



# 3003 Quick Guide

AS/NZS 3003: 2018

ELECTRICAL INSTALLATIONS – PATIENT AREAS

The following is a guide for electricians involved with electrical installations for patient areas in hospitals and medical facilities which are deemed to comply with AS/NZS 3003:2018 Electrical Installations – Patient Areas.

The guide provides a quick cross reference of requirements between BODY and CARDIAC protected areas, and may in some cases provide answers to frequently asked questions (FAQ) about patient electrical areas.

This guide in no way replaces the need to consult and understand the relevant standard and it is not endorsed or approved by any authority.

This document has been produced by persons with relevant industry experience who have seen a need to give some basic advice and direction for electricians prior to them undertaking electrical installations in patient areas.

Electricians and engineers may gain further insight by referring to the following guides located on our website under the heading of – Resources.

- ☐ A Guide to AS/NZS 3003: 2018 – Electrical Installations Patient Areas – BODY protected electrical areas
- ☐ A Guide to AS/NZS 3003: 2018 – Electrical Installations Patient Areas – CARDIAC protected electrical areas
- ☐ A Guide to AS/NZS 3003: 2018 – Electrical Installations Patient Areas – COMPREHENSIVE

Refer to the index for the category or requirement of the standard that you require information, then refer to the page nominated for the specific information about the requirements in either body-protected or cardiac protected electrical areas.

e.g.-

**Category:**

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- (The requirement stated here)	(The specific principle stated here)	
- (The requirement stated here)	(The specific principle stated here for Body-protection)	(If I am highlighted by a yellow background, this means I am different to Body-protection)

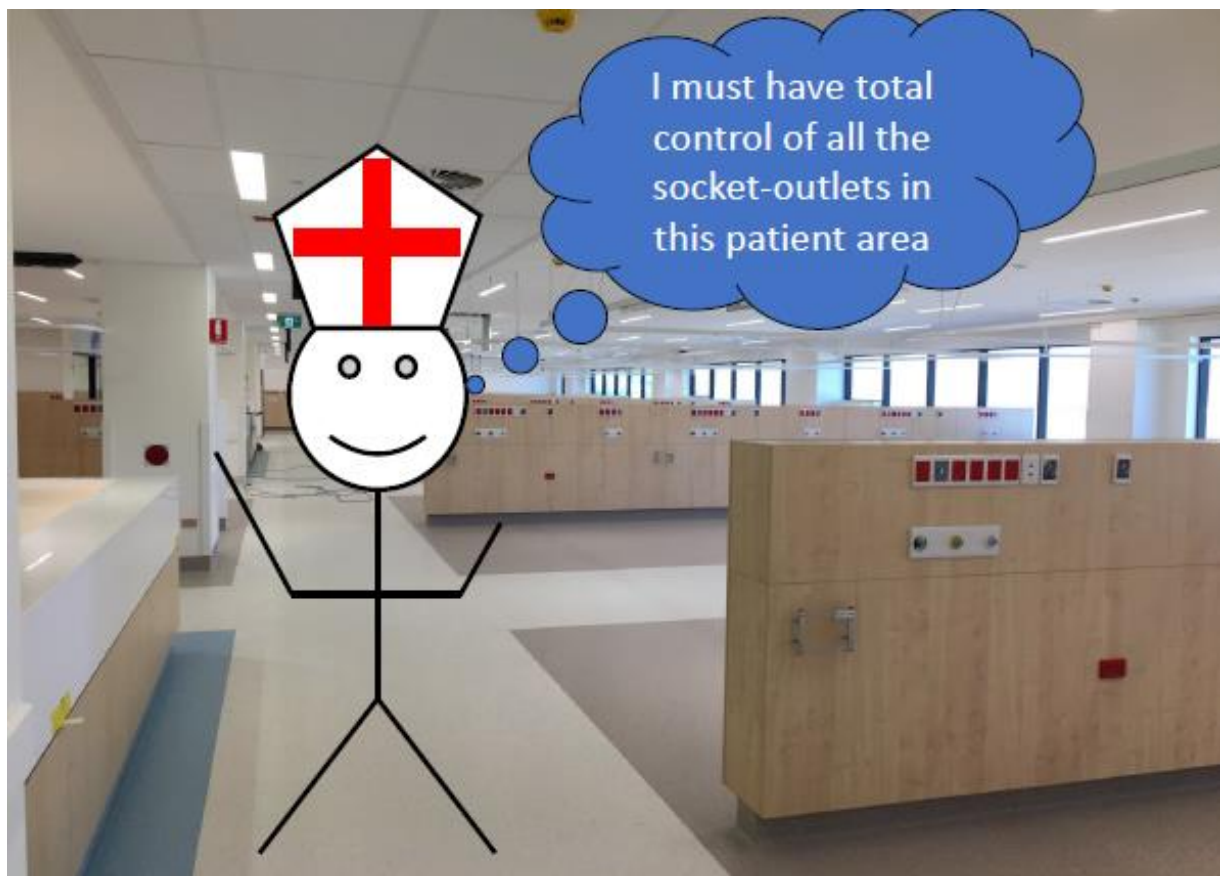


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### ***Fundamental Principle:***

<b><i>Requirement</i></b>	<b><i>Body-protected</i></b>	<b><i>Cardiac-protected</i></b>
- The clinician in the patient area	must have total control of the patient electrical areas medical electrical equipment.	
- The clinician in the patient area	must be able to access all the electrical controlling switchgear to enable isolation of socket-outlets and the resetting of RCDs.	
- The clinician in the patient area	is unable to reach above 2m.	
- The clinician in the patient area	cannot by accident turn off RCDs when switching light circuits at the room entrance.	
- The clinician in the patient area	is unable to reach below benches, desks, shelves or enter cupboards to reset RCDs.	
- The clinician in the patient area	is unable to move bulky and or heavy equipment to access socket-outlets and RCDs.	
- Readily accessible	All RCDs and socket-outlets must be readily accessible; refer clause 1.5.25 for the definition.	
- If socket-outlets are not readily accessible	extra provisions shall be made to allow for the control of the socket-outlet.	



### ***Patient electrical areas:***

<i>ASNZS 3003: 2018</i>	<i>Classification</i>	
Without further documentation from the facility manager, the following classification list shall be adhered to by the electrician.		
<i>Requirement</i>	<i>Body-protected</i>	<i>Cardiac-protected</i>
- Cardiac catheter labs	NO	YES
- Cardiac ICU	NO	YES
- ICU	NO	YES
- NICU	NO	YES
- Cardiac surgery	NO	YES
- CCU	NO	YES
- A & E	YES	NO
- Chiropractic	YES	NO
- Physiotherapy	YES	NO
- Optometry	YES	NO
- Naturopathic	YES	NO
- Allied health care	YES	NO
- Anaesthetic bays	YES	NO
- Audiometry	YES	NO
- Blood collection	YES	NO
- Day procedure theatre	YES	NO
- Delivery suites	YES	NO
- Dental surgeries	YES	NO



***Patient electrical areas (continued):***

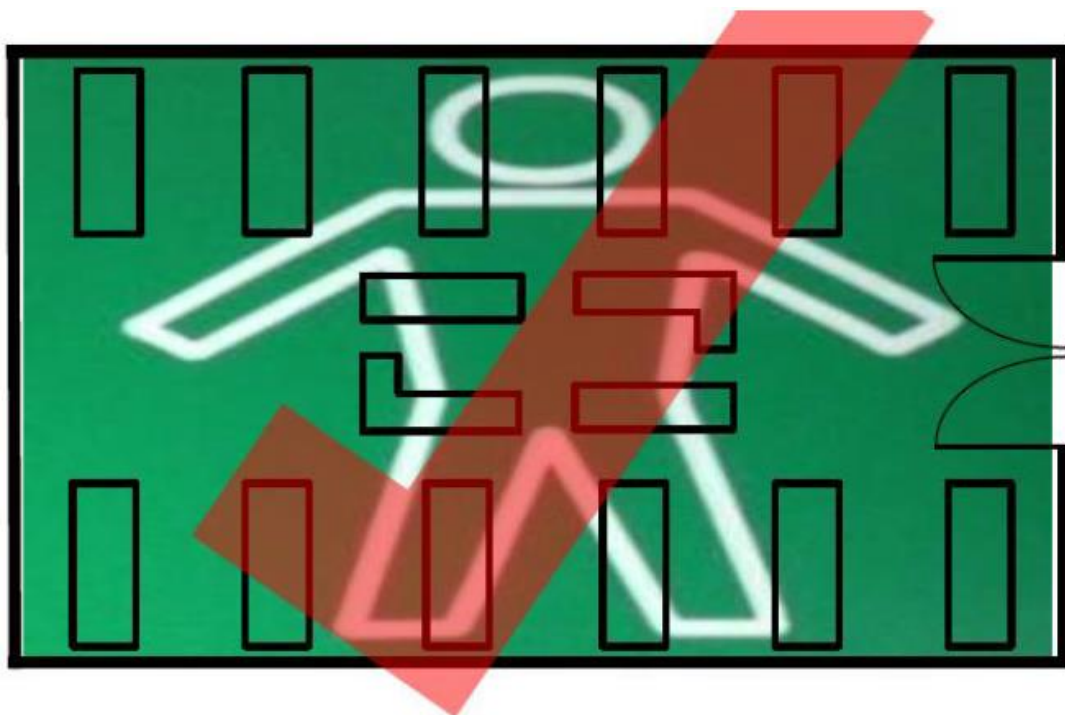
<i>ASNZS 3003: 2018</i>	<i>Classification</i>	
Without further documentation from the facility manager, the following classification list shall be adhered to by the electrician.		
<i>Requirement</i>	<i>Body-protected</i>	<i>Cardiac-protected</i>
- Dermatology	YES	NO
- Consult	YES	NO
- Endoscopy	YES	NO
- Medical / surgical wards	YES	NO
- HDU	YES	NO
- Imaging	YES	NO
- Nurseries	YES	NO
- Op theatres non-cardiac	YES	NO
- Examination	YES	NO
- Plasmapheresis	YES	NO
- Plaster	YES	NO
- Recovery	YES	NO
- Respiratory labs	YES	NO
- Resuscitation	YES	NO
- Stress test	YES	NO
- Treatment	YES	NO
- Ultrasound	YES	NO
- Patient ensuites / bathrooms	YES	NO





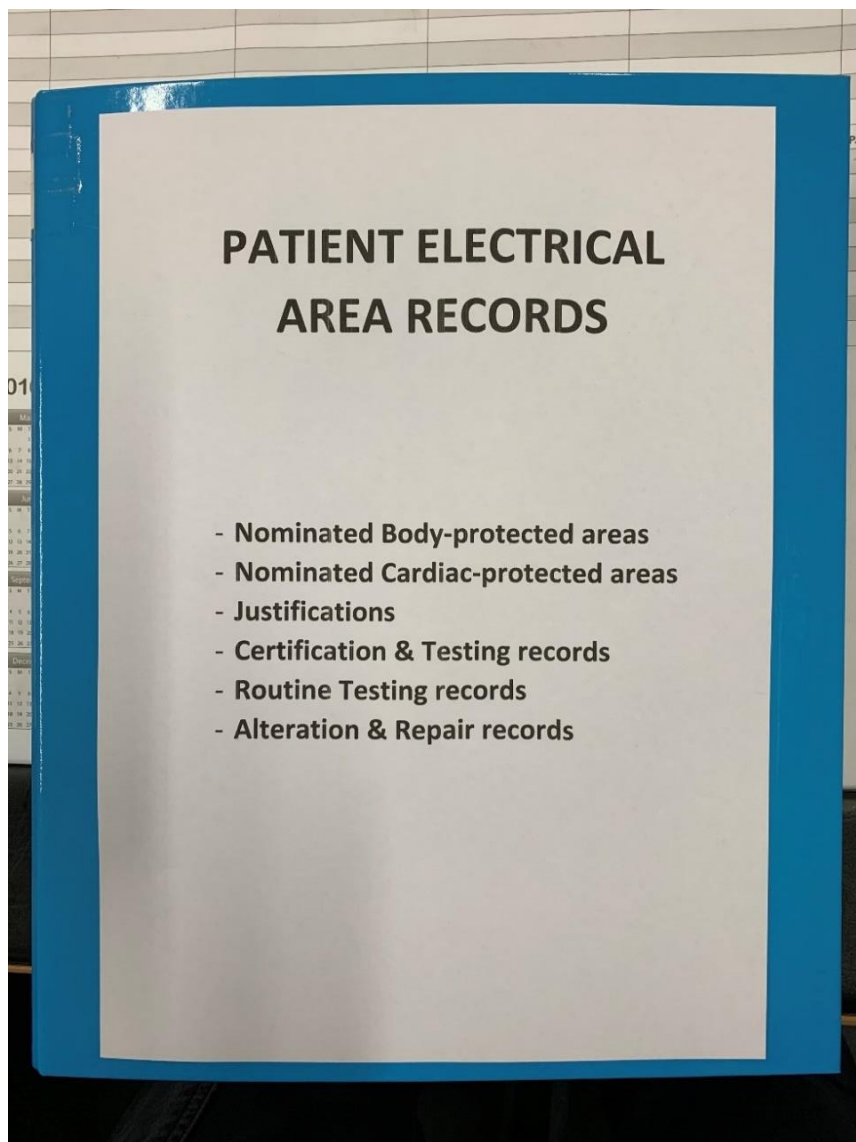
***Patient electrical areas (continued):***

<b><i>Requirement</i></b>	<b><i>Body-protected</i></b>	<b><i>Cardiac-protected</i></b>
- Disability and aged care	If patient areas are not nominated, the installation shall comply with AS/NZS 3000.	
- Classification	The facilities responsible entity should refer to AS/NZS 2500 for guidance in the safe use of electricity in patient care.	
- Documentation	Patient area location and classification documentation shall be provided by the responsible entity of the facility, and be readily available for inspection by routine testing services and electricians.	
- Documentation	Shall be updated to record all alterations, repairs, changes and testing.	
- Extend to	full height walls and doors	
- Bed curtains are	not boundaries	
- Staff stations are	not boundaries	
- Low height partitions are	not boundaries	
- Benches or desks are	not boundaries	
- Moveable walls are	not boundaries	
- Screens are	not boundaries	
- Nib walls are	not boundaries	



### ***Record keeping:***

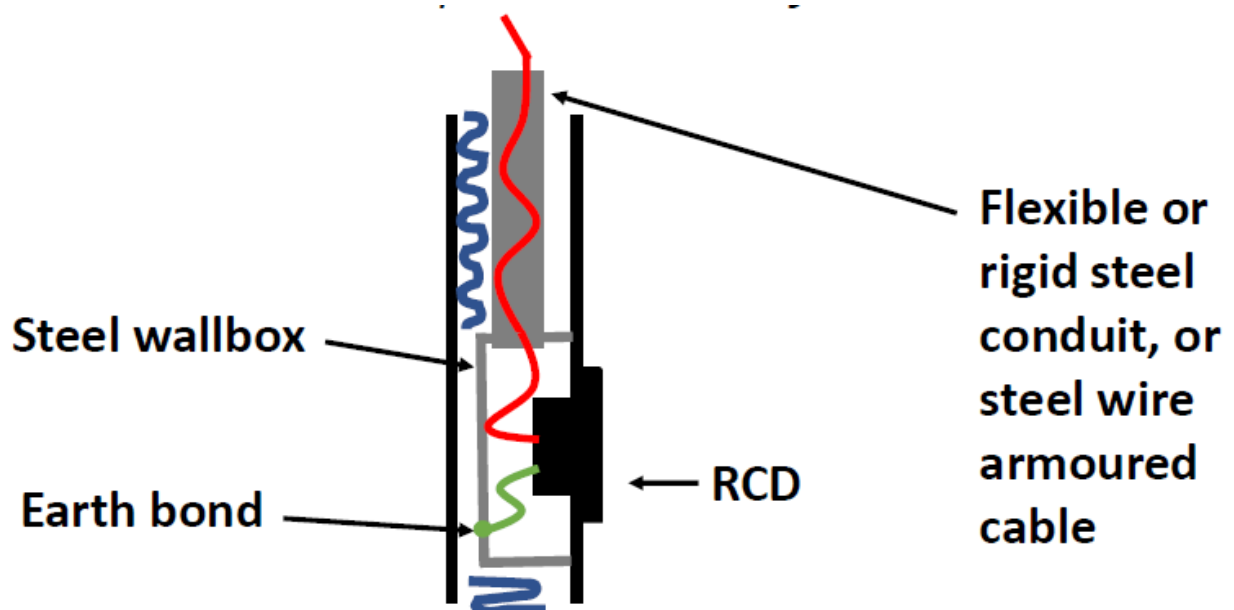
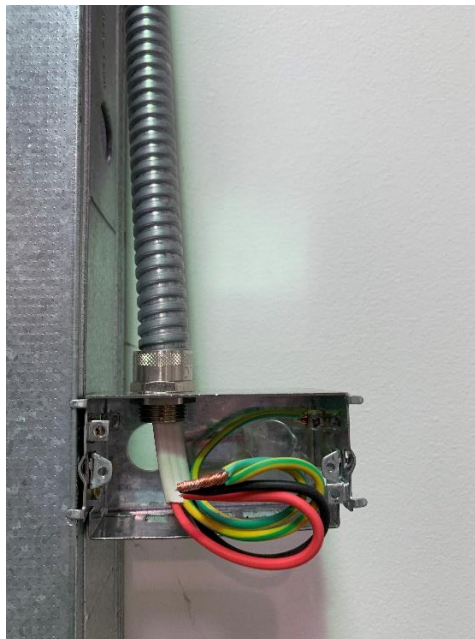
<b><i>Requirement</i></b>	<b><i>Body-protected</i></b>	<b><i>Cardiac-protected</i></b>
- Refer clause	2.2.1 of ASNZS 3003	
- Documentation	Patient area location and classification documentation shall be provided by the responsible entity of the facility, and be readily available for inspection by routine testing services and electricians.	
- Documentation	Electricians are responsible for the correct wiring and protection systems being installed based on the area classification by the responsible entity of the facility.	
- Documentation	Shall be updated to record all alterations, repairs, changes and testing.	
- Documentation	Shall also include justification to not provide electrical protection in patient areas.	





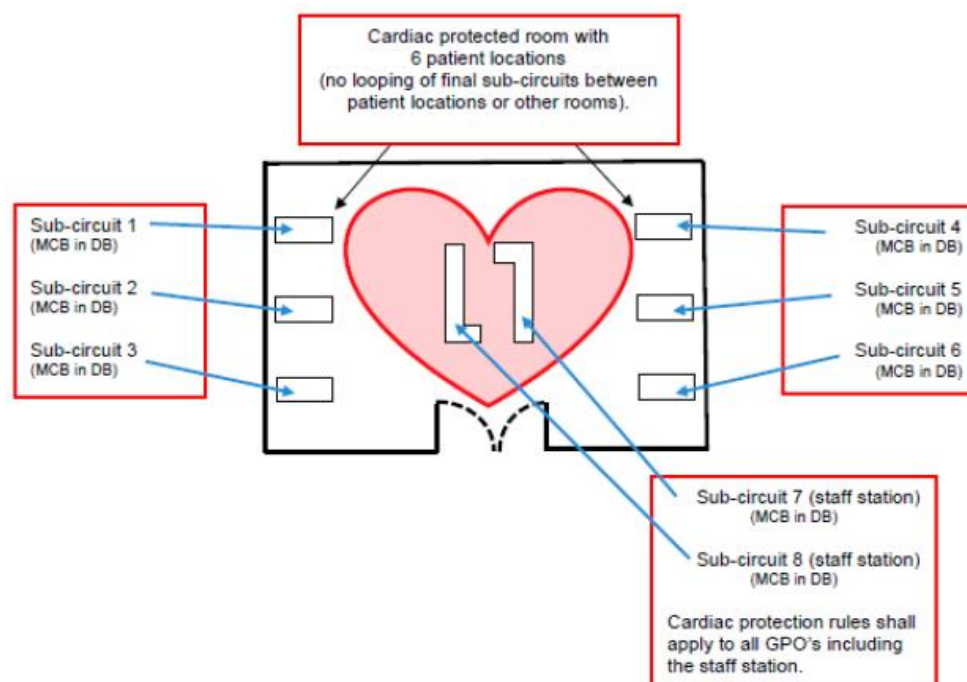
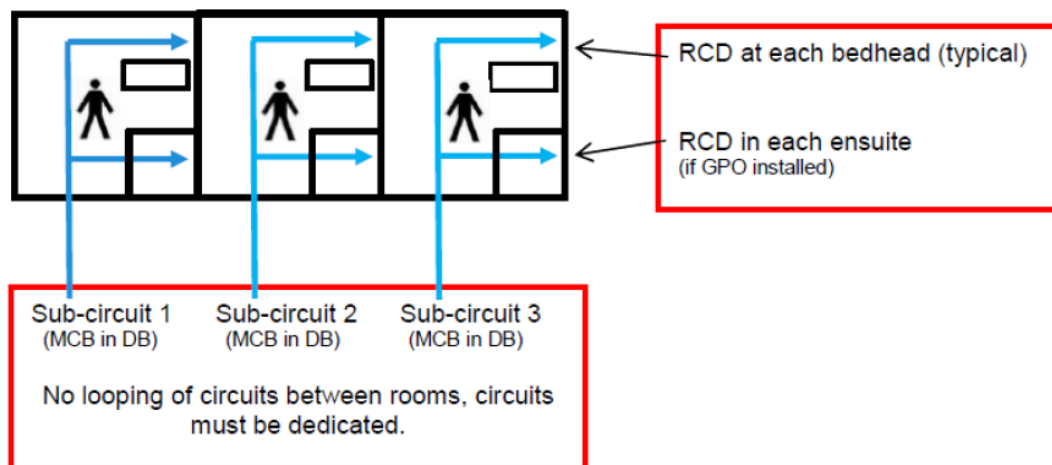
***Mechanical protection of:***

<b><i>Requirement</i></b>	<b><i>Body-protected</i></b>	<b><i>Cardiac-protected</i></b>
- Line side cables	Unprotected line-side cables to RCDs shall have a mechanical earthed screen if concealed within 50mm of the building surface; in accordance with ASNZS 3000.	
- Line side cables	RCDs in switchboards cannot backup RCDs in patient areas.	
- Line side cables	Refer clause 3.9.4.4 of ASNZS 3000 for protection methods.	



### Patient sub-circuits:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Dedicated to	room	patient location
- In ensuite	may share the body-protected area sub-circuit.	Must be dedicated to the ensuite.
- In multi patient locations in one room	Multi patient locations may share the sub-circuit in one room.	Cannot share the sub-circuit between patient locations, sub-circuit must be dedicated to the patient location.
- Mechanical damage to unprotected sub-circuit	Metal earth screen to line side cabling of RCDs if concealed within 50mm of the building surface; in accordance with AS/NZS 3000 cl.3.9.4.4.	



## RCDs:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Are 10mA and double pole in all cases	YES	
- May back up other RCDs	NO	
- To be located and	<ul style="list-style-type: none"> <li>- readily accessible</li> <li>- in the patient area</li> <li>- below 2m</li> <li>- visible</li> <li>- not under a bench</li> <li>- not in cupboards</li> <li>- not behind equipment</li> </ul>	
- Are required for all socket-outlet types	In general, no socket-outlet types are excluded from having 10mA RCD protection.	
- Located near room entrance light switches	Must be 500mm minimum apart, in any direction.	
- Do not control	<ul style="list-style-type: none"> <li>- more than 12 points (a DGPO is 2 points)</li> <li>- outlets in different rooms</li> </ul>	
- May control multiple bed locations in the one area	YES, to a maximum of 12 points.	NO, the RCD shall be dedicated to the patient.
- For cleaners' points	must be 10mA and double pole.	
- Are provided with a test point	when dedicated to fixed equipment.	
- Are labelled with a unique identifier and DBCB reference	RCD X DB X CB X	
- Are required	for socket-outlets outside the area controlling MEE for the patient area.	
- Are required	for imaging control room socket-outlets.	
- Are required	for permanently wired medical electrical equipment with Type B applied parts.	



### Socket-outlets:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Must be	individually switched	
- If not readily accessible	Provided with a separate readily accessible DP isolation switch below 2m.	
- Isolation switches	must be 500mm minimum apart, in any direction from a light switch.	
- Isolation switches	shall be labelled with their controlling RCD reference; FROM RCD X and the item they are controlling.	
- Near the entrance, outside a patient area	Within 2m of the entrance shall be 10mA RCD protected.	Within 5m of the entrance shall be 10mA RCD protected.
- Near the entrance, outside a patient area	The 10mA RCD shall be located with the socket-outlets and: <ul style="list-style-type: none"> <li>- socket-outlets must be colour coded</li> <li>- have a PA neon</li> <li>- mandatory labelling</li> </ul>	
- Are labelled with the controlling RCD reference	FROM RCD X	
- Shall be marked	RCD Protected	
- Shall have a	power available amber indicator light.	
- Switch shall indicate when on	by a red marking or a red indicator light.	
- ELV USB sockets	must be 10mA RCD protected.	
- ELV USB sockets	shall have an RCD test point if dedicated to the USB.	
- ELV USB sockets	if placed in the same circuit as other socket-outlets; shall have a double pole isolator.	
- Multi-phase sockets	must be 10mA RCD protected.	
- Above 2.3m	may be protected in accordance with AS3000 if not for medical electrical equipment.	
- Backed up by a UPS system	Require a UPS STATUS indicator / alarm where there is continuous patient observation.	



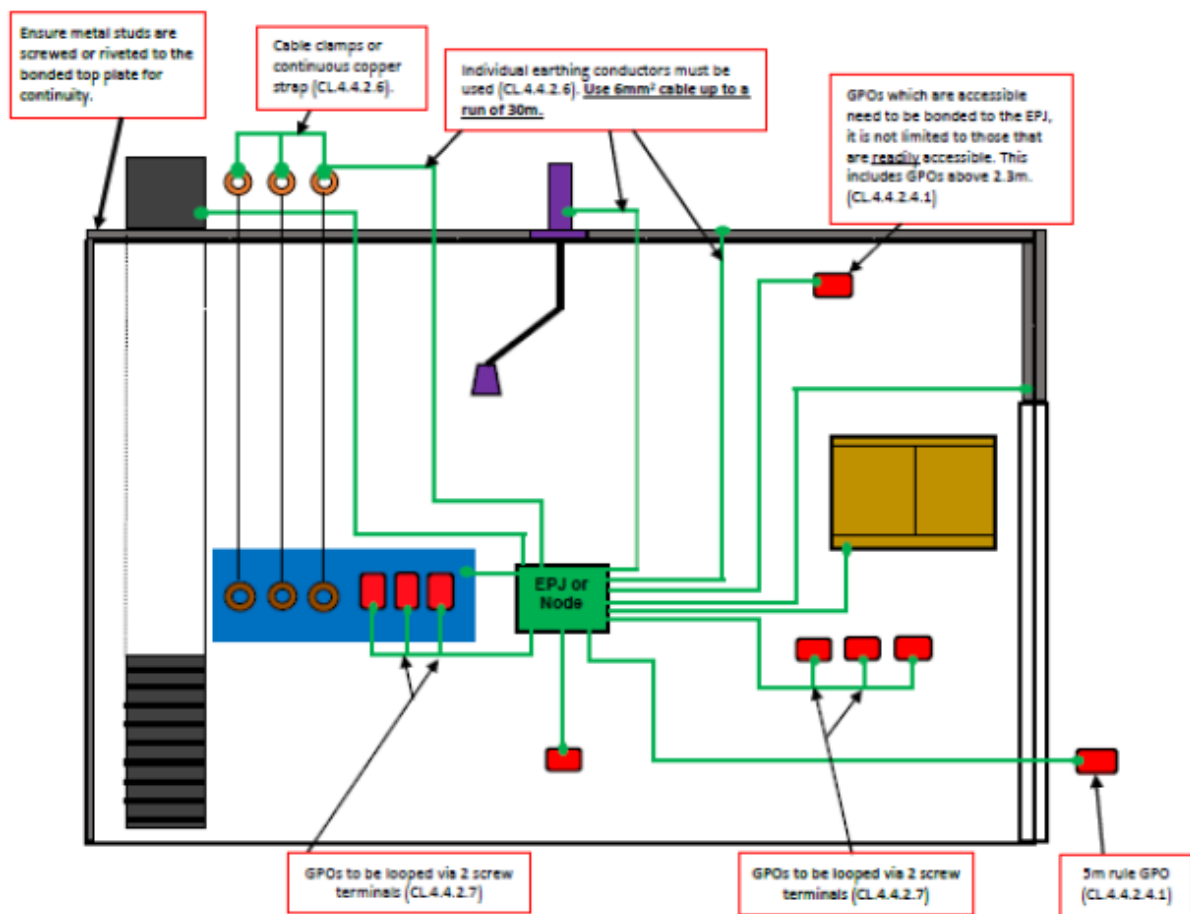
### Colour code of socket-outlets:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Refer clause	2.7.4.3 of AS/NZS 3003	
- Normal supply	White	
- Essential supply	Red	
- UPS back-up supply	Blue	
- For cleaners'	Beige	
- For USB sockets	Colour code requirements as shown above, but applies to the plate and surround only (not necessarily the socket component).	
- For RCD test points	White with round pin earth.	



## Earthing:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- In patient areas	In accordance with AS/NZS 3000.	In accordance with Section 4.4 of AS/NZS 3003: 2018.



Typical equipotential bonding in a cardiac area



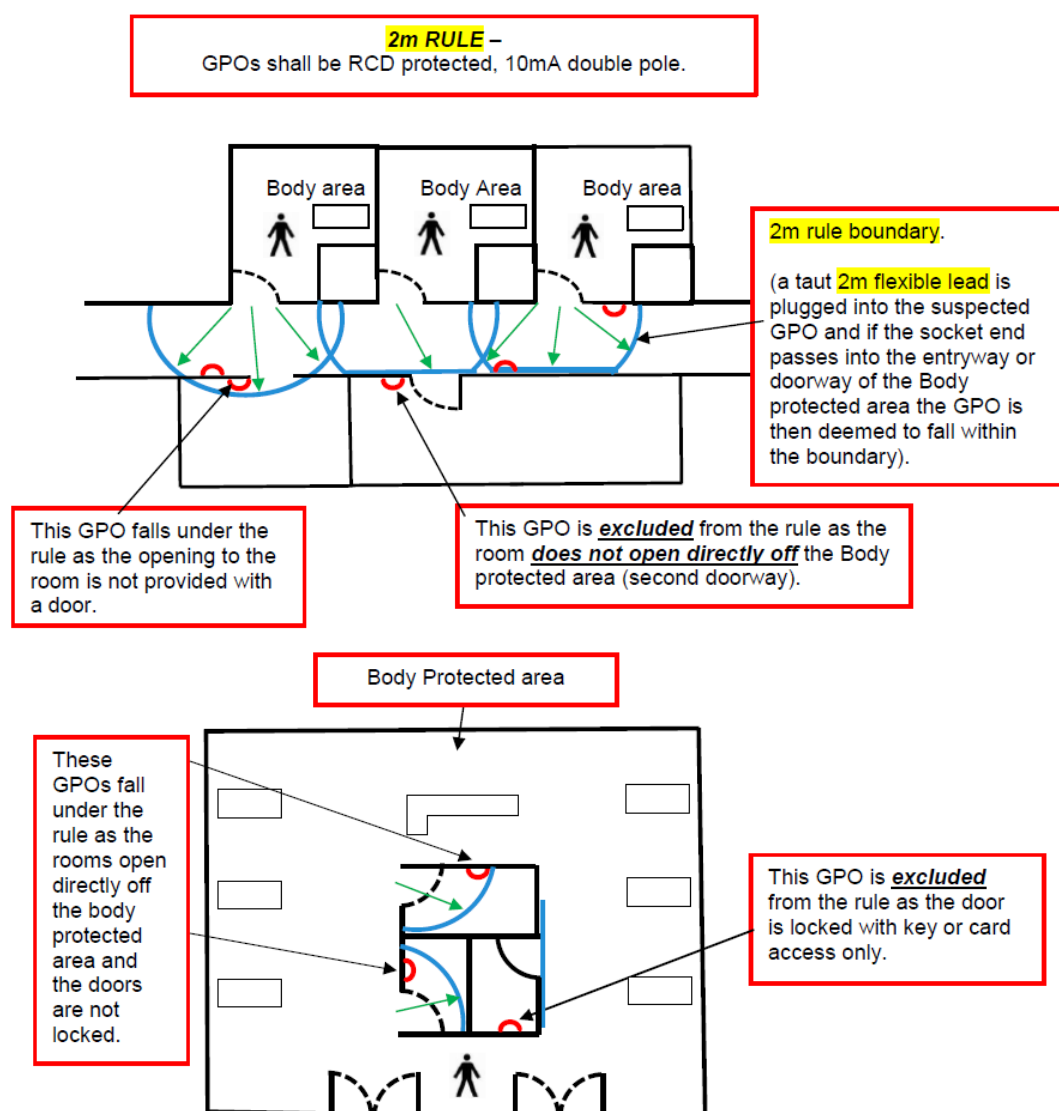
***Patient ensuite:***

<b><i>Requirement</i></b>	<b><i>Body-protected</i></b>	<b><i>Cardiac-protected</i></b>
- RCD protection	Must have its own 10mA RCD, if a socket-outlet is installed.	
- RCD protection	May be located in a vanity cupboard.	
- Socket-outlet location	May be located in a vanity cupboard.	
- Sub-circuit	May share the BP area sub-circuit.	Must be dedicated to the ensuite.



## Body 2m rule:

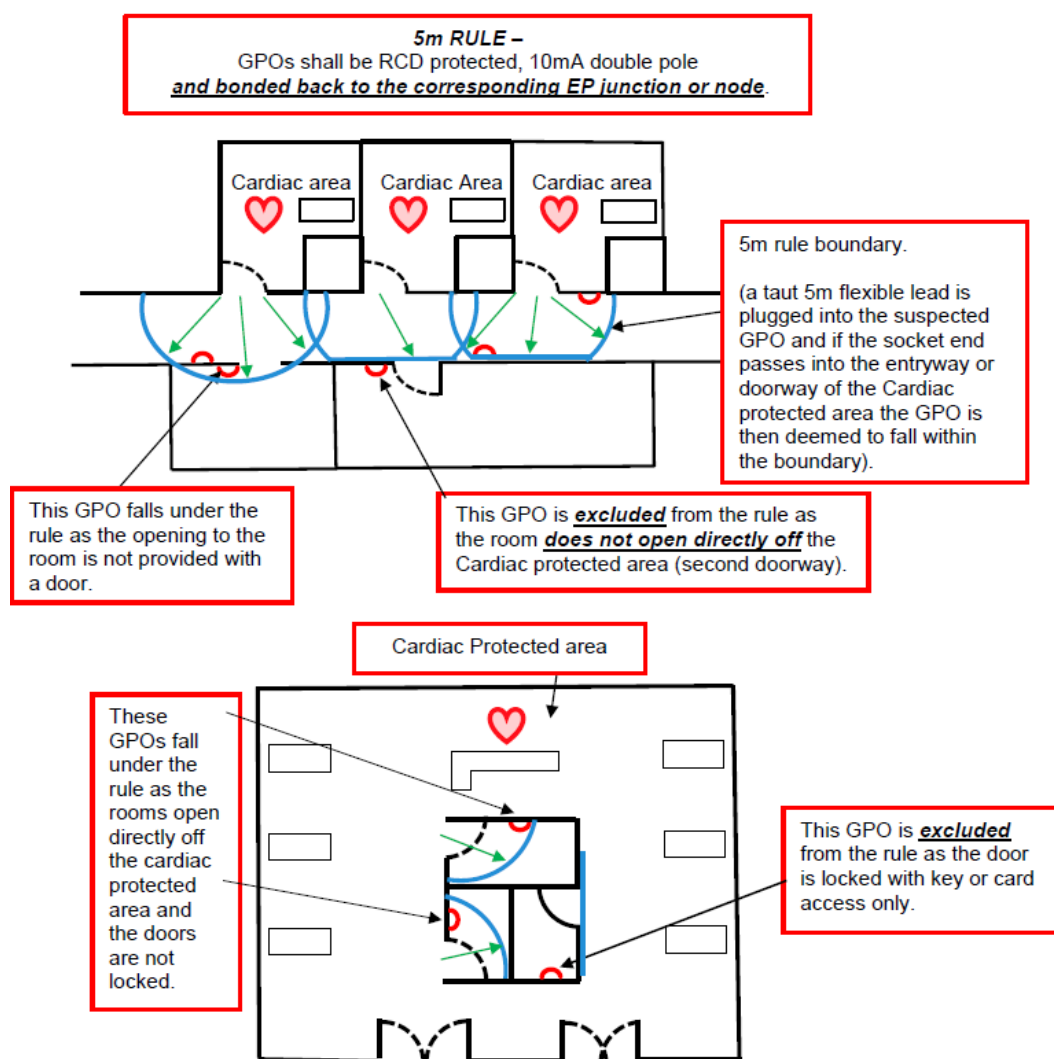
Requirement	Body-protected	Cardiac-protected
- Refer clause	2.4.3.2.2 of AS/NZS 3003	
- Socket-outlets within 2m of the patient area	are to be 10mA protected.	Refer Cardiac 5m rule.
- 2m rule socket-outlets	could be located within rooms or corridors opening directly off the patient area.	Refer Cardiac 5m rule.
- 2m rule socket-outlets	must be colour coded, have a PA neon and the mandatory labelling.	Refer Cardiac 5m rule.
- 2m rule RCDs	must be located with the socket-outlets they are protecting.	Refer Cardiac 5m rule.
- 2m rule RCDs	shall be 10mA and double pole.	Refer Cardiac 5m rule.



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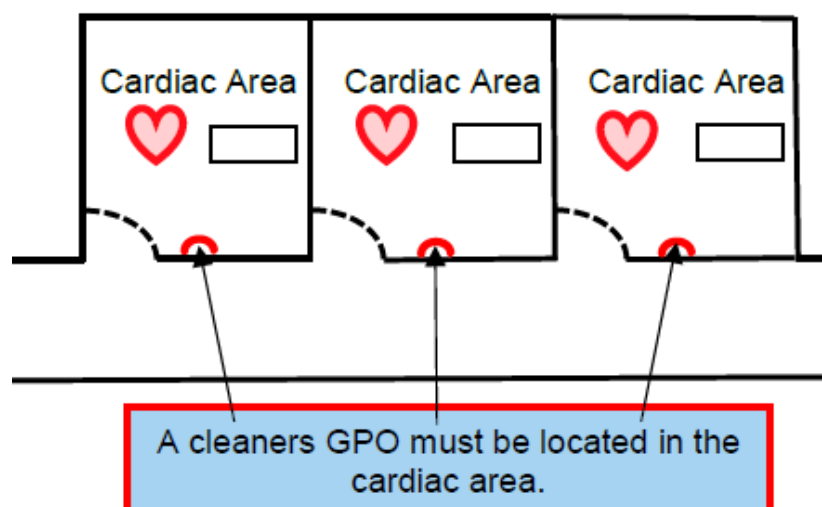
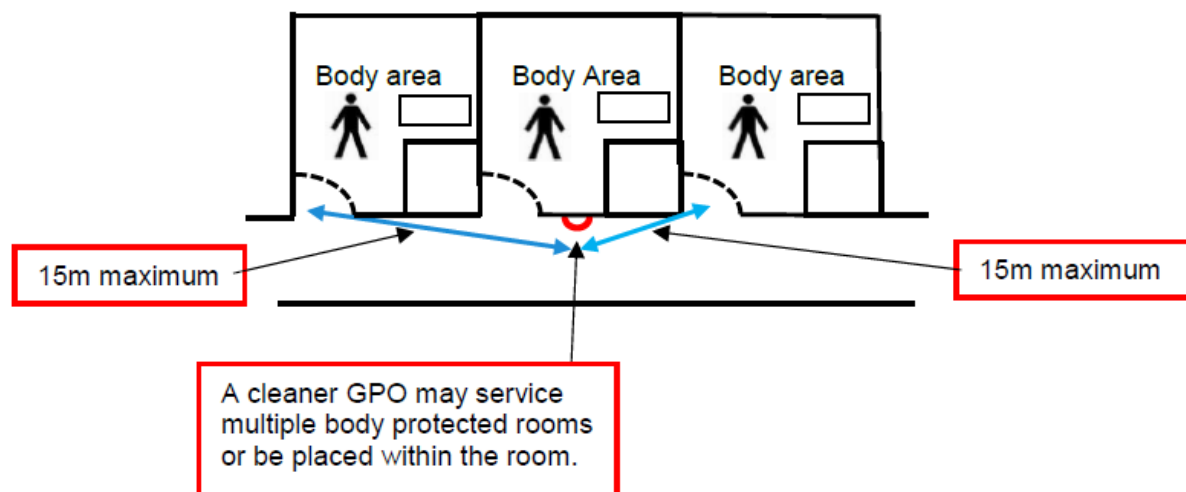
## Cardiac 5m rule:

Requirement	Body-protected	Cardiac-protected
- Refer clause	2.4.3.2.2 of ASNZS 3003	
- Socket-outlets within 5m of the patient area	Refer Body 2m rule.	are to be 10mA protected.
- 5m rule socket-outlets	Refer Body 2m rule.	could be located within rooms or corridors opening directly off the patient area.
- 5m rule socket-outlets	Refer Body 2m rule.	must be colour coded, have a PA neon and the mandatory labelling.
- 5m rule RCDs	Refer Body 2m rule.	must be located with the socket-outlets they are protecting.
- 5m rule RCDs	Refer Body 2m rule.	shall be 10mA and double pole.



### Cleaners' socket-outlet:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Refer clause	2.7.3 of AS/NZS 3003	
- Location	Within 15m of the patient area, if outside the area.	Within the patient area.
- Protection	10mA RCD double pole	
- RCD location	May be located remote from the socket-outlet.	
- Sub-circuit	Must be dedicated to cleaners' socket-outlets only.	
- Colour	Beige	



**UPS supplies:**

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Refer clause	2.4.4 of ASNZS 3003	
- When available	shall be connected to an essential supply.	
- UPS STATUS alarm / indicator required in	<ul style="list-style-type: none"><li>- each operating theatre</li><li>- staff stations in recovery, ICU, isolation, special care</li><li>- other areas with continuous patient observation</li></ul>	



## Labelling:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Refer clause	2.12 of AS/NZS 3003	
- Height of lettering for DB CB identification	Not less than 1.5mm	
- Height of lettering for RCD identification	Not less than 2.0mm	
- Height of lettering for GPO identification	Not less than 2.0mm	
- From tape machines must be	laminated type	
- Shall not be fixed to	clip-on surrounds unless the label is duplicated under the surround on the plate.	
- May be fixed adjacent	on the wall.	

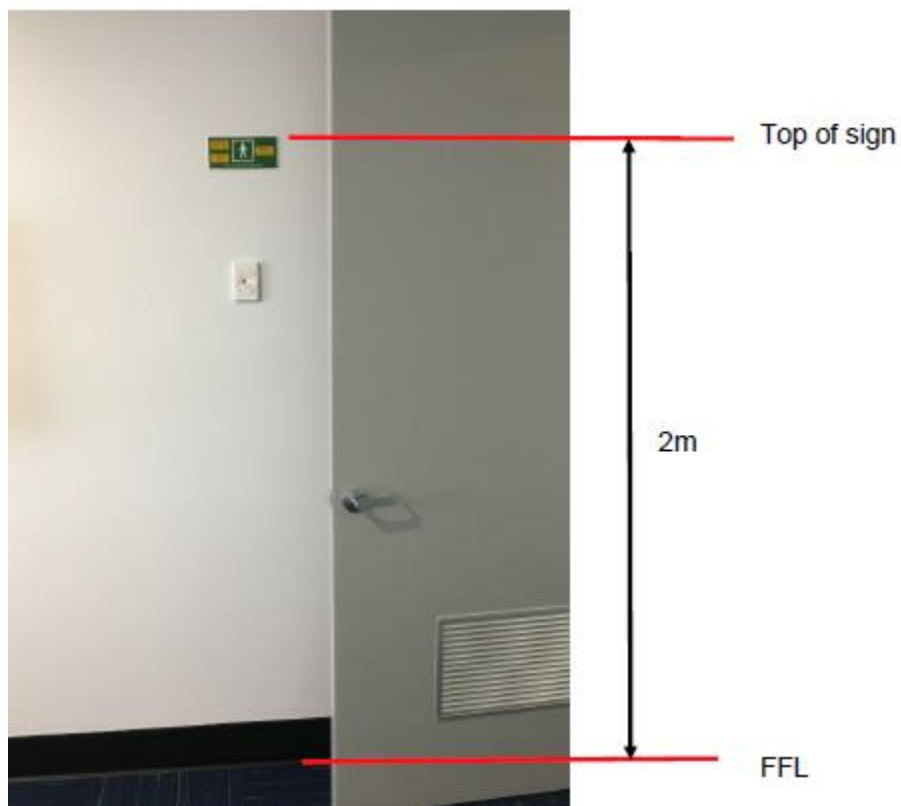
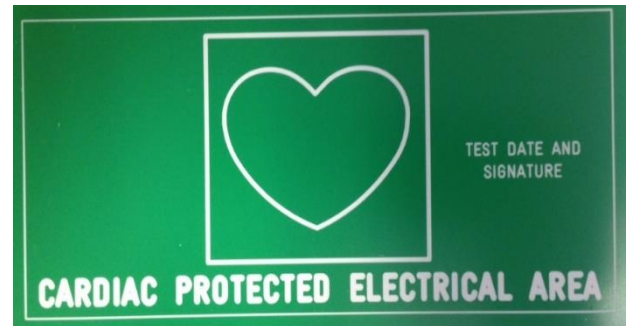


Laminated



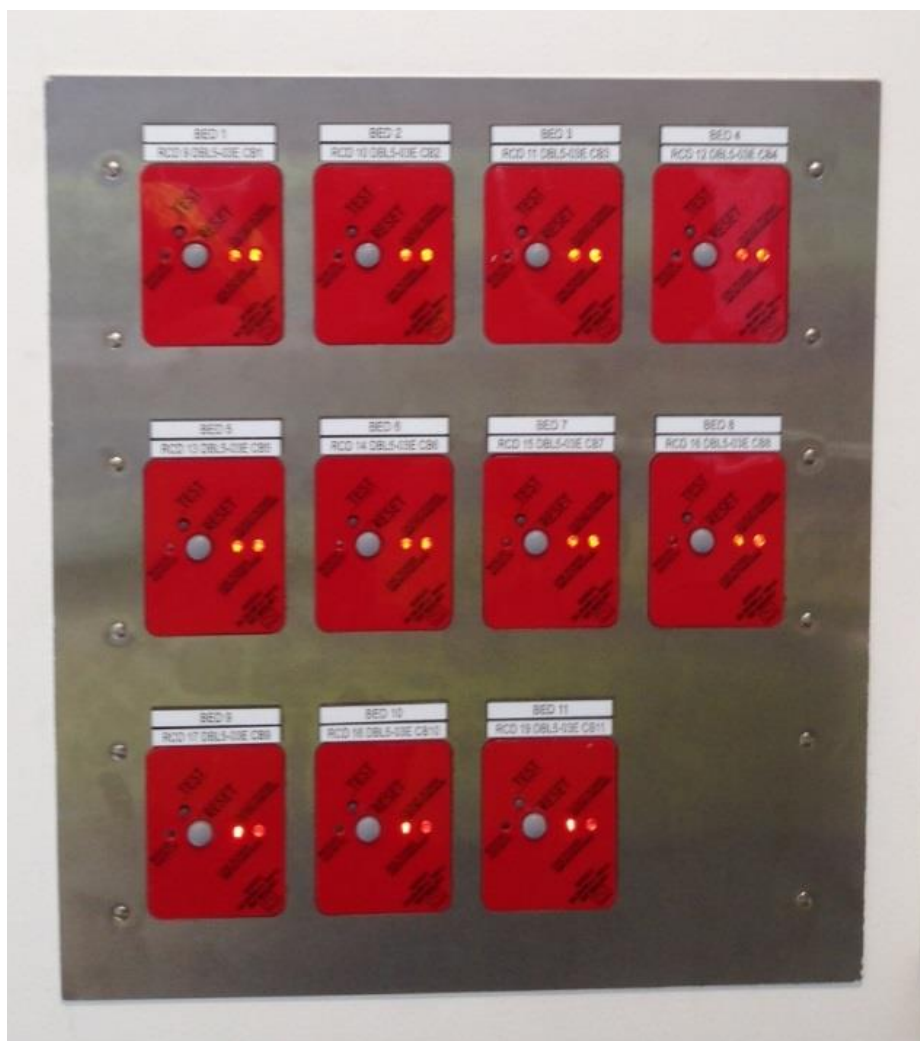
**Green area sign:**

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Is installed	in the patient area.	
- Refer clause	7.1 of ASNZS 3003	
- In a position which is	visible	
- At a mandatory height	of 2m to the top of sign.	



### ***Installations for self-harm patients:***

<b><i>Requirement</i></b>	<b><i>Body-protected</i></b>	<b><i>Cardiac-protected</i></b>
- Shall be wired as	YES	NO
- Refer clause	5.4 of AS/NZS 3003	
- Shall have RCDs located	at the staff station.	
- RCDs shall be fitted	with a PA neon on the load side.	
- RCDs shall be	labelled with the bed / room number.	
- Socket-outlet	PA neons need not be provided.	
- Socket-outlet	colour code requirements need not apply.	
- Area signs	should be located immediately outside the entrance to the patient area and securely fixed as high as practicable.	



### Isolated supplies:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- May be used as an LPD	YES	
- Refer clause	2.9 of AS/NZS 3003	
- Shall include a	line isolation & overload monitor (LIM or LIOM).	
- Transformers shall be	accessible for servicing.	
- May supply more than one patient location	YES	NO
- Transformer primary side to be protected	by an MCB, rated to suit.	
- Shall comply with	AS/NZS 4510 and certified.	
- LIOMs are labelled with a unique identifier and DBCB reference	LIOM X DB X CB X	
- Shall not control more than	12 points per single transformer.	
- Dedicated to permanently wired equipment	shall have a test facility.	
- LIOMs or LIMs	shall be readily accessible.	
- LIOMs or LIMs	shall be located in accordance with Table 2.1.	
- Socket-outlets shall be	double pole	
- Socket-outlets shall be marked	Isolation Transformer Protected	



## Magnetic fields:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Provisions are now informative, and details are located in	Appendix G of ASNZS 3003	
- Are the responsibility of	the facilities controlling entity, who should ensure that magnetic fields do not exceed safe limits in sensitive areas.	
- Should not exceed 3 (microtesla) $\mu\text{T}$ in the following patient areas	<ul style="list-style-type: none"> <li>- Resus</li> <li>- A&amp;E</li> <li>- Outpatient for ECG</li> <li>- Stress test units</li> </ul>	<ul style="list-style-type: none"> <li>- Cardiac cath labs</li> <li>- ICU</li> <li>- CCU</li> </ul>
- Should be	separated by a distance of 3m as a guideline from heavy current sources.	
- Testing arrangements	should be carried out at the completion of the work.	



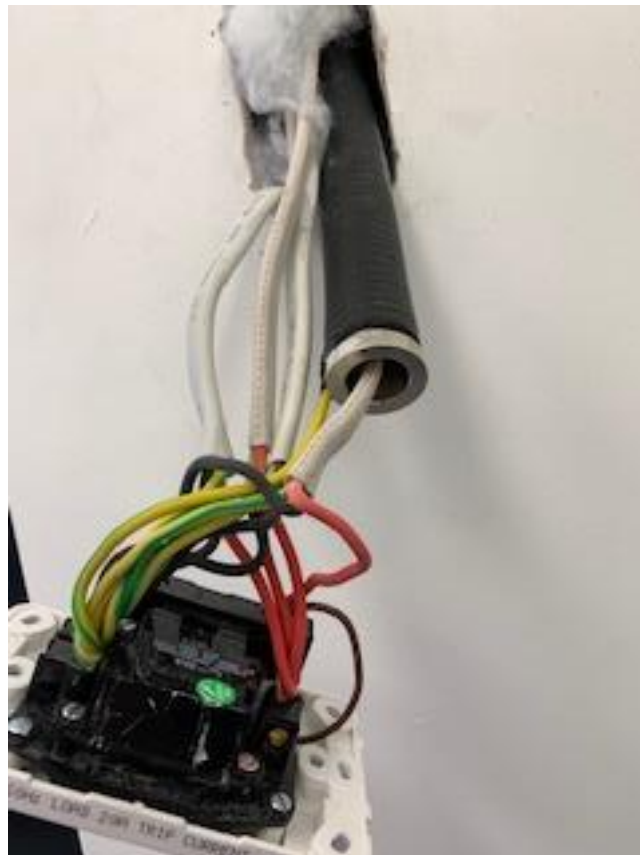
### Alterations and additions:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Refer clause	6.2 of AS/NZS 3003	
- In an existing patient area	<u>shall</u> conform with the current edition of AS/NZS 3003.	
- In patient areas <u>not</u> signposted body or cardiac	<u>shall</u> be upgraded to body or cardiac-protected prior to or during the alteration or addition to the electrical installation.	
- In patient areas <u>not</u> signposted body or cardiac	Separate circuits to patient areas need <u>not</u> apply during the upgrade.	Separate circuits must be provided to each patient location during the upgrade.
- If the patient area is signposted body or cardiac	the alteration shall <u>not</u> proceed unless the area has a current routine electrical test.	
- If the patient area is signposted body or cardiac	A 10% increase in the total number of socket-outlets <u>shall</u> have the current colour code requirements apply to the existing socket-outlets in the area.	
- If the EPJ cannot be identified	(not applicable)	The earthing system shall be upgraded to the current standard.
- If the EPJ is inaccessible for new connections	(not applicable)	The earthing system shall be upgraded to the current standard.
- If the EP test point is not in a readily accessible location	(not applicable)	A new EP test point shall be installed.
- The installation of new fixed electrical equipment rated 2kW or above	shall have the entire patient area upgraded to the current standard.	



## Repairs:

<b>Requirement</b>	<b>Body-protected</b>	<b>Cardiac-protected</b>
- Refer clause	6.3 of ASNZS 3003	
- In patient areas <u>not</u> signposted body or cardiac	<u>Should</u> be upgraded to body or cardiac-protected prior to or during the repair of RCDs or socket-outlets or permanently wired medical electrical equipment.	
- If the patient area <u>is</u> signposted body or cardiac	The repair <u>shall</u> not proceed unless the area has a current routine electrical test.	
- If the patient area <u>is</u> signposted body or cardiac	Repairs and replacement of electrical accessories with equivalent components may occur.	
- If the patient area <u>is</u> signposted body or cardiac	Replacement of component parts of fixed equipment with equivalent components, allowed.	





## Checklist summary:

✓	<b>Body-protected</b>	✓	<b>Cardiac-protected</b>
	Installation has been tested and verified in accordance with AS/NZS 3000, clause 2.13.		Installation has been tested and verified in accordance with AS/NZS 3000, clause 2.13.
	AS/NZS 3000 mechanical protection of line side cabling to patient RCDs, clause 2.4.2		AS/NZS 3000 mechanical protection of line side cabling to patient RCDs, clause 2.4.2
	Earthing shall be in accordance with AS/NZS 3000, clause 3.2		Earthing shall be in accordance with AS/NZS 3000 and Section 4, clause 4.1
	Dedicated sub-circuits to respective rooms, clause 2.4.1.1		Dedicated sub-circuits to individual patient locations, clause 2.4.1.2
	Ensuite may share room sub-circuit, clause 2.4.1.1		Ensuite cannot share the patient sub-circuit, clause 2.4.1.2
	Cleaner sub-circuit is a separate sub-circuit, clause 2.4.1.1		Cleaner sub-circuit is a separate sub-circuit, clause 2.4.1.1
	Cleaner sub-circuit is dedicated to cleaner socket-outlets only, clause 2.4.1.3		Cleaner sub-circuit is dedicated to cleaner socket-outlets only, clause 2.4.1.3
	A cleaner socket-outlet is located within 15m of the area, clause 2.7.3.1		A cleaner socket-outlet is located within the cardiac area, clause 2.7.3.1
	Cleaner socket-outlets are colour coded beige and labelled correctly, clause 2.7.4.3		Cleaner socket-outlets are colour coded beige and labelled correctly, clause 2.7.4.3
	All socket-outlets that are accessible in the patient area are RCD protected, clause 2.4.3.2.2		All socket-outlets that are accessible in the patient area are RCD protected, clause 2.4.3.2.2
	All socket-outlets located within 2m of the entrance to a body-protected area are RCD protected, unless locked off, clause 2.4.3.2.2		All socket-outlets located within 5m of the entrance to a cardiac-protected area are RCD protected, unless locked off, clause 2.4.3.2.2
	All socket-outlets used to supply MEE in the area which are located outside the area are RCD protected, clause 2.4.3.2.2		All socket-outlets used to supply MEE in the area which are located outside the area are RCD protected, clause 2.4.3.2.2
	Socket-outlets not readily accessible are provided with a separate readily accessible isolation switch, double pole, clause 2.7.2		Socket-outlets not readily accessible are provided with a separate readily accessible isolation switch, double pole, clause 2.7.2
	Permanent fixed equipment has a DP iso-switch when connected to GPO circuits, clause 2.10		Permanent fixed equipment has a DP iso-switch when connected to GPO circuits, clause 2.10
	RCDs do not back up other RCDs, clause 2.8.2		RCDs do not back up other RCDs, clause 2.8.2
	RCDs are double pole, including cleaners RCDs, clause 2.8.1		RCDs are double pole, including cleaners RCDs, clause 2.8.1
	RCDs are readily accessible, below 2m and visible, clause 2.6		RCDs are readily accessible, below 2m and visible, clause 2.6
	RCDs are at least 500mm from a light switch, clause 2.6		RCDs are at least 500mm from a light switch, clause 2.6
	RCDs are not mounted under benches or desks, clause 2.6		RCDs are not mounted under benches or desks, clause 2.6

### Checklist summary (continued):

✓	<b>Body-protected</b>	✓	<b>Cardiac-protected</b>
	RCDs are not in cabinets or cupboards or behind equipment, clause 2.6		RCDs are not in cabinets or cupboards or behind equipment, clause 2.6
	RCDs are not under shelves which are less than 1200mm from the ground and protrude more than 250mm from a wall, clause 2.6		RCDs are not under shelves which are less than 1200mm from the ground and protrude more than 250mm from a wall, clause 2.6
	RCDs are located in accordance with Table 2.1		RCDs are located in accordance with Table 2.1
	RCDs do not control more than 12 points, clause 2.8.3		RCDs do not control more than 12 points, clause 2.8.3
	RCDs do not control outlets in different rooms, clause 2.8.3		RCDs do not control outlets in different rooms, clause 2.8.3
	RCDs are provided with a test point when connected to fixed equipment, clause 2.8.7		RCDs are provided with a test point when connected to fixed equipment, clause 2.8.7
	Socket-outlets are labelled ' <b>From RCD X</b> ', clause 2.7.4.1		Socket-outlets are labelled ' <b>From RCD X</b> ', clause 2.7.4.1
	RCDs are labelled ' <b>RCD X</b> ' and with ' <b>DB/CB</b> ', clause 2.8.5		RCDs are labelled ' <b>RCD X</b> ' and with ' <b>DB/CB</b> ', clause 2.8.5
	Labelling shall not be fixed to removable clip on surrounds, clause 2.12.1		Labelling shall not be fixed to removable clip on surrounds, clause 2.12.1
	Socket-outlets on normal supply are colour coded white, clause 2.7.4.3		Socket-outlets on normal supply are colour coded white, clause 2.7.4.3
	Socket-outlets on essential supply are colour coded red, clause 2.7.4.3		Socket-outlets on essential supply are colour coded red, clause 2.7.4.3
	Socket-outlets on UPS back-up supply are colour coded blue, clause 2.7.4.3		Socket-outlets on UPS back-up supply are colour coded blue, clause 2.7.4.3
	A UPS status indicator is installed where required, clause 2.4.4.3		A UPS status indicator is installed where required, clause 2.4.4.3
	Socket-outlets are individually switched, clause 2.7.5		Socket-outlets are individually switched, clause 2.7.5
	Green body-protected area sign is installed in the area in a visible position, at a height of 2m to the top of the sign, clause 2.12.2		Green cardiac-protected area sign is installed in the area in a visible position, at a height of 2m to the top of the sign, clause 2.12.2
			An EP earthing system shall only have one EP junction, clause 4.4.2.3
			All socket-outlets in the cardiac area are bonded to the EP junction or node, clause 4.4.2.4.1
			All socket-outlets located within 5m of the entrance to a cardiac-protected area are bonded to the EP junction or node, clause 4.4.2.4.1
			All socket-outlets in another room or ceiling used to supply MEE in the area with conductive parts are bonded to the EP junction or node, clause 4.4.2.4.1

## Checklist summary (continued):



✓	<b>Cardiac-protected</b>
	All socket-outlets in the cardiac area including those mounted above 2.3m or on the underside of the ceiling shall be bonded to the EP junction or node, clause 4.4.2.4.1
	Each node is individually connected to the EP junction by insulated conductors, clause 4.4.2.3
	Each node is accessible and location identified at the EP junction by labelling, clause 4.4.2.3
	Each node is insulated or isolated from contact with structural metal, clause 4.4.2.3
	Each node is numbered and identifies the location of the EP junction, clause 4.4.2.3
	Each conductor installed between a node and the EP junction is numbered at the EP junction to identify the node, clause 4.4.2.3
	The EP junction is labelled to identify the number of nodes connected, clause 4.4.2.3
	The protective earth terminal of permanently installed Class 1 equipment is directly connected to the EP junction or node, clause 4.4.2.5
	Metal wall boxes or ducts containing socket-outlets are individually directly earthed to the EP junction or node, clause 4.4.2.5
	Reticulated metal services are bonded directly to the EP junction or node, clause 4.4.2.6
	Metal substrates of walls, windows, doors, air-con are individually bonded directly to the EP junction or node, clause 4.4.2.6
	EP earthing system conductors are not joined in single screw tunnel terminals, clause 4.4.2.7
	EP junction and test points are correctly identified, clause 4.4.2.9
	EP junction return earths are connected to each switchboard supplying the cardiac area, and are labelled ' <b>RETURN EARTH</b> ', clause 4.4.3

*Electrical Testing Company Pty Ltd*

*Est: 1969*

*Unit 15, 10 Victoria Ave*

*Castle Hill NSW 2154*

*T: 1300 TEST IT*

*1300 8378 48*

*electricaltestingcompany.com.au*