

# ESA Switchboard Audit

C G MSB Audit

Complete

Score	0 / 0 (0%)	Flagged items	0	Actions	1
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Job Number : CGEN14

Client / Site Name : Typical Apartments

Site Location : Surfers Paradise QLD 4217  
Australia  
(-27.990302901601225,  
153.4295471871725)

Job Name : C G MSB Audit

## Actions

1 action

Work Description / AS/NZS 3019 Form 1 "Certificate of Periodic Verification"

Do any items require urgent attention?

Yes

Chassis on Essential Section requires rectification. Some basic remedial works completed on the day.

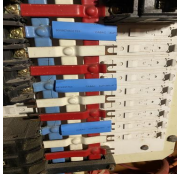


Photo 12

**To do** | Assignee **Dion Harris** | Priority **Low** | Due **23.08.2023 18:33 AEST** | Created by **Dion Harris**

Replace chassis

## Risk Assessment

Safety Analysis :

Hazard Identification :

Hazard

Hazard 1

Hazard :

**Electrical**

Control Method :

**Isolation**

Additional Control Measures :

**Personal Protective  
Equipment**

**Electrical Safety Equipment**

**Assistance**

Is the Hazard Suitably Controlled ?

**Safe**

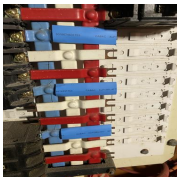
Work Description		1 action
Work Sheets :		
Work Sheet		
Work Sheet 1		
Electrician :	Dion & Jacob	
Date :	16.08.2023 09:00 AEST	
Hours :	4	
Rate :	Electrical Tradesman x 1.5	
Verification by Basic Visual Inspection AS3019:2007 Section 3		
Verification by Basic Visual Inspection AS3019:2007 Section 3 1		
Switchboard Identification	MSB	
3.2 (a) Evidence of Cable Sheath or Insulation Deterioration	Pass	
3.2 (b) Exposed portions of the Earth Electrode are in good condition?	Pass	
3.2 (c) Waterpipe used as an Earth has not been modified?	N/A	
3.2 (d) Socket Outlets have no mechanical damage?	N/A	
3.2 (e) Lamp Holders have no mechanical damage?	N/A	
3.2 (f) Switchboard and electrical equipment have no conductor insulation deterioration?	Fail	
		
Photo 1		
3.2 (g) RCD's, MCB's fuses and switches show no evidence of mechanical damage?	Fail	



Photo 2

3.2 (h) Semi-enclosed fuses have not deteriorated and have no exposed live parts?

**Fail**



Photo 3



Photo 4

3.2 (i) Switchboard equipment is correctly labelled?

**Fail**



Photo 5



Photo 6

3.2 (j) Covers of fixed-wired appliances are not broken or missing?

**N/A**

3.2 (k) Electrical Fittings in damp areas have correct IP rating?

**N/A**

3.2 (l) Overhead lines and POA's have no evidence of deterioration including rust?

**N/A**

3.2(m) Safety distance clearances have not been compromised?

**Fail**

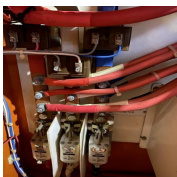


Photo 7

Quotation Required?

**Yes**

Quote Type

**Replace**

Equipment Required

**Main Switchboard**

Description of Work

**Design for quotation to replace MSB, metering and Community Switchboard.**

Estimated Cost

**TBA**

Price Excludes GST



Verification by Visual Inspection and Limited Testing  
AS3019:2007 Section 4

Verification by Visual Inspection and Limited Testing  
AS3019:2007 Section 4 1

### Switchboard Identification

**MSB**

4.2(a) Access to live parts is not possible without the use of a tool?

**Fail**

Switchboard doors are easily opened without the requirement of tools, exposing live components.

4.2(b) Electrical equipment and fixed wired appliances are not damaged?

**Fail**

Damage present on bus bar insulating materials.

4.2(c) Conductors of cables are correctly identified and are connected to the correct terminals of fittings?

**Pass**

4.2(d) Conductors are securely held in terminals of fittings and are not subject to tension at the termination?

**Pass**

4.2(e) There is adequate insulation and distance between live conductors and between live conductors to Earth?

**Fail**

Bare conductors fail to meet the clearance requirements.

4.2(f) Electrical equipment is adequately supported?

**Fail**

Cabling to and from externally mounted ATS is not supported to meet the required fault current capacity.

4.2(g) Electrical equipment is designed for the environment in which it is located or suitably enclosed?

**Pass**

4.2(h) Lamps do not exceed the rating of the fitting in which they are installed?

**N/A**

4.2(i) Fittings are undamaged and serviceable? Wiring shows no evidence of overheating?

**N/A**

4.2(j) Exposed metal is connected to Earth?

**Pass**

4.3(a) The current rating and breaking capacity of protective devices are appropriate for the circuits they protect?

**Fail**

Short circuit fault current capacities of circuit breakers within this installation fail to meet the required 10kA for application.

4.3(b) Semi-enclosed rewirable fuses have not deteriorated due

**N/A**

to arcing and have no exposed live parts?	
4.3(c) Switches and protective devices are clearly labelled showing the circuit type they control or protect?	Fail
Labelling is not present on the majority of the installation.	
4.3(d) Live conductors are insulated or provided with a barrier requiring the use of a tool to gain access?	Fail
All internal conductive parts fail to have barriers and/or covers fitted. All doors are accessible without the use of tools.	
4.3(e) Neutral bars are supported on insulated fittings?	Pass
4.3(f) Earthing conductors are connected to the Earth Bar and Neutral conductors are connected to the Neutral Bar?	Pass
4.3(g) The main Earthing conductor from the Earth electrode is correctly connected at the Main Switchboard?	Pass
4.3(h) Required labelling on the main Earth connection is correct?	N/A
Not sighted during this inspection.	
4.7.1(a) The main Earthing conductor between the Main Switchboard and the Earth electrode is continuous and the resistance does not exceed 0.5 Ohms?	N/A
Not tested during this inspection.	
4.7.1(b) The connection between any point on the installation required to be earthed and the switchboard Earth Bar is continuous?	Pass
4.7.1(c) The resistance of the protective Earthing conductor does not exceed the maximum permitted value as per AS/NZS3017?	Pass
4.7.1(d) Fixed wired appliances (Class 1) requiring earthing are connected to Earth?	N/A
4.7.2(a) The connection between any point on the installation required to be equipotentially bonded and the switchboard Earth Bar is continuous? and;	Pass
4.7.2(b) The resistance of each equipotential bonding conductor does not exceed 0.5 Ohms?	Pass

4.7.3(a) Every single-pole switch or protective device of the electrical installation operates in the active conductor of the circuit in which it is connected? and;

**Pass**

4.7.3(b) Every RCD operates in the active conductor of the circuit to which it is connected, and the neutral conductor where specified in AS/NZS3000?

**Fail**

RCD's are not fitted to final sub circuits requiring protection as per AS3000:2018.

4.7.4 Limited Leakage Current Testing by Active/Neutral clamp meter measurement

**N/A**

Leakage tests not performed during this test.

4.7.5 RCD Testing by use of the integral testing device

**N/A**

Verification by visual inspection and full testing AS3019:2007 Section 5

Verification by visual inspection and full testing AS3019:2007 Section 5 1

Switchboard Identification

**MSB**

5.2(a) In a multiphase circuit a switch, or circuit breaker when used as an isolator, operates simultaneously in all active conductors of the circuit in which it is connected?

**Pass**

5.2(b) Neutral conductors of circuits are connected to the Neutral Bar of the switchboard from which the circuit is supplied?

**Pass**

5.2(c) The consumers mains Neutral is connected to the Neutral Bar of the main switchboard?

**Pass**

5.3(a) Single phase socket outlets that accommodate flat pin plugs are connected so that the Earth, Active and Neutral are connected in a clockwise order and the Earth is connected to the slot on the radial line? and;

**N/A**

5.3(b) Where multi phase socket outlets of the same type form part of the electrical installation the phase sequence of the socket outlets is the same?

**N/A**

5.4 Insulation Resistance Tests

**Fail**



5.5 (a) Measure Earth loop fault impedance in Ohms?

N/A

5.5(b) Maximum prospective short circuit current on protective devices? or;

Fail

Prospective Short Circuit current at terminals of Essential Chassis 6.7kA. Circuit Breakers only rated to 6kA.

5.5(c) Indicate whether the protective device of a given fault current rating will operate satisfactorily under fault conditions?

Fail

5.6 Verify by measurement that the prospective short circuit fault level at the point of connection of the protective device does not exceed the fault current interrupting capacity of the protective device?

Fail

Measured by test equipment greater than fitted circuit breakers can withstand.

5.7 RCD Verification by test equipment?

N/A

No RCD's fitted.

5.8 Integrity of switchboard connections by thermal imaging?

N/A

Thermal imaging not conducted during this test.

### Guidance for Recipients

This periodic verification report is intended for reporting on the condition of an existing electrical installation.

If you were the person ordering this report, but not the owner of the installation, you should pass this report or a copy of it immediately to the owner.

This report should be retained in a safe place. It is recommended that this report or a copy of it be placed in or near the Main Switchboard of the electrical installation for the information of any person inspecting or undertaking work on the electrical installation in the future. If you later vacate the property, the copy in the Main Switchboard will provide the new owner with details of the condition of the electrical installation at the time the report was issued.

The report may contain a list of recommended actions necessary to bring the installation up to an electrically safe condition as detailed in the current AS/NZS3000 Electrical Wiring Rules.

Legislation requires specific action including DISCONNECTION, ISOLATION, MAKING SAFE or REPORTING to the Electrical Safety Office any defect which constitutes an electrical hazard to persons, livestock or property.

For items classified as requiring URGENT ATTENTION, the safety of those using the installation may be at risk and arrangements should be made for a competent person to undertake remedial

work without delay.

For safety reasons the installation will need to be re-inspected at appropriate intervals by a competent person. The maximum time interval recommended before the next inspection is stated in the report.

AS/NZS 3019 Form 1 "Certificate of Periodic Verification"

1 action

Installation Details including Client and Address:

**Surfers Paradise**

This Certificate covers the following:

**Basic Visual Inspection in accordance with Section 3 of AS/NZS3019:2007.**

**Visual Inspection and Limited Testing in accordance with Section 4 of AS/NZS3019:2007.**

**Visual Inspection and Full Testing in accordance with Section 5 of AS/NZS 3019:2007.**

Estimated age of installation:

**35**

Evidence of alterations or additions since last inspection:

**Yes**

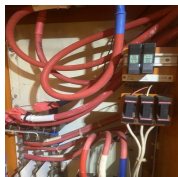


Photo 8

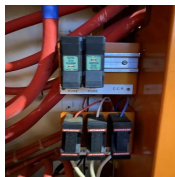


Photo 9

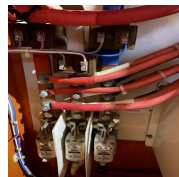


Photo 10



Photo 11

Approximate age of alteration

**10**

Have previous inspections been completed?

**No**

Limitations of Inspection:

**Partial testing only due to extensive failures.**

Do any items require urgent attention?

**Yes**

Chassis on Essential Section requires rectification. Some basic remedial works completed on the day.

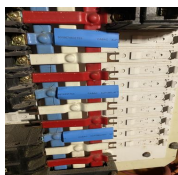


Photo 12

**To do** | Assignee **Dion Harris** | Priority **Low** | Due **23.08.2023 18:33 AEST** | Created by **Dion Harris**

Replace chassis

Other items requiring attention:

**Switchboard has CT metering to the Main Switch Chamber. This is not compliant with Energex Metering Standards and is required to be enclosed within its own compartment.**



Photo 13



Photo 14

Insulation Resistance Result:  
MOhms

**>2M Ohms**

Main Switchboard fault level:  
kVA

**25kA Rated. Dissolved by  
inferior ATS installation works.**

750kVA pad mounted transformer at front of building with <20 meters of incoming mains.

Certification:

Having carried out a verification of the above installation in accordance with the requirements of AS/NZS3019:2007 I hereby certify that, subject to the type of verification and limitations as detailed above, the installation satisfies the requirements of AS/NZS3019:2007 for the issue of this certificate.

**Fail**

Name of person who carried out the verification:

**Dion Harris**

Electrical License Number:

**51646**

Electrical Contractor Number:

**67020**

Signature:

**16.08.2023 18:41 AEST**

Date of verification test:

**16.08.2023 12:00 AEST**

Next test due:

**Upon completion rectification  
works.**

Any observations detailed within this report requiring Urgent Attention to be repaired without delay.

This report is a valuable document on the safety status of the electrical installation and should be retained for future reference. Placing in or near the Main Switchboard is recommended. For

safety reasons, the electrical installation should be re-inspected on or prior to the recommended date by a competent person and this report be given to the person carrying out the next verification.

#### AS/NZS3019 Form 2 "Schedule of Test Results"

Refer to the attached Spreadsheet

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Photo 5



Photo 6



Photo 7



Photo 8



Photo 9



Photo 10



Photo 11

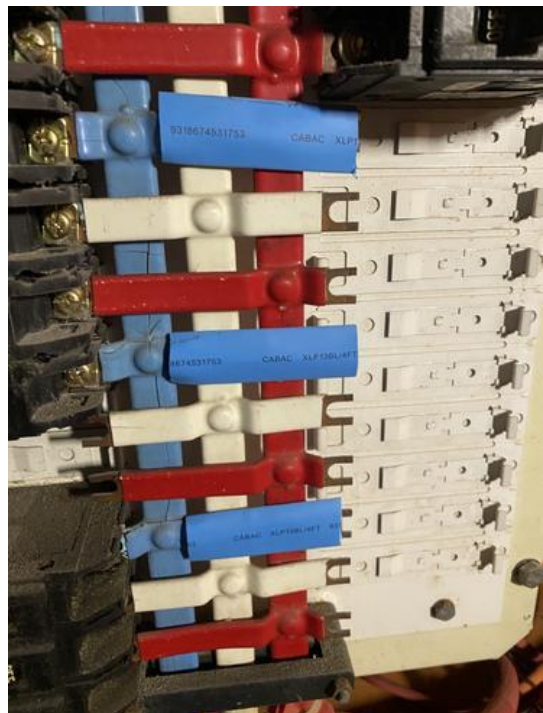


Photo 12



Photo 13

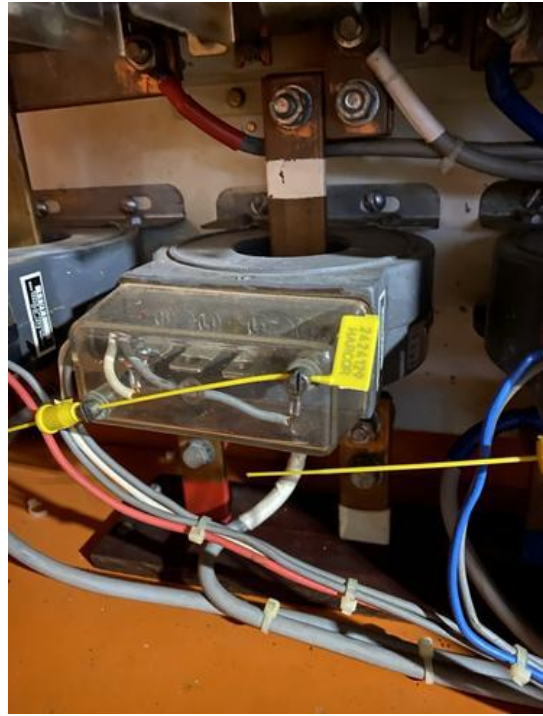


Photo 14