

# Discussion on Building Electrical Construction Quality Control Measures

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**ABSTRACT** This paper discusses in electrical engineering by building quality and safety, and the corresponding preventive measures. Author according to their own management experience to analyze the problem and tells the construction of electrical engineering safety management measures.

## KEYWORDS

Electrical engineering  
Management  
Quality control

## 1. Introduction

Quality control of electrical engineering is one of the core areas of modern science and technology disciplines; discipline is the key to today's high-tech fields indispensable. For example it is the huge advances in electronic technology was soon promoted to a computer network-based information age, and changing the operating mode of human life, and so on. In a sense, the levels of development of electrical engineering represent the level of scientific and technological progress of the country. Because of this, the status and role of electrical engineering is becoming increasingly important, it is directly related to quality, schedule, investment and the expected results of the whole project. Electrical engineers are responsible for coping with high quality electrical engineering in charge of the responsibility, the full application of their professional level depth, detailed improve electrical engineering technology, quality, schedule, visa and security management. Electrical engineers first have comprehensive knowledge, the construction of the project, including construction, renovation, plumbing, HVAC, electrical installation. In the construction, if a professional only consider the progress of the profession or type of work, it is bound to affect other types of construction, but the profession is difficult to do a good job. In the construction phase of the foundation, building electrical installation should do the earthing

and grounding wire, lightning deflectors work; at the main construction phase, should be prepared piping, wiring, reserved, embedded work; in construction renovation phase, should do electrical installation and commissioning work.

## 2. Preparatory work before construction

Before the project started, the electrical installation technician should first become familiar with the electrical construction drawings, together with civil construction and technical personnel to check civil construction drawings and electrical construction drawings, which are listed in cross section construction, civil construction according to schedule, the relevant embedded steel base, hanger embedded and line protection tubes embedded, etc., discharged with cross construction plans to determine the exact with the time, to prevent the occurrence of omissions and errors. And before with the construction, we will make a good variety of embedded parts, and make the necessary anti-corrosion treatment, to do pre-construction techniques and materials preparation. Strict implementation of standardized operating procedures, the preparation of regulatory compliance, technology standards, quality control procedures operable. Usually pay attention to timely collect and organize information, particularly information on the hidden works acceptance and hidden visa. Without the person concerned in the covert acceptance table signature shall not carry out the next step, to prevent oversight mere formality. Record the log construction.

## 3. The quality control of the construction phase

Must be based on the electrical construction drawings and technical documents related to already triage post, according to the current national construction and acceptance of electrical engineering, local laws and regulations relating to the construction, the document, the construction design (construction technology program) approved for con-

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struction in. Construction drawings if found the problem should be raised and processed without the consent is not allowed without authorization to change the design.

Strict implementation of standardized operating procedures, the preparation of regulatory compliance, technology standards, workable quality control procedures. Each procedure without acceptance of persons in the table on the signing, shall not carry out the next step, recording a good job logs, prevent supervised a mere formality.

To guarantee the material quality of the construction phase, the implementation of quality control card measures have complete information for each material (factory certification, test report, retest reports, etc.) and through the construction units, supervision units before signature approach [1]. The substandard materials into the project avenues blocked; Second, we must strictly control the quality segment of the project, focusing on the quality control process. During the construction phase quality control section to pay attention to detail, focusing on inspection and control.

### **3.1. The quality control base construction phase**

When infrastructure construction, should be strong to do with the civil, weak professional cable into the household wall embedded pipe and sealing baffles, reserve job. This work requires electrical engineering should be done in time for the civil water treatment prior to completion of the wall, to avoid damage to the waterproof layer caused by electrical construction of the wall in the future leakage; the need for embedded pieces of iron, Elevators, wood tiles, and foundation bolts boom distribution cabinet base steel and other embedded parts, electrical construction workers should be prepared in advance with civil engineering, civil construction put in place promptly buried, cannot be missed. Electrical construction and installation, managers only strive to improve their quality and professionalism to the good quality.

### **3.2. The main construction phase of quality control**

Strict electrical pipes, boxes of quality, substandard materials will resist the outside projects. Such as the wall thickness of galvanized steel, thick tube is not less than 2.5 mm, thin tube is not less than 1.5mm, galvanizing layer should be in good condition, pvc pipe should be medium-sized, heavy-duty pipe commonly used must be flame retardant. Each feed material should fill the trial table, after examination and approval by the Commissioner in order for the project. Does not affect the structure to ensure that the thickness of the protective layer, embedded wire tube cannot be laid on the outside of steel, pipe cross in the same place not more than three, line pipe not banding together side by side. Tube, pipe and box connection should be firm, tight, to prevent clogging, lashing must be strong. The residential portions of the wall generally have switches and sockets, the wall must be accurately positioned.

Now they use flame-retardant engineering design Con-cealed pvc pipe, in many cases tend to only pay attention to line pipe, review boxes and ignore a small detail such as the connection with glue. In fact, if the glue failed, even the best materials, and then stringent process requirements also cannot guarantee the quality of the connection, the connection is not strong, resulting in joint off when the concrete vibrator. So pay special attention to the quality of the glue, the best selection and line pipe of the same brand of glue, generally can meet the requirements. When pouring concrete, it requires that each pump has electrician attendant, the timely processing of line pipe was crushed box.

### **3.3. Quality control installation and commissioning phases**

Requirements prior to distribution boxes, cable box pressure line to do a model, wiring neat, crimping solid, multi-strand wire lining of tin, then in full swing, after the discovery of a lot of work to prevent Problems, rework difficult and affect the progress.

A ground wire, grounding terminal should comply with regulatory requirements aside; facades of metal doors and windows, metal railings large part of mine as the key defense and roof, improve the process of convergence, to prevent the omission; equipment shell grounding should be improved.

Requirements to work according to the procedure, such as all the cables, connectors bus, wire, insulation test equipment must be approved before being sent to the electrical commissioning qualified, prohibited with "experience", the feel temerity transmission.

Equipment operation according to the first commissioning with load after load, carried out after the first monomer linkage. And should be tunable element such as a thermal relay is adjusted to a predetermined value design, commissioning, operation will continue for a defined period, to verify the reliability of the electrical and mechanical properties.

Focus on examination of the ceiling inside the line, wire wear pipe laying must meet the requirements.

Generators from the start, with the mains switch, dual power debugging end switching, although relatively simple to implement, but often too simple, do not pay attention or to poor coordination between the various types of problems.

Control the fire pump, which involve step-down start, field manual, fire control manual, automatic start, mutual investment and other alternate control, and often involve several installation (supply) units, are prone to technology, coordination on The problem, coupled with individual design, there are some small flaws, the impact of commissioning and acceptance, electrical engineers must be familiar with the secondary circuit diagram in advance and manufacturers to provide design drawings, control sche-

matics, early detection or anticipate problems that may occur, and make a deal. This part of debugging is critical, and sometimes a small little problem will affect the whole project acceptance.

### 3.4. Quality control renovation phase

Before the masonry wall should be civil foreman and actinomycetes and horizontal partition line staff will verify it again, because the Click line to determine the location and piping embedded lamps, switches and sockets location, elevation. Before plastering, electrical construction personnel shall inner wall and wall pop horizontal line, all the electrical engineering reservation holes according to design and specifications to verify again, to meet the requirements after the boxes stability is good, all the dark pipe [2]. Also check the road again, and then sweep through the pipeline, put on with the line, good blocking tube box. When civil plaster with good distribution boxes and boxes of stickers Menlian shut up, shut up boxes at the plaster should be smooth.

### 4. The electrical engineering construction safety management

To adhere to the “safety first, prevention first” approach, the preparation of technical measures for the safety and security of organizational measures of this project, for safety and technical tests, construction workers, and provided certificates of full-time safety officer.

(1) The establishment of the construction organization

design and safe use of electricity for preparation of technical measures, examination and approval system, and establish the corresponding technical files.

(2) The establishment of technical tests the system, to a professional electrician, various electricity staff overall intent of the construction organization design and safety measures for electrical technology, technical content and attention, and to fulfill the formalities sign text information on the technical tests, indicating the tests, date.

(3) The establishment of safety education and training system, regularly professional electricians and electrical personnel electrical safety education and training, where the posts must hold qualification certificates issued by the labor department, is prohibited without certificate.

### 5. Conclusion

As China's economy continues to develop, building electrical installation and other security issues, and its quality has become the focus of attention. Therefore, the electrical engineering installation quality issues to attention.

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