

## **All about Electrical Safety Inspection**

Are you looking for a person who will inspect your electrical equipment and identify the electrical potential hazards, if yes then you must read this article? The concept of electrical safety and the associated hazards, the need for the electrical safety inspection, and the benefits of hiring an inspection company. What should be covered in the regular or specific inspection of the electrical equipment? The overall general idea hidden in the terminology of electrical inspection is addressed in the upcoming content.

Electricity is safe to use but it becomes dangerous in careless hands that's why electrical inspection of equipment or instruments in any organization is of critical importance in terms of safety, reliability, and operation. Careless operation of electrical can cause fire, damage, and fatal or non-fatal accidents to personal and appropriate action are required to tackle this alarming situation. The risk of being affected by the electricity can be minimized by using good quality equipment, material, proper wiring, and by using the concept of preventive maintenance. The understanding of electrical accidents is necessary to know about the importance of electrical safety inspection. When a person suffers an injury directly or indirectly due to the electrical shock from transmission supply or use of electrical energy is considered an "Electrical Accident" and it is urgent and important to report this event and the treatment is parallel is also of equal importance. The understanding of electrical parameters is critically important to absorb the concept of electrical safety inspection. Current, voltage, power, frequency, and resistance are the most used electrical parameters and the electrical safety inspector should know in detail about the safe range. More than 98 % of men are women are at the danger zone while experiencing a current of 10-30mA. Many inspection companies like 'CIL' is trying their best to rectify the causes of electrical accidents and doing a very good job to create a sense of awareness among the electrical engineers, electrical supervisors and to address the rules of safety inspection. Internal and external factors like insulation, overvoltages, short circuits, relays malfunctioning are the key factors to inspect in every inspection. Proper and safe operation of all the electrical installations and machinery can be covered in the inspection and the root causes of these faults are internal and external. In the first category, leakage of insulation and corrosions on the live conductors are inspected and in the second category, physical and environmental parameters cause the issues. Therefore, protection like circuit breakers, earth leakage circuit breakers, relays, and sensors must be used after the certifications of a reputed safety inspector. Electrical Safety

inspection can be covered in various aspects and explained from a different point of view in the upcoming sections:

Electrical Inspection is required at uniform intervals because all the electrical installations deteriorate with the passage of time and use. Therefore, they should be checked and inspected to make sure the satisfactory conditions and also helpful for long and continuous use. Some important points that should be covered in any electrical inspection are:

1. Highlight the electrical equipment or circuits that are heavily loaded.
2. Try to find the potential hazards of electricity
3. Identify the defective electrical work or any damaged insulation
4. Check the Earthing values and they should be in the prescribed range.
5. Megger Testing of LV and MV cables in any industry before commissioning.
6. Short circuit and overload testing must be done before the on-grid operation.
7. Testing of cable joints
8. Testing of Circuit Breakers at the rated voltage.
9. Proper tagging and verification of operation indications must be checked by the Safety Inspection Company.
10. Proper testing and grounding of transformers in case of placing it on the operation.

It is pretty interesting to know about the ideal time frame after that we must carry out the electrical inspection. According to different surveys, the time is varied for various scenarios. For example, daily, monthly and yearly inspection is required in the Mega Scale electrical industries to ensure safe operation. The Inspection companies provide a better service to ensure safe operation and benefit for the long run. The inspection and testing procedure varies based on the geographical location but the hazards in the backend remain the same. The rules stated that every installation during erection and completion must be checked before to put in operation. Several tests are performed at the industries and commercial level to ensure safety and long-term operation. Inspection includes continuity of conductors, resistance insulation test, flashback tests, polarity tests, earth fault loop impedance test, ground resistance test, functional test, performance test, and many more. It is the responsibility of every individual to hire an Electrical Inspection

Company and to follow the nominated procedures in multiple tests. The modern era has digital devices easy to access through mobile and web applications and the inspection, testing, and monitoring are very easy. Our focus should be on reliable and safe operation, and the inspection companies are there to facilitate you at your doorstep. Make sure to cover the following areas while hiring someone to inspect for you.

1. GFCI and AFCI protection
2. General testing of electrical services
3. Labeling and tagging of devices and types of equipment.

If the results for the first draft of the inspection are up to the mark, then the electrical safety officer will conduct the service and reliability test. After the first installation, the quality of the equipment is checked and tested to have a safe reliable function. However, If someone fails their inspection, it's their responsibility to have a technical conversation with their technicians, workers, or electricians and decide what changes can be made to make the property or equipment safe enough to get a high-quality passing grade. Once the changes have been made, they should apply for another electrical inspection to see if the system is now compliant with current electrical codes and laws of national and international safety organizations and it is highly encouraged for the companies and the electrical engineers to conduct the HSE sessions and have a good toolbox talk with the persons involved in the electrical work. The standard practice of Safety and Inspection is such a remarkable step to ensure a smooth, safe and reliable working environment.