal is within a terminal box or enclosure, any marking may be in a durable manner by means such as painting or a suitable transfer.		N/A
	Lettering used for the marking of the earthing terminal shall be of such a size, or so indented or embossed, as to be conspicuous.		N/A
	The marking required by this Clause may be supplemented by other identifying features, such as plating or green colouring or the word 'green'.		N/A
7.5	Marking of class II equipment		N/A
	All Class II equipment, other than accessories, shall be identified by means of the international symbol for , double-insulated equipment, viz.  or the words 'DOUBLE INSULATED'.		N/A
	Such markings shall be legible and indelible and shall be made either on the equipment itself or on a nameplate securely fixed thereto.		N/A
	The symbol for Class II construction shall be so placed that it will be obvious that it is a part of the technical information and is unlikely to be confused with any other marking.		N/A
7.6	Marking of live supply connections		P
	Where it is necessary to mark and identify live supply connections, the following system shall		P

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	be used.		
	(a) For active connections, any marking or abbreviation which clearly indicates the intent.		P
	(b) For neutral connections, N (or Neutral).		P
	In any equipment, marking as above shall not be used other than to indicate live connections.		P
7.7	Additional marking of multi-rated equipment		N/A
	Where an equipment is provided with facilities for supply by flexible cord and plug and is designed for		N/A
	conversion to a rating which exceeds that at which the equipment is initially intended to operate, the equipment shall be marked with the following information:		N/A
	(a) Instructions which clearly indicate how the equipment is to be converted to any higher rating.		N/A
	(b) Details for fitting the correct type of supply flexible cord and plug and the appropriate socket-outlet to be used for each rating which exceeds 10 A.		N/A
7.8	Equipment with type X, type Y and type Z attachments		N/A
	The instructions shall contain the substance of the following:		--
	(a) For equipment with Type X attachment having a specially prepared cord, if the supply cord is damaged, it shall be replaced by a special cord or assembly available from themanufacturer or its service agent.		N/A
	(b) For equipment with Type Y attachment, if the supply cord is damaged, it shall be replaced by the manufacturer or its service agent or similarly qualified person in order to avoid a hazard.		N/A
	(c) For equipment with Type Z attachment, the supply cord cannot be replaced. If the cord is damaged the equipment should be scrapped.		N/A
7.9	Legibility of marking		P
	The marking required by Section 7 shall comply with Clause 8.13.		P
7.10	Instructions for installation and use		P
	If it is necessary to take special precautions when installing or using equipment, details shall be given in an instruction sheet, which shallaccompany the equipment.		P
8	TEST		P
8.1	General		P
8.3	Insulation resistance and leakage current		P
8.3.1	Insulation resistance	See relevant clause of AS/NZS 3112	P
8.3.2	Leakage current test		P
8.4	High voltage (electric strength) test	See relevant clause of AS/NZS 3112	P
8.6	Cord anchorage		N/A
8.7	Test for screw threads and fixings (See Clause		N/A

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	4.7)		
8.8	Mechanical strength test		P
8.8.1	General		P
	Equipment shall be subjected to blows, with an impact energy of 0.5 ± 0.05 Nm.		P
8.8.2	Spring-operated impact-test apparatus		P
8.8.3	Procedure		P
	The sample as a whole is rigidly supported against a plane surface and three blows are applied to every point of the enclosure that is likely to be weak.		P
8.8.4	Criteria		P
	After the test, the sample shall show no damage within the meaning of this Specification; in particular, live parts shall not have become exposed.		P
(A2:2019)	In NOTE 5 replace AS 60068.2.75 by IEC 60068-2-75.		--
8.10	Standard test finger and protective impedance		P
8.10.1	General		P
	For the purpose of determining whether or not either live parts (see Clause 5.1) or non-current-carrying conductive parts are exposed to personal contact, use shall be made of the standard test finger.		P
8.10.2	Design and construction		P
	The standard test finger, as shown in Figure 8.10.		P
8.10.3	Method of use		P
	The standard test finger may be applied directly to the live or non-current-carrying conductive part and a visual examination made to determine whether or not the finger is in contact with the part under test.		P
8.10.4	Protective impedance		N/A
	Protective impedance shall consist of at least two separate components, the impedances of which are unlikely to change significantly throughout the life of the equipment.		N/A
	Voltage, current and capacitance are measured between the relevant part and either pole of the supply source, the equipment being supplied at rated voltage.		N/A
	The circuit for measuring the current is that of Annex E or that in Figure 4 of AS/NZS 60990.		N/A
	Resistors or capacitors used as protective impedances shall comply with Clause 14.1(a), or		N/A
8.12	Temperature and fire risk test		P
8.13	Test of marking		P
	Checked by inspection and by rubbing by hand for 15s with a piece of cloth soaked with water and again with a piece of cloth soaked with petroleum spirit.		P

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Clause	Requirement - Test	Result - Remark	Verdict
	At the completion of these tests, the marking shall comply with Clause 7.2.		P
8.14	Stability test		N/A
	Freestanding equipment intended for use on a surface such as a floor or a table shall have adequate stability.		N/A
	The equipment is placed, with the motor switched off, in any normal position of use on a plane inclined at an angle of 10°.		N/A
	Equipment with doors is tested with the doors open or closed, whichever is the more unfavourable.		N/A
	Equipment intended to be filled with liquid by the user in normal use is tested empty or filled with the most unfavourable quantity of water up to the rated capacity.		N/A
	The equipment shall not overturn.		N/A
8.15	Abnormal operation		P
8.15.1(A1:2017)	General		P
	Equipment shall be so designed that the risk of fire, mechanical damage impairing safety or the protection against electric shock as a result of abnormal or careless operation is obviated as far as is practicable.		P
	Compliance is checked as follows and by the tests of Clauses 8.15.2 to 8.15.9, as appropriate, all thermostats and temperature limiters being short-circuited or otherwise rendered inoperative, the tests being conducted under the general test conditions specified in Clause 8.12.		N/A
	The equipment shall then comply with the requirements of Clause 8.15.10; the tests being conducted under the general test conditions specified in Clause 8.12.		N/A
8.15.2	Heating equipment test		N/A
8.15.3	Locked-rotor test		N/A
8.15.4	Equipment with three-phase motors		N/A
	Equipment incorporating three-phase motors is operated under normal load, with one phase disconnected, for a period as specified in Clause 8.15.3.		N/A
8.15.5	Running overload test		N/A
8.15.6	Equipment for short-time or intermittent operation		N/A
	When steady conditions are established, or immediately before the operation of the thermal cut- out, the temperature of the windings shall not exceed the values specified in Clause 8.15.5.		N/A
8.15.7	Equipment with series motors		N/A
8.15.8	Equipment incorporating electronic components		N/A
	Components are short-circuited or disconnected, whichever is the more unfavourable. If a non-self-resetting thermal cut-out operates or		N/A
	if the current is otherwise interrupted in a non-self-		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	resetting way before steady conditions are established, the operating period is considered to be ended.		
	If interruption of the current does not occur, the equipment is operated until steady conditions are established.		N/A
	For equipment for short-term operation, the duration of the test is equal to the rated operating time.		N/A
	Positive temperature coefficient resistors (PTCs), negative temperature coefficient resistors (NTCs) and voltage dependen resistors (VDRs) are not short-circuited if they are used within their manufacturer's declared Specification.		N/A
8.15.9(A1:2017)	Equipment incorporating Varistors		N/A
	This test is applied if required by clause 3.16(e).		N/A
	If the voltage rating of a varistor connected to live parts is such that it will conduct at twice the maximum rated voltage of the equipment , (2 Vr) or lower, the equipment and a test resistor Rx connected in series with the mains supply to the equipment is energized from an a.c. source of 2 Vr.		N/A
	Components in parallel with the varistor that may be affected by this test shall be disconnected.The test shall be performed with Rx(1) = 2 Vr / 0.125.		N/A
	If the circuit does not open, the test shall be continued for 4 h, then repeated with lower values of Rx in turn, until the circuit opens: Rx(2) = 2 Vr / 0.5,Rx(3) = 2 Vr / 2.5, Rx(n) = Rx(n-1) / 2, half the previous value, etc.		N/A
8.15.10	Test results		P
	Equipment shall not emit flames, molten metal, poisonus or ignitable gas in hazardous amounts.		P
	Enclosure shall not deform to such an extent that compliance is impaired.		P
	Temperature rises shall not exceed the values in table 8.15.10		P
	After tests, the insulation of equipment other than Class III, shall withstands the electric strength test in clause 8.4 with the test voltage:		P
	(a) basic insulation: 1000V		P
	(b) supplementary insulation: 2750V		P
	(c) reinforced insulation: 3750V		P
A	**Annex A; SECTION 6: RESISTANCE TO HEAT, FIRE AND TRACKING**		P
A 6.1.1	General requirements for compliance of solid insulating materials and non metallic enclosures:		P
	Compliance of solid insulating materials and non metallic materials of electrical accessories is checked by A 6.1.2 to A 6.1.7.		P
	Burning droplets or glowing particles do not escape from the equipment and ignite the tissue		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	paper or scorch the particle board underlay.		
A 6.1.2	Materials and tests		P
	Tests are carried out on solid insulating materials and non metallic enclosure whilst assembled on a complete end product.		P
	Tests are not carried out on decorative trims, insulation of wires, knobs and other small parts unlikely to be ignited or to propagate flames originating from inside		P
A 6.1.3	Glow-wire tests on relevant parts		N/A
	Relevant parts, other than those in A 6.1.4 are subjected to the glow-wire test of AS/NZS 60695.2.11 at 650°C; unless		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	Otherwise specified in relevant product standard.		N/A
	Glow-wire test is not carried out on material classified		N/A
A 6.1.4	Glow–wire tests on retaining parts		P
	Parts of insulating material retaining current carrying parts carrying more than 0.2A, subjected to the glow-wire test at temperature 'T ' specified		P
	Temperature "T"……:	850°C	P
	Parts tested withstand the glow-wire test, but produce a flame that persists for longer than 2 s, consequential needle flame test of A 6.1.5 applies.		P
A 6.1.5	Consequential needle flame test		N/A
	a) Needle-flame test of A 6.1.7 is applied to all parts of non-metallic material likely to be ignited by and positioned within a distance of 50 mm of those parts that flamed during the glow-wire test of A6.1.4.		N/A
	b) Needle-flame test of A 6.1.7 is applied to those parts contacted by the flame, outside the 50mm, subjected to burning droplets or glowing particles during the needleflame test of A6.1.5 b).		N/A
	c) Needle-flame test of A.6.1.7 is applied to those parts contacted by the flame or subjected to burning droplets or glowing particles during the needleflame test of A6.1.5 b).		N/A
	Needle-flame test is not carried out on parts of material classified as V-0 or V-1 provided that the test sample was no thicker than the relevant part.		N/A
A 6.1.6	Needle flame tests on printed circuit boards		N/A
	Base material of printed circuit boards is subjected to subjected to the needle-flames or burning droplets;		N/A
	The test is not carried out:		--
	i) on printed circuit boards in a metal enclosure that confines flames or burning droplets;		N/A
	ii) if the material is classified as V-0 for correct thickness.		N/A
A 6.1.7	Needle-flame test method		N/A
A 6.2	Temperatures of surfaces to be handled		N/A
	The temperature rise shall not exceed the values specified in Table 5.7.		N/A
A 6.3	Resistance to tracking		N/A
	Insulating material shall have adequate resistance to tracking, taking into account the severity of its duty conditions.		N/A
	For parts of insulating material used under severe duty conditions, the test voltage is 175V.		N/A
	For parts of insulating material used under extra-		N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	severe duty conditions, the test voltage is 250V.		

As specified in sub-clause 8.15.8 AS/NZS 3100						
Test voltage: Rated voltage 240V						
No.	Component	Fault Condition	Current(A)	Voltage	During time	Description
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Clause	Requirement - Test	Result - Remark	Verdict

Appendix J of AS/NZS 3112: 2017+A1: 2021

J1	**Scope**		**P**
J2	**Definitions**		**P**
J2.1	Detachable plug portion		P
	(a)Type A (see Figure J1)		P
	(b)Type B (see Figure J2)		N/A
	(c)Type C (see Figure J3)		N/A
J2.2	Integral plug portion		P
	A plug portion that is integral to the equipment enclosure and is not detachable.		P
J2.3	Plug portion		P
	A plug portion is that portion of equipment with pins for insertion into a socket-outlet, including the plug pins, terminals of the plug pins, external dimensions of the 'maximum projection' and any connections of a detachable plug portion.		P
J3	**Requirements for plug portion**		**P**
J3.1	General		P
	The following provisions apply to the dimensions apply to the dimensional and constructional requirements of the plug portion of equipment	See appendix 1	P
	and any detachable connection for (a) to (d).		P
	(a) For detachable plug portions intended for connection to the equipment in multiple orientations, the relevant tests are performed in the most onerous orientation.		P
	(b) For Type A detachable plug portion, the relevant requirements of AS/NZS 3105 are applicable, in addition to conformance with relevant clauses of this Appendix.	Compliance to requirements of AS/NZS 3105:2014 (output connector part complying with AS/NZS 60320.1 as a 2.5A 250V coupler)	P
	(c) For Type B detachable plug portions, the conformance is shown by the relevant clauses of this Appendix.		N/A
	(d) For Type C detachable plug portions, conformance is shown by assessment to Section 2 of this Standard (plugs) and relevant clauses of this Appendix.		N/A
J3.2	Plug pin of plug portions:	See below	P
	The requirements of clause 2.2 are applicable for plug pins.	See cl. 2.2	P

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Clause	Requirement - Test	Result - Remark	Verdict
Clause 2.2 Clause 2.2.1	Material for pins: Current carrying parts of plug pins shall be of metal having, under the conditions occurring in the plug, sufficient mechanical strength, electrical conductivity and resistance to corrosion adequate for their intended use. Compliances shall be check by inspection and where in doubt, by chemical analysis.	See below	P
	a) copper;		N/A
	b) copper alloy containing at least 58% copper for parts made from cold rolled sheet or at least 50% copper for other parts; or	≥58% copper	P
	c) stainless steel containing at least 13% chromium and not more than 0.09% carbon.		N/A
Clause 2.2.2	Assembly of pins: Where, during assembly, pin may become detached from the body of a plug yet remain attached to the conductors of a flexible cord, or have to be detached from the body to enable connection, it shall not be possible for a plus to be assembled with any pin located in a position other than that intended. In a plug made of resilient insulating material, the pins and terminals shall be held securely in position.	Moulded on the plug portion	P
Clause 2.2.3	Form of pin: The plug pins shall be adequately proportioned throughout and the portion adjacent to the connection shall be designed so as not to introduce a stress concentration which may lead to a fracture of the pin, and shall be suitably shaped to prevent abrasion or cutting of conductor strands due to flexure in normal use.	It can easily enter into the gauge without additional force applied. No sharp edges	P
	The exposed ends of plug pins shall have a bevel or radius to facilitate entry into socket-outlets and to operate shutters.	See below	P
	Round pins shall have a semicircular end profile.		P
	Flat pins with the following width and thickness profiles are deemed to comply:	See below	P
	a) Flat-pins with a radius on the end with side bevels, as shown in figure 2.1(h), may have a -	See appendix 1	P
	- i) width profile with an arc on the centre line of the pin of -	See appendix 1	P
	A) 6 mm for all pins of 10A plugs and live pins of 15A plug; or	See appendix 1	P
	B) 11 mm for each pins of 15A plugs and all pins of 20A plug; and	10 A plug	N/A

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Clause	Requirement - Test	Result - Remark	Verdict
	- ii) thickness profile with each corner beveled 0.3 mm to 0.4 mm along the sides finishing along the pin at 0.8 mm to 1.0 mm.	See appendix 1	P
	b) Flat-pins square on the end with corner bevels and side bevels, as shown in figure 2.1(i), may have a -	Flat-pins with radius on the end with side bevels	N/A
	- i) width profile which is square and with each corner beveled 0.6 mm finishing along the pin at 0.8 mm to 1.0 mm; and		N/A
	- ii) thickness profile with each corner beveled 0.3 mm to 0.4 mm along the sides finishing along the pin at 0.8 mm to 1.0 mm.		N/A
	c) Flat-pins square on the end with corner bevels and a radius on the sides, as shown in figure 2.1(j), may have a -	Flat-pins with radius on the end with side bevels	N/A
	- i) width profile which is square and with each corner beveled 0.6 mm finishing along the pin at 0.8 mm to 1.0 mm; and		N/A
	- ii) thickness profile with a radius of approximately half the material thickness along the sides, finishing along the pin at 0.8 mm to 1.0 mm.		N/A
	The contact portion of the pin shall be smooth and free from openings or indentations; however, for flat pin plug, a longitudinal seam or opening in the contact portion of one face up to 0.3 mm width is deemed to comply. The thickness of any pin at the seam is measured using a 0.3 mm thick blade as indicated in Figure 2.3	Smooth, no seam	P
	The exposed portion of plug pins of other than insulated pin plug shall be free from any non-metallic coverings or coatings.		P
Clause 2.2.4	Insulation of plug pins: Live parts of insulated pin plugs shall not be exposed when the plug is partially or fully engaged with the associated socket	See below	P
	Compliance for plugs of the types shown in figure2.1 is checked by measurement to Figure 2.4	See appendix 1	P
	For purpose of this clause, lacquer, enamel or sprayed insulating coating is not considered to be insulation material.	No such materials used	P
	All live pins on low voltage plugs except for those shown in Figure 2.1(a2), (b) and (g) shall be of the insulated pin type from 5 years after the publication of this Standard.	Insulated pin sleeve used	P
J3.3	Rating and dimensions for low voltage plug portions:	See below	P

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Clause	Requirement - Test	Result - Remark	Verdict
	The requirements of clause 2.8.1 and 2.8.4 are applicable for ratings and dimensions.	See cl. 2.8.1 and 2.8.4	P
Clause 2.8.1	Plugs with ratings up to and including 20 A, shall conform to the appropriate dimensions shown in Figure 2.1.	Two-pin plug. Complying with Figure 2.1(c), (e)	P
	In addition to dimensions of Figure 2.1, the distance between a live part pin of any plug and the edge of the moulding of the plug, shall be not less than 9 mm. Where doubt exists regarding compliance with this requirement, the gauge of Figure A1 in Appendix A or Figure B1 in Appendix B, or Figure F1(a) or Figure F1(b) in Appendix F, as appropriate, shall be place over the pin so as to contact the highest points associated with the plug face between the plug and the plug gauge, penetration to within 9 mm of the live pin shall not be possible.	The distance between a live part pin of any plug and its edge: 10.96mm (required: >9 mm)	P
	No point on the front face of the plug shall protrude by more than 0.5 mm. The pin lengths shall be measured from a plane normal to the pin passing through the highest point on the front face of the plug, to the end of the pin.	No point on the front face of the plug with protrusion	P
Clause 2.8.4	Compliance with dimensional requirements of Figure 2.1	See appendix 1	P
	Low voltage plug shall be checked for compliance with the prescribed dimensions of Figure 2.1 by any suitable means, except that compliance with the nominal dimensions covering disposition of pins, i.e. spacing from centre and angular orientation, shall be checked by a gauge complying with Appendix A, Appendix B or Appendix F, as appropriate.	See appendix 1	P
	In addition, low voltage flat-pin, or combination of flat and round pin, plug having ratings up to 15A of the Figure 2.1(a1), Figure 2.1(c), Figure 2.1(d), Figure 2.1(f) or Figure 2.1(g) type, shall comply with the dimensional requirements of Figure 2.1(e1 and e2).	Two-pin plug. Complying with Figure 2.1(c), (e). See appendix 1	P
	20 A plugs of the Figure 2.1(a2) type shall comply with the dimensional requirements of Figure 2.1(e2).		N/A
	Plugs with insulated pins, complying with this Standard, need not comply with dimension R20 ±1.0 mm of Figure 2.1(e2) provided there is at least 9mm from the edge of the live pins to the edge of the plug face Figure 2.1(e3).	Insulated pins used	P

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Clause	Requirement - Test	Result - Remark	Verdict
J3.4	Internal connections for plug portions:	See below	P
	Internal connections for plug portions: The requirements of Clause 2.9 are applicable for internal connections unless requirements are contained in the relevant product standard.	See cl. 2.9	P
Clause 2.9	Internal connections	See below	P
	The design and construction of a plug provided with earthing connections shall be such that when the plug is correctly wired and completely assembled:	Two-pin plug	N/A
	a) a loose terminal screw or conductive material cannot bridge and live parts or earthing parts;		N/A
	b) the earthing parts are effectively isolated from contact with a live conductor which may become detached ; and		N/A
	c) the live parts are effectively isolated from contact with any earthing conductor which may become detached		N/A
	Any connections for auxiliary devices, such as radio interference suppressors or visual indicators, shall comply with the above requirements.	Compliance shall be checked by end-product standard	N/A
J3.5	Arrangement of earthing connections for plug portions	Two-pin plug	N/A
	The requirement of Clause 2.10 are applicable for arrangement of earthing connections.		N/A
Clause 2.10	The earthing pin of any low voltage, three-pin plug shall be that pin which is radial to the circle embracing the pins (see Figure 2.1(a), Figure 2.1(f), Figure 2.1(g)).	Two-pin plug	N/A
J3.6	Configuration of plug portions	See below	P
	The requirement of Clause 2.12.6 are applicable for configuration of plug portions	See cl. 2.12.6	P
Clause 2.12.6	A plug conforming to Figure 2.1(a), Figure 2.1(c), Figure 2.1(f) or Figure 2.1(g) shall have its pins disposed as that, when the pins are correctly connected, the pin configuration, viewed as from the pins, shall be earth, neutral and active in a clockwise direction.	Conforming to figure 2.1(c)	P
	Where there is no earthing, the live part pins shall conform to this configuration	Two-pin plug	N/A
J4	**Test**		**P**
J4.1	General		P

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Clause	Requirement - Test	Result - Remark	Verdict
	Plug portions of equipment with integral pin shall be subjected to the following tests and unless stated otherwise, shall comply with the requirement specified in section 2 for each test. The number of test samples shall be in accordance with table J1	The number of test samples used in accordance with table J1	P
	For equipment with a detachable plug portion, the assessment of Table J1 tests 2, 3, 5, 10 and 11 shall be conducted on the-		P
	(a) assembled equipment with the detachable plug portion connected; and		P
	(b) the detachable plug portion after it has been separated from the equipment.		P
	Table J1: **Table J1 — Integral or detachable plug portions—Tests to be applied and order of application** 1 / 2 / 3 / 4 Test No. / Description of test / Reference for test procedure and criteria* / Sample identification — / General and dimensions / J3 / A 1 / High voltage test / J4.2 / A 2 / Tumbling barrel test / J4.3.1 / BCD† 3 / Impact test / J4.3.2 / BCD† 4 / Pin bending test / J4.3.4 / EFG 5 / Plug portion detachment requirements / J4.8.3 / H† 6 / Temperature rise test / J4.4 / H 7 / Securement of pins / J4.5 / H 8 / Tests for plugs with insulated pins / J4.6 / H 9 / Equipment with a plug portion intended to be supported by the contacts of a socket-outlet / J4.7 / H 10 / Access to live parts / J4.8.1 / H† 11 / Construction of detachable contacts / J4.8.2 / H† 12 / Resistance to heat / J4.8.4.1 / any or H‡ 13 / Determination of ignitability and combustion propagation / J4.8.4.2 / any or H‡ NOTE Total number of samples required: 10 samples (A, B, C, D, E, F, G, H, I, J). * Clause numbers refer to this Standard. † For detachable plug portions, additional samples are required to repeat the tests in both methods as described in Clause 4.1 (at least 3 additional samples). Should the product utilize multiple plug portions, then the test is repeated with each plug portion fitted (number of additional samples is determined by the number of plug portions). ‡ Resistance to fire test may require a further sample in new and clean condition.		P
J4.2	High voltage test	See below	P
	The requirement of clause 2.13.3 are applicable unless requirements are contained in the relevant product standard.	See cl. 2.13.3	P
Clause 2.13.3	High voltage test		P
	The plug shall withstand without failure an a.c voltage of the value indicated in table 2.3, applied between the parts set out in item (a) and (c) of clause 2.13.2 for 1 min. in each case		P
	a) Between all poles of the plug, taken in pairs.	Applied 1000V a.c.	P
	c) Between live poles of plug and the earthing terminal of exposed metal, the live poles being connected together.		N/A
	The plug shall further withstand, without failure, a voltage of 3000 V a.c. applied between the parts set out in Items (b) and (d) of clause 2.13.2 for 1 min. in each case.	Applied 3000V a.c.	P

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Clause	Requirement - Test	Result - Remark	Verdict
	b) Between live poles of plug and any external metal, all live poles of plug being connected together.		N/A
	d) Between live poles and a flexible electrode applied to non-conducting parts normally handled in service all live poles connected together.	Applied 3500V a.c. to live parts with metal foil wrapping over insulated mouldings.	P
	The insulation of insulated pin plugs shall withstand a voltage of 1250V a.c. for 1 min applied in accordance with Clause 2.13.2(e)	See below	P
	e) for insulated pin plug, between live poles and a metal foil applied around the insulation on each live pin for a distance of approximately 4 mm from plug face, all live poles being connected together.	Applied 1250V a.c. to live parts with metal foil wrapping over insulated pin	P
J4.3	Mechanical strength of pin test	See below	P
J4.3.1	Tumbling barrel test	See below	P
	The tumbling test is applied to determine the mechanical strength of the plug pins		P
	For equipment with a detachable plug portion, the detachable plug portion may become detached during the test. If this occurs the detachable plug portion shall be reassembled with the equipment when the pins are straightened as per (a) and (b) below:		P
	Three sample which have not been subjected to any previous test are tested to the requirements of clause 2.13.7.1 however, the test is modified for plug portion of equipment with integral pin as follows:	Tested according to cl. 2.13.7.1	P
	A sample of equipment with integral pins is dropped-	See below	P
	a) 500 times if the mass of the specimen does not exceed 250g. The pins being straightened after 100 drops and at the completion of the test to pass through the appropriate gauge of Figure A1, B1 or F1; and	Weight: 20g 500 times of falls were conducted Three samples tested. Not damaged. At the completion of the test it can pass through the gauge of Figure A1, B1 or F1, as appropriate.	P
	b) 250 times if the mass of the specimen exceed 250g. The pins being straightened after 25 drops and at the completion of the test to pass through the appropriate gauge of Figure A1, B1 or F1; and		N/A
	Compliance shall be checked in accordance with Paragraph J4.3.3	See J4.3.3	P
J4.3.2	Impact test	See below	P

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Clause	Requirement - Test	Result - Remark	Verdict
	Plug portions and equipment having integral plug portions or detachable plug portions shall withstand lateral impact forces.		P
	All samples that were subjected to the tests in Paragraph J4.3.1 shall be tested as followings:		P
	(a) The sample shall be positioned at the centre of a steel plate with a thickness of at least 6mm. Apertures in the steel plate for the plug pins to pass through shall conform to the corresponding socket Standard. The sample shall be held against the steel plate by clamping all the pins.		P
	(b) Samples shall be subjected to blows, with an impact energy of 1.0±0.05J by any means having the same performance as the spring-operated impact-test apparatus of AS/NZS 3100.		P
	(c) Three blows shall be applied to every point that is most likely to directly or indirectly stress the enclosure joints of the sample.		P
	Compliance shall be checked by Paragraph J4.3.3.		P
J4.3.3	Specific compliance certeria		P
	For equipment with an intergral plug portion, the assessment shall be made on the complete equipment.		N/A
	For equipment with a detachable plug portion, the assessment shall be conducted on the -	detachable plug.	P
	(a) assembled equipment with the detachable plug portion connected; and		P
	(b) the detachable plug portion after it has been separated from the equipment.		P
	Following each test the samples shall comply with Clause 2.13.7.1	See below	P
	(a) Live parts shall not have become exposed to the standard test finger.	Live parts are not exposed	P
	(b) For earth pins, the resistance of the plug/socket-outlet circuit shall be such that conformance with Clause 3.14.7 is maintained.	Not applied, no earth pin.	N/A
	(c) Any other function affecting safety shall not be impaired.	All functions can be worked normally.	P
	(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created (see Clause 2.9).	No detached or loosened	P

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Clause	Requirement - Test	Result - Remark	Verdict
	(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking	Pins are not broken	P
	The sample shall conform to the “Guarding of live parts” requirements of AS/NZS 3100.		P
	Following each test, no internal conductive material or conductive part shall have become detached or loosened, to the extent that it creates a hazardous situation. The sample shall conform to the “Separation of live parts from non-carrying conductive parts” requirements of AS/NZS 3100.		P
J4.3.4	Pin bending test	See below	P
	The pin of the plug portion of three samples not subjected to any previous tests shall be tested for compliance with the pin bending test of Clause 2.13.7.2	Tested according to cl. 2.13.7.2.	P
Clause 2.13.7.2	All flat-pins of plugs rated up to and including 15A shall be subjected to a pin bending test. Three samples not subject to any previous tests shall be test as following:	New three samples	P
	Pin of assembled plug shall be tested by clamping the plug in a rigid holding block and applying a bending force, as shown in figure 2.8, to the pin under test.		--
	The pin shall be straight at the beginning of the test. If there is any doubt about the straightness of the pin, it shall be checked by the appropriate plug gauge shown in Appendices A, B or F.	Checked with the appropriate plug gauge before conducting test	--
	The portion of application of the force shall be 14±0.5mm from the face of the plug.	The force applied on 14 ± 0.5 mm from the face of the plug	--
	The direction of the force shall be along a line parallel to the face of the plug.	The direction of the force applied along a line parallel to the face of the plug	--
	Active and neutral pins shall be forced towards the centroid of the plug and then back to the starting point. On the first sample plug, any earth pin shall be forced but in one direction only and then back to the starting point. On the second sample plug, any earth pin shall be forced in the opposite direction to that used for testing the first sample plug. On the third sample plug, any earth pin shall be force in the direction that gave the least favourable result during testing of the first two sample plugs.	Tested according to the procedure	--

AS/NZS 3112			
Clause	Requirement - Test	Result - Remark	Verdict
	The distance moved from the point of application shall be 7.45±0.5mm, and then the pin shall be forced back to the starting point. Any “spring-back” is ignored.	The distance moved from the point of application was 7.45 ± 0.5 mm	--
	The travel from the starting point, to the end point (7.45 mm), and back to the starting point is one cycle. (i.e. one cycle is two separate movements)		--
	The speed of deflection shall be maximum of 50 mm/s.	50 mm/s of the speed of deflection	--
	The interval between successive cycles shall be a minimum of 10 s.	10s of the interval	--
	The pins shall be tested for 20 movement cycles.	20 movement cycles	P
	After the tests the pins shall be inspected with normal or corrected to normal vision.		P
	The pin shall not be broken off.	No pins broken off	P
	If in doubt pins shall be disassembled from the plug and any insulation removed.		N/A
J4.4	Temperature rise test	See below	P
	The relevant requirements of clause 2.13.8 are applicable for the temperature rise test, except that the test current shall be that specified in the relevant product standard.	See cl. 2.13.8	P
	The temperature rise of the pins shall not exceed 45K irrespective of the temperature rise of parts specified in end product standards.	See appended table	P
Clause 2.13.8	Plug shall be so constructed that they comply with the following temperature rise test:		P
	a) Non-rewireable plugs are tested as delivered. (specially prepared sample with access to terminals for temperature measurement)	Non-rewireable plug	N/A
	b) Rewireable plugs are fitted with polyvinyl chloride flexible cord with conductors having the minimum cross-sectional area specified in the manufacturers instructions.	rewireable plug	P
	The terminal screws or nuts are tightened with a torque to two-thirds of that specified in test No. 5	No terminal screws or nuts used	N/A
	To ensure normal cooling of the terminals, the conductors connected to plugs shall have a length of at least 1 m.	See above	N/A
	The plug shall be tested in a draught-free environment at the centre of a plane wooden board, which shall be at least 6 + 2 mm thick, 500 mm wide and 500 mm long with the rear completely enclosed in a wooden mounting enclosure (wall box) of 90 × 60 × 40 mm.		P

AS/NZS 3112			
Clause	Requirement - Test	Result - Remark	Verdict
	Apertures in the wooden board for the plug pins to pass through are specified in Table 3.1, see Figure 2.9.		P
	Plugs are tested as follows:		P
	The appropriate clamping units with the dimensions specified in Figure 2.10 are fitted on each live pin of the plug, together with the thermocouple.		P
	The screw is then placed approximately in the middle of the bare part of the pin and tightened with a torque of 0.8 Nm. The clamping unit is fitted with PVC-insulated conductors at least 1 m long, having nominal cross-sectional areas as shown in Table 3.3.		P
	Where the conductors pass through the wooden mounting enclosure (wall box) there shall be a complete airtight seal between the conductors and the enclosure.		P
	The plug is inserted into the socket outlet and an alternating current of 1.1 times rated current is passed for 1 h.	240 V+10 %	P
	The temperature of the flexible cord terminal is determined by means of melting particles, colour changing indicators or thermocouples, so chosen and positioned that have negligible effect on the temperature being determined.	J type thermocouple used	P
	Temperature rise of the terminals shall not exceed 45K	See appended table	P

Measurement location	**Temperature rise in K**	**Maximum allow. temp. rise in K**	**P**
Termination L of plug	6.4	45	P
Termination N of plug	5.7	45	P
Enclosure inside	4.8	45	P
Enclosure outside	4.1	45	P
Ambient	24.2℃	--	
Notes: Measurement uncertainties were adjudged to be ± 2 ℃			

2.13.7.1	J 4.3.1Tumbling barrel test	P

Requirement	Test result		
	Sample 1	Sample 2	Sample 3
After 1000 times of falls, the sample shall show no damage within the meaning of this standard:			
(a) Live parts shall not have become exposed to the standard test finger.	OK	OK	OK

AS/NZS 3112			
Clause	Requirement - Test	Result - Remark	Verdict

(b) For earthing pin, the resistance of the plug/socket-outlet circuit shall be such that compliance with Clause 3.14.7 is maintained.	N/A	N/A	N/A
(c) Any other function affecting safety shall not be impaired.	OK	OK	OK
(d) No live part shall have become detached or loosened, to the extent that a hazardous situation is created.	OK	OK	OK
(e) The pins shall be inspected with normal, or corrected to normal, vision. Insulation may be removed if necessary. Pins shall not be broken or show cracking.	OK	OK	OK

J4.5	Securement of pin of the plug portion	See below	P
	The requirements of clause 2.13.9 are applicable for the securement of pins	See cl. 2.13.9	P
Clause 2.13.9	Securement of pins	See cl. 2.13.9.1 and 2.13.9.2	P
Clause 2.13.9.1	Movement of pins	See below test result	P
	Plug shall be tested for pin movement by clamping the pin or pins not under test in a rigid holding block positioned 5±0.5mm from the plug face and applying a force of 18±1N to the pin under test. The design of the block shall be such that the pin under test shall not come into contact with the block during the test.	A force of 18 ± 1 N applied	P
	Except for non-rewireable plugs, the test shall be carried out without a cord attached to the plug, and with the terminal screws loosened sufficiently to allow a 1mm^2 conductor to be connected.	Non-rewireable plug	N/A
	The plug and test equipment shall be preconditioned at a temperature of 40±1°C for 1 h, without the test force applied. Throughout the test, all parts of the plug test equipment shall be maintained at this temperature.	Preconditioned at a temperature of 40 ± 1 °C for 1h	P
	For all plugs, the point of application of the force shall be 14 ± 0.5 mm from the face of the plug along the pins, and the direction of the force shall be	Complied	--
	a) in both direction along the line perpendicular to the plane of the pin, and passing through the centre of the pin; and	Both directions tested	P
	b) in that plane in both directions along a line at right angle to that specified in item (a)	Both directions tested	P

AS/NZS 3112			
Clause	Requirement - Test	Result - Remark	Verdict
	Over a period of 10 s, the force shall be gradually applied to each of the pins in the manner prescribed in item (a) and (b), maintained at its maximum value for 10 s, and then released. The deflection of the pins shall be measured along the line of force relative to the face of the rigid holding block during the period when the force is applied. The maximum deflection shall not exceed 2.0 mm.	Measured:0.4 mm max. (all source of material were considered)	P
	Following the test on all pins of a plug conforming to Figure 2.1, any distortion 5 min. after the completion of the test on the last pin shall be such that it will not prevent the plug from being inserted in the appropriate standard gauges shown in Appendix A, Appendix B and Appendix F without the application of undue force,	After test it can still be inserted in the standard gauge shown in Appendix A, Appendix B or Appendix F, as appropriate, without the application of undue force	P
	For other types of plug, any distortion after 5 min shall be such as will not prevent the plug being inserted into an appropriate socket-outlet without the application of undue force.	All pins of plug confirming to figure 2.1	P
Clause 2.13.9.2	Fixing of pins	See below for test result	P
	A separate sample of a plug, shall be heated to a temperature of 50±2°C for 1 h and maintained at that temperature during the whole of these tests, including the 5 min. period after removal of the test load.	Heated to a temperature of 50 ± 2 °C for 1h	P
	The plug shall be held firmly in such a manner that there will be no undue squeezing or distortion of the body, and the means of holding shall not assist in maintaining the pins in their original position.	Firmly held without applying undue squeezing or distortion to the body	P
	Each pin, in turn, shall have applied to it a force which, over a period of 10 s, shall be increased steadily to 60±0.6N and held at this value for 10 min.	A force of 60 ± 0.6 N applied	P
	Two test on each pin shall be conducted, one with the direction of force along the length of the pin toward the body of the plug, and the other with the direction of force along the length of the pin away from the body.	Two tests on each pin were conducted	P
	The attachment of pins shall be considered inadequate if any pin is displaced relative to the adjacent material of the body by more than 2.4 mm at any time during these tests, or id any pin fails to return to within 0.8mm of its nominal length specified in Figure 2.1 within 5 min. of the removal of the test force.	No displacements on any pins of plug were observed	P
J4.6	Tests on the insulation material of insulated pin plug portions.	See below	P

AS/NZS 3112			
Clause	Requirement - Test	Result - Remark	Verdict
	The requirements of clause 2.13.13 are applicable for insulating material of insulated plug pins.	See cl. 2.13.13	P
Clause 2.13.13	Additional test for plug with insulation pins	See below	P
Clause 2.13.13.1	General		
	The material of the pin-insulation shall be resistant to the stresses to which it may be subjected at the high temperature likely to occur in conditions approaching the bad connection conditions and at low temperature in particular conditions of service.	See below	P
	Compliance shall be checked by the test of Clause 2.13.13.2 to 2.13.13.6	See cl. 2.13.13.2 to 2.13.13.6	P
Clause 2.13.13.2	Pressure test at high temperature	See below	P
	A specimen of one insulated pin only shall be subjected to the following test by means of the apparatus shown in Figure 2.5. This apparatus shall have a round shape with a distance of 6 mm and a thickness of 0.7 mm.	Tested by using of test equipment shown in Figure 2.5	P
	The specimens shall be placed in position as shown in the Figure 2.5 and a force of 2.5N shall be applied through the blade to the specimen.	A force of 2.5 N applied	P
	The apparatus, which the specimen in position, shall be maintained for 2 h in a heating cabinet at a temperature of 160± 5°C. The specimen shall then be removal from the apparatus and, within 10 s, cooled by immersion in cold water.	Tested in a heating cabinet at a temperature of 160 ± 5 °C for 2 h	P
	The thickness of the insulation shall be measured immediately at the point of impression. The thickness within the area of the impression shall not less than 50% of the thickness measured before the test.	After the test, the thickness of sleeve of plug pins (line and neutral pins) remaining at the impression point were reduced approximately 2.86% that not more than 50 %	P
	Visual inspection shall be made and no cracks on the insulation material shall be visible with normal, or corrected to normal, vision without additional magnification, and the dimension of the insulating material shall not have changed below the minimum size shown in Figure 2.4	Compliance checked	P
Clause 2.13.13.3	Static damp heat test	See below	P
	An insulated pin plug shall be subjected to two damp heat cycles in accordance with IEC60068-2-30. Db (12+12 h cycle), 95% relative humidity, lower temperature 25±3°C and upper temperature 40°C	Tested in accordance with IEC 60068-2-30	P

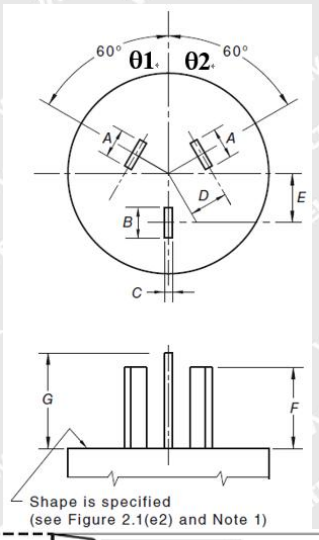
AS/NZS 3112			
Clause	Requirement - Test	Result - Remark	Verdict
	After this treatment and after recovery to room temperature, the specimen shall subjected to:	See below	P
	a) the insulation resistance test in accordance with Clause 2.13.2(e)	5MΩ	P
	b) high voltage test in accordance with Clause 2.13.3 and;	See cl. 2.13.3	P
	c) abrasion test in accordance with Clause 2.13.13.6	See 2.13.13.6	P
Clause 2.13.13.4	Low temperature test	See below	P
	An insulated pin plug shall be maintained at -15±2°C for at least 24 h and returned to room temperature.	Maintained at -15 ± 2 °C for 24 h	P
	a) the insulation resistance test in accordance with Clause 2.13.2 (e)	5MΩ	P
	b) high voltage test in accordance with Clause 2.13.3 and;	See cl. 2.13.3	P
	c) abrasion test in accordance with Clause 2.13.13.6	See cl. 2.13.6	P
Clause 2.13.13.5	Impact test at low temperature	See below	P
	A specimen of one insulated pin only shall be subjected to an impact test by means of the apparatus shown in Figure 2.6. The mass of the falling weight shall be 100±1 g,	See below	P
	The apparatus, on a sponge rubber pad 40 mm thick, together with the specimen, shall be maintained at -15±2°C for at least 24 h.	Maintained -15 ± 2 °C for at least 24 hrs	P
	At the end of this period, the specimen shall be placed in position, as shown in Figure 2.6, and the falling weight shall be allowed to fall from a height of 100 mm. Four impacts shall be applied successively to the same specimen, rotating it through 90° between impacts.	Tested by using test equipment shown in Figure 2.6	P
	After the test the specimen shall be allowed to return to room temperature and then examined. No cracks of the insulating material shall be visible with normal, or corrected to normal, vision without additional magnification.	No cracks of the insulating material	P
Clause 2.13.13.6	Abrasion test	See below	P
	An insulated pin of an insulated pin plug shall be subjected to the following test by means of an apparatus as shown in Figure 2.7	See below	P

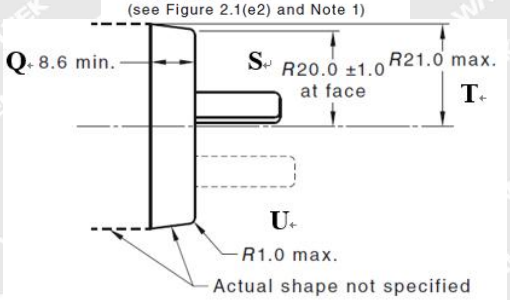
AS/NZS 3112			
Clause	Requirement - Test	Result - Remark	Verdict
	The test apparatus comprises a horizontally disposed beam, which shall be pivoted about its center point. A short length of steel wire, 1 mm in diameter and bent into a U-shape, the base of U being straight, shall be rigidly attached, at both ends, to one end of the beam, so that the straight part project below the beam and shall be parallel to the axis of the beam pivot.		P
	The plug shall be held in a suitable clamp in such a position that the straight part of the steel wire rests on the major axis face of the plug pin, at right angles to it. The pin shall slope downwards at an angle of 10° to the horizontal.	Tested at a pin was sloped downwards at an angle of 10° to the horizontal	P
	The beam shall be loaded so that the wire exerts a force of 4 N on the pin	A force of 4N applied	P
	The plug shall be moved backwards and forwards in a horizontal direction in the plane of the axis of the beam, so that the wire rubs along the pin. The length of the pin thus abraded shall be approximately 9 mm, of which approximately 7 mm shall be over the insulation		P
	The number of movements shall be 20,000 (10,000 in each direction) and the rate of operation shall be 30 movements per min.	20000 of movements with the rate of 30 movements per min	P
	After the test, the pins shall show no damage which may affect safety or impair the further use of the plug, in particular, the insulating sleeve shall not have punctured or rucked up.	No rucked up or punctured of insulating sleeve observed	P
J4.7	Equipment with integral pins intended to be supported by the contacts of a socket-outlet	See below	P
	Unless requirements are contained in the relevant product standard, compliance is checked by inserting the equipment with integral pins, as in normal use, into a flash-mounting combination switch socket-outlet complying with this standard, the socket-outlet being pivoted about a horizontal axis through the centre-lines of the contact apertures at a additional torque, which has to applied to the socket-outlet to maintain the engagement face in the vertical plane, shall not exceed 0.25N.m.	Weight: 20g The maximum measured torque: 0.040 N.m	P
	Where the equipment with integral pins is fitted with a flexible cord, the test is conducted with the centre-line of the axis of pivot of the socket-outlet located at a point 500 mm above a horizontal surface. The flexible cord is allowed to hang freely from the equipment with that flexible cord in excess of 500 mm resting on the horizontal surface during the test.	Tested as delivered	P

AS/NZS 3112			
Clause	Requirement - Test	Result - Remark	Verdict
J4.8	Additional requirements for detachable plug portions DOA 24/02/2019		P
J4.8.1	Access to live parts DOA 24/02/2019		P
	Detachable plug portion shall be not possible to contact live parts with the small test finger of Figure 13 of IEC 61032.		P
	If an opening does not allow entry of the test finger, a force on the test finger in the straight position is increased to 20 N.		N/A
J4.8.2	Construction of detachable contacts where the input current of the equipment exceeds 0.2 A DOA 24/02/2019		N/A
	Contacts of the equipment shall be such that they make and maintain, under normal service conditions, satisfactory electrical and mechanical contact with the corresponding contact of the detachable plug portion. The effectiveness of the contacts is checked by inspection and by the plug portion detachment requirements of Paragraph J4.8.3.		N/A
J4.8.3	Plug portion detachment requirements DOA 24/02/2019		P
	The plug portion and the equipment/adaptor shall be connected and disconnected 50 times (100 strokes).		P
	The plug portion shall be securely held in position. A force which, over a period of 10 s, shall be increased steadily to 60 ± 0.6 N and held at this value for a further 10 s, shall be applied evenly at the connecting equipment in a direction parallel to the pins. This procedure shall be conducted three times on the same plug portion, at intervals of 5 min, without disturbing the plug portions between tests. During the test period, the plug portion shall not separate from the equipment.		P
	The test of AS/NZS 3112 'temperature rise test' for plugs shall be conducted immediately after the above test without disturbing the sample.	Plug Max:7.2K	P
J4.8.4	Resistance of insulating material to heat and fire DOA 24/02/2019		P
J4.8.4.1	Resistance to heat		P

AS/NZS 3112			
Clause	Requirement - Test	Result - Remark	Verdict
	Subjecting the relevant part to the ball pressure test of IEC 60695-10-2 as specified below. The test is carried out at a temperature of 40 ± 2°C plus the maximum temperature rise determined during the temperature test of Paragraph J4.4, but it shall be at least: (a)75 ± 2°C, for external parts; (b)125 ± 2°C, for parts supporting live parts. After the test, dimension d (diameter of the indentation) shall not exceed 2 mm.	Plug holder(b):0.9mm, Enclosure(a):0.7mm	P
J4.8.4.2	Resistance to fire		P
	Plug portions shall comply with the requirements for resistance to fire in accordance with AS/NZS 3100. The glow-wire test temperature 'T' shall be 750°C.	750°C.	P
	Where a plug portion is detachable, conformance shall be established by assessment with the plug portion fully assembled with the equipment. Access to live parts shall be assessed for incorrect assembly of the plug portion. It shall not be possible to assemble the plug portion to the equipment resulting in a dangerous situation allowing access to live parts. The plug portion shall not expose live parts prior to assembly.		P

Appendix 1 10A Plug Portion Dimensions (Three-Pins)





(e2) Shape of plugs having ratings up to 20 A, 250 Vmax. and of the (a1), (a2), (c), (d), (f) or (g) type.

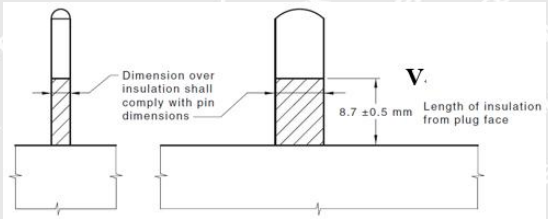
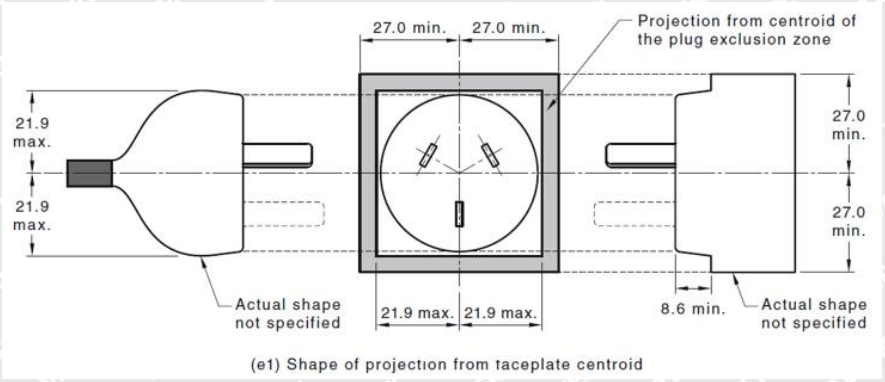
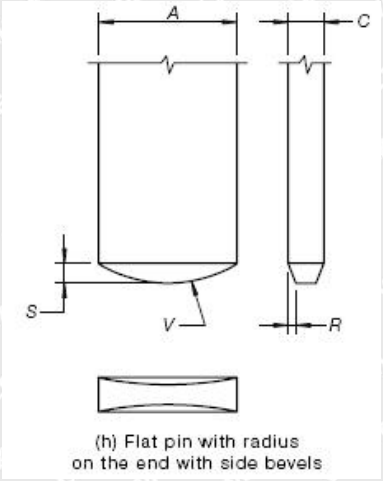


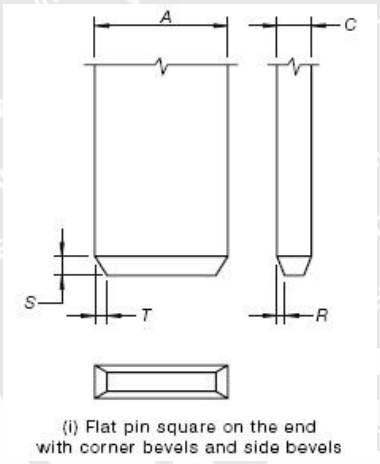
FIGURE 2.4 DIMENSIONS OF INSULATION ON INSULATED LIVE PINS



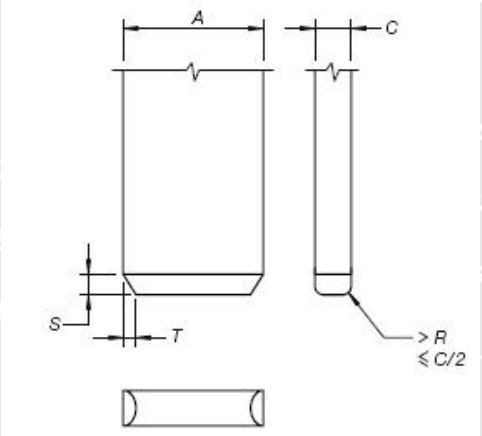
(e1) Shape of projection from taceplate centroid



(h) Flat pin with radius
on the end with side bevels



(i) Flat pin square on the end
with corner bevels and side bevels



(j) The flat pin square on the end
with corner bevels and radius on the sides

Linear Dimensions (mm)	Measurement (mm)		Limit (mm)	Verdict
	Metal	Insulation		
A (Active)	6.23	6.35	6.2 – 6.5	P
A (Neutral)	6.25	6.33		P
B	6.31		6.2 – 6.5	
C (Active)	1.59	1.64	1.58 – 1.78	P
C (Neutral)	1.60	1.63		P
C (Earth)	1.62			**P**
D (Active)	P	P	7.92 (Nominal) [1]	P
D (Neutral)	P	P		P
E	P		10.31 (Nominal) [1]	P
F (Active)	16.90		16.66 – 17.46	
F (Neutral)	16.94			P
G	20.11		19.14 – 20.74	
Q	9.53		8.6 min.	P
S	19.60		R19.0 – R21.0 [2]	
T	19.76		R21.0 max.	P
U	P		R1.0 max.	
V	L, 8.42 R, 8.46		8.2 – 9.2	P
Width of enclosure left side	26.95		≥ 27.0 or ≤ 21.9	
Width of enclosure right side	26.95		≥ 27.0 or ≤ 21.9	P
Length of enclosure top side	20.54		≥ 27.0 or ≤ 21.9	P
Length of enclosure bottom side	98.10		≥ 27.0 or ≤ 21.9	
θ1	P		60° [1]	P
θ2	P		60° [1]	
R	0.32		0.30 – 0.40	P
S	0.95		0.80 – 1.00	
T	P		0.60 min.	P
V	P		6 [1]	
Distance from projection part edge to L and N pins	10.96		9 min.	P

[1] Dimensions without tolerances are nominal. Samples are to be checked with the gauge specified in Appendix A, Appendix B or Appendix F, as appropriate.

[2] The dimension G is not applicable if the plug pins are insulated pin type.

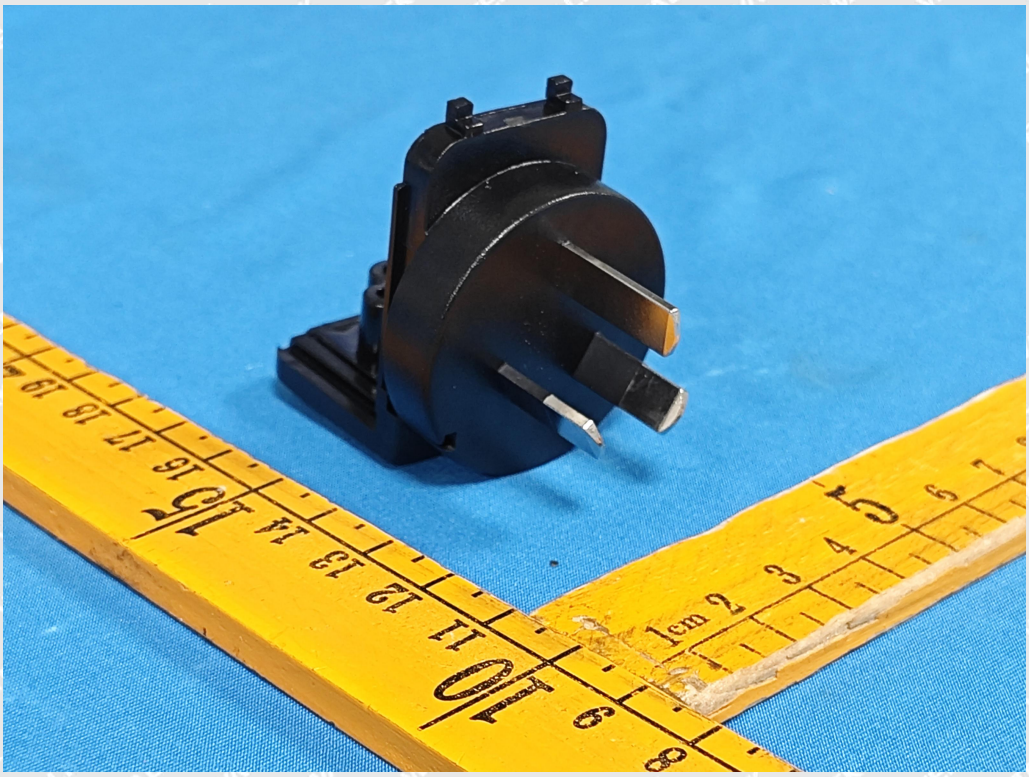


Photo 1 External View

Photo 2 External View

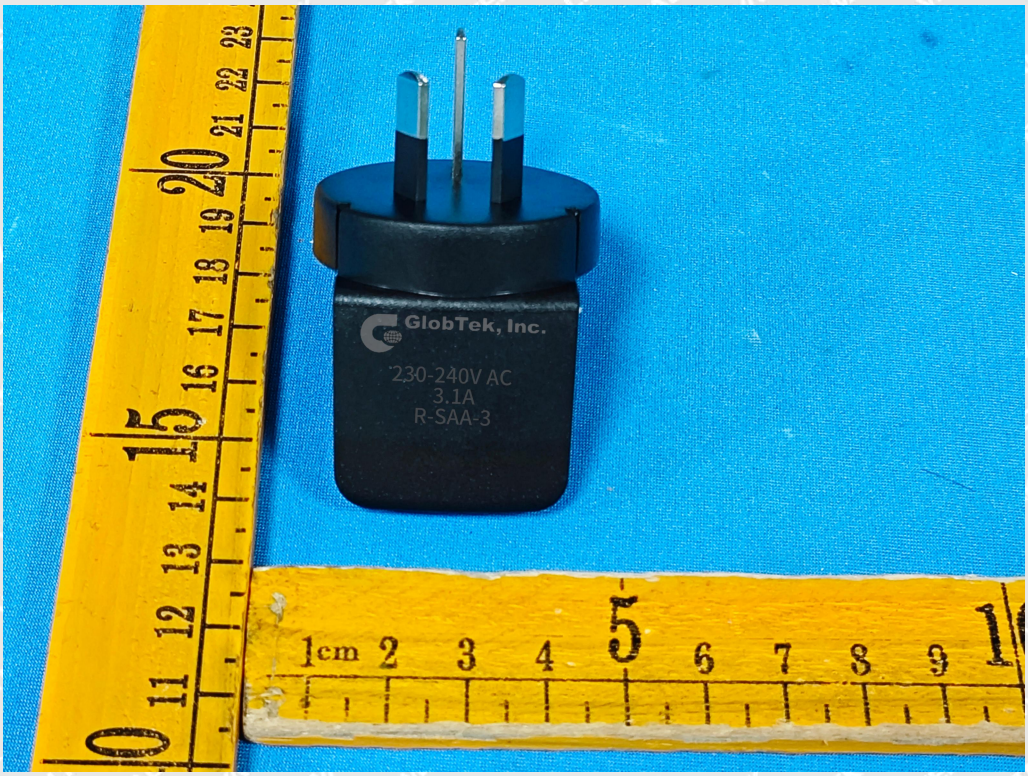


Photo 3 External View

Photo 4 External View

======End of Report======