



PowerTech Energy Solutions
Conserve to Consume

ELECTRICAL SAFETY AUDIT FOR CO-OPERATIVE HOUSING SOCIETIES AND INDIVIDUAL RESIDENTIAL FLATS

**By
PowerTech Energy
Solutions**



WHAT IS ELECTRICAL SAFETY AUDIT

- It is physical inspection, testing of electrical installation to find out the risk of electrical and fire hazard





WHY ELECTRICAL SAFETY AUDIT ?

- **70 to 80% fires due to faulty electrics, says BMC**
(<https://indianexpress.com/article/cities/mumbai/mumbai-70-to-80-fires-due-to-faulty-electrics-says-bmc-5543949/>)
- **Short circuit has caused 80% of Mumbai fires over past three years, says fire brigade**
(<https://www.hindustantimes.com/mumbai-news/short-circuit-has-caused-80-of-mumbai-fires-over-past-three-years-says-fire-brigade/story-VKbm0h1xzYLytukoEvzwnM.html>)





TYPES OF ELECTRICAL SAFETY AUDIT

1. For Common Area
2. For Individual Residential Flats





AREAS COVERED

Common Area	Individual Flat
<ul style="list-style-type: none">• Meter rooms• Pump electrical panel• Lift electrical panel• Club house electrical panel• STP/WTP/ Swimming pool electrical panel• Earthing system• Lightening Arrestor Protection System	<ul style="list-style-type: none">• Main distribution board• Earthing system• Home appliances electrical sockets



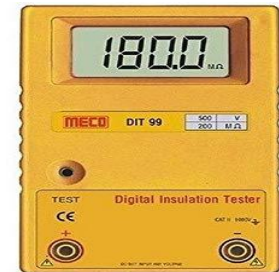
SCOPE – COMMON AREA ELECTRICAL SAFETY AUDIT

Sr.No	Work Description	Significance	Methodology	Instrument Used
1	Physical inspection of electrical meters, MCBs, cables, etc. placed in meter room as per IE Rules, National Electrical Code & National Building Code	<ul style="list-style-type: none"> To know the existing health condition of panel such as cable dressing, dust accumulation, earthing connection, etc. 	By visual inspection	<ul style="list-style-type: none"> NIL
2	Actual load (current) measurement of common area utilities such as pump panel, lift panels, lighting panels, etc	<ul style="list-style-type: none"> To know whether existing cables and switchgears are capable to withstand with present connected load To identify the load unbalancing if any 	By use of power analyser, collection of cable sizing and switchgear ratings	<ul style="list-style-type: none"> 1-phase / 3 phase power analyser (Make – Krykard, Model – ALM-10/ALM-36) Clamp meter (Make – Meco, Model -3510 PWH)
3	Thermography of each flat meter located in meter room and all common area electrical panels	<ul style="list-style-type: none"> To know the hot spot in the electrical panels due to loose connections, unbalancing of load, etc. 	By use of thermal imaging camera	<ul style="list-style-type: none"> Thermal imaging camera (Make- Flir, Model-E 6)
4	Insulation resistance testing of cables for each flat (for cables from meter room to flats)	<ul style="list-style-type: none"> To know whether cable insulation is in good condition or not To know life of cable 	By use of digital insulation resistance tester	<ul style="list-style-type: none"> Digital insulation resistance tester (Make- Meco, Model-DIT 99)
5	Earth pit resistance testing	<ul style="list-style-type: none"> To know the earth pit resistance and hence earhting system condition 	By use of Earth pit tester	<ul style="list-style-type: none"> Earth pit tester (Make – Meco, DET 1601))
6	Study of lightening arrestor	<ul style="list-style-type: none"> To know whether existing location and no. of lighting arrestor is sufficient to cover the society area, properly earthed or not , etc 	By visual inspection and use of distance gun	<ul style="list-style-type: none"> Distance Gun (Make – Bosch)

SCOPE – INDIVIDUAL RESIDENTIAL FLATS

Sr. No	Work Description	Significance	Methodology	Instrument Used
1	Physical inspection of main electrical distribution board where main supply comes from meter room as per IE Rules, National Building Codes, etc	<ul style="list-style-type: none"> To know the existing health condition of panel such as cable dressing, dust accumulation, earthing connection, etc. 	By visual inspection	<ul style="list-style-type: none"> NIL
2	Actual load (current) measurement of main incomer and home appliances circuit such as AC's, Geyser, Microoven, Refrigerator, etc.	<ul style="list-style-type: none"> To know whether existing cables and switchgears are capable to withstand with present connected load To identify the load unbalancing if any 	By use of meters, collection of cable sizing and switchgear ratings	<ul style="list-style-type: none"> 1-phase / 3 phase power analyser (Make –Krykard, Model – ALM-10/ALM-36) Clamp meter (Make – Meco, Model -3510 PWH)
3	Thermography of main electrical distribution board	<ul style="list-style-type: none"> To know the hot spot in the electrical board due to loose connections, unbalancing of load, etc. 	By use of thermal imaging camera	<ul style="list-style-type: none"> Thermal imaging camera (Make- Flir, Model-E 6)
4	Insulation resistance testing of wires (for wires which are used for home appliances)	<ul style="list-style-type: none"> To know whether cable insulation is in good condition or not To know life of cable 	By use of digital insulation resistance tester	<ul style="list-style-type: none"> Digital insulation resistance tester (Make- Meco, Model-DIT 99)
5	Checking of earthing system	<ul style="list-style-type: none"> To know whether proper earthing is provided in flat or not? 	By use of Multimeter	<ul style="list-style-type: none"> Multimeter (Make – Meco, Model - 3510 PWH)

INSTRUMENTS



Sr.No.	Instrument name	Make & Model
1	3 Phase Power Quality Analyzer/Load Manager	Krykard ALM-36
2	1 Phase Power Analyzer/Load Manager	Krykard ALM-10
3	Thermal Imager	Flir E-6
4	Insulation Resistance Tester	Meco, DIT 99
5	Earth Pit Tester	Nippen, DET 1601
6	Distance Meter	Bosch



SOME MAJOR CLIENTS

Sr.No	Society Name	Location
1	Ajmera Pristine CHSL	Borivali (W) Mumbai
2	Dheeraj Hill View Towers CHSL	Kandivli (E) Mumbai
3	Eden Garden CHSL	Pune
4	Fiesta CHSL	Mulund, Mumbai
5	GK Galaxy CHSL	Navi Mumbai
6	Jeevan Jyot CHSL	Mumbai
7	Kasturi Viyog CHSL	Moshi, Pune
8	Kritika Towers CHSL	Mumbai
9	Lillium Lantana CHSL	Mumbai
10	Mahavir Darpan CHSL	Nerul, Navi Mumbai
11	Saarthi Souvenir CHSL	Baner, Pune
12	Sai Sthaan CHSL	Nerul, Navi Mumbai
13	Sarita Vihar CHSL	Pune
14	Shivshakti CHSL	Mumbai
15	Spring Leaf CHSL	Kandivli (E) Mumbai



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