



SAVIC COMPANY LIMITED



ENGINEERS AND PROJECT MANAGERS

15, BIADUO STREET OFF KEFFI STREET, SOUTH WEST IKOYI, LAGOS

IOC & OTHER REGISTRATIONS:

TOTAL E&P VENDOR NUMBER: 74514

NAOC VENDOR NUMBER : 164058

D&B D-U-N-S NUMBER: 85-054-3095

EXXONMOBIL - MPN

ADDAX

NLNG

NNPC

SEPLAT

corporate
profile

PRESENTATION ON ELECTRICAL INTEGRITY EVALUATION OF BUILDINGS & FACILITIES



INTEGRITY CHECKS OF ELECTRICAL INSTALLATIONS IN PRIVATE & COMMERCIAL BUILDINGS.

Preamble

In Lekki which extend to other parts of Lagos and the country, we have had recent incidence of fire outbreak in homes that mostly emerged from electrical sources. Properties costing billions of Naira have been destroyed and in some cases lives which cost cannot be quantified.

A forum of residents in Lekki requested the management of SAVIC COMPANY LIMITED, to generate a guideline for potential clients to use in determining the integrity of the electrical installation in their homes and offices. SAVIC COMPANY LIMITED has developed the template for electrical integrity evaluation as one of their technical products

Situational Review

Many fires in Nigeria were triggered by surges from the public power source, but cursory investigations also show that most may have been caused by electrical faults arising from deteriorated materials through years of use, counterfeit connection accessories, wrong connections or phase imbalance.

INTEGRITY CHECKS OF ELECTRICAL INSTALLATION IN PRIVATE & COMMERCIAL BUILDINGS

It is important to note that wiring of electrical systems and the accessories for connection suffer integrity loss through years of use mainly due to oxidation process which gradually corrode the materials, and eventually reduce the capacity to withstand the designed current flow.

Such situation result in the cables burning or sometimes connector blow-out, and flames emerging from these situations can ignite any inflammable material that ultimately set fire on the building.

Most people in our society don't think about electrical safety inspections for their homes. However, it is a good idea to have your home inspected thoroughly once and periodically every 5 years to make sure that all electrical components are properly grounded, bonded and wired to meet local building codes.

Periodic evaluation of the integrity of your homes, offices, industries and allied infrastructure should be encoded as a policy that mandates all property owners to use qualified experts to conduct scheduled electrical system integrity evaluation. This is where SAVIC can be of support because the company has very professional and experienced Engineers that have operated in many iconic buildings in Lagos particularly and other parts of the country.

INTEGRITY CHECKS OF ELECTRICAL INSTALLATION IN PRIVATE & COMMERCIAL BUILDINGS

Residents, residential & office/commercial building owners are advised to arrange periodic electrical integrity check every five years and load balance of electrical system in their homes using the services of competent experts that are licensed to conduct such evaluation.

The only way to ensure that your home is safe with up-to-date electrical wiring is with a full electrical system evaluation called ELECTRICAL SYSTEM INTEGRITY CHECK. Modern technology and updated appliances make contemporary wiring requirements crucial. Even if your homes electricity is acting fine at the moment, it may only be a matter of time before the outdated wires become overworked and begin to break down, posing a threat to your entire family and household.

Electrical System Integrity Check:

Refers to the periodic evaluation of the operability of electrical circuits in a building which have been installed for five years and above.

Warning Signs When You are in Danger

- Lights dim or flicker
- Wall outlets are warm or are discolored or spark when used
- You notice a tingling feeling when touching an electrical appliance or metal enclosed device
- Repeated tripping of circuit breakers or blown fuses
- Continual burning odor coming from an area of the house, a room or an appliance or connecting cables etc.

Inspection Process

When performing an electrical safety inspection, we will inspect and test the following:

- Control Panel
- Cabling
- Switches & Terminals
- MCBs etc.

This assessment is conducted only by a qualified engineers & technicians with relevant experience electrical integrity evaluation process.

- We also evaluate the capacity of the service entry conductor and all sub-circuit conductors using ohmmeter.

RESISTANCE OF COPPER CABLE

Conductor nominal cross-sectional area(mm ²)	Maximum resistance of copper conductor(Ω /km
1	18.1
1.5	12.1
2.5	7.41
4	4.61
6	3.08
10	1.83
16	1.15
25	0.727
35	0.524
50	0.268

- ❖ The current (Ampere) rating on the panel board or service disconnect switch.
- ❖ The current (Ampere) rating marked on the main circuit breaker or main building fuse(s). This rating should never be higher than the panel board ratings; if it is, the system should not be used until it is evaluated by a qualified engineer or technician.
- ❖ Remove and test the outlets and switches for correct wiring and evaluation of the condition of the wires. If faults are detected, check the remaining receptacles and repair the problems.
- ❖ Wiring will be checked for integrity of cables and ensure proper method of installation.
- ❖ Proper grounding will be inspected to ascertain perfect earth system with resistance range form 0- 5 ohm.
- ❖ Inspect and test cable and telephone connections.
- ❖ Inspect and test driven ground rod installation and connection.

Inspection of main and sub panels

- Check for open grounds and proper polarity
- Corrosion of any grounds, bonding and cables will be inspected
- Check overloading of outlets
- Operational testing of carbon monoxide and smoke detectors will be checked and batteries replaced

LAOD BALANCING OF ELECTRICAL SYSTEM

It is evenly distribution of load in the building across the three phase of electrical system.

A balanced load in an electrical panel means that the current flowing through one leg is equal to the amount of current flowing through the other "hot" leg. The closer these numbers are, the more balanced the load. When the amperage is split up equally, the neutral current is canceled out. But when the current is placed all on one leg, the neutral must carry the entire load.

Benefit of load balancing

- Mitigate the incessant burning of electrical accessories.
- Gives room to know the size of equipment to install in each of the phase.
- It saves energy consuming

EFFECT OF ELECTRICAL INTEGRITY LOSS AND LOAD IMBALANCE IN ELECTRICAL SYSTEM



BURNT SOCKET



BURNT CABLES IN A JUNCTION BOX



BURNT MAIN CUT-OUT



BURNT HOUSE AS A RESULT OF ELETRICAL FAULT

Below are the type of houses we render electrical integrity checks and load balancing



Detached Building



Semi-Detached Building



SAVIC COMPANY LIMITED

SAVIC COMPANY LIMITED



THANK YOU FOR INVITING US.