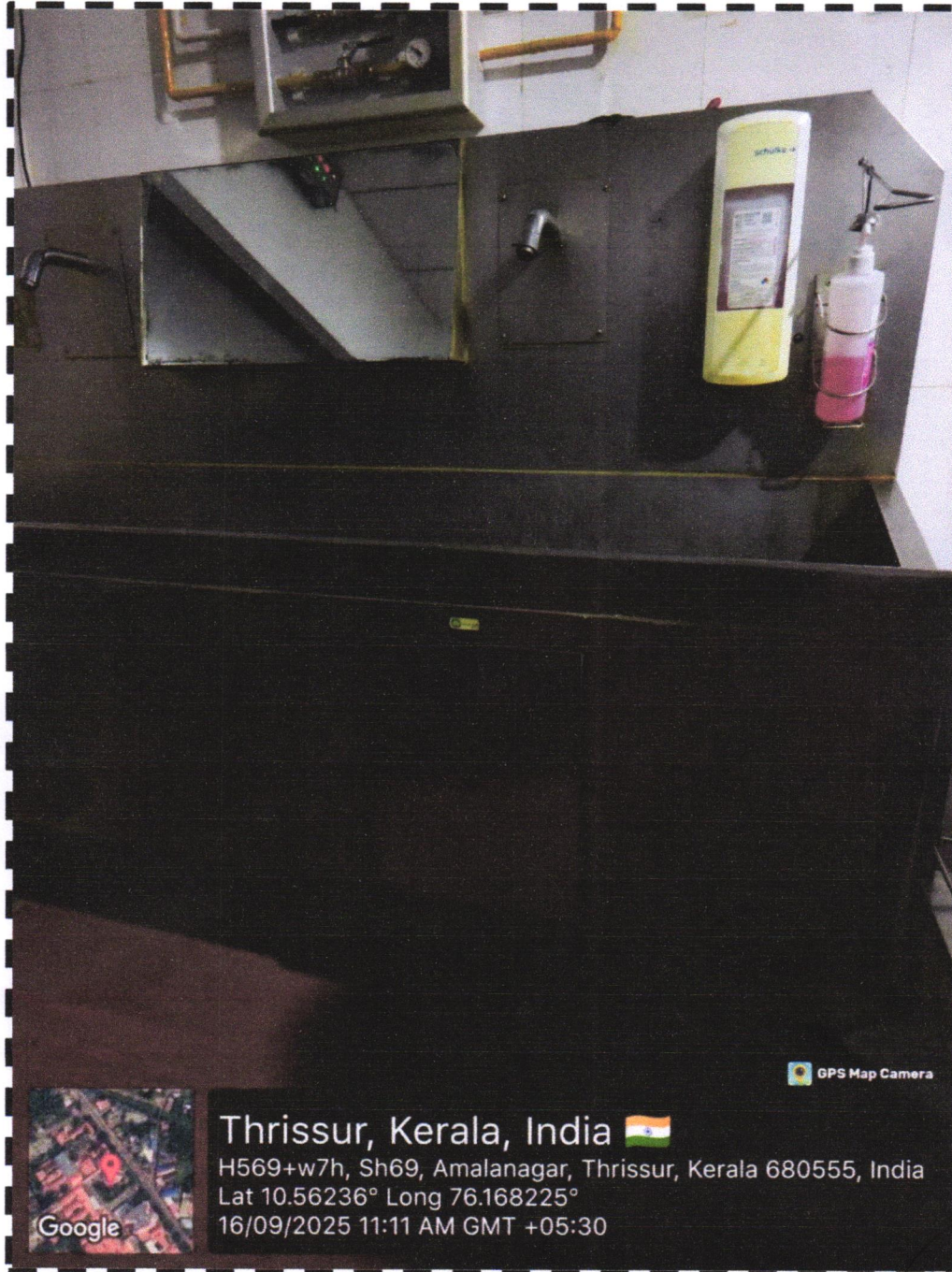




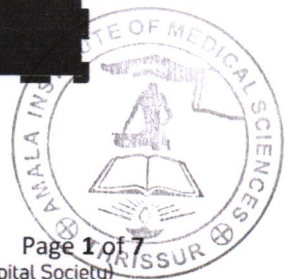
ENERGY CONSERVATION MEASURES - REPORT

Standard: 1.2.4

Measurable point: Conservation of energy through various means.



SENSOR TAP





ENERGY CONSERVATION MEASURES - REPORT

Standard: 1.2.4

Measurable point: Conservation of energy through various means.



LED SCREENS



Page 2 of 7

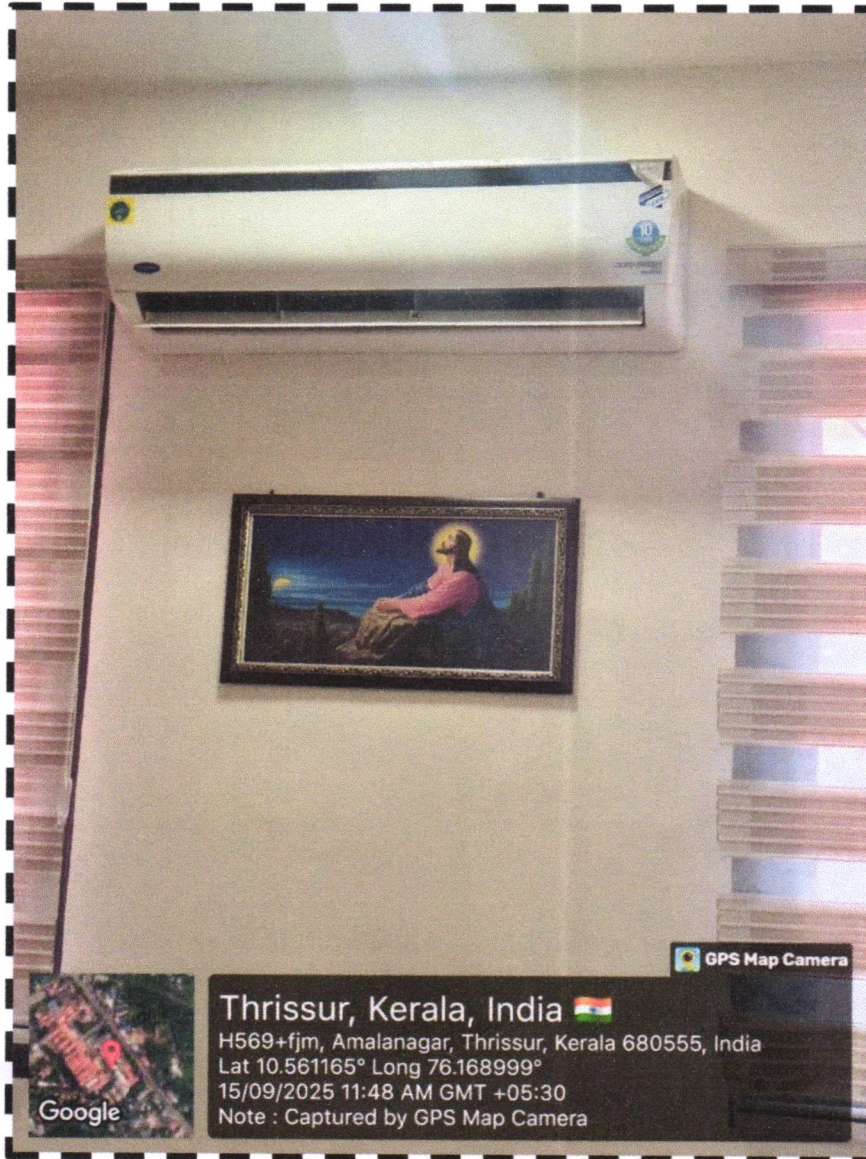




ENERGY CONSERVATION MEASURES - REPORT

Standard: 1.2.4

Measurable point: Conservation of energy through various means.



3 STAR AIR CONDITIONERS WITH INVERTOR





ENERGY CONSERVATION MEASURES - REPORT

Standard: 1.2.4

Measurable point: Conservation of energy through various means.



3 STAR AIR CONDITIONERS





ENERGY CONSERVATION MEASURES - REPORT

Standard: 1.2.4

Measurable point: Conservation of energy through various means.



SENSOR DOORS FOR ENERGY CONSERVATION OF AIR CONDITIONING





ENERGY CONSERVATION MEASURES - REPORT

Standard: 1.2.4

Measurable point: Conservation of energy through various means.



BLDC FAN





ENERGY CONSERVATION MEASURES - REPORT

Standard: 1.2.4

Measurable point: Conservation of energy through various means.



BIOGAS PLANT

Date:
Place:



Betsy
Dr. Betsy Thomas
Principal

Dr. BETSY THOMAS
MD, FRCOG, DNB, MICOG

PRINCIPAL Page 7 of 7





No: AEC/EL/010

12-05-2025

Certificate

This is to certify that **M/s Amala Institute of Medical Sciences, Thrissur – 680555** has conducted electrical safety audit on 08th May 2025 as their premises and has successfully completed 90 % of the observations within the stipulated time. The remaining 10% of the work is planned and will be completed as scheduled.

We, **Athul Energy Consultants Pvt Ltd**, Thrissur congratulate the electrical engineer and staff members and students for the participation in the electrical safety audit and successful completion of observations and findings in the report.



Managing Director

Athul Energy Consultants Pvt Ltd

Betsy

Dr. BETSY THOMAS

MD, FRCOG, DNB, MICOG

PRINCIPAL

AMALA INSTITUTE OF MEDICAL SCIENCES
AMALA NAGAR, THRISSUR-680 555



Athul Energy Consultants Pvt Ltd

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Asian paint Chowkady, GIDC

Ankleshwar-393002, Gujarat

+91 73561 ☎

No: AEC/GAC/24-26

16-04-2024

Audit Certificate

This is to certify that **Amala College of Nursing**, Amala Nagar, Thrissur has successfully completed the **Energy Audit** of the academic year 2023-24 on 08th & 09th April 2024. The college had submitted all the necessary data and credentials for scrutiny and the delegates of **Athul Energy Consultants Pvt Ltd** verified the building, campus and all the facilities of the institution.

We, **Athul Energy Consultants Pvt Ltd**, Thrissur congratulate the Director, Principal, staff members and students for the successful completion and participation in the audit report process.






Managing Director


Athul Energy Consultants Pvt Ltd

Betsy
Dr. BETSY THOMAS
MD, FRCOG, DNB, MICOG
PRINCIPAL
AMALA INSTITUTE OF MEDICAL SCIENCES
AMALA NAGAR, THRISSUR-680 555



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Asian paint Chowkady, GIDC
Ankleshwar-393002, Gujarat
 +91 735611991

No: AEC/GAC/24-27

16-04-2024

Audit Certificate


This is to certify that **Amala College of Nursing**, Amala Nagar, Thrissur has successfully completed the **Environment Audit** of the academic year 2023-24 on 08th & 09th April 2024. The college had submitted all the necessary data and credentials for scrutiny and the delegates of **Athul Energy Consultants Pvt Ltd** verified the building, campus and all the facilities of the institution.

We, **Athul Energy Consultants Pvt Ltd**, Thrissur congratulate the Director, Principal, staff members and students for the successful completion and participation in the audit report process.




Managing Director


Athul Energy Consultants Pvt Ltd



Dr. BETSY THOMAS
MD, FRCOG, DNB, MICOG
PRINCIPAL
AMALA INSTITUTE OF MEDICAL SCIENCES
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Asian paint Chowkady, GIDC
Ankleshwar-393002, Gujarat

 +91 735611991

No: AEC/GAC/24-28

16-04-2024

Audit Certificate

This is to certify that **Amala College of Nursing**, Amala Nagar, Thrissur has successfully completed the **Green Audit** of the academic year 2023-24 on 08th & 09th April 2024. The college had submitted all the necessary data and credentials for scrutiny and the delegates of **Athul Energy Consultants Pvt Ltd** verified the building, campus and all the facilities of the institution.

We, **Athul Energy Consultants Pvt Ltd**, Thrissur congratulate the Director, Principal, staff members and students for the successful completion and participation in the audit report process.



Managing Director

Athul Energy Consultants Pvt Ltd

Betsy
Dr. **BETSY THOMAS**
MD, FRCOG, DNB, MICOG
PRINCIPAL
AMALA INSTITUTE OF MEDICAL SCIENCES
AMALA NAGAR, THRISSUR-680 555



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Energy audit
report

ELECTRICAL SAFETY AUDIT REPORT

2025

(Post Implementation)



**AMALA INSTITUTE OF MEDICAL
SCIENCES**

**AMALA NAGAR, THRISSUR,
KERALA**

EXECUTED BY



ATHUL ENERGY CONSULTANTS PVT LTD

4th FLOOR, CAPITAL LEGEND BUILDING,
KORAPPATH LANE, ROUND NORTH, THRISSUR, KERALA-680020
Ph: +91 735611199/0-6 Web: www.athulenergy.com E-Mail: info@athulenergy.com

July 2025



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ACKNOWLEDGEMENTS

We express our sincere gratitude to the management of **Amala Institute of Medical Sciences** for giving us an opportunity to carry out the Electrical Safety audit. The post safety audit was conducted on 20th July 2025.

We are extremely thankful to the staffs for their wholehearted cooperation in completing the post safety audit.

Also mentioning our audit team, who were present there for the study and making their best efforts to add value.

Audit Team

- | | | |
|---|--------------------|--|
| 1 | Mr. Ashok K M P | NSC certified, BEE certified Energy Auditor |
| 2 | Mr. Harikrishnan K | Project Engineer, BEE certified Energy Auditor |
| 3 | Ms. Della David | Project Engineer, BEE certified Energy Auditor |

Yours faithfully


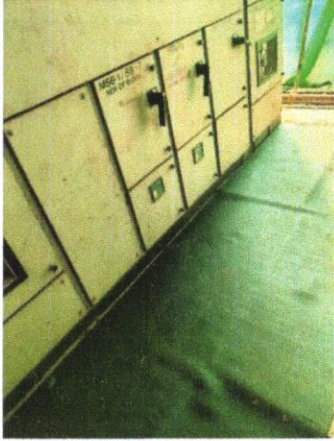


Managing Director
Athul Energy Consultants Pvt Ltd
Date: 20/07/2025

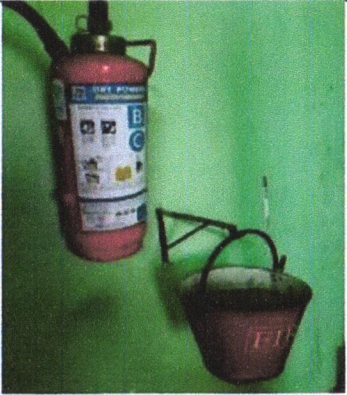



OBSERVATIONS



Figure 1 PHOTOS

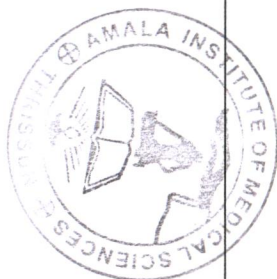
Sl no	Observation	Location/Photo	Implementation status	
1	Medium	HT Panel room/LT Panel rooms		
	The electrical safety mats are in a dilapidated condition, and appropriate PPE such as gloves are provided in the room			Implemented on 10/07/25

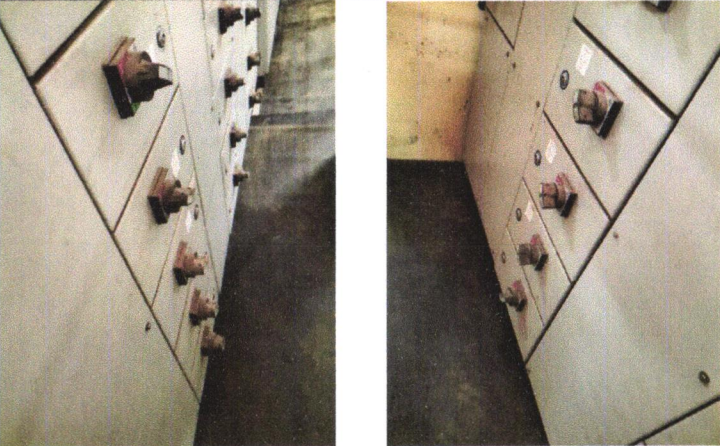



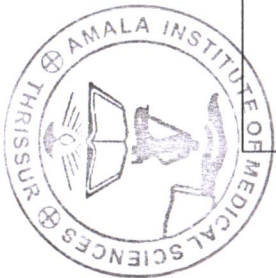
2	Low	LT Panel room – Chavara Block		
	Unwanted materials are stored in fire sand buckets			Implemented on 15/07/25
3	High	LT Panel room – Chavara Block		
	A couple of overheated panels are left open, with pedestal fans provided to cool them		Overheating issue resolved	Implemented on 12/07/25





Implementation details				
4	Medium	Various locations		
	<p>The earth pits near the Chavara LT panel room are covered with debris. All other earth pits, including the aforementioned, are not properly marked</p>		<p>Earth pit is marked properly</p>	<p>Implemented on 18/07/25 08/06/25</p>
5	High	Chavara Block -Ground floor		
	<p>Electrical safety mats are not deployed in front of the panels, and a section of the cable trench is left open, which may pose various hazards</p>		<p>Electrical safety mats be deployed in front of the panels as per IS 15652 standards.</p>	<p>Implemented on 15/07/2025</p>




Implementation details on 8/7/2025			
		<p>Electrical safety measures have been implemented, and the cable trenches have been closed.</p>	
6	Medium	Various locations	
<p>The electrical panels were found to be dusty, which may lead to potential issues such as overheating, reduced efficiency, and increased risk of short circuits</p>			<p>Regular cleaning imposed</p> <p>Implemented and continuing now from 02/07/2025</p>



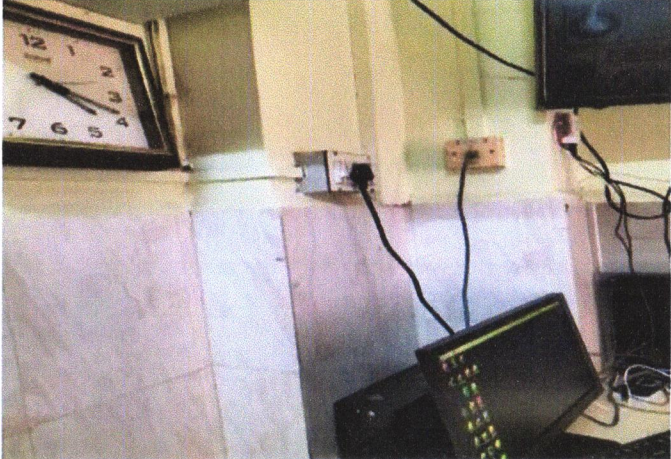
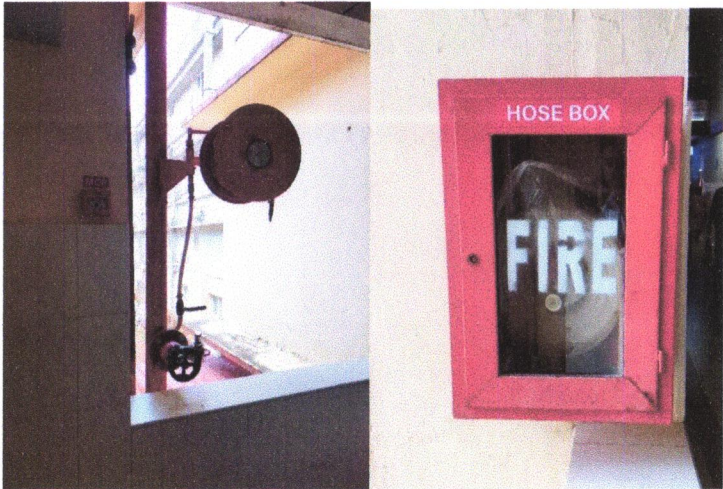


7	Low	Various locations		
	<p>Knockout holes/openings were observed in multiple distribution boards, which may lead to dust ingress and insect entry, potentially causing issues</p>		Knock out holes sealed	<p>Implemented on 03/07/2025</p>
8	Medium	Blood bank – Infection serology		
	<p>In the infection serology room, one AC unit is running continuously at a low set temperature of 19°C, while the other AC unit is not functioning. This may cause the condenser unit to overheat, increasing the risk of fire or equipment failure</p>		Set temperature has been changed to 23°C	<p>Implemented On 2/6/2025</p>





Implementation details				
8	High	Multiple locations		
	100 mA RCCBs are installed in most distribution boards, which may not provide adequate protection against electric shock. Some distribution boards, such as Ward 22 DB and SSB 3C LDB, do not have RCCBs installed, and some existing RCCBs are not functional (Refer RCCB testing section)		Installed 30mA RCCB in the DBs	14/06/25
9	Medium			
	Cable joints were observed in multiple distribution boards, which may pose potential hazards such as overheating, arcing, and electrical faults (Image location: Wall DB - Ward 18)	The cables are removed from the system	Implemented on 12/7/2025	




10	<p>Medium</p> <p>Multiple equipment are connected using multi plugs and extension boards, which is not a safe practice (Image : Ward 12 nursing station)</p>	<p>Various locations</p> 	<p>Extension boxes are removed from the system and proper methods are followed up.</p>	<p>Implemented on 18/6/2025</p>
11	<p>Low</p> <p>Manual call points, fire hose reels, hydrant points, and fire extinguishers are not marked as per standard guidelines</p>	<p>Multiple locations</p> 	<p>Proper marking done</p>	<p>Implemented on 19/06/25</p>




12	High	Multiple locations – Fire exits adjacent to nurising stations		
	<p>Fire exits near the nursing stations at Chavara block are not marked, with one exit found locked. Multiple obstructions were observed at this and other exits, potentially hindering evacuation</p>		<p>Ensure that all fire exits are clearly marked as per NBC Part 4 – Fire and Life Safety, kept unlocked during occupancy, and kept free from obstructions to maintain clear evacuation paths</p>	<p>Implemented on 15/7/2025</p>
13	Medium	Chavara block – Ground floor		
	<p>One of the fire alarm panels was found to be silenced due to a faulty alarm trigger</p>		<p>The fault in the detector has been addressed, and the fire alarm panel is now healthy and no longer silenced</p>	<p>Implemented on 11/07/25</p>





	<p>The battery racks are not earthed, posing a potential electrical hazard</p>		<p>Proper earthing done in battery system.</p>	<p>Implemented on 24/06/25</p>
--	--	--	--	--------------------------------

14	<p>Low</p>	<p>Generator area</p>		
	<p>The generator exhaust height is not as per the prescribed standards, potentially causing safety and environmental concerns</p>		<p>Adjusted the height</p>	<p>On 14/7/2025</p>





15	High	LT panel room – Chavara block		
	No shrouding is provided for the cable/bus bar chamber located behind the switchgear chamber, posing a potential electrical hazard		Install appropriate shrouding for the cable/bus bar chamber as per IS 8623 (Low-voltage switchgear and control gear assemblies) to prevent accidental contact and ensure electrical safety.	On 18/7/2025



THERMAL IMAGES

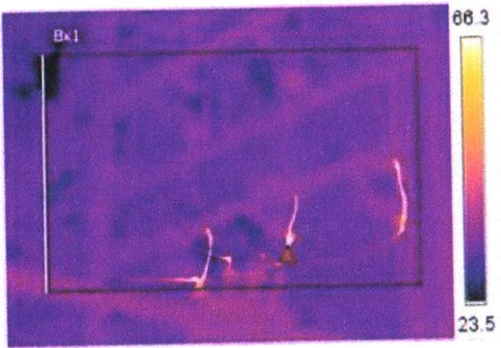

A thermal imaging is a reliable non-contact technology which is able to scan and visualize the temperature distribution of entire surfaces of machinery and electrical equipment quickly and accurately. The electrical panel in the plant and motor casing were analysed using the thermal imager and identified the critical locations that needs urgent attention. Some of the images are given for the temperature profile.

Thermal imaging Guidelines as per NETA (International Electrical Testing Association Inc.

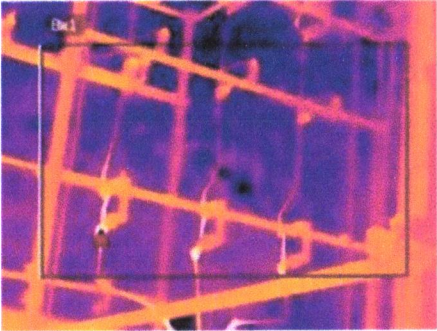

Date of thermal imaging is 20/07/2025



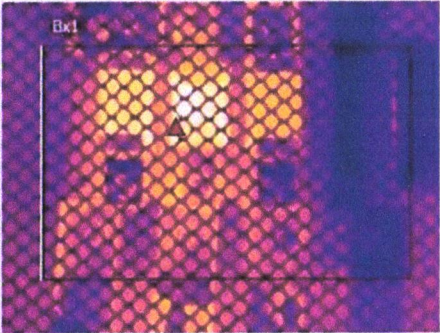
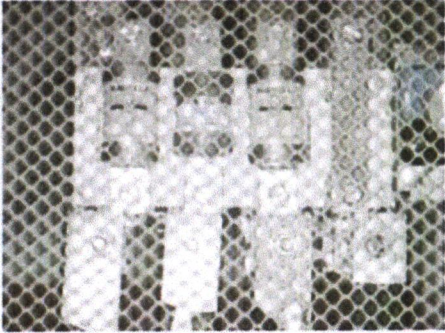
Figure 2 THERMAL IMAGE PHOTOS

1. Location: HT yard near CT PT		Compliance status												
<div style="display: flex; justify-content: space-around;">   </div> <table border="1" style="margin-top: 10px;"> <thead> <tr> <th colspan="3">Measurements</th> </tr> </thead> <tbody> <tr> <td>Bx1</td> <td>Max</td> <td>58.0</td> </tr> </tbody> </table> <table border="1" style="margin-top: 10px;"> <thead> <tr> <th colspan="2">Parameters</th> </tr> </thead> <tbody> <tr> <td>Emissivity</td> <td>0.98</td> </tr> <tr> <td>Ref. temp.</td> <td>40 °C</td> </tr> </tbody> </table>	Measurements			Bx1	Max	58.0	Parameters		Emissivity	0.98	Ref. temp.	40 °C	<p>Rectification work done on the cabling on 17/7/2025</p>	
Measurements														
Bx1	Max	58.0												
Parameters														
Emissivity	0.98													
Ref. temp.	40 °C													

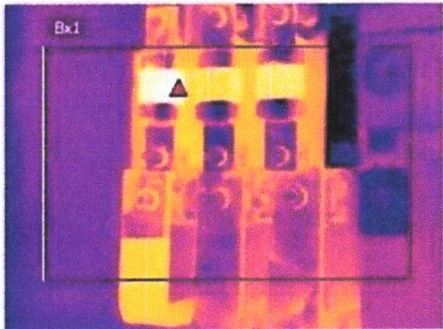
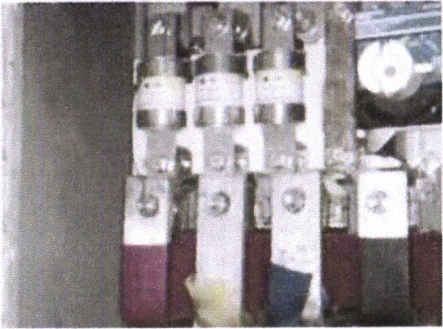


2. Location: DO fuse outgoing	Inference & suggestion	Compliance status															
<div style="display: flex; justify-content: space-around;">   </div> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td colspan="2">Measurements</td> <td style="text-align: right;">°C</td> </tr> <tr> <td>Bx1</td> <td style="text-align: center;">Max</td> <td style="text-align: right;">46.0</td> </tr> <tr> <td colspan="3">Parameters</td> </tr> <tr> <td>Emissivity</td> <td></td> <td style="text-align: right;">0.98</td> </tr> <tr> <td>Ref. temp.</td> <td></td> <td style="text-align: right;">40 °C</td> </tr> </table>	Measurements		°C	Bx1	Max	46.0	Parameters			Emissivity		0.98	Ref. temp.		40 °C	<p>Rectification done in the cabling.</p>	<p>On29/06/25</p>
Measurements		°C															
Bx1	Max	46.0															
Parameters																	
Emissivity		0.98															
Ref. temp.		40 °C															

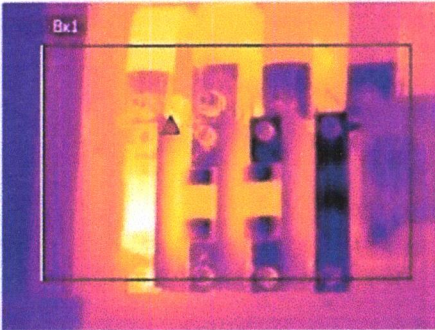



3. Location: MSB - 1/SB3	Inference & suggestion	Compliance status															
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Measurements		°C															
Bx1	Max	51.0															
Parameters																	
Emissivity		0.98															
Ref. temp.		40 °C															





4. Location: MSB 1/SB 2 Main block	Inference & suggestion	Compliance status												
<div style="display: flex; justify-content: space-around;">   </div> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th colspan="2">Measurements</th> <th style="text-align: right;">°C</th> </tr> </thead> <tbody> <tr> <td>Bx1</td> <td style="text-align: center;">Max</td> <td style="text-align: right;">48.1</td> </tr> </tbody> </table> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th colspan="2">Parameters</th> </tr> </thead> <tbody> <tr> <td>Emissivity</td> <td style="text-align: right;">0.98</td> </tr> <tr> <td>Ref. temp.</td> <td style="text-align: right;">40 °C</td> </tr> </tbody> </table>	Measurements		°C	Bx1	Max	48.1	Parameters		Emissivity	0.98	Ref. temp.	40 °C	<p>Tightening of joints are done and heat level reduced</p>	<p>29/06/25</p>
Measurements		°C												
Bx1	Max	48.1												
Parameters														
Emissivity	0.98													
Ref. temp.	40 °C													



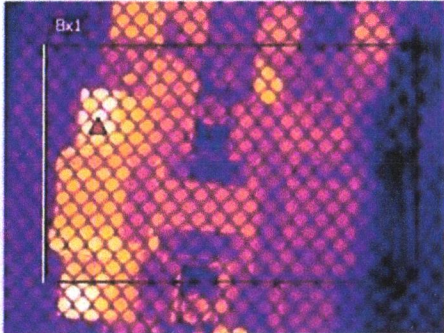
5. Location: MSB 1/SB 1 Research block	Inference & suggestion	Compliance status															
<div style="display: flex; justify-content: space-around;">   </div> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td colspan="2">Measurements</td> <td style="text-align: right;">°C</td> </tr> <tr> <td>Bx1</td> <td style="text-align: center;">Max</td> <td style="text-align: center;">43.3</td> </tr> <tr> <td colspan="3">Parameters</td> </tr> <tr> <td>Emissivity</td> <td></td> <td style="text-align: center;">0.98</td> </tr> <tr> <td>Ref. temp.</td> <td></td> <td style="text-align: center;">40 °C</td> </tr> </table>	Measurements		°C	Bx1	Max	43.3	Parameters			Emissivity		0.98	Ref. temp.		40 °C	<p>All bolting's are properly tightened, the fuse is securely fixed,</p>	<p>Implemented on 17/7/2025</p>
Measurements		°C															
Bx1	Max	43.3															
Parameters																	
Emissivity		0.98															
Ref. temp.		40 °C															

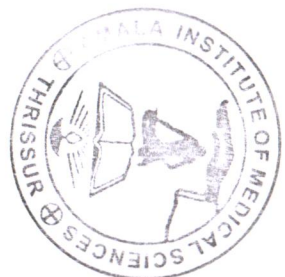




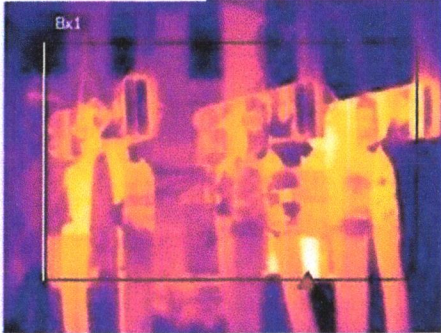

6. Location: MSB 1/SB4 Laundry	Inference & suggestion	Compliance status												
<div style="display: flex; justify-content: space-around;">   </div> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Measurements</th> <th style="text-align: right;">°C</th> </tr> </thead> <tbody> <tr> <td>Bx1</td> <td style="text-align: center;">Max</td> <td style="text-align: center;">46.8</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2">Parameters</th> </tr> </thead> <tbody> <tr> <td>Emissivity</td> <td style="text-align: center;">0.98</td> </tr> <tr> <td>Refi. temp.</td> <td style="text-align: center;">40 °C</td> </tr> </tbody> </table>	Measurements		°C	Bx1	Max	46.8	Parameters		Emissivity	0.98	Refi. temp.	40 °C	<p>Replace the temporary fuse with a permanent fuse of the appropriate rating to be done on 12/7/2025</p>	
Measurements		°C												
Bx1	Max	46.8												
Parameters														
Emissivity	0.98													
Refi. temp.	40 °C													



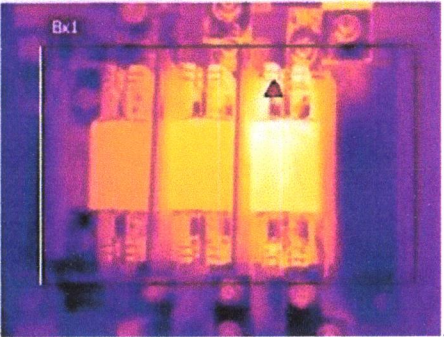
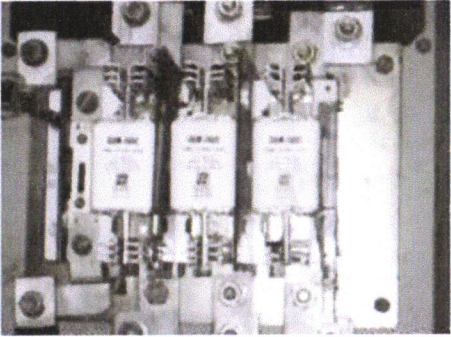
7. Location: MSB 1/SB6	Inference & suggestion	Compliance status												
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Measurements		°C												
Bx1	Max	53.3												
Parameters														
Emissivity	0.98													
Ref. temp.	40 °C													



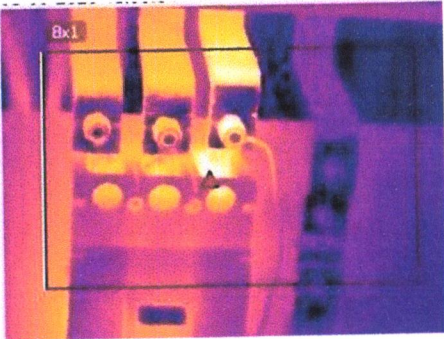
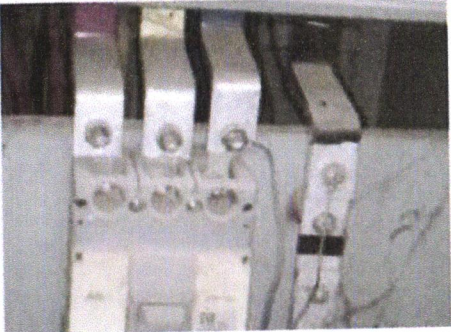


8. Location: Chavara Block / 500kVA incomer	Inference & suggestion	Compliance status							
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Bx1	Max	53.3							
Emissivity	0.98								
Ref. temp.	40 °C								


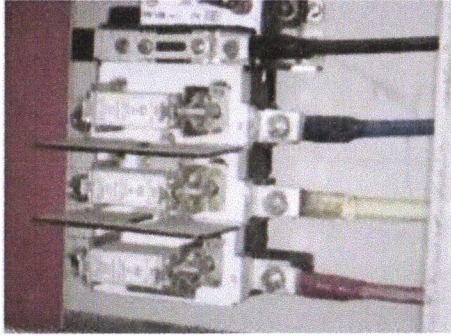


9. Location: MSB 1/SB-6/SSB -6E near new OP	Inference & suggestion	Compliance status															
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Measurements		°C															
Bx1	Max	48.5															
Parameters																	
Emissivity		0.98															
Ref. temp.		40 °C															





10. Location: MSB-1/SB-6 Incomer	Inference & suggestion	Compliance status															
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Measurements		°C															
Bx1	Max	46.8															
Parameters																	
Emissivity		0.98															
Ref. temp.		40 °C															

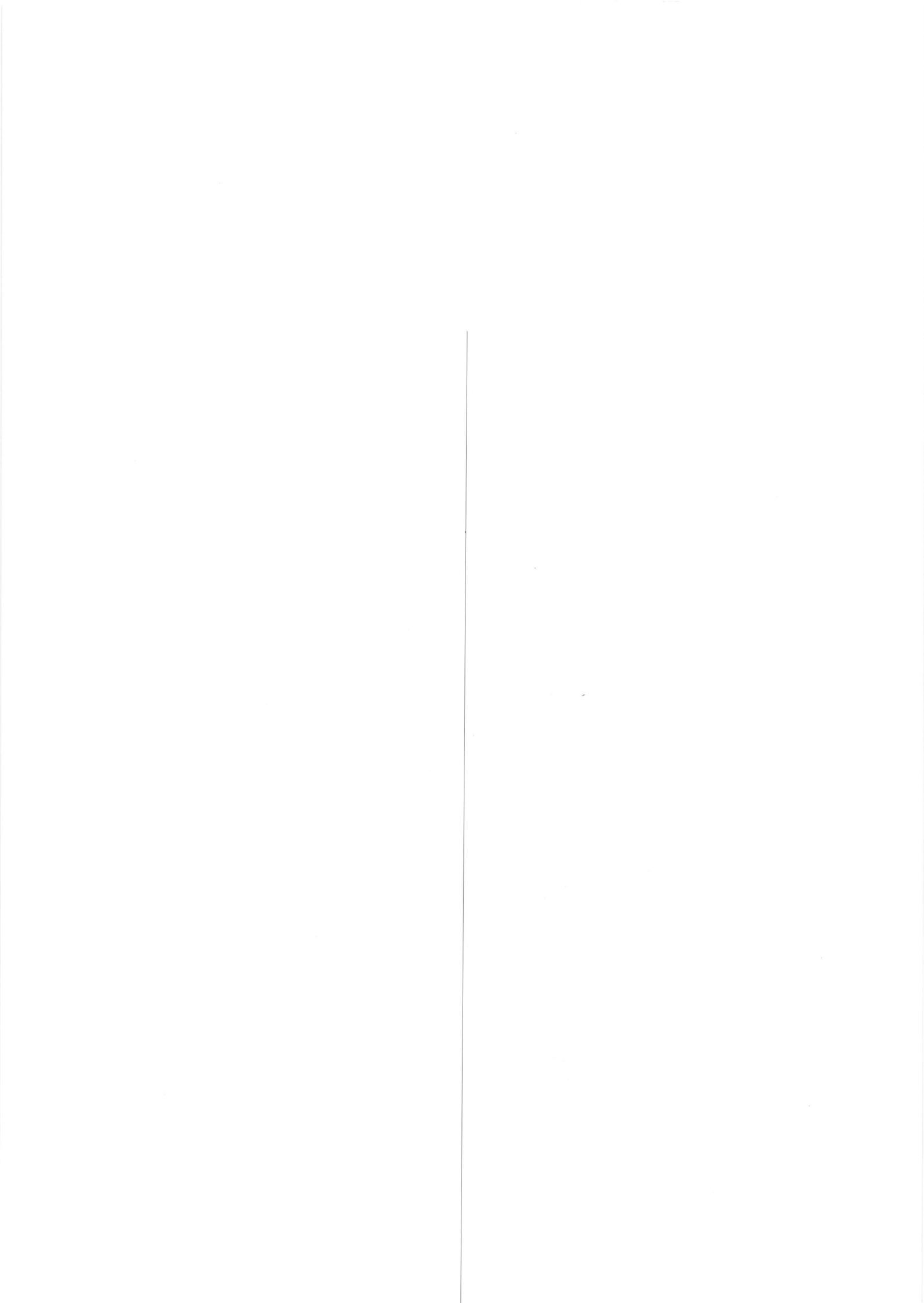


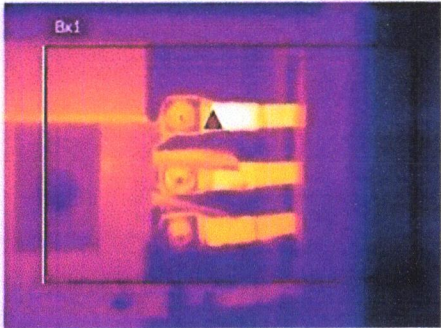
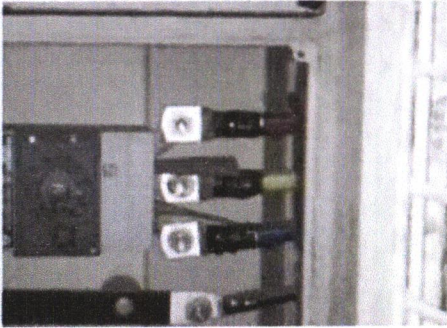
11. Location: MSB-1/SB4/Spare WTP	Inference & suggestion	Compliance status												
<div style="display: flex; justify-content: space-around;">   </div> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th colspan="2">Measurements</th> <th style="text-align: right;">°C</th> </tr> </thead> <tbody> <tr> <td>Bx1</td> <td style="text-align: center;">Max</td> <td style="text-align: center;">47.3</td> </tr> </tbody> </table> <table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2">Parameters</th> </tr> </thead> <tbody> <tr> <td>Emissivity</td> <td style="text-align: center;">0.98</td> </tr> <tr> <td>Ref. temp.</td> <td style="text-align: center;">40 °C</td> </tr> </tbody> </table>	Measurements		°C	Bx1	Max	47.3	Parameters		Emissivity	0.98	Ref. temp.	40 °C	<p>Re crimp and re terminate the Y-phase cable to address overheating issues 9/7/2025</p>	
Measurements		°C												
Bx1	Max	47.3												
Parameters														
Emissivity	0.98													
Ref. temp.	40 °C													



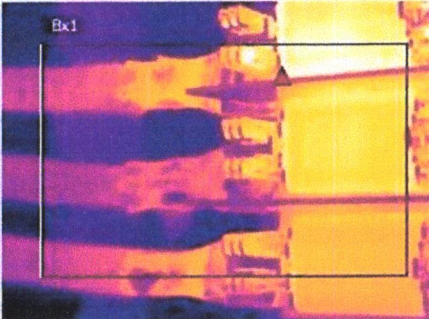

12. Location: MSB-1 SB-3 Incomer	Inference & suggestion	Compliance status															
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Measurements		°C															
Bx1	Max	49.6															
Parameters																	
Emissivity		0.98															
Ref. temp.		40 °C															



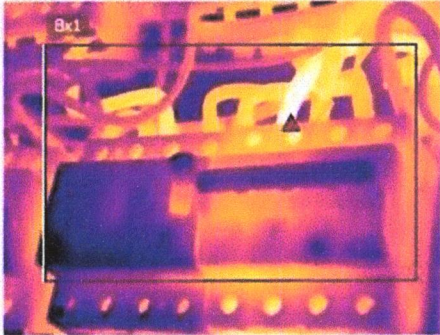
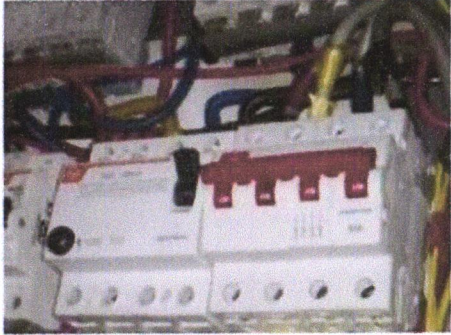


13. Location: MSB 1 SB3/AC VDB Ward panel	Inference & suggestion	Compliance status												
<div style="display: flex; justify-content: space-around;">   </div> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th colspan="2">Measurements</th> <th style="text-align: right;">°C</th> </tr> </thead> <tbody> <tr> <td>Bx1</td> <td style="text-align: center;">Max</td> <td style="text-align: center;">69.3</td> </tr> </tbody> </table> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th colspan="2">Parameters</th> </tr> </thead> <tbody> <tr> <td>Emissivity</td> <td style="text-align: center;">0.98</td> </tr> <tr> <td>Refl. temp.</td> <td style="text-align: center;">40 °C</td> </tr> </tbody> </table>	Measurements		°C	Bx1	Max	69.3	Parameters		Emissivity	0.98	Refl. temp.	40 °C	<p>Re crimp and determinate the R-phase cable to address overheating issues are done 01/7/2025</p>	
Measurements		°C												
Bx1	Max	69.3												
Parameters														
Emissivity	0.98													
Refl. temp.	40 °C													


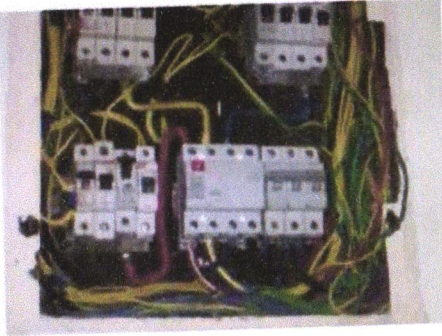


14. Location: MSB 1/SB 2I incomer	Inference & suggestion	Compliance status															
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Measurements		°C															
Bx1	Max	53.6															
Parameters																	
Emissivity		0.98															
Ref. temp.		40 °C															

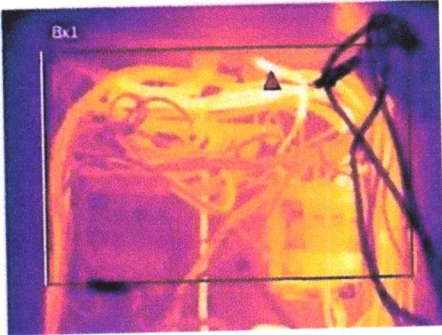
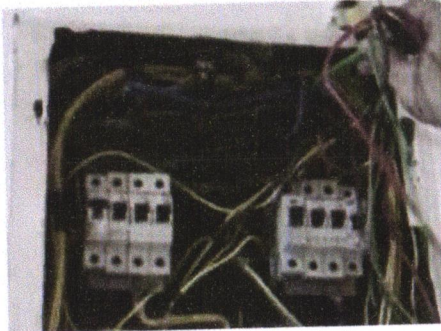


15. Location: Wall DB - blood bank	Inference & suggestion	Compliance status															
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Measurements		°C															
Bx1	Max	43,5															
Parameters																	
Emissivity		0.98															
Ref. temp.		40 °C															

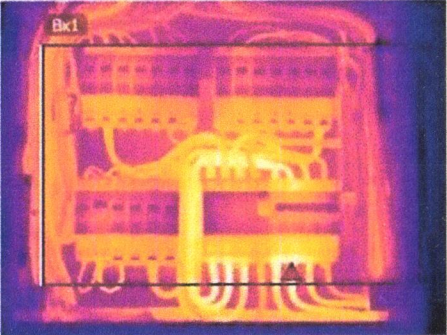
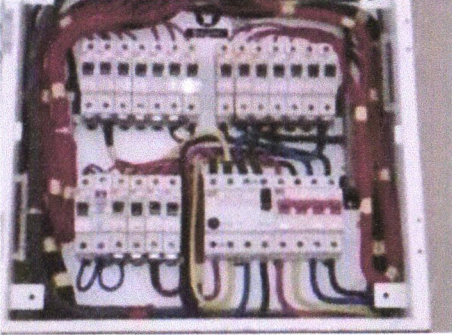


16. Location: Wall DB - Ward 18	Inference & suggestion	Compliance status															
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Measurements		°C															
Bx1	Max	74.7															
Parameters																	
Emissivity		0.98															
Ref. temp.		40 °C															





17. Location: Wall DB - Ward 18	Inference & suggestion	Compliance status																				
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Measurements			°C																			
Bx1	Max	50.9																				
Parameters																						
Emissivity		0.98																				
Ref. temp.		40 °C																				


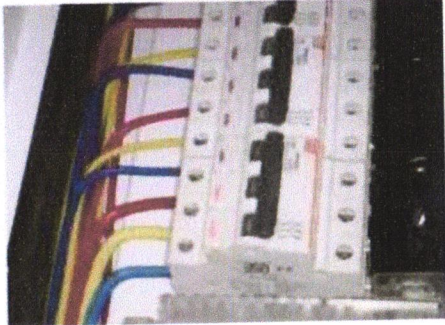


18. Location: Gastro Dept OP wall DB	Inference & suggestion	Compliance status															
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Measurements		°C															
Bx1	Max	43.5															
Parameters																	
Emissivity		0.98															
Ref. temp.		40 °C															



19. Location: Ward 20, Gastro VDB	Inference & suggestion	Compliance status												
<div style="display: flex; justify-content: space-around;">   </div> <table border="1" style="width: 100%; margin-top: 10px;"> <thead> <tr> <th colspan="2">Measurements</th> <th style="text-align: right;">°C</th> </tr> </thead> <tbody> <tr> <td>Bx1</td> <td style="text-align: center;">Max</td> <td style="text-align: center;">48.1</td> </tr> </tbody> </table> <table border="1" style="width: 100%;"> <thead> <tr> <th colspan="2">Parameters</th> </tr> </thead> <tbody> <tr> <td>Emissivity</td> <td style="text-align: center;">0.98</td> </tr> <tr> <td>Ref. temp.</td> <td style="text-align: center;">40 °C</td> </tr> </tbody> </table>	Measurements		°C	Bx1	Max	48.1	Parameters		Emissivity	0.98	Ref. temp.	40 °C	<p>All cable terminations are properly tightened 22/6/2025</p>	
Measurements		°C												
Bx1	Max	48.1												
Parameters														
Emissivity	0.98													
Ref. temp.	40 °C													



20. Location: Pneumatic operations room	Inference & suggestion	Compliance status															
<div style="display: flex; justify-content: space-around;">   </div> <table border="1" style="width: 100%; margin-top: 10px;"> <tr> <td colspan="2">Measurements</td> <td style="text-align: right;">°C</td> </tr> <tr> <td>Bx1</td> <td>Max</td> <td>61.4</td> </tr> <tr> <td colspan="3">Parameters</td> </tr> <tr> <td>Emissivity</td> <td></td> <td>0.98</td> </tr> <tr> <td>Ref. temp</td> <td></td> <td>40 °C</td> </tr> </table>	Measurements		°C	Bx1	Max	61.4	Parameters			Emissivity		0.98	Ref. temp		40 °C	<p>Re crimp and terminate the cables 21/6/2025</p>	
Measurements		°C															
Bx1	Max	61.4															
Parameters																	
Emissivity		0.98															
Ref. temp		40 °C															



NEUTRAL TO EARTH VOLTAGE ANALYSIS

This section details the voltage levels and neutral-to-earth voltage (NEV) measurements for various sockets within the building. These readings are essential for ensuring the electrical system's safety, efficiency, and reliability. Maintaining a low neutral-to-earth voltage (<5V) is crucial for the safe and efficient operation of electrical equipment. High NEV can indicate issues such as poor grounding, potential electrical faults, or unbalanced loads, leading to equipment malfunction, electrical shocks, or even fires. Regular monitoring of NEV helps in identifying and addressing these issues promptly, ensuring a safe environment for personnel and equipment.

Table 1 NEUTRAL TO EARTH VOLTAGE

Sl. No	Plug Point	P-N Voltage	N-E Voltage	Remarks
1	Ward 4 nursing station	231	3.9	Good
2	OT waiting area	222	1.2	Good
3	Blood bank	229	2.9	Good
4	Ward 15 nursing station	238	4.7	Good
5	Pulmonology	229	1.1	Good
6	Gastro OP dept	232	2.5	Good
7	Ward 11 nursing station	230	0.6	Good

EARTH RESISTANCE

Earth resistance is crucial for ensuring effective grounding, which safely dissipates fault currents and prevents electric shock hazards. Low earth resistance minimizes voltage build-up during faults, reducing the risk of equipment damage and enhancing overall electrical safety. Regular monitoring helps maintain grounding system integrity and prevents potential hazards

Table 2 EARTH RESISTANCE TESTING

Sl. No	Pit name	Measured resistance (Ω)	Leakage current (mA)	Remarks
1	Earth pit 31	0.31	3.05	Good



RCCB TESTING ¹

Comprehensive testing of Residual Current Circuit Breakers (RCCBs), which are crucial for ensuring electrical safety by protecting against electric shocks and short circuits, was carried out. The primary objective is to measure and analyse the tripping time in milliseconds (ms) under fault conditions. This ensures that the RCCBs provide optimal protection, enhancing the overall safety of the electrical system. The results obtained from these tests are critical for verifying the reliability and performance of RCCBs, ensuring they meet the necessary safety standards and regulations.

Table 3 RCCB TESTING

Sl. No	DB	Time (ms)	Tripping current (mA)	RCCB Rating (mA)	Remarks
1	Walld DB ward 4	53	60	100	Replaced with 30mA
2	LDB inside ward 15	32	40	100	Replaced with 30mA
3	Wall DB ward 18			100	Working now
4	Gastro OP wall DB	26	80	100	Replaced with 30mA
5	Wall DB ward12	23	70	100	Replaced with 30mA
6	Wall DB ward 11			100	Working now
7	Wall DB ward 9	32	60	100	Replaced with 30mA
8	Wall DB ward 20	19	60	100	Replaced with 30mA

¹ RCCBs were randomly tested; it is recommended to conduct periodic testing of all RCCBs at the facility. Additionally, consider installing 30 mA RCCBs wherever feasible to enhance safety



1. ABBREVIATIONS

NEV	:	Neutral to earth voltage
CEA	:	Central electrical authority
CPR	:	Cardiopulmonary resuscitation
dB	:	Decibels
EMC	:	Energy management center
HT	:	High tension
LT	:	Low tension
IEEE	:	The Institute of electrical and electronics engineers
ITP	:	Inspection test plan
MCCB	:	Molded case circuit breaker
MSB	:	Main switch board
NBC	:	National building code
NETA	:	International electrical testing association Inc.
NSC	:	National safety council
PPE	:	Personal protective equipment
SSB	:	Sub switch board
VCB	:	Vacuum circuit breaker
RCCB	:	Residual current circuit breaker





2. CERTIFICATE

NSC certified person

