



COMBINED FABRICS LIMITED New Buildings (Extended Area)

Atta Baksh Road, 17 KM off Ferozepur Road, Lahore Pakistan.

Electrical Safety Assessment Report

Inspection Date:
9th-12th & 15th, 16th April, 2019

BV Job No. PAK-BV-40-19-0131-LHR



Bureau Veritas Pakistan (Pvt.) Ltd.

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INSPECTION REPORT No. 1

BV Job No. PAK-BV-40-19-0140-LHR

Contents

Sr #	Description
1	Cover Sheet
2	Executive Summary
3	Chapter 1 – Non-conformities by Description
4	Chapter 2 – Non-conformities by Pictures
5	Chapter 3 – Interpretation of Thermal Images
6	Chapter 4 – DB Schedule
7	Appendix A – Earth Resistance
8	Appendix B – Insulation Resistance



INSPECTION REPORT No. 1

BV Job No. PAK-BV-40-19-0140-LHR

PROJECT: Electrical Safety Assessment	Ref: Email
BV Client: Combined Fabrics Limited, New Buildings (Extended Area) Atta Baksh Road, 17 KM Off Ferozepur Road, Lahore Pakistan.	P/o nr: -- (client to BV)
Manufacturer: Nil	P/o nr: -- (client to Manufacturer)
Inspection requested by: Mr. Ashraf	

SUPPLY / SUBJECT OF INSPECTION	ITEM / TAG Nr	QTY
Electrical Safety Assessment	---	01

DOCUMENTS OF REFERENCE : See continuation sheet for additional documents: ☐ Yes ☒ No				
Title	Reference no.	Rev.	Approved by	Date
NFPA 70 (National Electrical Codes)	---	---	---	---
Electricity Act 1937 & 1978 (inclusive all amendments & ordinances issued from time to time)	---	---	---	---

Inspection Place: Combined Fabrics Limited, New Buildings (Extended Area) Atta Baksh Road, 17 KM Off Ferozepur Road, Lahore Pakistan. Inspection Date & Period: Dated: 9th-12th & 15th, 16th April, 2019 Period: 06 Days Stage of Inspection: ☐ Before manufacturing ☐ During manufacturing ☒ Final ☐ Packing Kind of Inspection: ☐ Pre-inspection meeting ☐ Witnessing tests ☒ Final inspection ☒ Document review ☐ Expediting & vendor assessment ☐ Packing (for details see continuation sheet) Stamping : ☒ No ☐ ☒ ☒	Non Conformities Reports (NCR): ☐ NCR's Issued During Reporting Period: NCRs were discussed with Supervisor (electrical) & Management representative(s) during the inspection/audit. ☐ List of outstanding NCR's : No Main Conclusions & Remarks: Deficiencies of various categories were observed during the audit. All of them were discussed & elaborated to the enterprise electrical team & management. Substantial number of deficiencies / observations was attended by the team during the process of audit & the remaining ones were later on fixed by the enterprise. (rectification pictures have been also shared by the enterprise) Overall Assessment: Satisfactory. Next visit scheduled: There are no further visits scheduled for this assignment.
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INSPECTION REPORT No. 1

BV Job No. PAK-BV-40-19-0140-LHR

Description of the Inspections Carried Out:

➤ **Introduction**

The undersigned surveyor to Bureau Veritas acting within the scope of General Conditions which regulate the intervention of the society-Industry Division at the request of **M/s Combined Fabrics Limited, New Buildings (Extended Area) Atta Baksh Road, 17 KM Off Ferozepur Road, Lahore Pakistan.** attended the subject site from 9th - 12th & 15th, 16th April 2019 for the purpose of Electrical Safety Assessment.

➤ **Attendees:**

- Mr. Naimat Ali
- Mr. Adeel Ahmad

➤ **BV Scope of Work:**

Electrical Safety Assessment of M/s Combined Fabrics Limited, New Buildings (Extended – Area), Atta Baksh Road, 17 KM Off Ferozepur, Road, Lahore, Pakistan.

➤ **Applicable Documents & Status of Approval**

- NFPA-70, Chapter # 1, 2, 3, 4, 5, 6 & 7.
- Electricity Act 1937 & 1978 (inclusive of all amendments & ordinances issued from time to time).

➤ **Manufacturing Progress Status**

None

➤ **Details of inspection activities carried out with respect to scope of work:**

Electrical Safety Assessment of the following facilities was carried out:

1. LT Room, Generator Area & Power House (Old Building)
2. New Compressor & Boiler Area (Old Building)
3. New Dying & Dying Finishing (New Building)
4. Masjid & Store (New Building)
5. Washing Hall, Knitting Hall & Production Floor's (New Building)
6. Lift Area & Roof (New Buildings)
7. Security, corridors & walkways (New Building)



INSPECTION REPORT No. 1

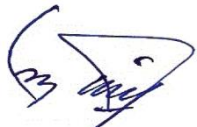
BV Job No. PAK-BV-40-19-0140-LHR

- **Surveillance with reference to ITP**
NFPA-70
Electricity Act 1937 & 1978 (inclusive of all amendments & ordinances issued from time to time).
- **Problems pending**
Please refer to Executive Summary & detailed report.

Inspected by:

Name: Naimat Ali
(Industrial Surveyor to Bureau Veritas)

Reviewed & Validated by:

Signature:

Name: Mubashir Baig
(Operation Manager IVS / Industrial Inspections, Northern Area)

Date of issue: 10/06/2019

Inspection centre: Bureau Veritas Pakistan

Distribution : ☒ Client ☐ Manufacturer



**BUREAU
VERITAS**

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Executive Summary

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area) Atta Baksh Road, 17 KM Off Ferozepur Road, Lahore Pakistan** was conducted from **9th - 12th & 15th, 16th April 2019** to assess whether or not Combined Fabrics Limited, New Buildings (Extended Area), electrical distribution system is in conformity with NFPA-70 or not. The summary of findings/observations/assessment pertaining to above referred code applicable in the country Pakistan (where Combined Fabrics Limited is located) have been categorized in three categories in the report.

Category A – Critical

Category B – Highly Hazardous

Category C – Hazardous

Sr. No.	Item	Findings/Observation(s)	Category
1.	"As built drawings" of electrical main/sub distribution circuits connecting electrical loads.	Satisfactory – Drawings are available.	Highly Hazardous
2.	Instruction board display of first aid procedure(s) for attending personal(s) electrocuted.	Satisfactory – Boards are available.	Hazardous
3.	Instruction board display for "artificial respiration" procedure for attending personal(s) electrocuted.	Satisfactory – Boards are available.	Hazardous
4.	Double insulated Hand held tools used by electricians.	Satisfactory – Used by electricians.	Highly Hazardous
5.	Hand gloves being used or not?	Satisfactory – Used.	Highly Hazardous
6.	Standard colour cables (Red, Yellow, Blue) used in 3 Phase connection.	Satisfactory	Highly Hazardous



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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Sr. No.	Item	Findings/Observation(s)	Category
7.	Standard colour cables for neutral & earth used.	Satisfactory – Standard colour followed.	Highly Hazardous
8.	Dust & Vermin proofing of electrical panels.	Satisfactory	Critical
9.	Higher size of breaker used in contrast-low connected load/low size of cable.	Satisfactory	Critical
10.	MCCBs input used as cascade – to minimize the Cable length	Satisfactory.	Critical
11.	Electrical panels located in safe environmental conditions.	Satisfactory – Electrical panels are in safe environmental conditions.	Critical
12.	Planned Periodical inspection/testing & Maintenance record of electrical equipment/machinery records.	Satisfactory	Hazardous
13.	Periodical Insulation resistance test (IR test) records.	Satisfactory	Critical
14.	Yearly record of Load measurement (voltage/current) on all feeders.	Satisfactory	Hazardous
15.	Periodical calibration/validation of all types of meters at floor levels and generator rooms.	Satisfactory – Enterprise have master calibrator.	Hazardous
16.	Display - Notice/record for Periodical inspection & testing power/control room at least once in 2 years.	Satisfactory	Hazardous



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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Sr. No.	Item	Findings/Observation(s)	Category
17.	Identification of earthed conductors & earth neutral conductor shall be of permanent nature at all boards.	Satisfactory – Permanent identification is available.	Highly Hazardous
18.	Electrical panels Current & Volt meters.	Satisfactory	Hazardous
19.	Indicator lamps of LT/MDB/DB/SDB connected through protective device.	Satisfactory	Highly Hazardous
20.	Electrical graded rubber mats on floors of MDB/DB/SDBs.	Satisfactory	Hazardous
21.	Cable termination quality/workmanship? Lugs used or not?	Satisfactory	Critical
22.	Distribution boards (SDB/MDB/DBs) load connecting list in laminated sheets inside/the Distribution Board panels.	Satisfactory	Hazardous
23.	Display sheet of actual Current drawn by each C.B.	Satisfactory	Hazardous
24.	Cable harnessing & workmanship inside electrical panels (LT/ MDBs/DBs/SDBs)	Satisfactory – Few electrical panels need to be harnessed properly.	Critical
25.	Bushing Glands being used or not at Cable entering points of LT Panels/MDBs/DBs/SDBs & Machines.	Satisfactory	Highly Hazardous



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Executive Summary

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Sr. No.	Item	Findings/Observation(s)	Category
26.	Availability of suitable size Earth continuity conductor at DB/MDB/SDB.	Satisfactory – Suitable size of E.C.C. is used.	Critical
27.	Identification & Markings at LT's/DB's/MDB's.	Satisfactory – Marking not available.	Hazardous
28.	Cleanliness of Generation Room.	Satisfactory	Highly Hazardous
29.	Proper laying of power cables in Transformer & Generator Rooms	Satisfactory	Highly Hazardous
30.	Proper sizing of MCCB/MCB's	Satisfactory – System is designed as per load requirements.	Critical
31.	DB's connected to loads without proper identification of load.	Satisfactory	Critical
32.	Availability of protective devices for circuits/loads.	Satisfactory	Critical
33.	Socket Circuits & Light circuits CB's should be separate.	Satisfactory – Separate at all locations.	Hazardous
34.	Panel Boards/ MCCB's/CB's/DB's physical look.	Satisfactory	Highly Hazardous
35.	Lighting in storage/dispatch areas.	Satisfactory	Highly Hazardous
36.	Standby Generator for water hoses working or not?	Satisfactory – Available.	Critical

Overall Assessment: **Satisfactory**

Chapter 1

NON-CONFORMITIES BY DESCRIPTION





Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

During the Electrical Safety Assessment of **M/s Combined Fabrics Limited, New Buildings (Extended Area) Atta Baksh Road, 17 KM Off Ferozepur Road, Lahore Pakistan**, deficiencies of various categories were observed & were communicated to the client instantaneously. Client's technical team deputed to clear the observations worked on the issues / observations, fixed them & got them verified by Bureau Veritas Inspectors.

1. "As built electrical drawings" of main/sub distribution circuits connecting electrical loads (Single Line Diagram/ electrical lay out) are available but required minor updates. This is a major document which reveals the visibility of electrical installations.

Drawings have been corrected / updated during the inspection.

2. Cables (tested) have qualified the Insulation Resistance (IR) test. Records of Insulation Resistance test results (IR test) are provided in Appendix – B of this report. This is an important test that provides early alerts about the degradation of cable insulation & may help from eventual hazards. The production unit is recommended to maintain records of all power cables & may be updated twice a year.
3. Standard color/markings for phases (Red, Yellow & Blue), neutral (black) & earth (green with yellow strip) followed.
4. Instruction board display of first aid procedure(s) & artificial respiration for attending personal(s) electrocuted were available.
5. Electrical graded rubber mats on floors of MDBs/DBs/SDBs & LT room are available.
6. Size of Earth Continuity Conductor (E.C.C.) installed is adequate. Presence of E.C.C. provide alternate path to the flow of current in case of any short circuit.
7. Identification & Markings at LTs (MSB)/MDBs/DBs/SDBs available.
8. Fire protection systems / Hydrant & fire extinguishers are being installed.
9. Electrical panels/distribution boxes & trenches are untidy.
10. Protective devices for all the circuits & load are available.
11. Indicator lamps are connected through protective devices.
12. No looping or cascading observed from input side of the breakers for lighting DB's.

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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

- 13.** LT (MSB) /MDB/DB panels were dust & vermin free.
- 14.** Multiple terminations observed at few circuit breakers using cables of different gauges. All multiple terminations have been removed during the inspection.
- 15.** Cable termination quality & workmanship is poor at few locations – cables are terminated without lugs & glands not used at cable inlet / outlet.
- All such MDBs / DBs have been attended & fixed during the inspection.
- 16.** Double Insulated hand tools & insulated gloves are used by technicians.
- 17.** All electrical panels are located in safe environmental conditions.
- 18.** Display sheet for designed load to be connected available inside every panel.
- 19.** Identification & marking for all electrical panels available.
- 20.** Socket circuits and lighting circuits are separate at all locations.
- 21.** Lighting in storage areas is as per standards.
- 22.** Standby generator for water hoses was connected.
- 23.** Lightning arrestors are installed.

Overall Assessment: Satisfactory

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Chapter – 2

NON-CONFORMITIES BY PICTURES



Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

1. LT Room – Electrical Panel No. 02 (PFI)

BV Observation		
Observation	Required Action	Picture
Bottom side panel sheet missing.	Panel shall be closed / sealed from all the side to prohibit dust / vermin entry into the panel. This action applies to all locations with similar observations.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Bottom side panel sheet placed. Current Status: Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

2. LT Room – Electrical Panel No. 04 (Outgoing)

BV Observation		
Observation	Required Action	Picture
Open hole observed on the bottom side of the panel & loose glands used.	Panel shall be closed / sealed from all the side to prohibit dust / vermin entry into the panel & glands of appropriate size shall be provided at the cable's entry / exit points of cables into the panel.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Opening & loose glands space cover with fire retardant foaming material. Current Status: Satisfactory	Foaming material used to only cover electrical minor gaps, It is not the replacement of gland(s).	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

BV Observation		
Observation	Required Action	Picture
Standard color of bus bars for three phase's indication not followed.	Standard colored bus bars (Red/Yellow/Blue) for three phase's indication shall be followed.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Standard color coding (Red/Yellow/Blue) for three phase's indication followed on bus bars. Current Status: Satisfactory	No further action is required against this observation.	

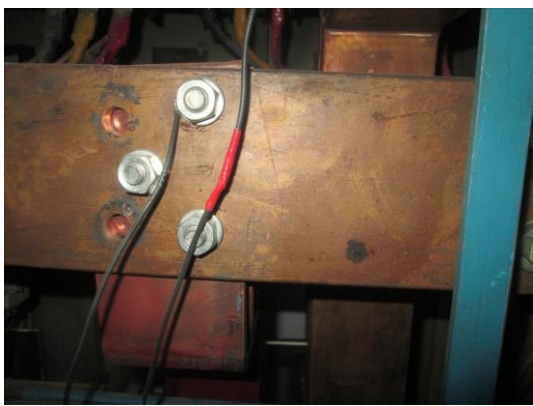
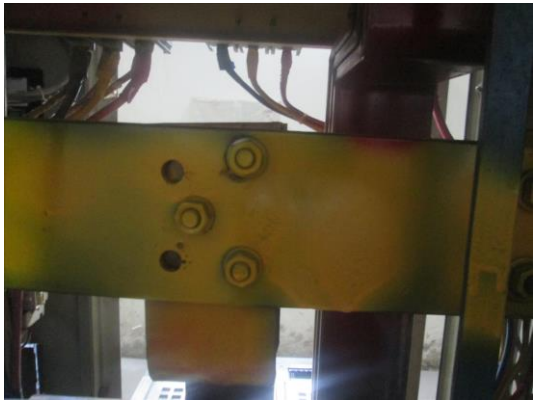
Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

3. LT Room – Electrical Panel No. 05 (Outgoing)

BV Observation		
Observation	Required Action	Picture
Open hole observed on the bottom side of the panel & loose glands used.	Panel shall be closed / sealed from all the side to prohibit dust / vermin entry into the panel & glands of appropriate size shall be provided at the cable's entry / exit points of cables into the panel size's.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Opening & loose glands space cover with fire retardant foaming material. Current Status: Satisfactory	Foaming material used to only cover electrical minor gaps, It is not the replacement of gland(s).	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

4. LT Room – Electrical Panel No. 06 (Diesel Generator – 3516)

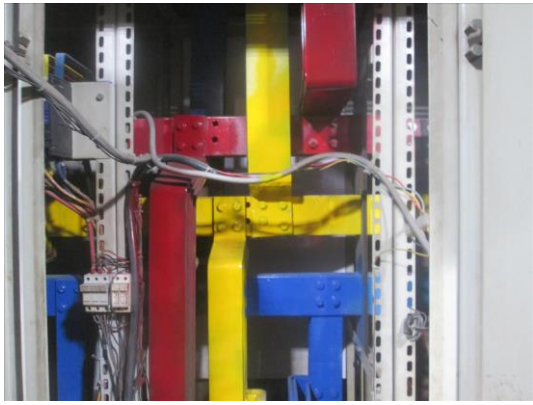
BV Observation		
Observation	Required Action	Picture
Termination on bus bar without lugs, standard color of bus bars for three phase's indication not followed & spliced joint observed.	Standard colored bus bars (Red/Yellow/Blue) for three phase's indication shall be followed, lugs shall be used for all terminations & spliced joints shall be removed.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Standard color coding (Red/Yellow/Blue) for three phase's indication followed on bus bars, termination on bus bar without lugs & spliced joint removed. Current Status: Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

BV Observation		
Observation	Required Action	Picture
Open holes observed on the bottom side of the panel & loose glands used.	Panel shall be closed / sealed from all the side to prohibit dust / vermin entry into the panel & glands of appropriate size shall be provided at the cable's entry / exit points of cables into the panel size's.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Opening & loose glands space cover with fire retardant foaming material. Current Status: Satisfactory	Foaming material used only to cover electrical minor gabs, It is not the replacement of gland(s).	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

5. LT Room – Electrical Panel No. 07 (Wapda Incoming)

BV Observation		
Observation	Required Action	Picture
Standard color of bus bars for three phase's indication not followed.	Standard colored bus bars (Red/Yellow/Blue) for three phase's indication shall be followed.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Standard color coding (Red/Yellow/Blue) for three phase's indication followed on bus bars. <u>Current Status:</u> Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

BV Observation		
Observation	Required Action	Picture
Faulty ampere meters used.	Meters to calculate ampere & voltages shall be accurate & calibrated.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Faulty ampere meters replaced. Current Status: Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

BV Observation		
Observation	Required Action	Picture
Bottom side panel sheet missing & open holes observed.	Panel shall be closed / sealed from all the side to prohibit dust / vermin entry into the panel. This action applies to all locations with similar observations.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Bottom side panel sheet placed & Opening cover with fire retardant foaming material. <u>Current Status:</u> Satisfactory	No further action is required against this observation.	

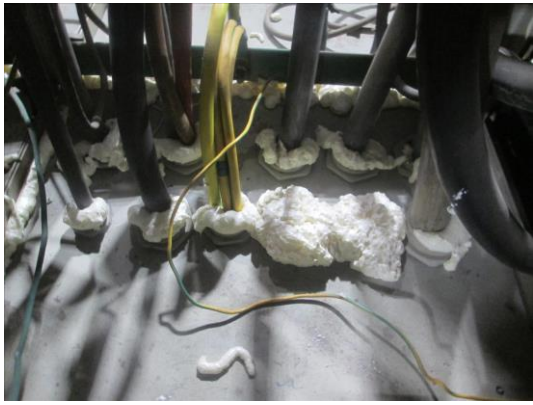
Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

6. LT Room – Electrical Panel No. 08 (Bus Coupler)

BV Observation		
Observation	Required Action	Picture
Open holes observed on the bottom side of the panel & loose glands used.	Opening of all type inside the panel shall be removed & glands of appropriate size shall be provided at the cable's entry / exit points of cables into the panel size's.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Opening & loose glands space cover with fire retardant foaming material. Current Status: Satisfactory	Foaming material used to only cover electrical minor gaps, It is not the replacement of gland at any situation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

7. LT Room – Electrical Panel No. 10 (Outgoing)

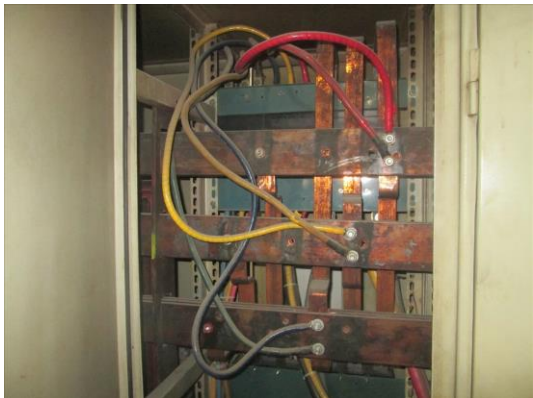
BV Observation		
Observation	Required Action	Picture
Electrical panel has an opening from the bottom side. This opening allows vermin & moisture to enter inside the electrical panel.	All electrical panels should be properly sealed. Proper sealing of panels helps in protecting panels from short circuiting due to vermin.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Bottom side of the panel is sealed foam. Current Status: Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

8. LT Room – Electrical Panel No. 12 (Outgoing)

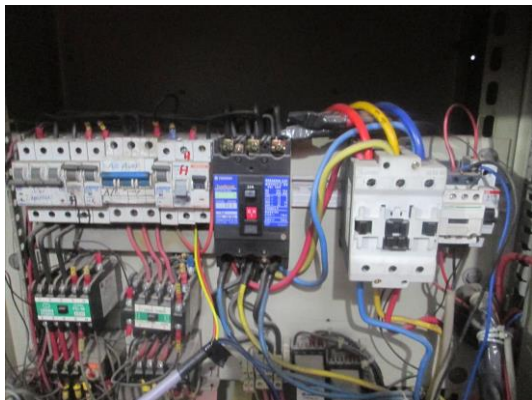
BV Observation		
Observation	Required Action	Picture
Electrical panel has an opening from the bottom side. This opening allows vermin & moisture to enter inside the electrical panel.	All electrical panels should be properly sealed. Proper sealing of panels helps in protecting panels from short circuiting due to vermin.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Bottom side of the panel is sealed from foam. Current Status: Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

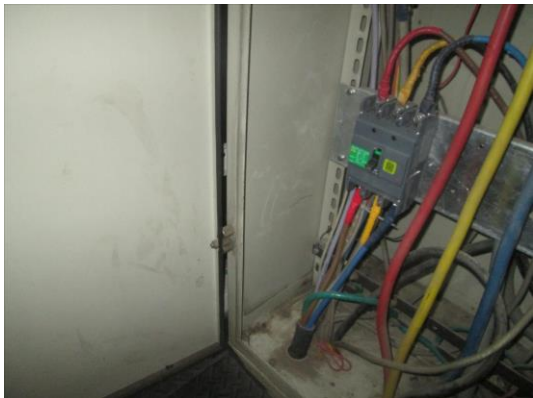
BV Observation		
Observation	Required Action	Picture
Standard color of bus bars for three phase's indication not followed.	Standard colored bus bars (Red/Yellow/Blue) for three phase's indication shall be followed.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Standard color of bus bars used for three phase's indication. Current Status: Satisfactory	All panels with similar observation have been attended & rectification works found satisfactory. No further action(s) are pending against these observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

9. MDB – Power House

BV Observation		
Observation	Required Action	Picture
Phase separators of MCCBs are missing & looping from inside observed.	Phase separators of MCCBs shall be provided & looping shall be removed.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Phase separators of MCCBs provided & looping removed. Current Status: Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

BV Observation		
Observation	Required Action	Picture
E.C.C. (Earth Continuity Conductor) not connected with the panel's door.	E.C.C. (Earth Continuity Conductor) of appropriate size shall be connected with the door of all panels.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
E.C.C. connected with the panel's door. Current Status: Satisfactory	No further action is required against this observation.	

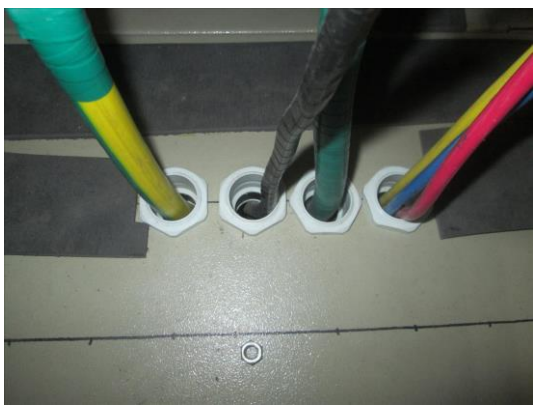
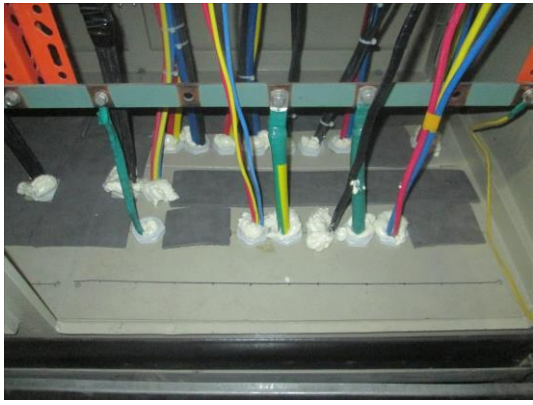
Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

10. Generator Area – Power House

BV Observation		
Observation	Required Action	Picture
Glands not used.	glands of appropriate size shall be provided at the cable's entry / exit points of cables into the panel	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Glands used. Current Status: Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

11. MDB No. 36 – New Dying

BV Observation		
Observation	Required Action	Picture
Glands not used according to the cable sizes.	glands of appropriate size shall be provided at the cable's entry / exit points of cables into the panel	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Loose glands space cover with fire retardant foaming material. Current Status: Satisfactory	Foaming material used to only cover electrical minor gaps, It is not the replacement of gland(s).	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

12. DB Fans Control – New Dying

BV Observation		
Observation	Required Action	Picture
- Messy / junky arrangement of cables. - Open ended tapped spare cables.	- Cables shall be properly harnessed & laced. - Open ended spare cables shall be identified or removed.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
- Cable arrangement improved. - Open ended spare cables removed. Current Status: Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

13. MDB No. 53 – Washing Hall

BV Observation		
Observation	Required Action	Picture
Multiple terminations using wires of different gauges.	Multiple terminations shall be removed – every load shall be connected using independent & appropriate rating circuit breaker(s). This action applies to all locations with similar observation(s).	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Multiple termination removed. Current Status: Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

14. MDB No. 16 – Knitting Hall

BV Observation		
Observation	Required Action	Picture
Multiple terminations using wires of different gauges.	Multiple terminations shall be removed – every load shall be connected using independent & appropriate rating circuit breaker(s). This action applies to all locations with similar observation(s).	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Not rectified. Current Status: Satisfactory	Not rectified.	No Picture

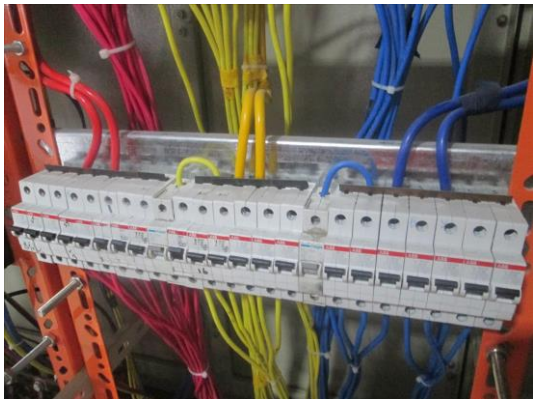
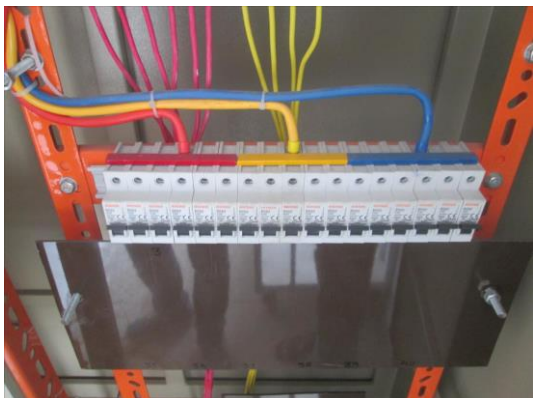
Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

15. DB No. 53.07 – Knitting Building (2nd Floor)

BV Observation		
Observation	Required Action	Picture
Multiple terminations using wires of different gauges.	Multiple terminations shall be removed – every load shall be connected using independent & appropriate rating circuit breaker(s). This action applies to all locations with similar observation(s).	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Multiple termination removed. Current Status: Satisfactory	No further action is required against this observation.	

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

16. DB No. 56.08 – (production – 20)

BV Observation		
Observation	Required Action	Picture
Connector strip for single pole CB's not insulated.	Connected strip shall be insulated with three phase (red/yellow/blue) indications.	
Rectification Action At The Time Of Inspection		
BV Remarks on Rectification	Additional Comments	Picture
Connector strips with three phase (red/yellow/blue) indications provided. Current Status: Satisfactory	No further action is required against this observation.	



Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

During Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area) Atta Baksh Road, 17 KM Off Ferozepur Road, Lahore Pakistan** the following electrical distribution panels were inspected. The load measured & the specifications of installation are represented in this chapter whereas the remarks are further mentioned in the 'Remarks' column.

1. LT Room – Electrical Panel No. 07 (Transformer Incoming)

Location		LT – Room			
Feed From		Transformer – 2500KVA			
Incoming Cable Size		Bus Bars			
Incoming Breaker Size		4000A TP ACB			
Incoming Supply Voltage (v)	3Ø (400-415)	R-Y	398	Measured Load Current (A)	
		Y-B	400	I_{Red}	Bus Bar
		R-B	399	I_{Yellow}	Bus Bar
	P-N (220-240)	R-N	231	I_{Blue}	Bus Bar
		Y-N	233	I_{Neutral}	Bus Bar
		B-N	232	I_{Earth}	Bus Bar

2. LT Room – Electrical Panel No. 03 (Outgoing)

Location		LT – Room			
Feed From		Electrical Panel No. 07 (Transformer Incoming)			
Incoming Cable Size		Bus Bars			
Incoming Breaker Size		Bus Bars			
Incoming Supply Voltage (v)	3Ø (400-415)	R-Y	398	Measured Load Current (A)	
		Y-B	400	I_{Red}	Bus Bar
		R-B	399	I_{Yellow}	Bus Bar
	P-N (220-240)	R-N	231	I_{Blue}	Bus Bar
		Y-N	233	I_{Neutral}	Bus Bar
		B-N	232	I_{Earth}	Bus Bar

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Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
1.	-	-	-	150A TP MCCB	36	37	45	35mm ² x 4Core x 1	3 Ø	Water Treatment Plant	-
2.	-	-	-	100A TP MCCB	5	2	4	25mm ² x 4Core x 1	3 Ø	Sampling Cutting	-
3.	-	-	-	200A TP MCCB	16	20	25	70mm ² x 4Core x 1	3 Ø	New Sampling	-
4.	-	-	-	100A TP MCCB	23	22	16	25mm ² x 4Core x 1	3 Ø	Packing Department	-
5.	-	-	-	400A TP MCCB	26	49	44	70mm ² x 4Core x 1	3 Ø	Sampling Building	-
6.	-	-	-	150A TP MCCB	0	0	0	50mm ² x 4Core x 1	3 Ø	Thermal Oil Boiler	-
7.	-	-	-	300A 3P MCCB	3	5	10	35mm ² x 4Core x 1	3 Ø	Production # 6,7	-

3. LT Room – Electrical Panel No. 04 (Outgoing)

Location		LT – Room			
Feed From		Electrical Panel No. 07 (Transformer Incoming)			
Incoming Cable Size		Bus Bar			
Incoming Breaker Size		Bus Bar			
Incoming Supply Voltage (v)	3Ø (400-415)	R-Y	398	Measured Load Current (A)	
		Y-B	400	I _{Red}	Bus Bar
		R-B	399	I _{Yellow}	Bus Bar
	P-N (220-240)	R-N	231	I _{Blue}	Bus Bar
		Y-N	233	I _{Neutral}	Bus Bar
		B-N	232	I _{Earth}	Bus Bar

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Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
1.	-	-	-	100A TP MCCB	11	28	29	25mm ² x 4Core x 1	3 Ø	Production # 05	-
2.	-	-	-	250A TP MCCB	0	0	0	35mm ² x 4Core x 1	3 Ø	Printing Dyer	-
3.	-	-	-	200A TP MCCB	50	29	26	35mm ² x 4Core x 1	3 Ø	Merchandising Hall	-
4.	-	-	-	400A TP MCCB	33	22	37	70mm ² x 4Core x 1	3 Ø	Production # 8,10,4	-
5.	-	-	-	200A TP MCCB	2	2	3	25mm ² x 4Core x 1	3 Ø	Cutting	-
6.	-	-	-	600A TP MCCB	155	122	123	300mm ² x 1Core x 3	3 Ø	FFS Store & HR Block	-

4. LT Room – Electrical Panel No. 05 (Outgoing)

Location				LT – Room											
Feed From				Electrical Panel No. 07 (Transformer Incoming)											
Incoming Cable Size				Bus Bar											
Incoming Breaker Size				Bus Bar											
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y	398		Measured Load Current (A)							
					Y-B	400		I _{Red}	Bus Bar						
					R-B	399		I _{Yellow}	Bus Bar						
		P-N (220-240)			R-N	231		I _{Blue}	Bus Bar						
					Y-N	233		I _{Neutral}	Bus Bar						
					B-N	232		I _{Earth}	Bus Bar						
Sr #	Estimated Load in KW			CB Rating		Measured Current (A)			Size of Wire		Phase	Description of Equipment		Remarks	
	R	Y	B			R	Y	B							
1.	-			800A TP MCCB		190	178	181	400mm ² x 1Core x 3		3 Ø	Production # 05		Dyeing	

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DB Schedule

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Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
2.	-	-	-	-	-	-	-	-	-	-	Spare
3.	-	-	-	200A TP MCCB	12	10	11	25mm ² x 4Core x 1	3 Ø	Masjid	-
4.	-	-	-	150A TP MCCB	73	52	63	70mm ² x 4Core x 1	3 Ø	Finishing # 8,10,14	-
5.	-	-	-	400A TP MCCB	2	4	2	95mm ² x 1Core x 3	3 Ø	Stanter Machine	-
6.	-	-	-	600A TP MCCB	116	108	105	300mm ² x 1Core x 3	3 Ø	Yarn Dying	-
7.	-	-	-	600A TP MCCB	198	192	186	400mm ² x 1Core x 3	3 Ø	New Knitting Hall	-

5. LT Room – Electrical Panel No. 06 (Diesel Generator Incoming & Outgoing)

Location				LT – Room									
Feed From				Diesel Generator – 3516 (&) Electrical Panel No. 07 (Transformer Incoming)									
Incoming Cable Size				Not Connected (&) Bus Bar									
Incoming Breaker Size				3200A TP ACB (&) Bus Bar									
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y	398		Measured Load Current (A)					
					Y-B	400		I _{Red}	Bus Bar				
					R-B	399		I _{Yellow}	Bus Bar				
		P-N (220-240)			R-N	231		I _{Blue}	Bus Bar				
					Y-N	233		I _{Neutral}	Bus Bar				
					B-N	232		I _{Earth}	Bus Bar				
Sr #	Estimated Load in KW			CB Rating		Measured Current (A)			Size of Wire		Phase	Description of Equipment	Remarks
	R	Y	B			R	Y	B					
1.	-			250A TP MCCB		2	4	2	25mm ² x 4Core x 1		3 Ø	New washing Machine	-
2.	-			150A TP MCCB		0	0	0	10mm ² x 4Core x 1		3 Ø	New washing Machine	-

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Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
3.	-	-	-	250A TP MCCB	4 2	2 0	5 2	16 mm ² x 4Core x 1	3 Ø	Not Mentioned	-
4.	-	-	-	6A TP MCB	0	0	0	10mm ² x 4Core x 1	3 Ø	Motor winding workshop	-
5.	-	-	-	6A TP MCB	0	0	0	10mm ² x 4Core x 1	3 Ø	Not Mentioned	-

6. LT Room – Electrical Panel No. 10 (Outgoing)

Location				LT – Room								
Feed From				Electrical Panel No. 07 (Transformer Incoming)								
Incoming Cable Size				Bus Bar								
Incoming Breaker Size				Bus Bar								
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y		398		Measured Load Current (A)			
					Y-B		400		I _{Red}		Bus Bar	
					R-B		399		I _{Yellow}		Bus Bar	
		P-N (220-240)			R-N		231		I _{Blue}		Bus Bar	
					Y-N		233		I _{Neutral}		Bus Bar	
					B-N		232		I _{Earth}		Bus Bar	
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks	
	R	Y	B		R	Y	B					
1.	-			400A TP MCCB	37	40	39	70mm ² x 4Core x 1	3 Ø	Raising Hall	-	
2.	-			400A TP MCCB	8	15	13	50mm ² x 4Core x 1	3 Ø	Steam Boiler	-	
3.	-			150A TP MCCB	4	8	2	35mm ² x 4Core x 1	3 Ø	Thermal Oil Boiler	-	
4.	-			100A TP MCCB	2	0	0	10mm ² x 4Core x 1	3 Ø	DMS Dryer Hall	-	

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Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
5.	-	-	-	800A TP MCCB	140	145	141	300mm ² x 1Core x 3	3 Ø	Compressor	-
6.	-	-	-	600A TP MCCB	6	12	9	185mm ² x 4Core x 1	3 Ø	Knitting Circular	-

7. LT Room – Electrical Panel No. 11 (Diesel Generator Incoming & Outgoing)

Location		LT – Room									
Feed From		Diesel Generator (&) Electrical Panel No. 07 (Transformer Incoming)									
Incoming Cable Size		300mm ² x 1Core x 2 / Ø (&) Bus Bar									
Incoming Breaker Size		2000A TP ACB (&) Bus Bar									
Incoming Supply Voltage (v)	3Ø (400-415)			R-Y	398			Measured Load Current (A)			
				Y-B	400			I _{Red}	Congested		
				R-B	399			I _{Yellow}	Congested		
	P-N (220-240)			R-N	231			I _{Blue}	Congested		
				Y-N	233			I _{Neutral}	Congested		
				B-N	232			I _{Earth}	Congested		
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
1.	-	-	-	150A TP MCCB	Congested	Congested	Congested	35mm ² x 4Core x 1	3 Ø	Waste Heat Boiler	-
2.	-	-	-	150A TP MCCB	Congested	Congested	Congested	35mm ² x 4Core x 1	3 Ø	Printing	-
3.	-	-	-	400A TP MCCB	60	59	62	185mm ² x 4Core x 1	3 Ø	Pantek Machine	-
4.	-	-	-	600A TP MCCB	51	49	38	300mm ² x 1Core x 3	3 Ø	New Printing	-

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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

8. LT Room – Electrical Panel No. 12 (Outgoing)

Location				LT – Room							
Feed From				Electrical Panel No. 07 (Transformer Incoming) & Gen.Set							
Incoming Cable Size				Bus Bar							
Incoming Breaker Size				Bus Bar							
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y		398		Measured Load Current (A)		
					Y-B		400		I _{Red}	Bus Bar	
					R-B		399		I _{Yellow}	Bus Bar	
		P-N (220-240)			R-N		231		I _{Blue}	Bus Bar	
					Y-N		233		I _{Neutral}	Bus Bar	
					B-N		232		I _{Earth}	Bus Bar	
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
1.	-			600A TP MCCB	460	456	453	400mm ² x 1Core x 3	3 Ø	New Compressor	-
2.	-			300A TP MCCB	77	97	79	50mm ² x 4Core x 1	3 Ø	Power House	-
3.	-			400A TP MCCB	Conge sted	Conge sted	Conge sted	70mm ² x 4Core x 1	3 Ø	Production 3,4	-
4.	-			600A TP MCCB	199	186	194	400mm ² x 1Core x 3	3 Ø	New Dying Finishing	-
5.	-			600A TP MCCB	73	64	86	400mm ² x 1Core x 3	3 Ø	New Dying	-

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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

9. LT Room – Electrical Panel No. 14 (Outgoing)

Location				LT – Room							
Feed From				Electrical Panel No. 07 (Transformer Incoming) & Gen.Set							
Incoming Cable Size				Bus Bar							
Incoming Breaker Size				Bus Bar							
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y		398		Measured Load Current (A)		
					Y-B		400		I _{Red}	Bus Bar	
					R-B		399		I _{Yellow}	Bus Bar	
		P-N (220-240)			R-N		231		I _{Blue}	Bus Bar	
					Y-N		233		I _{Neutral}	Bus Bar	
					B-N		232		I _{Earth}	Bus Bar	
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
1.	-			400A TP MCCB	172	152	164	120mm ² x 1Core x 3	3 Ø	Old Panel	-
2.	-			400A TP MCCB	-	-	-	-	-	-	Spare
3.	-			250A TP MCCB	Conge sted	Conge sted	Conge sted	35mm ² x 4Core x 1	3 Ø	Washing Area	-
4.	-			400A TP MCCB	190	194	196	185mm ² x 1Core x 3	3 Ø	DMS Dryer Machines	-
5.	-			400A TP MCCB	13	28	23	50mm ² x 4Core x	3 Ø	Finishing 3,4,12	-
6.	-			250A TP MCCB	Conge sted	Conge sted	Conge sted	35mm ² x 4Core x 1	3 Ø	Sample Winch	-
7.	-			250A TP MCCB	26	23	14	70mm ² x 4Core x 1	3 Ø	Production 3,4,12	-
8.	-			400A TP MCCB	5	40	33	70mm ² x 4Core x 1	3 Ø	Turbine Control	-
9.	-			250A TP MCCB	3	7	4	16mm ² x 4Core x 1	3 Ø	Production 1,2	-

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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

10. LT Room – Electrical Panel No. 17 (Outgoing)

Location				LT – Room								
Feed From				Electrical Panel No. 07 (Transformer Incoming) & Gen.Set								
Incoming Cable Size				Bus Bar								
Incoming Breaker Size				Bus Bar								
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y		398		Measured Load Current (A)			
					Y-B		400		I _{Red}		Bus Bar	
					R-B		399		I _{Yellow}		Bus Bar	
		P-N (220-240)			R-N		231		I _{Blue}		Bus Bar	
					Y-N		233		I _{Neutral}		Bus Bar	
					B-N		232		I _{Earth}		Bus Bar	
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks	
	R	Y	B		R	Y	B					
1.	-			800A TP MCCB	393	346	362	300mm ² x 1Core x 3	3 Ø	Yarn Dying LT	-	
2.	-			400A TP MCCB	294	321	311	300mm ² x 1Core x 3	3 Ø	Yarn Dying Wapda	-	
3.	-			400A TP MCCB	-	-	-	-	-	-	Spare	
4.	-			400A TP MCCB	-	-	-	-	-	-	Spare	
5.	-			400A TP MCCB	40	41	49	300mm ² x 1Core x 3	3 Ø	Printing Oval 02	-	
6.	-			400A TP MCCB	-	-	-	-	-	-	Spare	

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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

11. LT Room – Electrical Panel No. 18 (Outgoing)

Location				LT – Room								
Feed From				LT – Electrical Panel No. 07 (Transformer Incoming) & Gen.Set								
Incoming Cable Size				Bus Bar								
Incoming Breaker Size				Bus Bar								
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y		398		Measured Load Current (A)			
					Y-B		400		I _{Red}		Bus Bar	
					R-B		399		I _{Yellow}		Bus Bar	
		P-N (220-240)			R-N		231		I _{Blue}		Bus Bar	
					Y-N		233		I _{Neutral}		Bus Bar	
					B-N		232		I _{Earth}		Bus Bar	
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks	
	R	Y	B		R	Y	B					
1.	-			800A TP MCCB	130	138	136	300mm ² x 1Core x 3	3 Ø	Thermo Oil Coal Boiler	-	
2.	-			800A TP MCCB	258	198	185	300mm ² x 1Core x 3	3 Ø	New Washing Hall	-	
3.	-			400A TP MCCB	13	16	16	70mm ² x 4Core x 1	-	Saclavo Machine Hall	-	
4.	-			400A TP MCCB	-	-	-	-	-	-	Spare	
5.	-			400A TP MCCB	191	200	185	300mm ² x 1Core x 3	3 Ø	Hanger Units	-	
6.	-			400A TP MCCB	40	62	40	150mm ² x 1Core x 3	-	Steam Coal Boiler	-	

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12. MDB – Power House

Location				Power House								
Feed From				LT – Electrical Panel No. 12 (Outgoing)								
Incoming Cable Size				70mm ² x 4Core x 1								
Incoming Breaker Size				400A TP								
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y		398		Measured Load Current (A)			
					Y-B		400		I _{Red}		79	
					R-B		399		I _{Yellow}		93	
		P-N (220-240)			R-N		231		I _{Blue}		79	
					Y-N		233		I _{Neutral}		13	
					B-N		232		I _{Earth}		0	
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks	
	R	Y	B		R	Y	B					
1.	-			32A TP MCCB	Off	Off	Off	6mm ² x 1Core x 3	3 Ø	J/W Heater	-	
2.	-			16A TP MCCB	0	2	0	6mm ² x 1Core x 3	3 Ø	A/C Pump	-	
3.	-			50A TP MCCB	8	11	14	16mm ² x 4Core x 1 x 3	3 Ø	Fans , Battery Charger & Exhaust Fans	-	
4.	-			125A TP MCCB	Off	Off	Off	35mm ² x 4Core x 1	3 Ø	Not Mentioned	-	
5.	-			60A TP MCCB	Off	Off	Off	25mm ² x 4Core x 1	3 Ø	Not Mentioned	-	
6.	-			6A SP MCB	0	1	0	2.5mm ² x 1Core x 1	3 Ø	Controls	-	
7.	-			6A SP MCB	1	0	1	2.5mm ² x 1Core x 1	3 Ø	Controls	-	

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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

13. MDB No. 35 – Dying Finishing

Location				New Dying Department								
Feed From				LT – Room								
Incoming Cable Size				400mm ² x 1Core x 3								
Incoming Breaker Size				630A TP								
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y		398		Measured Load Current (A)			
					Y-B		400		I _{Red}		209	
					R-B		399		I _{Yellow}		189	
		P-N (220-240)			R-N		231		I _{Blue}		195	
					Y-N		233		I _{Neutral}		12	
					B-N		232		I _{Earth}		0	
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks	
	R	Y	B		R	Y	B					
1.	-			400A TP MCCB	209	189	198	250mm ² x 1Core x 3	3 Ø	Santex Dryer	-	
2.	-			400A TP MCCB	-	-	-	-	-	-	Spare	
3.	-			100A TP MCCB	175	171	176	10mm ² x 4Core x 1 x 3	3 Ø	Laffer Compactor	-	
4.	-			100A TP MCCB	15	10	11	16mm ² x 4Core x 1	3 Ø	Lights	-	

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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

14. MDB No. 36 – New Dying

Location				New Dying Department								
Feed From				LT – Room								
Incoming Cable Size				400mm ² x 1Core x 3								
Incoming Breaker Size				800A TP								
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y		398		Measured Load Current (A)			
					Y-B		400		I _{Red}		93	
					R-B		399		I _{Yellow}		81	
		P-N (220-240)			R-N		231		I _{Blue}		72	
					Y-N		233		I _{Neutral}		10	
					B-N		232		I _{Earth}		2	
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks	
	R	Y	B		R	Y	B					
1.	-			50A TP MCCB	-	-	-	-	-	-	Spare	
2.	-			50A TP MCCB	-	-	-	-	-	-	Spare	
3.	-			400A TP MCCB	-	-	-	-	-	-	Spare	
4.	-			400A TP MCCB	-	-	-	-	-	-	Spare	
5.	-			400A TP MCCB	-	-	-	-	-	-	Spare	
6.	-			200A TP MCCB	0	0	0	50mm ² x 4Core x 1	3 Ø	Dying Dept. Machines s	-	
7.	-			200A TP MCCB	20	19	21	50mm ² x 4Core x 1	3 Ø	Dying Dept. Machines s	-	
8.	-			100A TP MCCB	25	23	25	35mm ² x 4Core x 1	-	-	Spare	
9.	-			100A TP MCCB	0	0	0	25mm ² x 4Core x 1	3 Ø	Dying Dept. Machines s	-	
10	-			100A TP MCCB	0	0	0	16mm ² x 4Core x 1	3 Ø	Dying Dept. Machines s	-	

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DB Schedule

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
11	-	-	-	50A TP MCCB	-	-	-	-	-	-	Spare
12	-	-	-	50A TP MCCB	-	-	-	-	-	-	Spare
13	-	-	-	50A TP MCCB	0	0	0	6mm ² x 3Core x 1	3 Ø	Dying Dept. Lights	-
14	-	-	-	50A TP MCCB	21	18	19	16mm ² x 4Core x 1	3 Ø	Dying Dept. Lights	-

15. MDB No. 52 – Coal Boiler

Location		Boiler Area – Electrical Panel Room									
Feed From		LT – Room									
Incoming Cable Size		300mm ² x 1Core x 3									
Incoming Breaker Size		600A TP									
Incoming Supply Voltage (v)	3Ø (400-415)				R-Y	398	Measured Load Current (A)				
					Y-B	400	I_{Red}	141			
					R-B	399	I_{Yellow}	146			
	P-N (220-240)				R-N	231	I_{Blue}	143			
					Y-N	233	I_{Neutral}	117			
					B-N	232	I_{Earth}	0			
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
1.	-	-	-	400A TP MCCB	98	97	105	70mm ² x 4Core x 1 x 2	3 Ø	Power Panel Boiler	-
2.	-	-	-	200A TP MCCB	34	36	44	70mm ² x 4Core x 1	3 Ø	FD ID Fans	-
3.	-	-	-	250A TP MCCB	-	-	-	-	-	-	Spare
4.	-	-	-	100A TP MCCB	2	1	2	16mm ² x 4Core x 1	3 Ø	Lights	-

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Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
5.	-	-	-	100A TP MCCB	3	2	2	16mm ² x 4Core x 1	-	Control Panel Boiler	-
6.	-	-	-	250A TP MCCB	-	-	-	-	-	-	Spare

16. MDB No. 56 – Hanger's Unit

Location				Hangers Unit - 2 nd Floor							
Feed From				LT – Room							
Incoming Cable Size				300mm ² x 1Core x 3							
Incoming Breaker Size				630A TP							
Incoming Supply Voltage (v)		3Ø (400-415)			R-Y	398		Measured Load Current (A)			
					Y-B	400		I _{Red}	229		
					R-B	399		I _{Yellow}	194		
		P-N (220-240)			R-N	231		I _{Blue}	180		
					Y-N	233		I _{Neutral}	103		
					B-N	232		I _{Earth}	3		
Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
1.	-			125A TP MCCB	0	0	0	10mm ² x 4Core x 1	3 Ø	Lift - 02	-
2.	-			200A TP MCCB	26	29	33	70mm ² x 4Core x 1	3 Ø	Flat Knitting	-
3.	-			125A TP MCCB	0	0	0	10mm ² x 4Core x 1	3 Ø	Lift - 03	-
4.	-			125A TP MCCB	0	0	0	10mm ² x 4Core x 1	3 Ø	Lift - 01	-
5.	-			125A TP MCCB	0	2	0	70mm ² x 4Core x 1	3 Ø	Security Room	-

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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Sr #	Estimated Load in KW			CB Rating	Measured Current (A)			Size of Wire	Phase	Description of Equipment	Remarks
	R	Y	B		R	Y	B				
6.	-			400A TP MCCB	34	18	29	70mm ² x 4Core x 1	3 Ø	Production 27,29 & 30	-
7.	-			400A TP MCCB	70	68	45	70mm ² x 4Core x 1	3 Ø	Finishing 2,5,27 & 29	-
8.	-			400A TP MCCB	116	79	78	70mm ² x 4Core x 1	3 Ø	Production 20	-

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Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Subject of inspection	Description	Po. Qty.	Actual Inspected QTY.
Thermo-imaging for electrical panels	Third Party Inspection for electrical panels	Lot	Lot

The undersigned inspector from Bureau Veritas, acting within the Bureau Veritas Terms and Conditions, attended the premises of **Combined Fabrics Limited, New Buildings (Extended Area) Atta Baksh Road, 17 KM Off Ferozepur Road, Lahore Pakistan** to perform thermo-imaging of electrical panels as detailed hereunder:

BRIEF DESCRIPTION OF THE PROCEDURE:

The pages of this report are formatted to document "exceptions (abnormally warm or cool components) observed during the survey.

The Text of the page identifies the area, piece of equipment, and the problem. A recommendation is also made, however the actual repair procedure will be the decision of the owners and maintainers of the equipment. This should be based on what is found once the problem is investigated.

Along the left of the thermograph is a scale showing the temperature range, and the corresponding color. The area of concern is usually outlined with a rectangle or ellipse. A label containing the maximum temperature with in the outline identifies the temperature of interest. Cursor points or another outline is used to indicate temperatures at the reference points.

It is known that 40% of fires have their origin in progressive degradation of electrical connections for many reasons like oxidation or Looseness. This degradation results temperature increase and sometimes associated with generation of Micro arcs. In order to prevent such anomalies, periodic visual inspection and connections tightening are sometimes used, but such a procedure doesn't guarantee risk of connection oxidation. So, the infrared thermography inspection (ITI) has been introduced to allow a non-contact temperature measurements using Infra-Red thermal imaging special cam for all critical zones in order to detect hot spots if any.

With this method, all elements are under control and only defective zones are maintained by more reliable way.

Electrical Safety Assessment of Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.

Method Statement:

The following outlines the steps of the survey:

- Meeting with appropriate staff on site and review the service order covering what will be inspected, who will accompany the thermographer, permit to work and what type of reporting is expected.
- Preparation for inspection with the designated staff member or electrical contractor.
- Panel protection screens/covers to be removed to prepare access to components.
- Each type of component to be discussed to determine how it will be inspected.
- Components (Bus bars, cable terminations, ACB's....), once exposed-after screens/covers removal-will be inspected with infrared camera.
- Detailed records of any suspect components found reading to be kept as well as temperature measurements.

➤ **Results of Inspection:**

As a result of the electrical and control panel's thermography inspection was performed for the following panels:

Sr. NO	ELECTRICAL PANEL NAME	LOCATION	REMARKS	RELATED THERMOGRAM S	THERMOGRAMS REFERENCE PAGE	OBSERVATION
01	Generator Incoming P-09	LT Room	Normal	17248	03	N/A
02	Bus Coupler P-08	LT Room	Medium Grade (17256)	17256	04	Medium grade temperature raise found at thermogram (17256) & Page-04.
03	Outgoing P-03	LT Room	Low Grade (17276)	17274 17276	05,06	Low grade temperature raise found at thermogram (17276) & Page-06.

Electrical Safety Assessment of Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.

Sr. NO	ELECTRICAL PANEL NAME	LOCATION	REMARKS	RELATED THERMOGRAM S	THERMOGRAMS REFERENCE PAGE	OBSERVATION
04	Outgoing P-04	LT Room	Medium Grade (17286)	17286 17290 17294	07,08,09	Medium grade temperature raise found at thermogram (17286) & Page-07.
05	Outgoing P-05	LT Room	Low Grade (17298,17300,17302 & 17306) Medium Grade (17308)	17296 17298 17300 17302 17306 17308	10,11,12,13,14,15	Medium grade & Low grade temperature raise found.
06	Outgoing P-06	LT Room	Normal	17310	16	N/A
07	Outgoing P-10	LT Room	Low Grade (17316)	17316 17322	17,18	Low grade temperature raise found at thermogram (17316) & Page-17.
08	Outgoing P-11	LT Room	Normal	17324	19	N/A
09	Outgoing P-14	LT Room	Low Grade	17342	22	Low grade temperature raise found at thermogram (17342) & Page-22.
10	P-17	LT Room	Medium Grade (17352) Low Grade (17354) Medium Grade (17356)	17352 17354 17356	23,24,25	Medium grade & Low grade temperature raise found at thermogram (17352, 17354 & 17356) & Page-23,24 & 25

Electrical Safety Assessment of Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.

Sr. NO	ELECTRICAL PANEL NAME	LOCATION	REMARKS	RELATED THERMOGRAM S	THERMOGRAMS REFERENCE PAGE	OBSERVATION
11	P-18	LT Room	Low Grade (17370) Medium Grade (17372)	17366 17370 17372	26,27,28	Medium grade & Low grade temperature raise found at thermogram (17370 & 17372) & Page-27 & 28
12	Main Distribution Panel-35	New Dying Finishing	Normal	17378 17384	29,30	N/A
13	MDP-36	New Dying Finishing	Normal	17390 17394 17396	31,32,33	N/A
14	Main Distribution Panel-52	Coal Boiler	Low Grade (17402)	17402 17404 17406 17410 17412	34,35,36,37,38	Low grade temperature raise found at thermogram (17402) & Page-31.
15	MDP-53	New Washing Hall	Low Grade (17416 & 17428)	17416 17418 17420 17424 17428	39,40,41,42,43	Low grade temperature raise found at thermogram (17416 & 17428) & Page-37 & 41.
16	MDP-16	Knitting Hall	Low Grade (17450)	17442 17448 17450 17452 17456 17460 17466 17468 17470 17472 17476 17478 17480	44,45,46,47,48,49,50,51,52,53,54,55,56,57,58,59,60,61,62,63	Low grade temperature raise found at thermogram (17450) & Page-44.

Electrical Safety Assessment of Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.

Sr. NO	ELECTRICAL PANEL NAME	LOCATION	REMARKS	RELATED THERMOGRAM S	THERMOGRAMS REFERENCE PAGE	OBSERVATION
17	DP-56.02	Flat Knitting	Normal	17516	64	N/A
18	DP-56.07	Finishing 12,15,27,29	Normal	17524 17526	65,66	N/A
19	MDP-56	Hanger Units	Low Grade (17528)	17528 17530 17536 17538 17540 17542 17544 17546	67,68,69,70,71,7 2,73,74	Low grade temperature raise found at thermogram (17528) & Page-65.
20	DP-56.06	Production Area 27, 29, 30	Normal	17548 17550 17554	75,76,77	N/A
21	DP-56.08	Production Area 20	Normal	17556	78	N/A
22	DP-56.05	Security Room	Normal	17566	79	N/A
23	DP-53.04	1 st Floor Packing	Normal	17570	80	N/A
24	DP-53.05	2 nd Floor	Normal	17572 17574	81,82	N/A
25	DP-53.06	3 rd Floor Production 27	Normal	17576 17580	83,84	N/A

Electrical Safety Assessment of Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.

The following table is the Overview of Fault Rating for the problems, if any problem were detected during the inspection followed by the thermography inspection finding associated with analysis and the recommended actions for each problem:

1: Normal	Temp rise 0-10 °C	No action
2: Low grade	Temp rise 11-18 °C	To be monitored
3: Medium grade	Temp rise 19-38 °C	Repair at scheduled shut down (Maximum 10 days)
4: Severe	Temp rise more than 38 °C	Repair immediately

Inspection History

Last	This	Next
	01-May-2019	

Remarks

All the comments noted below were observed at the time of inspection. Any changes made after the inspection date are not reflected in this report.

Sr.No	Observations & Recommendations		
	Electrical Panel Name & Location	Remarks	Related Thermograms & Page No.
1	Bus Coupler P-08 LT Room	Medium grade temperature raise found, load unbalance to be monitored and repair at schedule shutdown	17256 & Page-04
2	Outgoing P-03 LT Room	Low grade temperature raise found, load unbalance/loose connection to be Monitored	17276 & Page-06

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Sr.No	Observations & Recommendations		
	Electrical Panel Name & Location	Remarks	Related Thermograms & Page No.
3	Outgoing P-04 LT Room	Medium grade temperature raise found. load unbalance/loose connection to be monitored and repair at schedule shutdown	17286 & Page-07
4	Outgoing P-05 LT Room	Medium & low grade temperature raise found. load unbalance/loose connection to be monitored and repair at schedule shutdown	17298, 17300, 17302, 17306, 17308 & Page-11 to 15
5	Outgoing P-10 LT Room	Low grade temperature raise found, load unbalance/loose connection to be Monitored	17316 & Page-17
6	Outgoing P-14 LT Room	Low grade temperature raise found, load unbalance/loose connection to be Monitored	17342 & Page-22
7	P-17 LT Room	Medium & low grade temperature raise found. load unbalance/loose connection to be monitored and repair at schedule shutdown	17352, 17354, 17356 & Page-23 to 25
8	P-18 LT Room	Low grade temperature raise found, load unbalance/loose connection to be Monitored	17370 & Page-27
9	P-18 LT Room	Medium grade temperature raise found, load unbalance/loose connection to be Monitored	17372 & Page-28
10	Main Distribution Panel-52 Coal Boiler	Low grade temperature raise found, load unbalance/loose connection to be Monitored	17402 & Page-32
11	MDP-53 New Washing Hall	Low grade temperature raise found, load unbalance/loose connection to be Monitored	17416, 17428 & Page-37, 41
12	MDP-16 Knitting Hall	Low grade temperature raise found, load unbalance/loose connection to be Monitored	17450 & Page-44



Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Sr.No	Observations & Recommendations		
	Electrical Panel Name & Location	Remarks	Related Thermograms & Page No.
13	MDP-56 Hanger Units	Low grade temperature raise found, load unbalance/loose connection to be Monitored	17528 & Page-65

Reference Images: Yes ☒ No ☐

Thermo-imaging by:

Name: Waqar & Adeel Ahmad
Date : 01-May-2019

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

INTERPRETATION OF THERMAL IMAGES



Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Thermographic Assessment Criteria

Definitions:

Normal: No action required – If difference is less than 11 degrees from measured 'Ambient Temperature'.

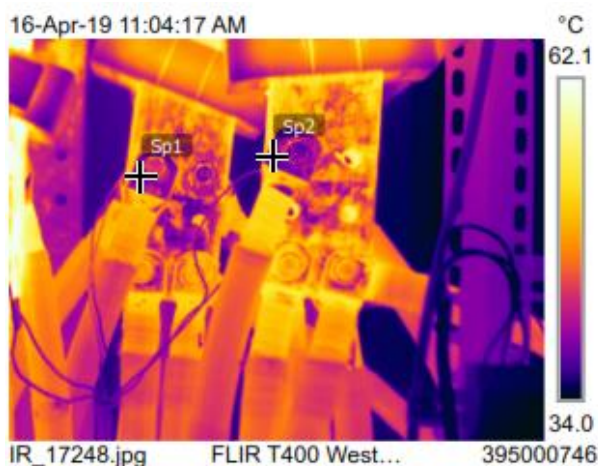
Probable Deficiency: Investigate, monitor and take action as necessary – If difference is more than 11 degrees and up to 18 degrees from measured 'Ambient Temperature'.

Certain Deficiency: Investigate (on priority) & take corrective actions (if required) – If difference is more than 19 degrees and up to 38 degrees from measured 'Ambient Temperature'.

Critical Deficiency: Investigate on highest priority & take immediate corrective measures – If difference is more than 39 degrees from measured 'Ambient Temperature'.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Generator Incoming



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

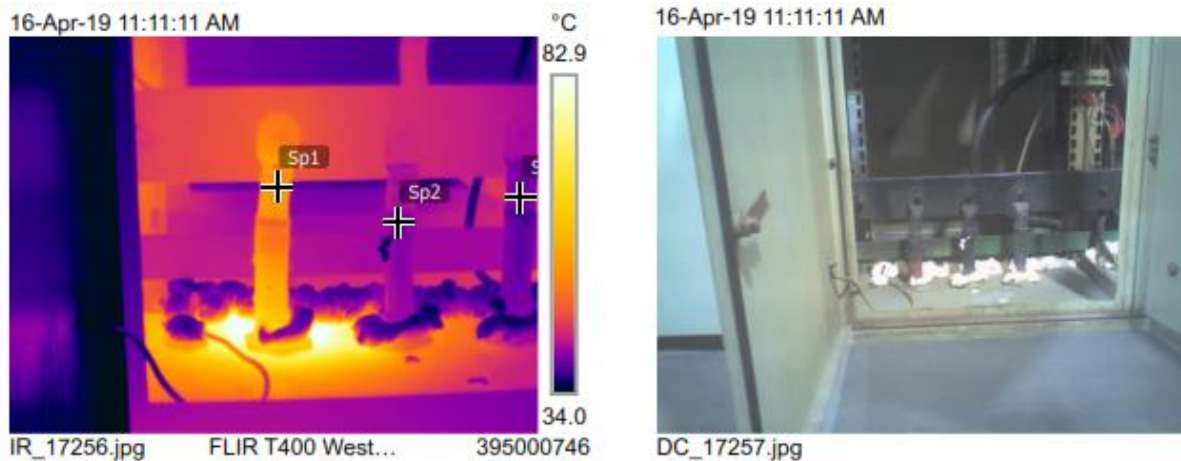
Measurement Point	Temperature °C	Remarks
Spot 1	38.0	Normal
Spot 2	38.0	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Bus Coupler



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

Measurement Point	Temperature °C	Remarks
Spot 1	54.6	Certain Deficiency
Spot 2	39.4	Normal
Spot 3	39.3	Normal

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 09 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

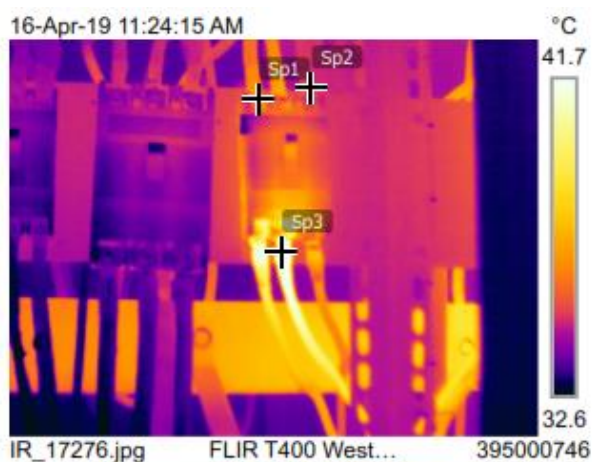
Measurement Point	Temperature °C	Remarks
Spot 1	37.9	Normal
Spot 2	40.8	Normal
Spot 3	37.6	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 03 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

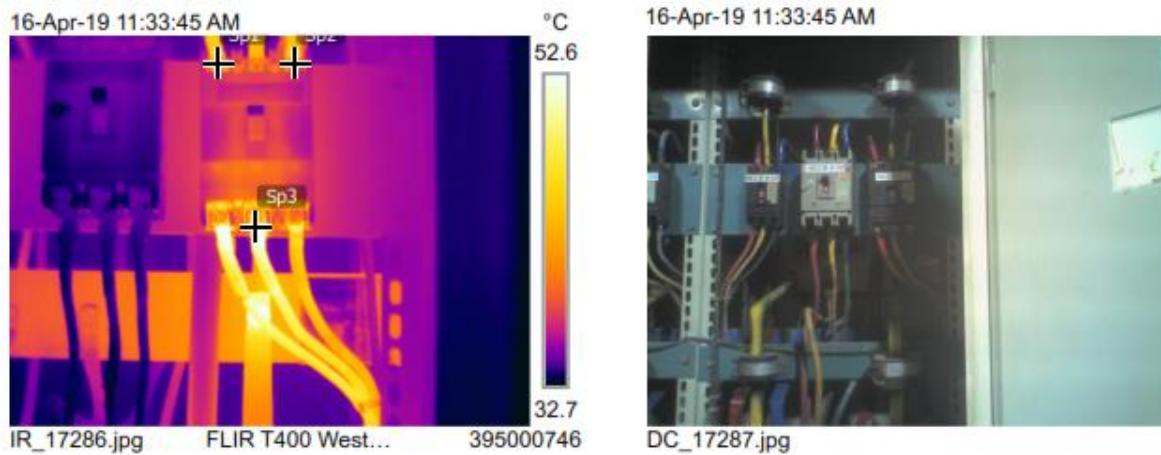
Measurement Point	Temperature °C	Remarks
Spot 1	35.6	Normal
Spot 2	35.2	Normal
Spot 3	44.4	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 04 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

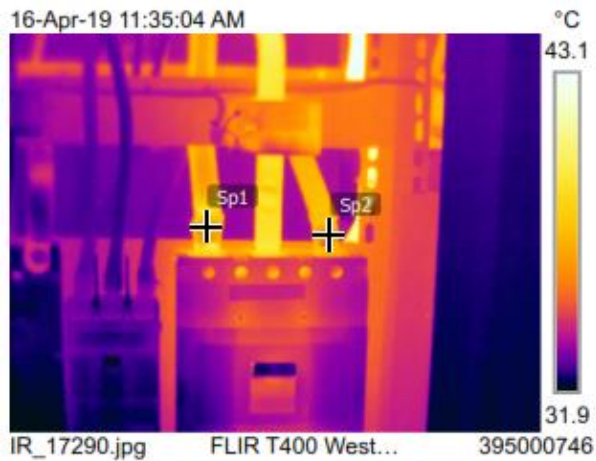
Measurement Point	Temperature °C	Remarks
Spot 1	39.3	Normal
Spot 2	39.9	Normal
Spot 3	55.4	Certain Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 04 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

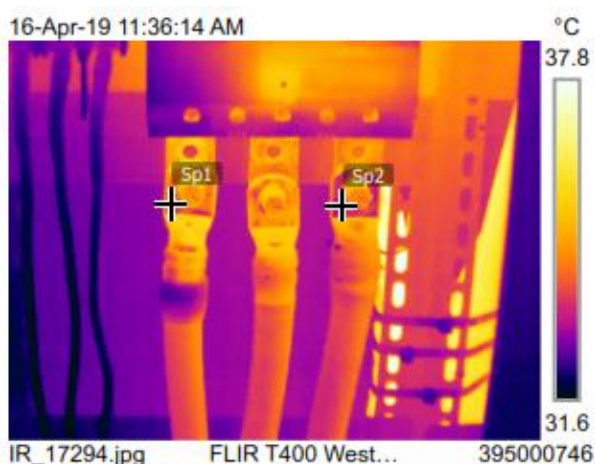
Measurement Point	Temperature °C	Remarks
Spot 1	36.0	Normal
Spot 2	35.7	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 04 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

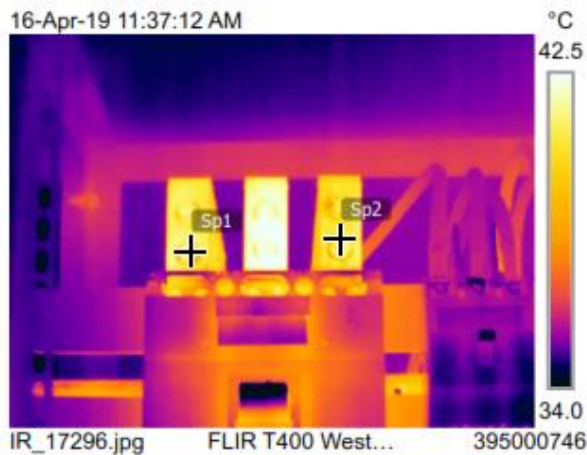
Measurement Point	Temperature °C	Remarks
Spot 1	34.1	Normal
Spot 2	33.1	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 05 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

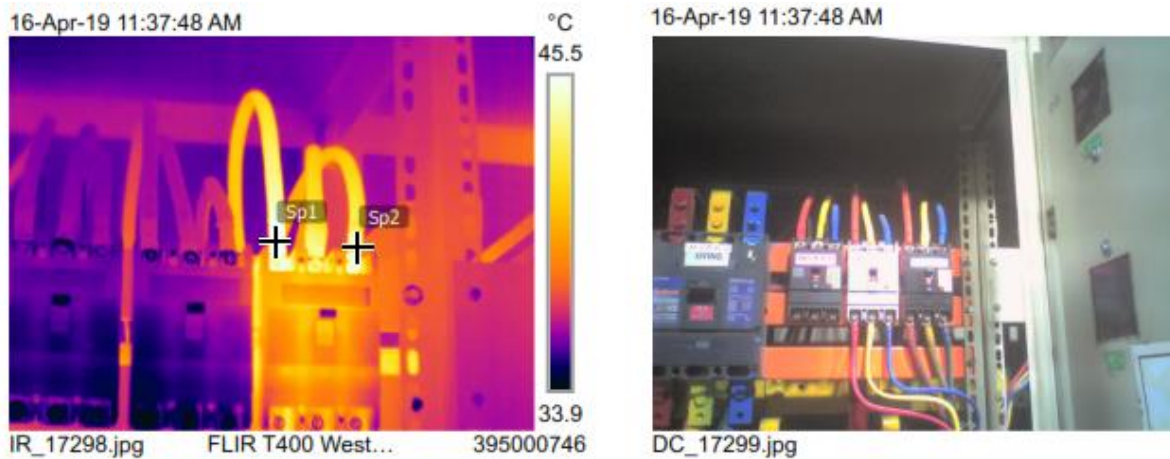
Measurement Point	Temperature °C	Remarks
Spot 1	41.2	Normal
Spot 2	41.4	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 05 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

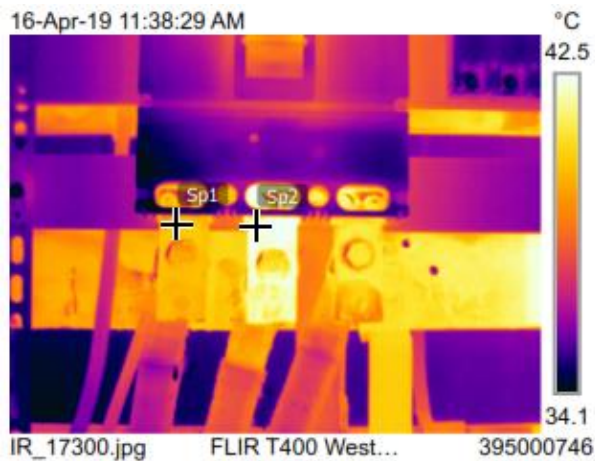
Measurement Point	Temperature °C	Remarks
Spot 1	47.1	Probable Deficiency
Spot 2	42.2	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 05 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

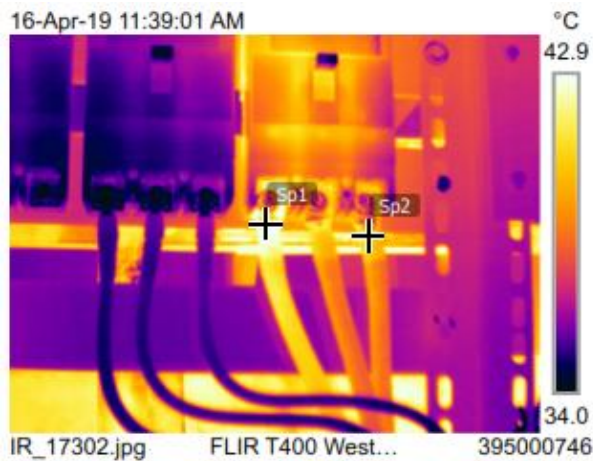
Measurement Point	Temperature °C	Remarks
Spot 1	40.2	Normal
Spot 2	42.4	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 05 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

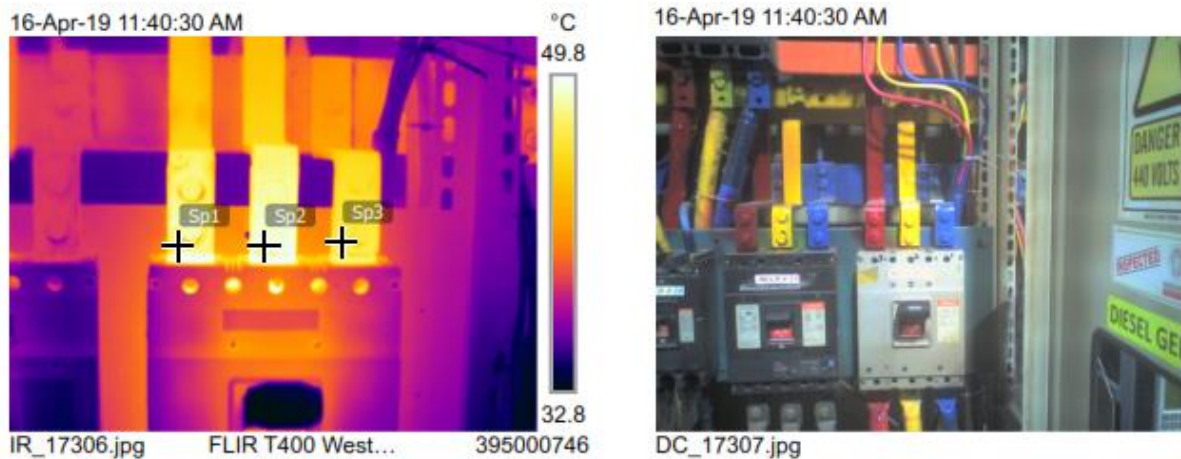
Measurement Point	Temperature °C	Remarks
Spot 1	43.0	Probable Deficiency
Spot 2	40.8	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 05 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

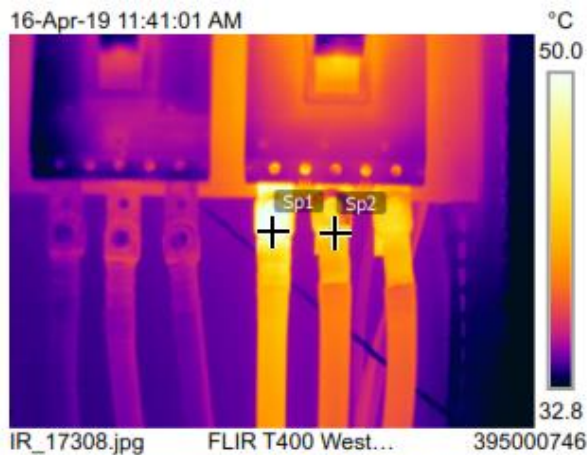
Measurement Point	Temperature °C	Remarks
Spot 1	47.6	Probable Deficiency
Spot 2	49.1	Probable Deficiency
Spot 3	47.0	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 05 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

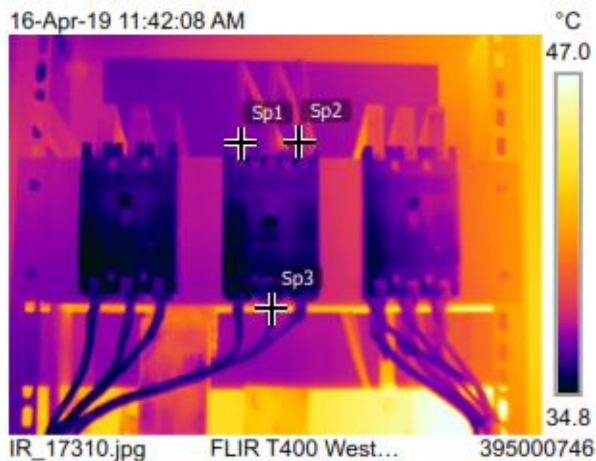
Measurement Point	Temperature °C	Remarks
Spot 1	50.7	Certain Deficiency
Spot 2	40.8	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 06 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

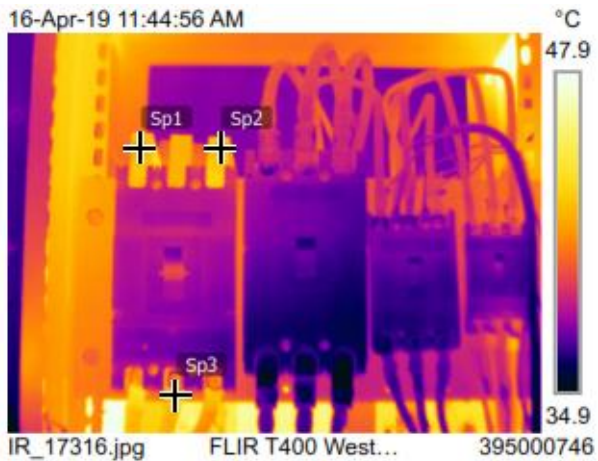
Measurement Point	Temperature °C	Remarks
Spot 1	37.4	Normal
Spot 2	37.4	Normal
Spot 3	36.2	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 10 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

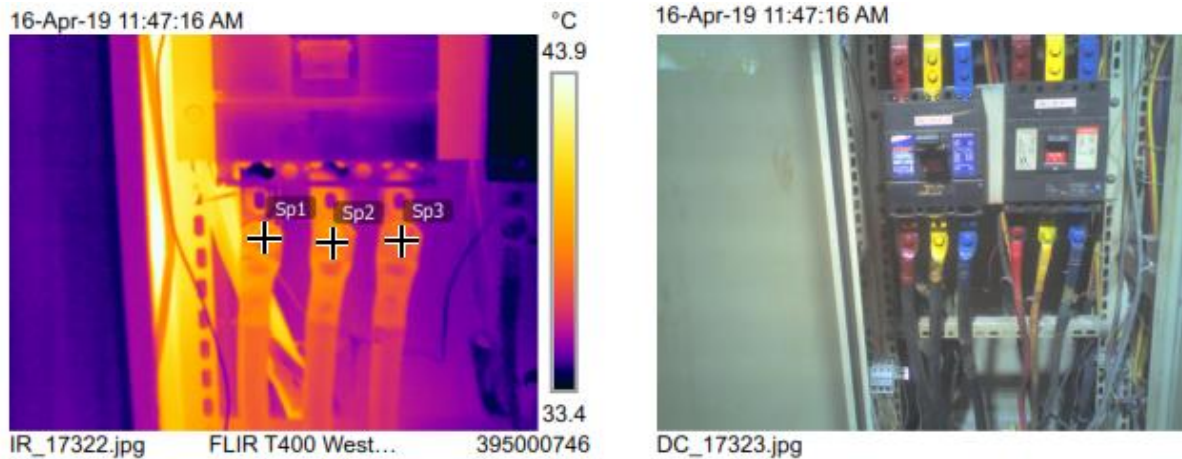
Measurement Point	Temperature °C	Remarks
Spot 1	42.1	Probable Deficiency
Spot 2	42.6	Probable Deficiency
Spot 3	43.4	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 10 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

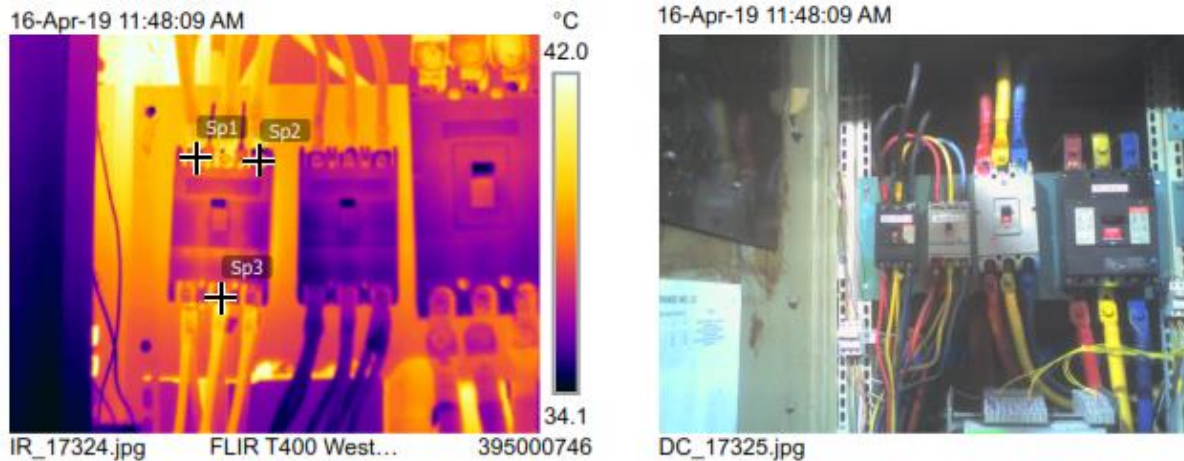
Measurement Point	Temperature °C	Remarks
Spot 1	37.8	Normal
Spot 2	38.2	Normal
Spot 3	37.2	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 11 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

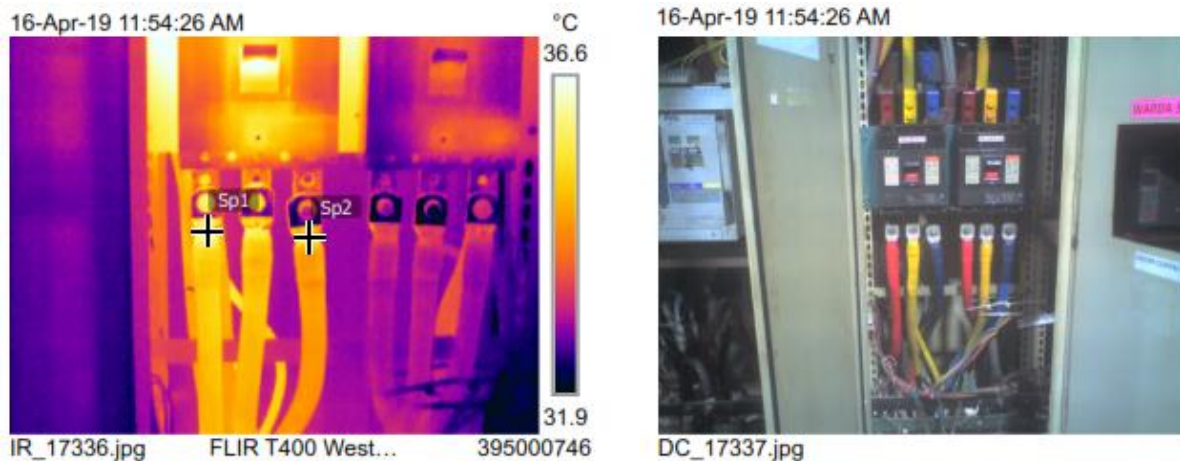
Measurement Point	Temperature °C	Remarks
Spot 1	38.7	Normal
Spot 2	37.7	Normal
Spot 3	37.2	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 12 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

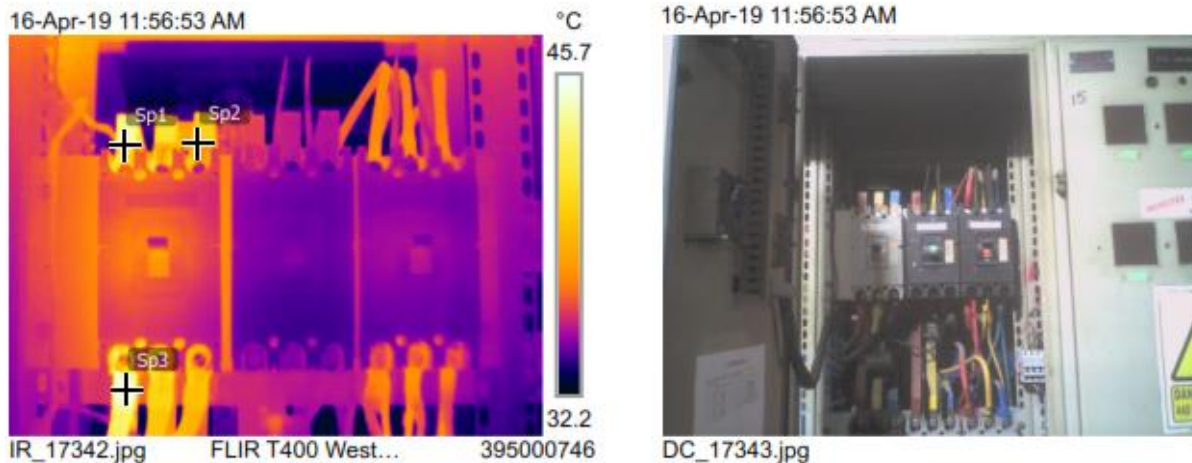
Measurement Point	Temperature °C	Remarks
Spot 1	36.0	Normal
Spot 2	35.1	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 14 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

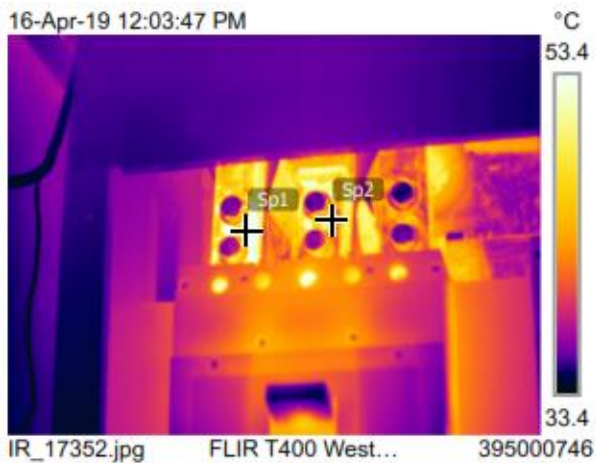
Measurement Point	Temperature °C	Remarks
Spot 1	40.2	Normal
Spot 2	38.0	Normal
Spot 3	44.7	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 17 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

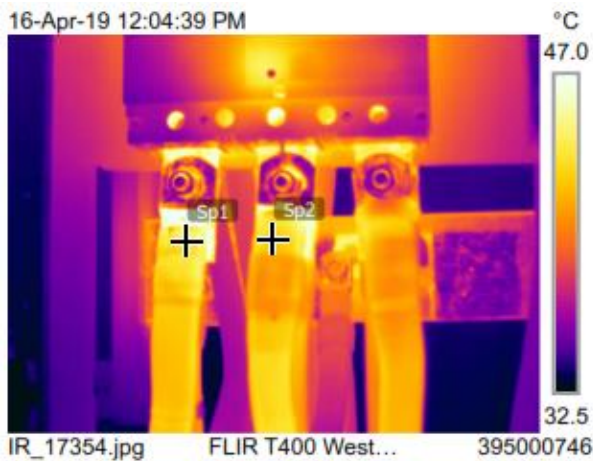
Measurement Point	Temperature °C	Remarks
Spot 1	54.3	Certain Deficiency
Spot 2	44.4	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 17 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

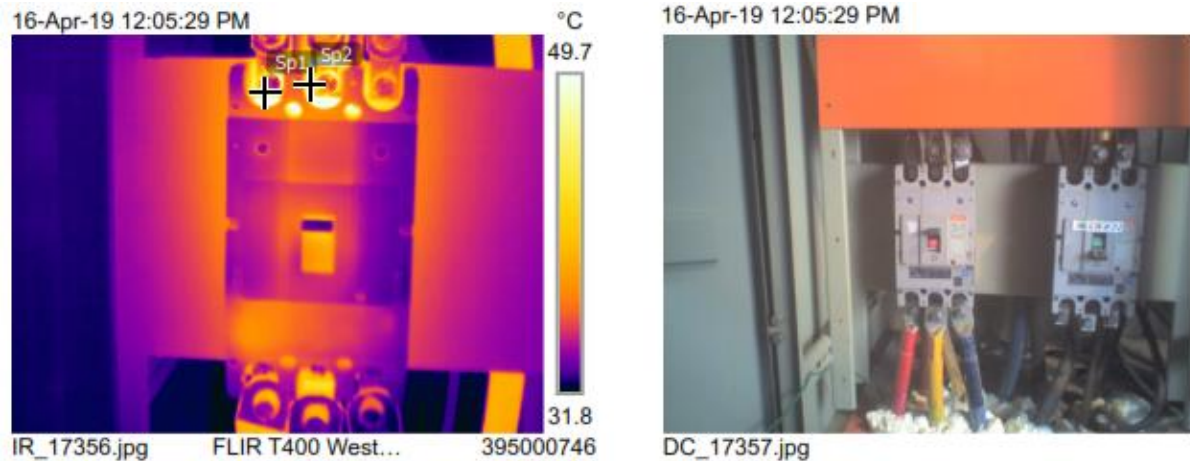
Measurement Point	Temperature °C	Remarks
Spot 1	43.7	Probable Deficiency
Spot 2	42.3	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 17 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

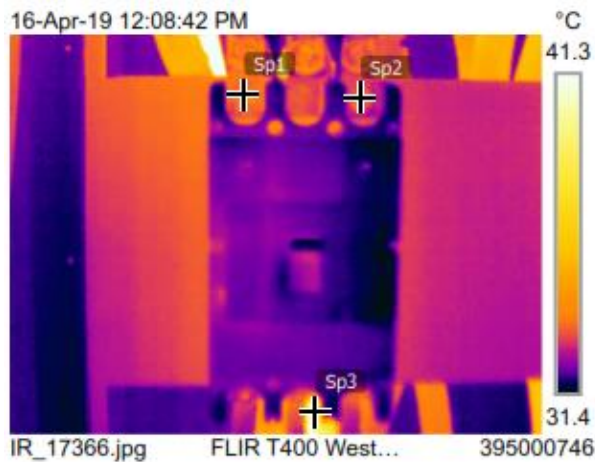
Measurement Point	Temperature °C	Remarks
Spot 1	41.9	Probable Deficiency
Spot 2	51.6	Certain Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 18 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

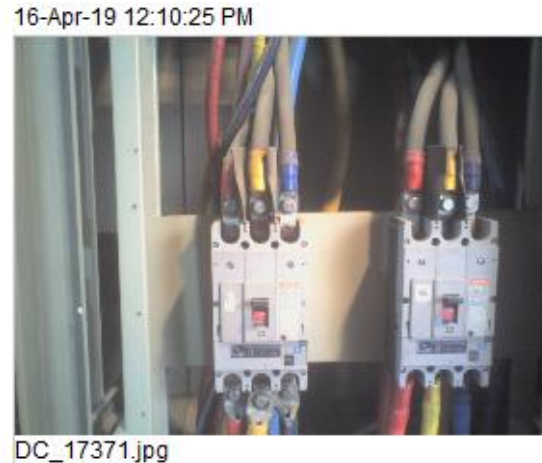
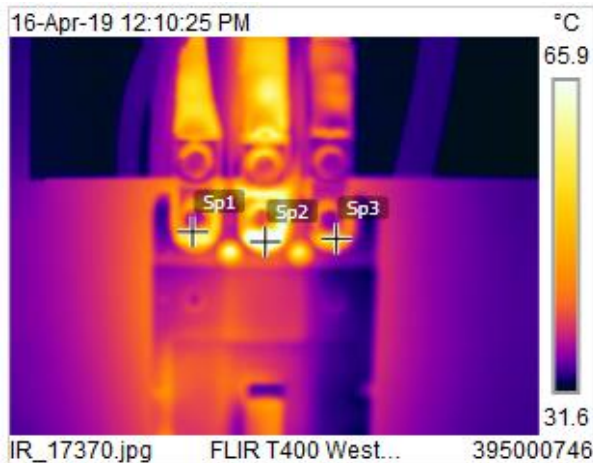
Measurement Point	Temperature °C	Remarks
Spot 1	33.5	Normal
Spot 2	33.2	Normal
Spot 3	39.5	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 18 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

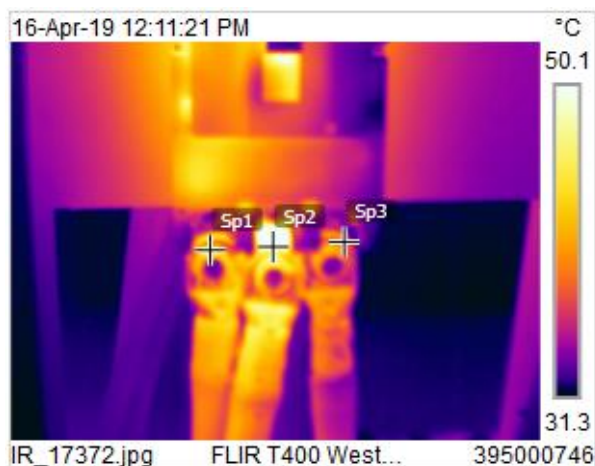
Measurement Point	Temperature °C	Remarks
Spot 1	48.8	Probable Deficiency
Spot 2	84.5	Critical Deficiency
Spot 3	51.7	Certain Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: LT Room – Electrical Panel # 18 (Outgoing)



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

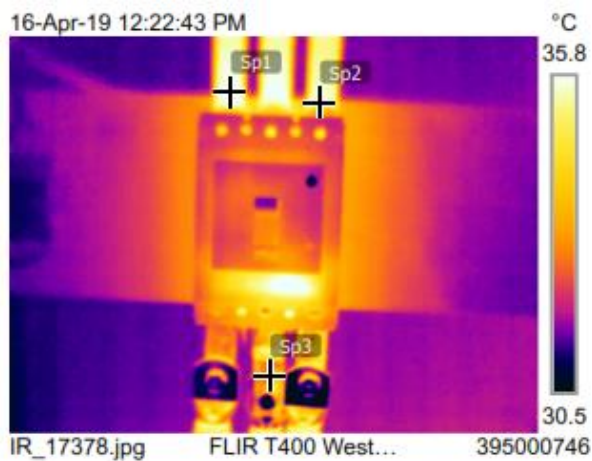
Measurement Point	Temperature °C	Remarks
Spot 1	44.7	Probable Deficiency
Spot 2	50.4	Certain Deficiency
Spot 3	38.5	Normal

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 35**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

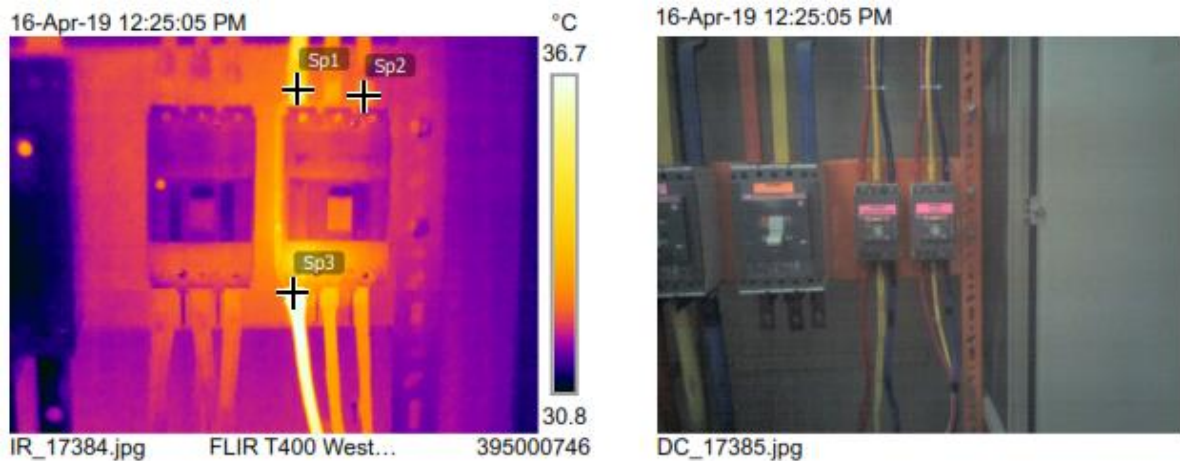
Measurement Point	Temperature °C	Remarks
Spot 1	35.8	Normal
Spot 2	35.0	Normal
Spot 3	32.8	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: Main Distribution Panel # 35



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

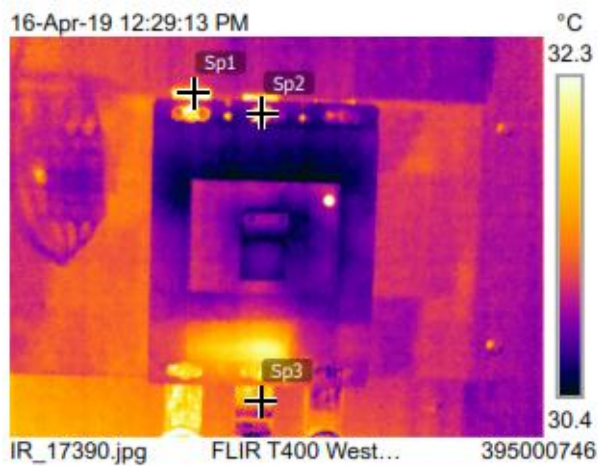
Measurement Point	Temperature °C	Remarks
Spot 1	35.5	Normal
Spot 2	32.8	Normal
Spot 3	37.4	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 36**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

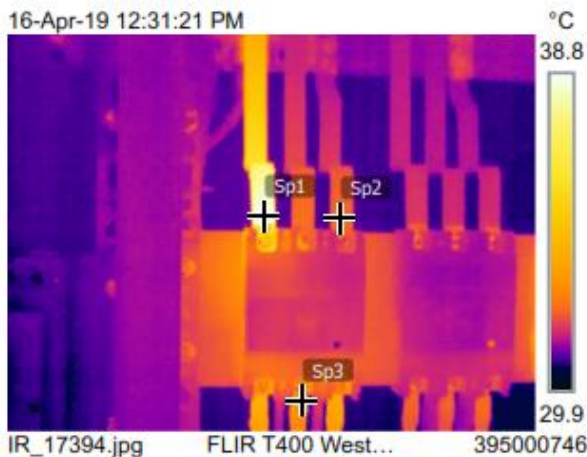
Measurement Point	Temperature °C	Remarks
Spot 1	32.3	Normal
Spot 2	32.4	Normal
Spot 3	31.6	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 36**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

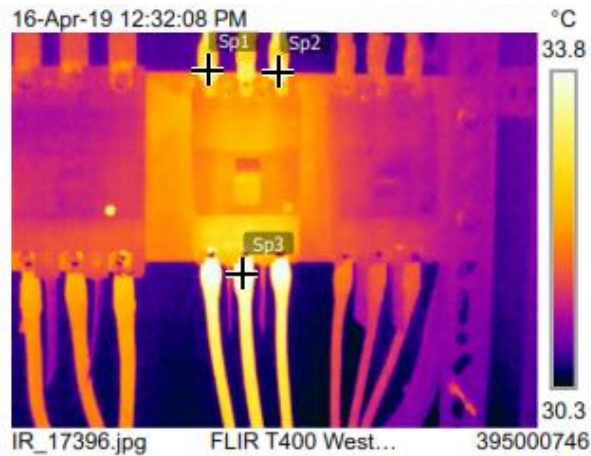
Measurement Point	Temperature °C	Remarks
Spot 1	38.9	Normal
Spot 2	32.2	Normal
Spot 3	33.0	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: Main Distribution Panel # 36



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

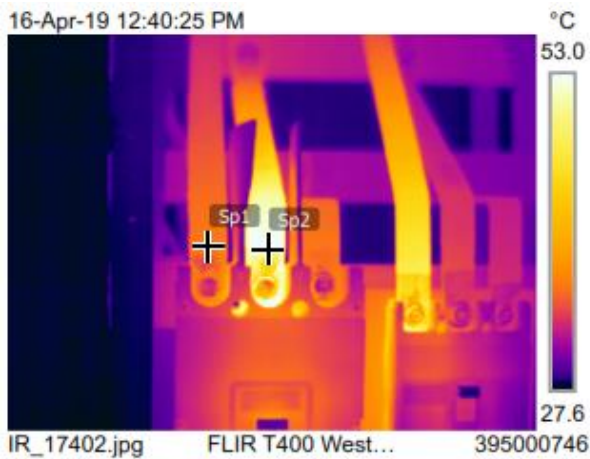
Measurement Point	Temperature °C	Remarks
Spot 1	33.1	Normal
Spot 2	33.2	Normal
Spot 3	33.8	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 52**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

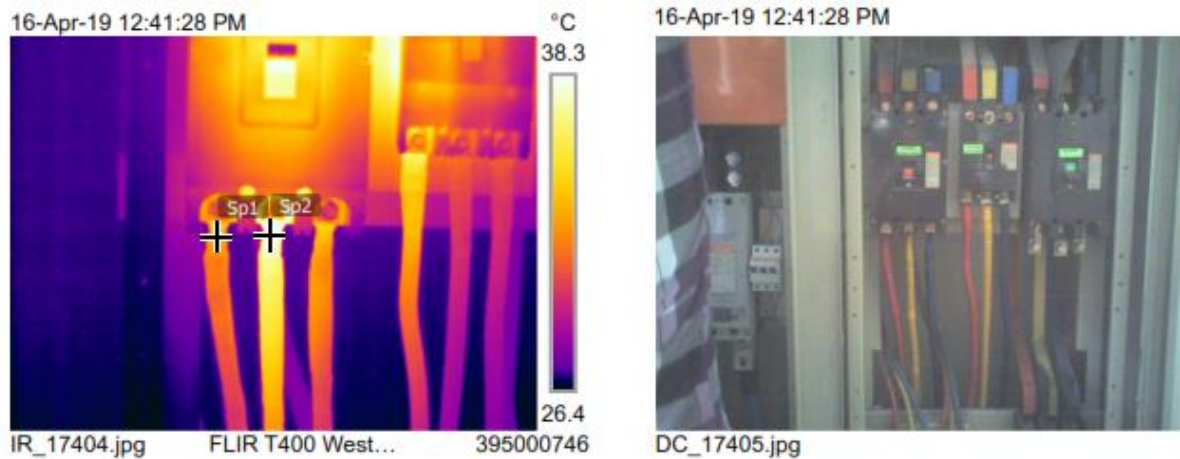
Measurement Point	Temperature °C	Remarks
Spot 1	36.2	Normal
Spot 2	49.9	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 52**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

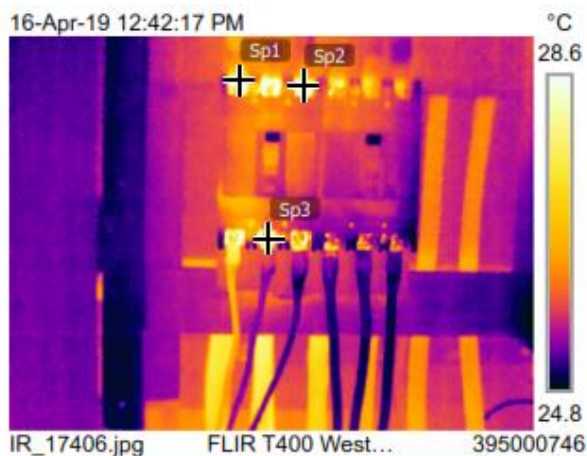
Measurement Point	Temperature °C	Remarks
Spot 1	33.1	Normal
Spot 2	38.3	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 52**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

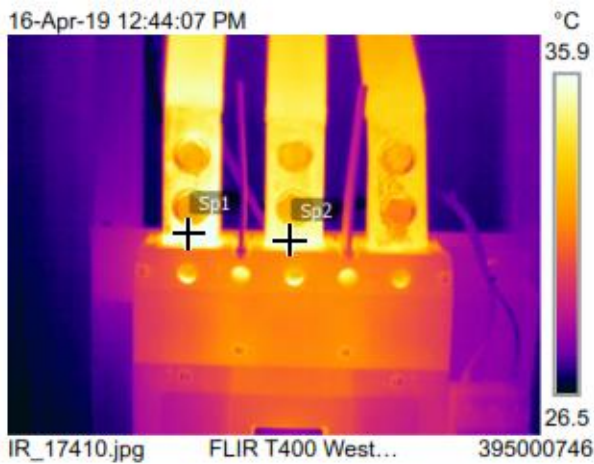
Measurement Point	Temperature °C	Remarks
Spot 1	28.4	Normal
Spot 2	27.7	Normal
Spot 3	26.3	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 52**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

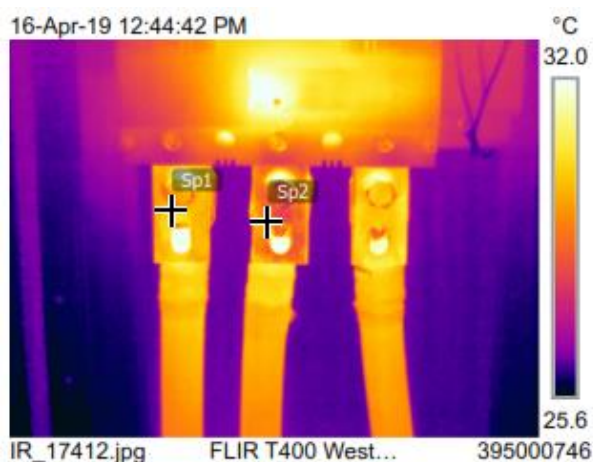
Measurement Point	Temperature °C	Remarks
Spot 1	35.9	Normal
Spot 2	35.3	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 52**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

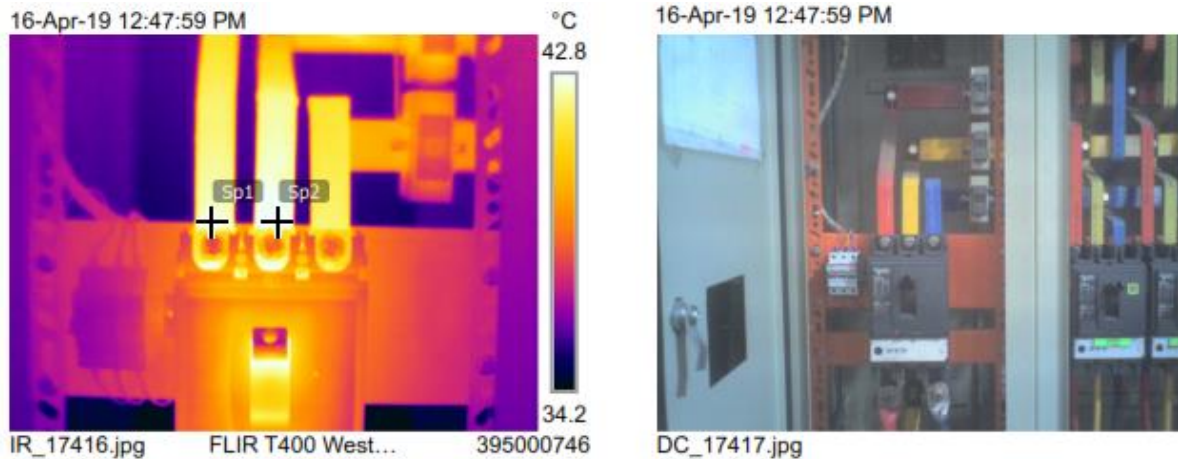
Measurement Point	Temperature °C	Remarks
Spot 1	30.1	Normal
Spot 2	29.1	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 53**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

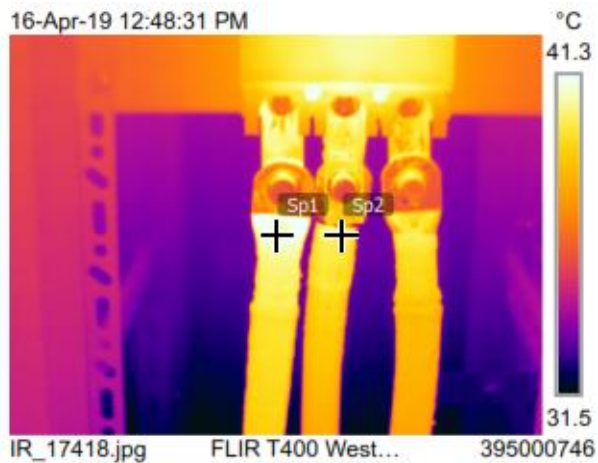
Measurement Point	Temperature °C	Remarks
Spot 1	42.5	Probable Deficiency
Spot 2	42.9	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 53**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

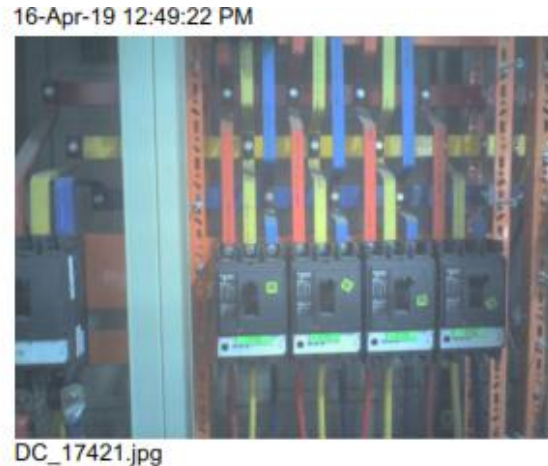
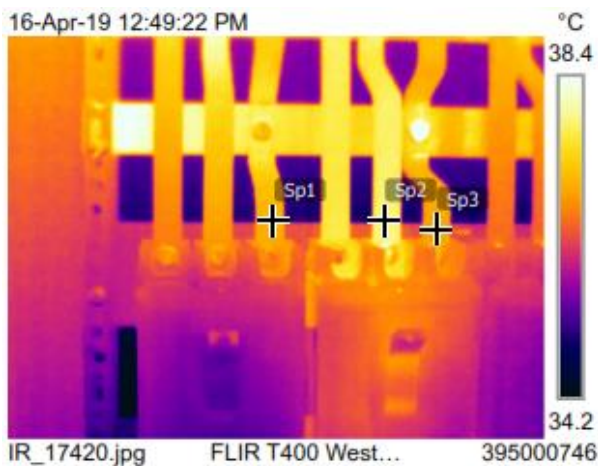
Measurement Point	Temperature °C	Remarks
Spot 1	40.9	Normal
Spot 2	40.3	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 53**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

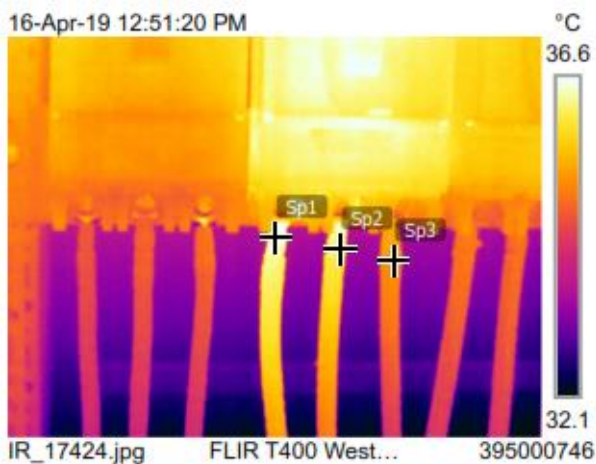
Measurement Point	Temperature °C	Remarks
Spot 1	37.0	Normal
Spot 2	37.9	Normal
Spot 3	37.0	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 53**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

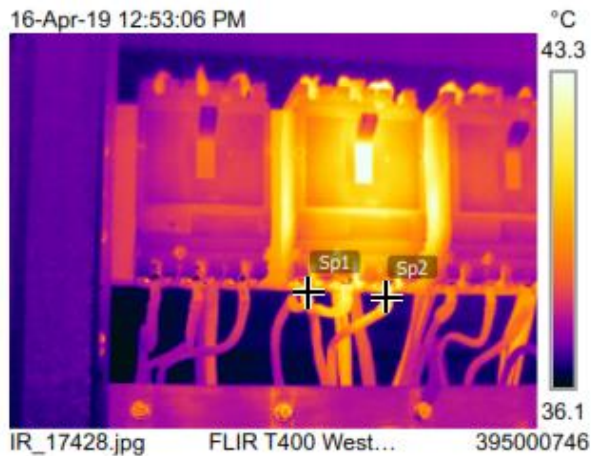
Measurement Point	Temperature °C	Remarks
Spot 1	36.5	Normal
Spot 2	36.1	Normal
Spot 3	35.3	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 53**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

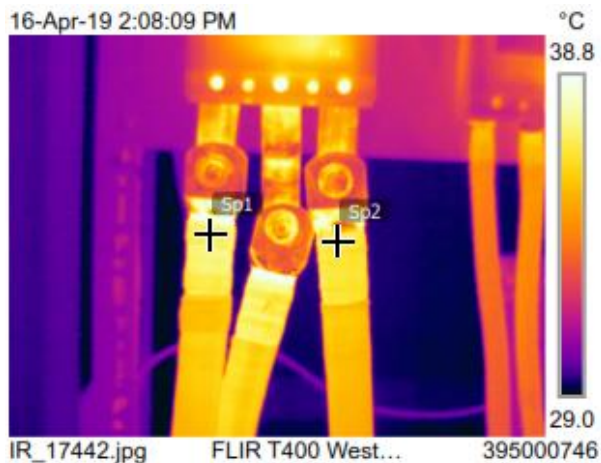
Measurement Point	Temperature °C	Remarks
Spot 1	41.2	Probable Deficiency
Spot 2	41.0	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

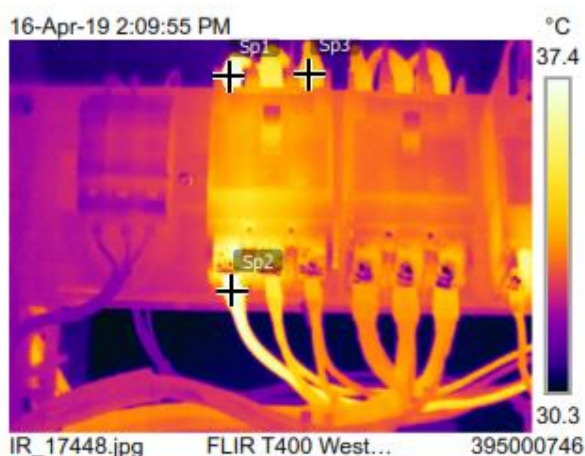
Measurement Point	Temperature °C	Remarks
Spot 1	37.0	Normal
Spot 2	36.8	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

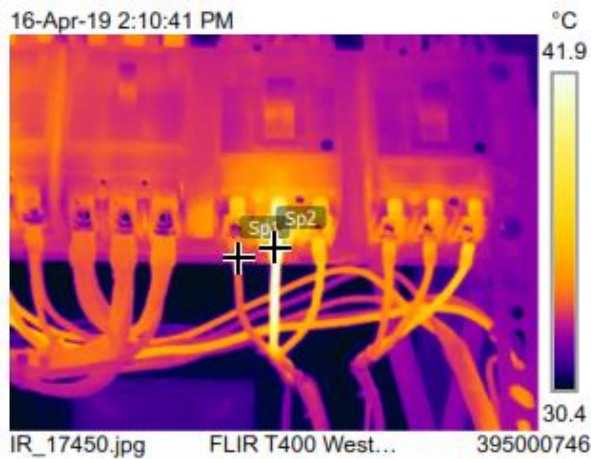
Measurement Point	Temperature °C	Remarks
Spot 1	37.9	Normal
Spot 2	37.7	Normal
Spot 3	34.5	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

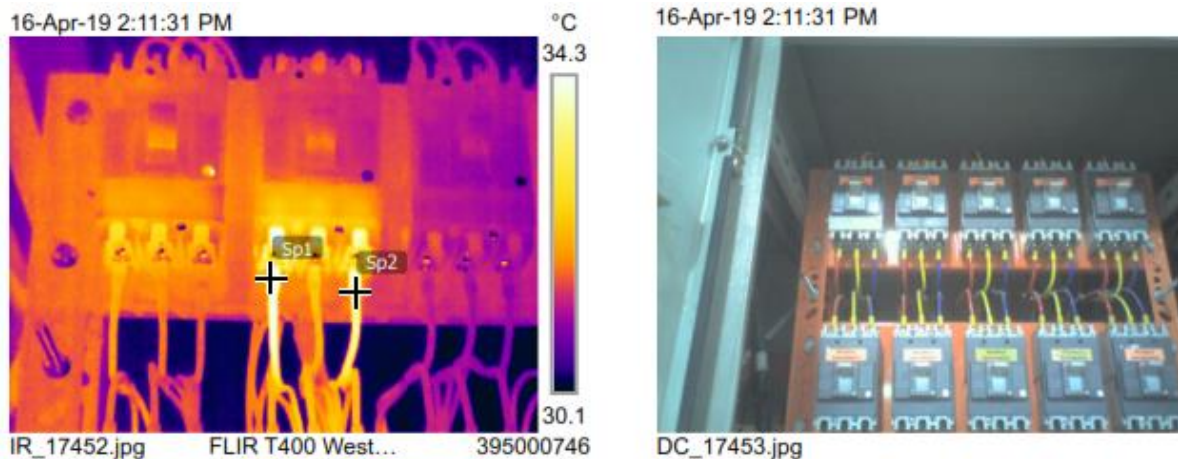
Measurement Point	Temperature °C	Remarks
Spot 1	33.9	Normal
Spot 2	43.3	Probable Deficiency

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

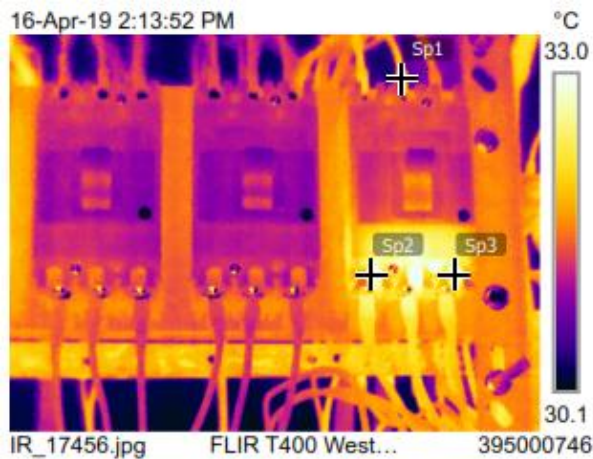
Measurement Point	Temperature °C	Remarks
Spot 1	34.8	Normal
Spot 2	34.1	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

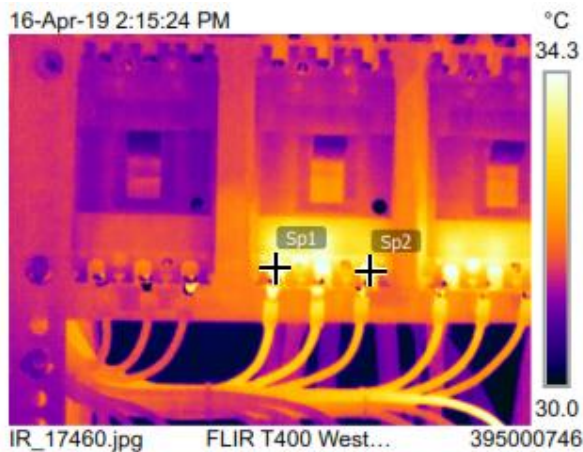
Measurement Point	Temperature °C	Remarks
Spot 1	32.0	Normal
Spot 2	33.3	Normal
Spot 3	32.8	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

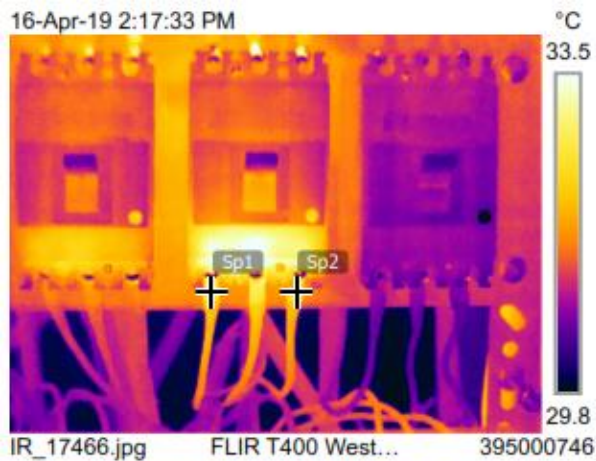
Measurement Point	Temperature °C	Remarks
Spot 1	35.5	Normal
Spot 2	33.6	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

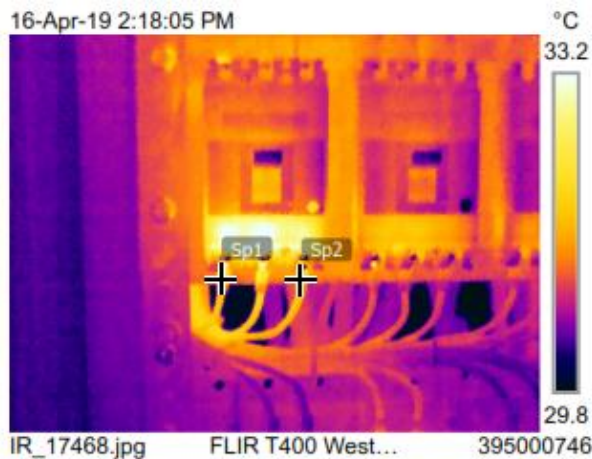
Measurement Point	Temperature °C	Remarks
Spot 1	32.7	Normal
Spot 2	32.5	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

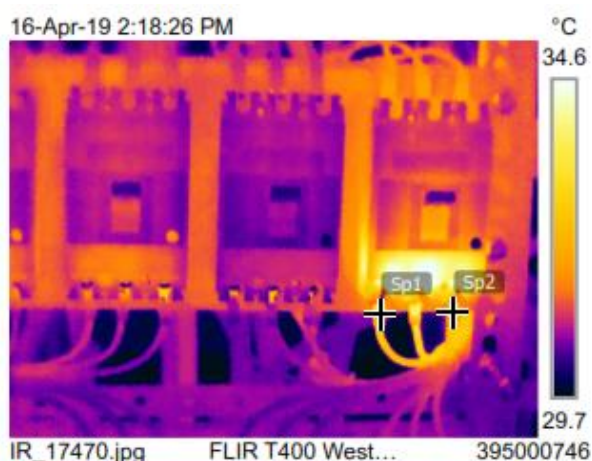
Measurement Point	Temperature °C	Remarks
Spot 1	32.1	Normal
Spot 2	31.8	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

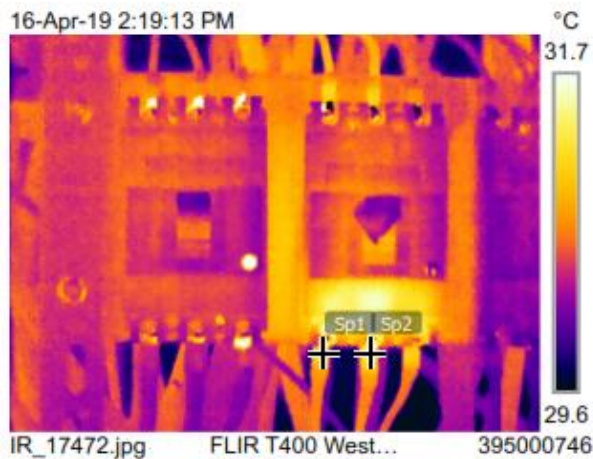
Measurement Point	Temperature °C	Remarks
Spot 1	32.9	Normal
Spot 2	33.1	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

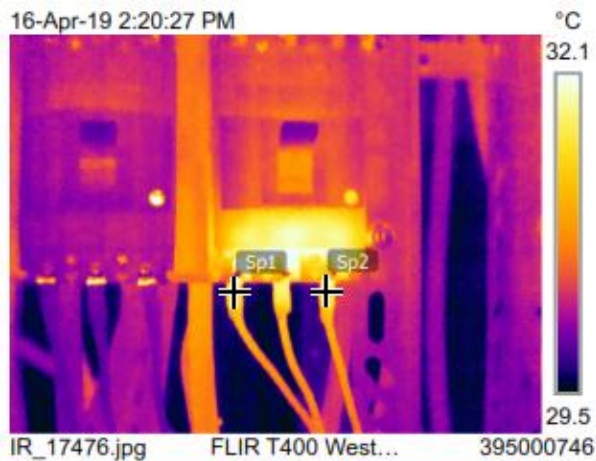
Measurement Point	Temperature °C	Remarks
Spot 1	31.1	Normal
Spot 2	31.3	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

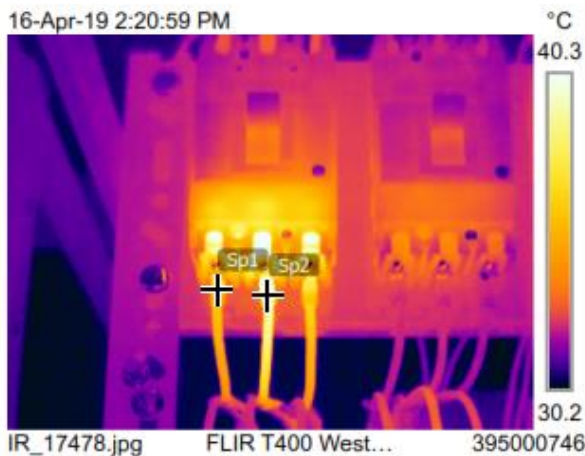
Measurement Point	Temperature °C	Remarks
Spot 1	31.6	Normal
Spot 2	31.6	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

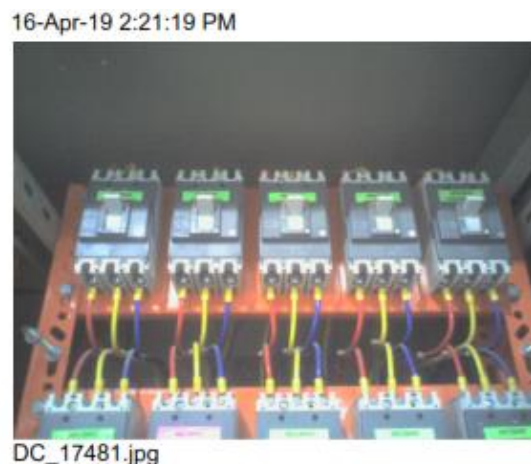
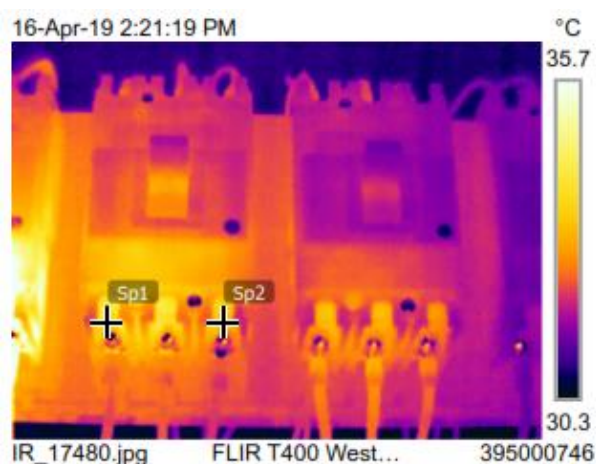
Measurement Point	Temperature °C	Remarks
Spot 1	35.9	Normal
Spot 2	39.2	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

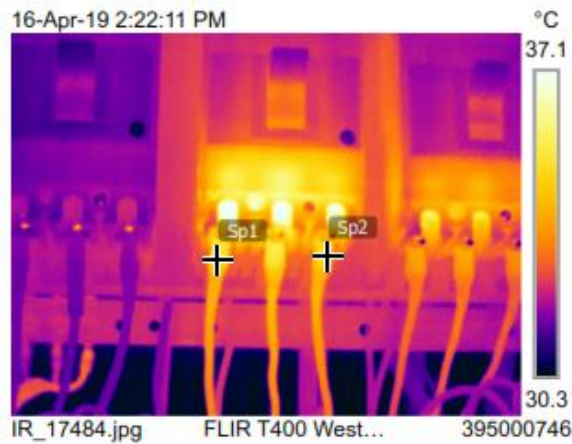
Measurement Point	Temperature °C	Remarks
Spot 1	33.7	Normal
Spot 2	33.3	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

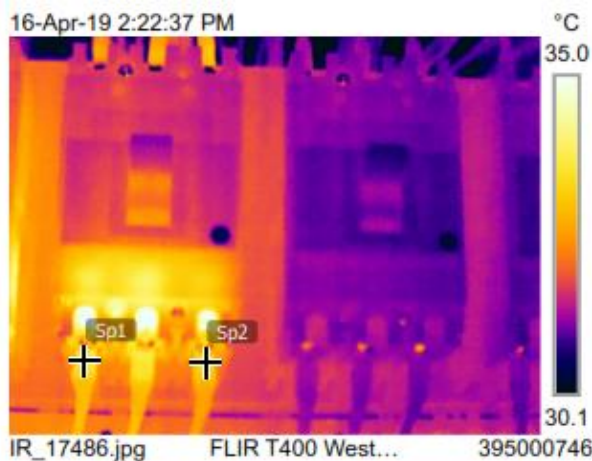
Measurement Point	Temperature °C	Remarks
Spot 1	34.9	Normal
Spot 2	34.8	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

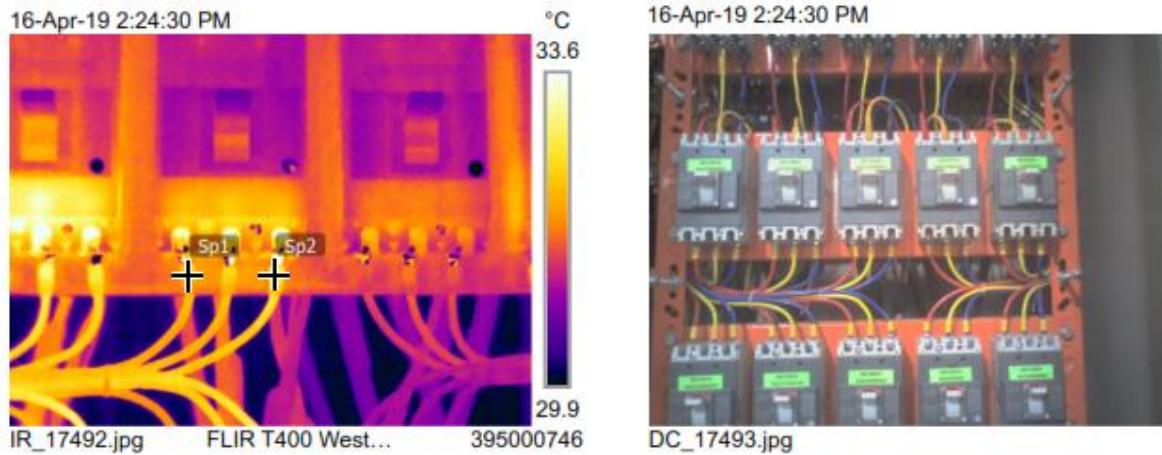
Measurement Point	Temperature °C	Remarks
Spot 1	33.5	Normal
Spot 2	33.3	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

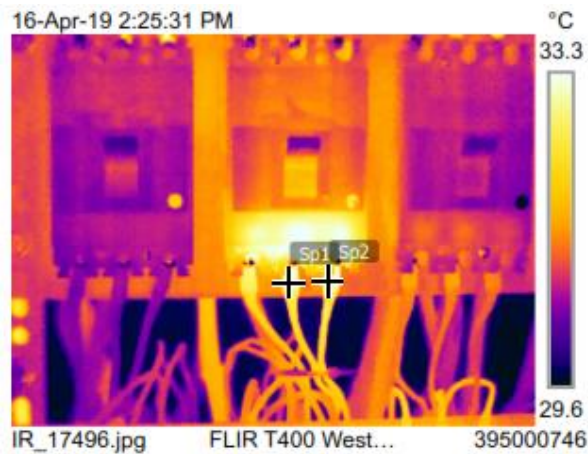
Measurement Point	Temperature °C	Remarks
Spot 1	32.3	Normal
Spot 2	32.8	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

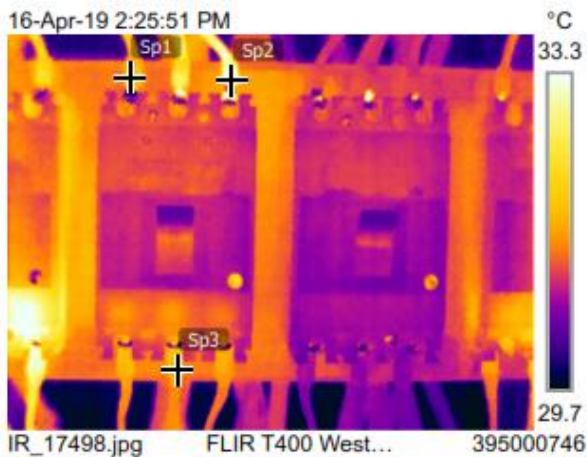
Measurement Point	Temperature °C	Remarks
Spot 1	33.1	Normal
Spot 2	33.1	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

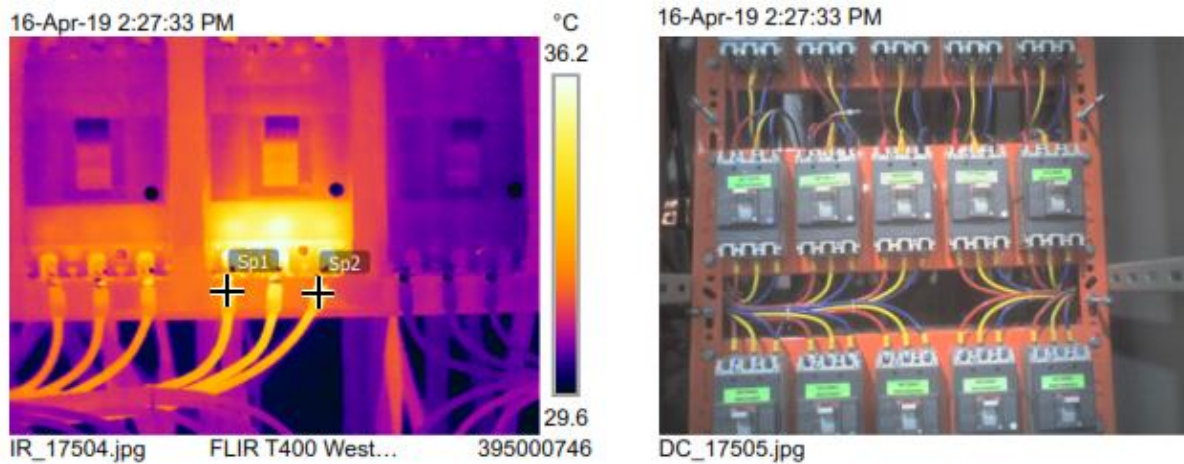
Measurement Point	Temperature °C	Remarks
Spot 1	32.0	Normal
Spot 2	33.5	Normal
Spot 3	31.6	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

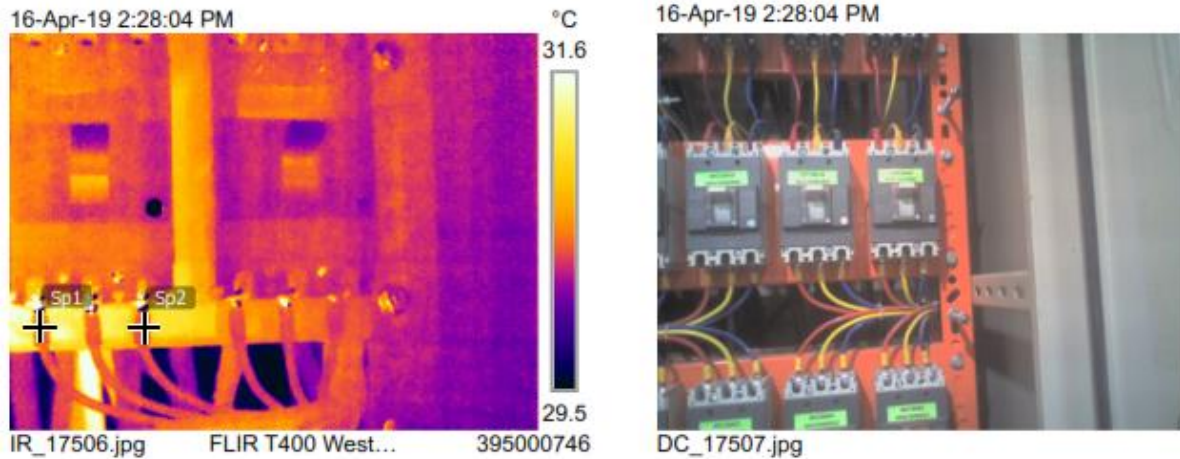
Measurement Point	Temperature °C	Remarks
Spot 1	34.4	Normal
Spot 2	34.5	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 16**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

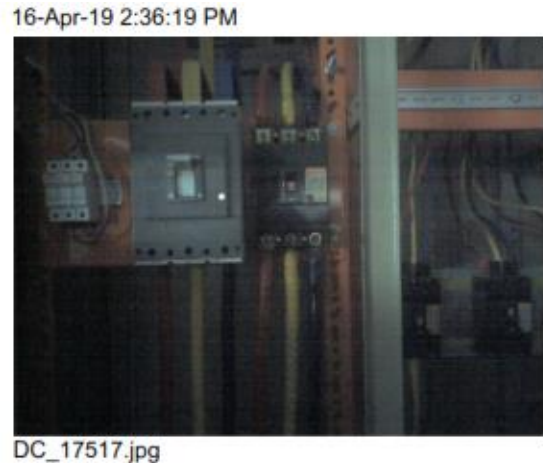
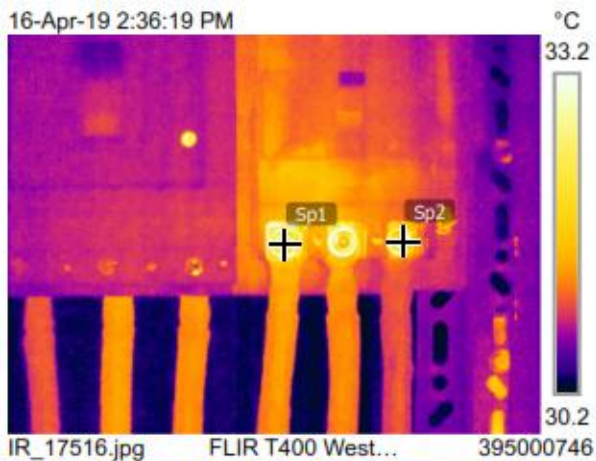
Measurement Point	Temperature °C	Remarks
Spot 1	30.6	Normal
Spot 2	30.4	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 56.02



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

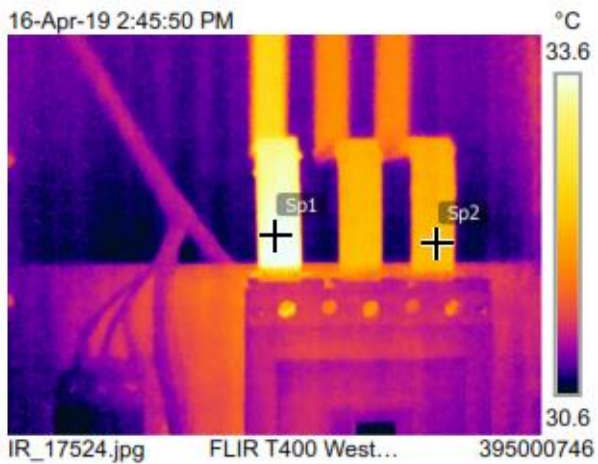
Measurement Point	Temperature °C	Remarks
Spot 1	31.4	Normal
Spot 2	31.6	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 56.07



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

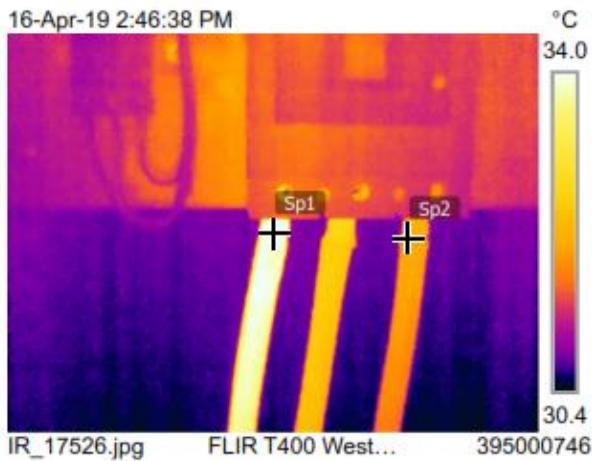
Measurement Point	Temperature °C	Remarks
Spot 1	33.6	Normal
Spot 2	32.2	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 56.07



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

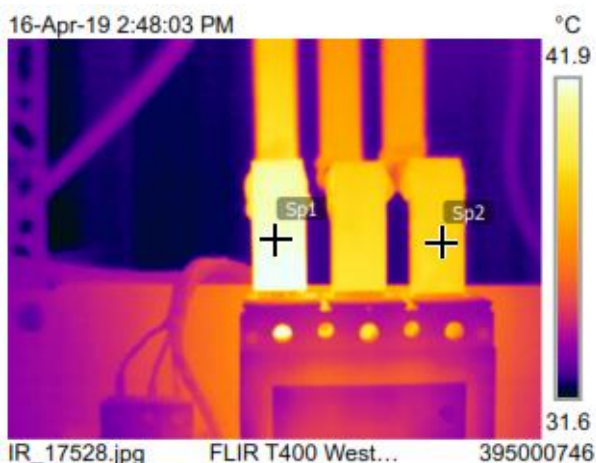
Measurement Point	Temperature °C	Remarks
Spot 1	34.1	Normal
Spot 2	32.1	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 56**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

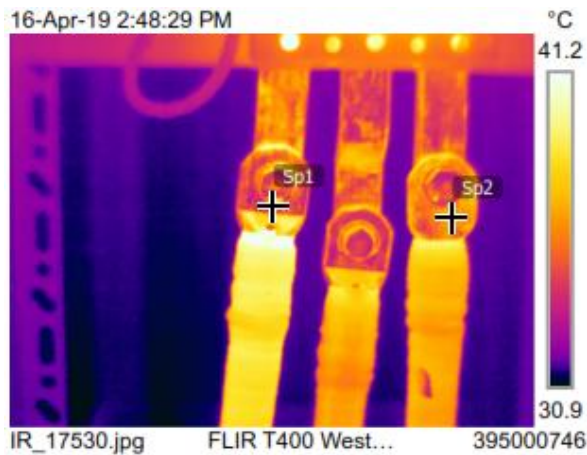
Measurement Point	Temperature °C	Remarks
Spot 1	41.5	Probable Deficiency
Spot 2	38.8	Normal

Remarks:

Thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 56**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

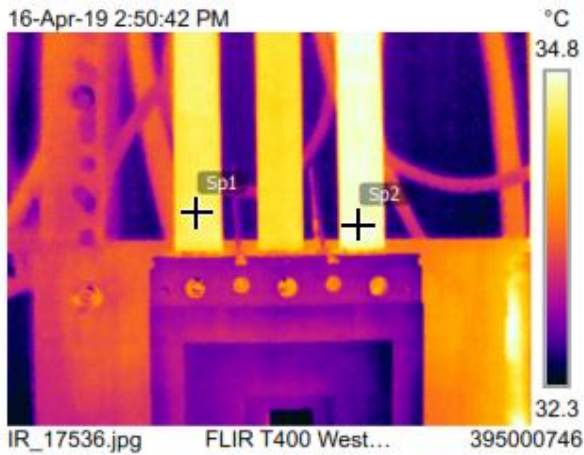
Measurement Point	Temperature °C	Remarks
Spot 1	34.0	Normal
Spot 2	36.3	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 56**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

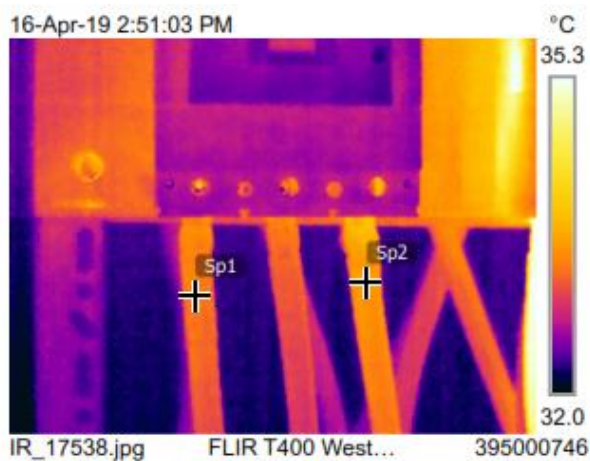
Measurement Point	Temperature °C	Remarks
Spot 1	34.5	Normal
Spot 2	34.8	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 56**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

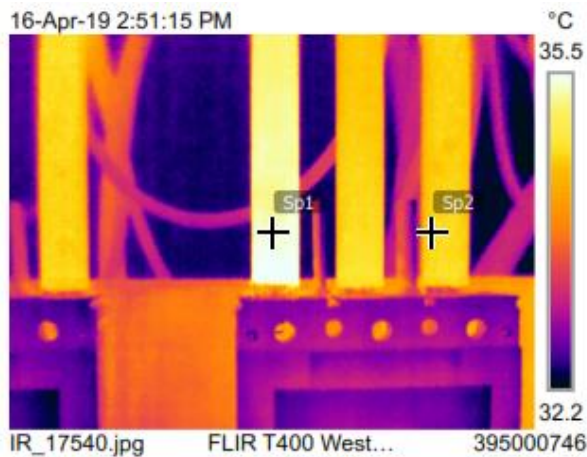
Measurement Point	Temperature °C	Remarks
Spot 1	33.3	Normal
Spot 2	33.6	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 56**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

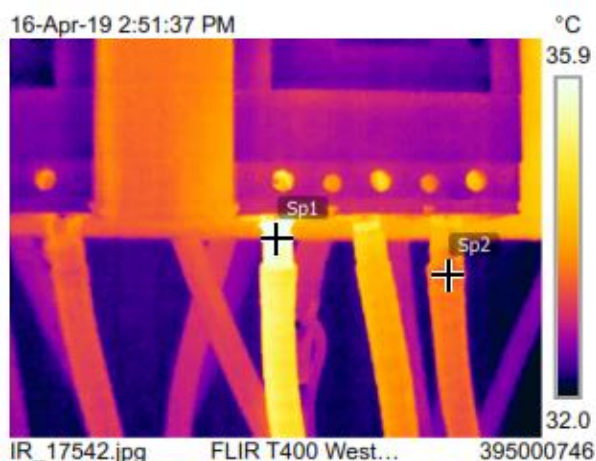
Measurement Point	Temperature °C	Remarks
Spot 1	35.4	Normal
Spot 2	34.7	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 56**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

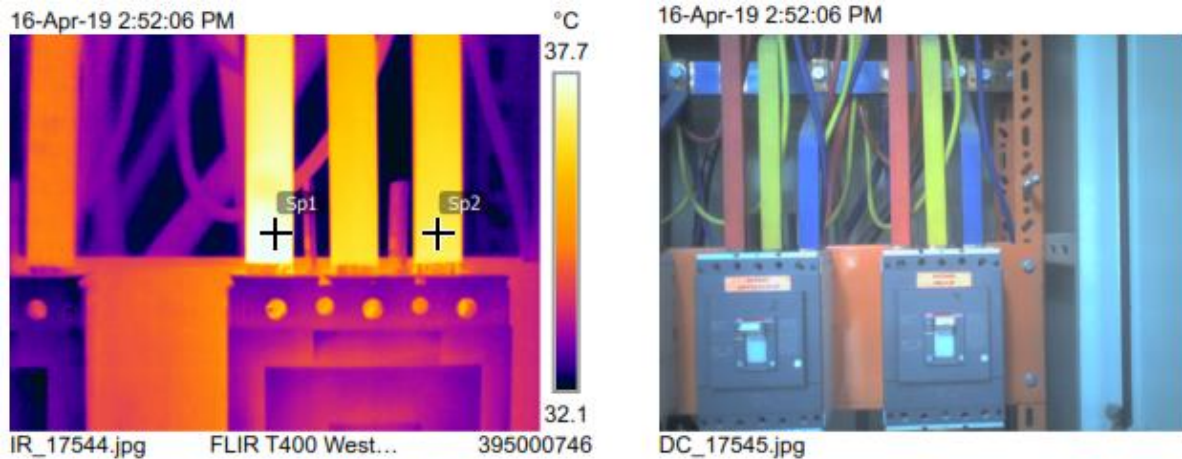
Measurement Point	Temperature °C	Remarks
Spot 1	35.9	Normal
Spot 2	33.4	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: **Main Distribution Panel # 56**



IR Image Parameters:

Emissivity: **0.90**

Reflected Temperature: **27.0°C**

IR Image Information:

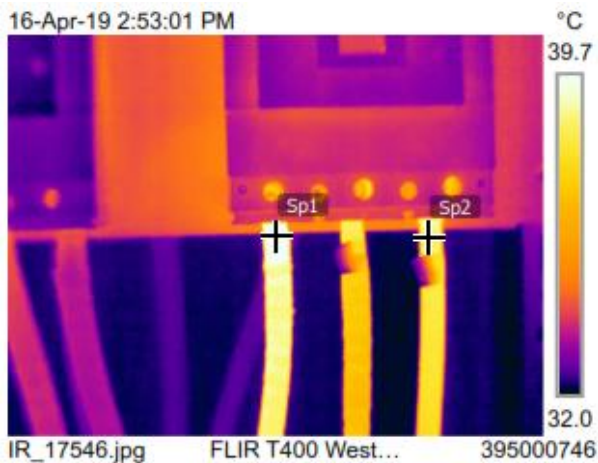
Measurement Point	Temperature °C	Remarks
Spot 1	37.7	Normal
Spot 2	36.9	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: Main Distribution Panel # 56



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

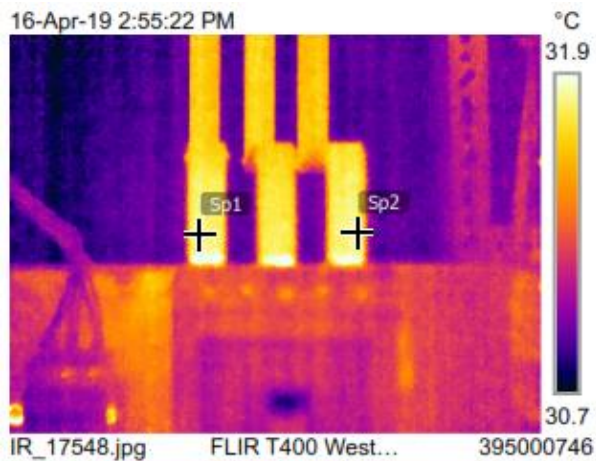
Measurement Point	Temperature °C	Remarks
Spot 1	40.1	Normal
Spot 2	38.5	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 56.06



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

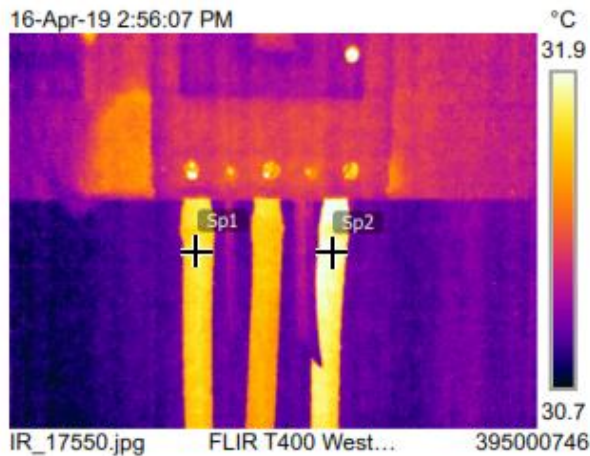
Measurement Point	Temperature °C	Remarks
Spot 1	31.8	Normal
Spot 2	31.8	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 56.06



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

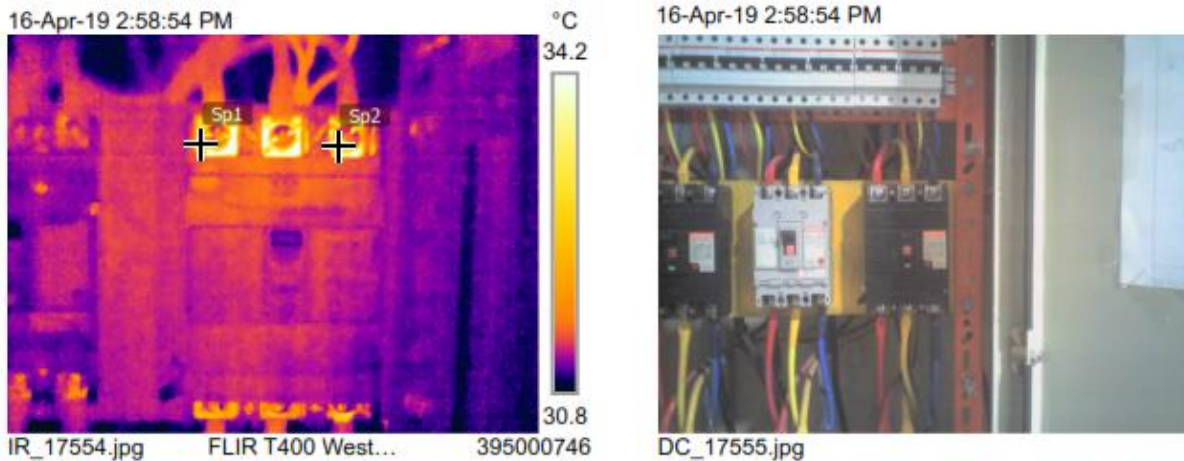
Measurement Point	Temperature °C	Remarks
Spot 1	31.7	Normal
Spot 2	31.9	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 56.06



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

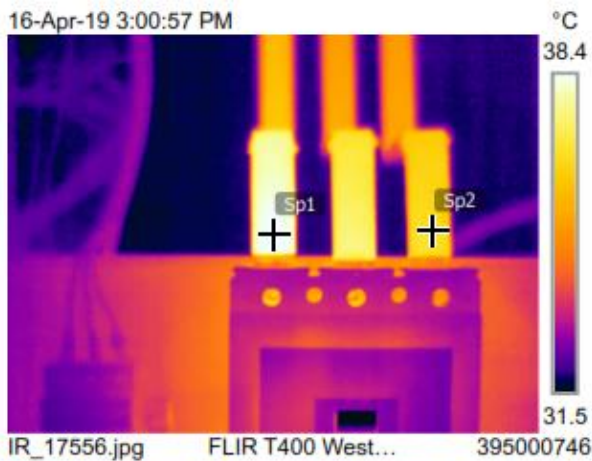
Measurement Point	Temperature °C	Remarks
Spot 1	33.9	Normal
Spot 2	32.3	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 56.08



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

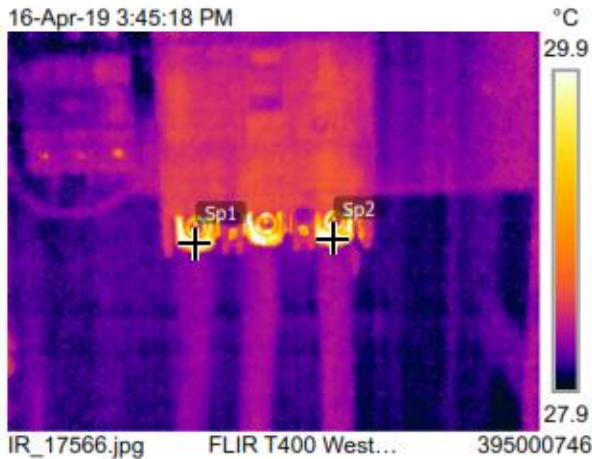
Measurement Point	Temperature °C	Remarks
Spot 1	38.5	Normal
Spot 2	36.6	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 56.05



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

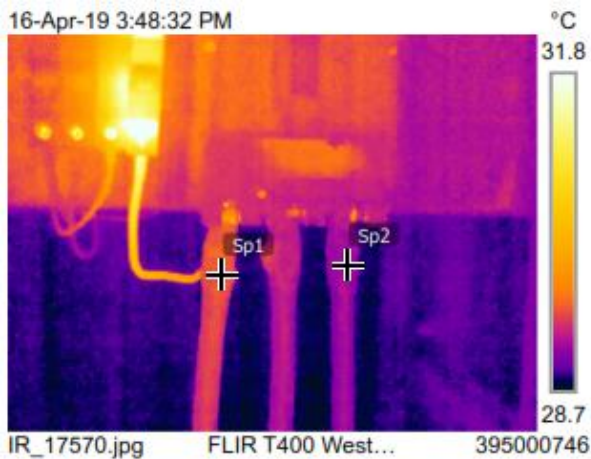
Measurement Point	Temperature °C	Remarks
Spot 1	29.5	Normal
Spot 2	29.8	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 53.04



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

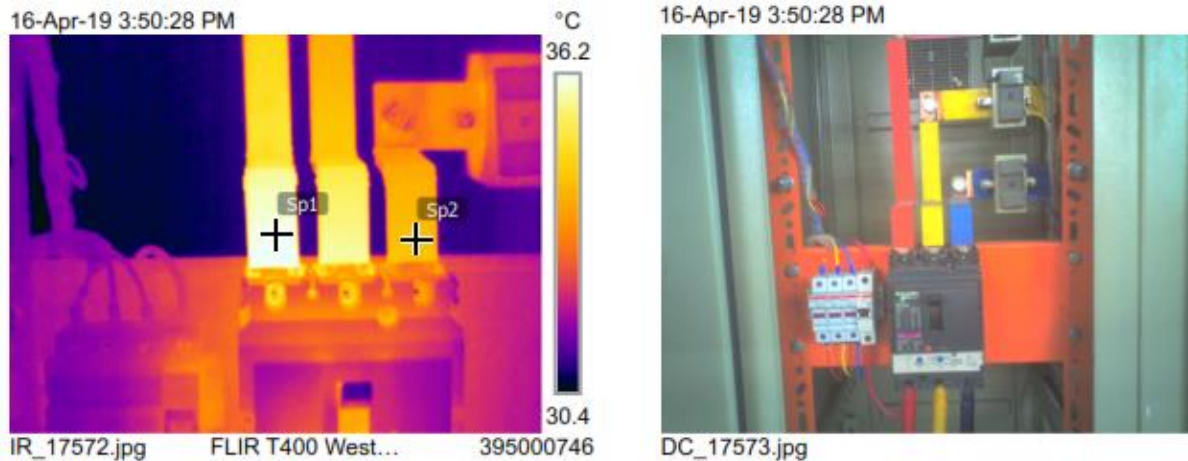
Measurement Point	Temperature °C	Remarks
Spot 1	29.4	Normal
Spot 2	29.1	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 53.05



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

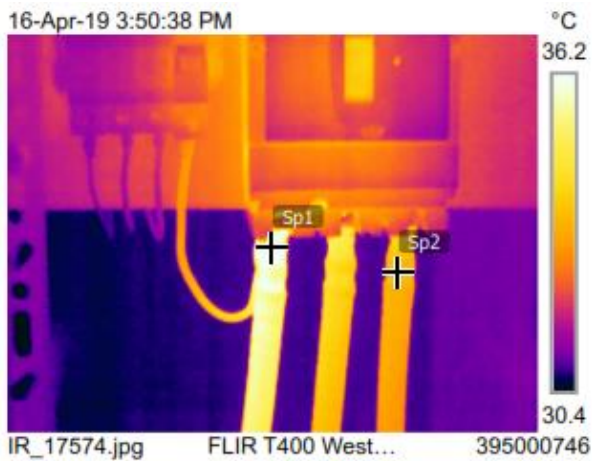
Measurement Point	Temperature °C	Remarks
Spot 1	36.1	Normal
Spot 2	34.2	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 53.05



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

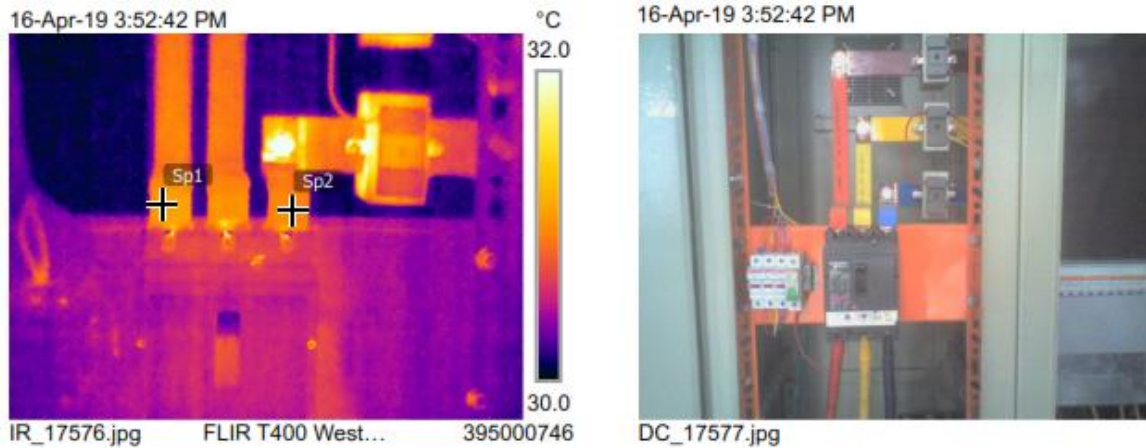
Measurement Point	Temperature °C	Remarks
Spot 1	36.8	Normal
Spot 2	33.5	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 53.06



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

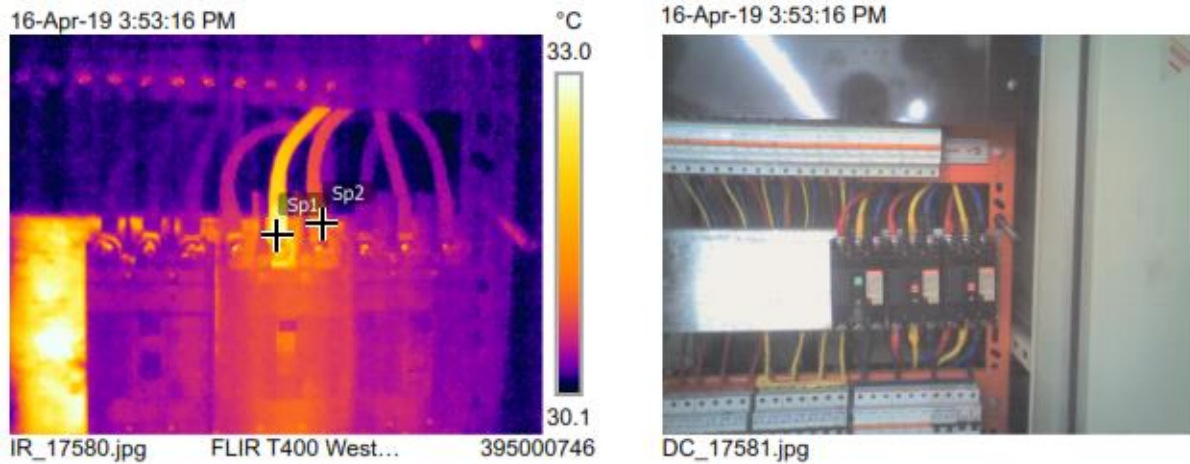
Measurement Point	Temperature °C	Remarks
Spot 1	31.1	Normal
Spot 2	30.9	Normal

Remarks:

No thermal abnormality found.

Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area), Lahore, Pakistan.**

Equipment ID or Name: DB – 53.06



IR Image Parameters:

Emissivity: 0.90

Reflected Temperature: 27.0°C

IR Image Information:

Measurement Point	Temperature °C	Remarks
Spot 1	31.8	Normal
Spot 2	31.1	Normal

Remarks:

No thermal abnormality found.



Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area),**
Lahore, Pakistan.

APPENDIX – A

Measurement of Earth Resistance

Sr #	Location	Measure Value (Ohm)	Remarks
1	Generator – Earth Pit # 1	0.06 Ω / 29mA	Satisfactory
2	Generator – Earth Pit # 2	0.06 Ω / 29.3mA	Satisfactory
3	Generator – Earth Pit # 3	0.06 Ω / 35.5mA	Satisfactory
4	LT – Earth Pit # 12	0.06 Ω / 28.5mA	Satisfactory
5	LT – Earth Pit # 13	0.06 Ω / 129mA	Satisfactory
6	Production Area – Earth Pit # 23	2.89 Ω / 246mA	Satisfactory
7	New Dying Hall – Earth Pit # 24	0.06 Ω / 2.0mA	Satisfactory
8	New Dying Hall – Earth Pit # 25	0.21 Ω / 22.7mA	Satisfactory
9	Lightning Arrestor – Earth Pit # 26	0.06 Ω / 4.8mA	Satisfactory
10	Boiler – Earth Pit # 27	0.06 Ω / 10.5mA	Satisfactory
11	New Washing – Earth Pit # 28	0.06 Ω / 9.0mA	Satisfactory
12	New Washing – Earth Pit # 29	0.67 Ω / 1.3mA	Satisfactory
13	Lightning Arrestor – Earth Pit # 30	0.69 Ω / 4.7mA	Satisfactory

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Email: mubashir.baig@pk.bureauveritas.com



Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area),**
Lahore, Pakistan.

Sr #	Location	Measure Value (Ohm)	Remarks
14	Knitting Hall – Earth Pit # 31	0.06 Ω / 0.9mA	Satisfactory
15	Knitting Hall – Earth Pit # 32	0.06 Ω / 0.4mA	Satisfactory
16	Knitting Hall – Earth Pit # 33	0.06 Ω / 1.3mA	Satisfactory
17	Knitting Hall – Earth Pit # 34	0.06 Ω / 3.1mA	Satisfactory
18	Circulation Plant – Earth Pit # 35	0.06 Ω / 1.2mA	Satisfactory

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Fax : +92 (21) 34392713

Email: mubashir.baig@pk.bureauveritas.com



Electrical Safety Assessment of **Combined Fabrics Limited, New Buildings (Extended Area),**
Lahore, Pakistan.

APPENDIX – B

Measurement of Insulation Resistance

Sr #	From	To	Outgoing Breaker	Insulation Resistance (Mega Ohms)						Remarks
				R-Y	Y-B	R-B	R-N	Y-N	B-N	
1	LT Room– Outgoing Panel	Masjid – 1 st Floor	200A TP MCCB	7GΩ	5GΩ	10GΩ	6GΩ	7GΩ	4GΩ	Satisfactory
2	LT Room– Outgoing Panel	New Washing Hall	800A TP MCCB	2.2GΩ	2.5GΩ	2.8GΩ	1200	1050	1400	Satisfactory
3	LT Room– Outgoing Panel	New Knitting Hall	600A TP MCCB	300	380	350	180	165	205	Satisfactory
4	LT Room– Outgoing Panel	Hangers Unit – 2 nd Floor	400A TP MCCB	860	850	950	420	375	400	Satisfactory

NOTE:

Enterprise recommended to maintain Periodical Insulation resistance test (IR test) records.

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