



# Ultimate Guide to Electrical Estimating

Managing profitable jobs begins with establishing reliable budgets. And to create these accurate budgets, electrical estimators need to know what their costs are and where their expenses are coming from. That's where estimating comes in.

Estimating involves determining all the required costs for a project. Which means an estimator needs a thorough understanding of both the industry and the estimating process to make precise calculations. Which is why we have developed this complete overview of electrical estimating to provide tips, tricks and insights that can be used to create exact estimates. Your path to more efficient electrical estimating starts here.

## Electrical Estimating Defined

Electrical estimating is the process of assessing the total cost of an electrical project by considering all the possible expenses. Accurate estimating is critical in creating and maintaining a feasible budget of project costs. This includes direct costs such as labor, materials and equipment. As well as indirect costs such as overhead costs which includes permits and fees, equipment mobilization and insurance.

Electrical estimating involves conducting a cost analysis to create an accurate price for an electrical project as part of a bidding process. Estimators begin with reviewing the bid package and performing quantity takeoff.

A bid package refers to a list of requirements expected by the client and will include electrical specifications, contract documents and steps to account for every known cost.

Takeoff measures the dimensions and quantifies the materials, labor and other resources. Each estimate will differ based on the materials needed, labor available, environmental conditions and budget requirements.

## The Role of an Electrical Estimator

Electrical estimators are responsible for providing accurate cost estimates related to electrical work. Estimators must have a thorough understanding of materials, methods and market trends. They provide a complete breakdown of electrical expenses before the project begins and ensure cost control throughout its duration. This involves tracking the types of materials being used for an electrical project, specific measurements required and a count of each item.

An electrical estimator must have expertise in the electrical industry with knowledge of local regulations, electrical codes and an understanding of project management principles. These aspects change from project to project, so an estimator must continuously conduct research and observe historical data to keep their industry knowledge up to date. This allows electrical estimators to consider all potential expenses, creating a more accurate estimate. Their cost-related insights are extremely valuable for project teams and clients by helping them save time and money.

## The Importance of Electrical Estimating in the Bidding Process

An electrical estimate directly impacts the bidding process. After the bid package is created, interested contractors will review and submit documentation about the project timeline and costs to the property owner. An electrical estimate is important because it adds all projected costs related to electrical work to the bid. With the cost information listed, a bid could make or break if the company is selected to take on the project.

The estimate will be used by electrical contractors to nail down a competitive bid, which represents the best quality at the most reasonable price. Since an electrical estimate helps to calculate what materials are needed, how much inventory is required, what manpower is expected when, developers can make any necessary changes in project design so funding can be procured.

## The Electrical Estimating Process

Picture the lights in a warehouse. How many feet of armored cable did it take to light up the warehouse? How many light fixtures are present on the production floor? Each of these items cost something. The electrical aspects of any building require a range of details that need to be accounted for. This is all a part of the electrical estimating process.

### **1. Review the Bid Package:**

The bid package contains a list of requirements expected by the client including electrical specifications, contract documents and steps to account for known costs. Reviewing the bid package entails: ensuring that all drawings and specifications are present, getting an overview of the project, evaluating electrical requirements and identifying any nonstandard items.

### **2. Conduct a Site Visit:**

It is important for electrical estimators to visit the site to consider its conditions. Site conditions may influence the project costs if work needs to be done to improve the natural environment, access limitations and local regulations.

### **3. Takeoff:**

Calculating the quantities of materials, labor and equipment required for the project is done to lay the groundwork for electrical estimates. Quantity takeoff requires four key types of measurement: count, length, area and volume. Electrical estimators will need to gain a comprehensive understanding of what needs quantified.

### **4. Solicit Pricing:**

With the quantities determined, each electrical item must then be assigned specific and accurate prices. Accurate pricing involves determining the cost of each material, any labor required and equipment items based on current market rates and supplier quotes.

### **5. Evaluate Labor Requirements:**

An estimator will need to determine all the labor necessary for an electrical project by specifying which roles are required for the project, how many hours will be necessary and how productive the crew is based on past projects. All the costs associated with workers including wages, overtime, taxes, insurance, retirement, union or leave must be budgeted into the electrical estimate.

### **6. Determine Bonds and Insurance Costs:**

Both bonds and insurance cost money and therefore must be covered in the estimate. Typically, these items are annual costs, however if additional bonding capacity or insurance coverage is required it will need to be factored into the electrical estimate.

### **7. Calculate Overhead Costs:**

Overhead and indirect costs are typically not clearly laid out in the bid package. Any expense associated with operating a business can make or break the accuracy of an electrical estimate. Estimators must establish a method for distributing overhead costs, direct costs and indirect costs to guarantee all electrical expenses are included in the estimate.

### **8. Account for Profit and Contingency:**

After calculating all the costs for an electrical project, the estimator will adjust the total to account for profit and contingency. The profit refers to the fee contractors earn for the contract, and a contingency refers to a portion, typically between 5-10% of the total project cost, that is set aside for overruns and waste.

As an estimator moves through this process, they will continuously update their initial estimates. Every estimate is different, however the requirements defined within the process are similar across every trade.

## Electrical Takeoff

Electrical takeoff directly impacts the accuracy of an estimate. Takeoff measures the dimensions and quantifies the materials, labor and other resources required to complete an electrical project. The takeoff process involves automatically drawing lines to endpoints like wiring to an electrical box. It should be completed after the project scope is determined. The data gathered in a takeoff is then compiled to produce reliable pricing and electrical costs.



During the takeoff process, estimators will carefully review architectural and engineering drawings, project specifications and any other relevant documentation to gain a comprehensive understanding. Once the quantities are determined, the estimator can then begin estimating by applying unit prices or costs to each electrical item to calculate the total material and labor costs. This is usually done by multiplying the quantities with appropriate unit rates. These rates may come from historical data, supplier quotes or industry-standard pricing references.

## Use of Electrical Estimates During a Project

The role of an electrical estimate isn't complete after the bid is won. Estimates serve as the foundation for a project budget, which means they're used to monitor production throughout a project's completion to ensure the budget is accurate. The information provided by an estimate allows electrical contractors to make spending adjustments while a project is being completed so that timelines can be met. The data acquired from estimates on the job can also help to improve budget expenses on similar projects going forward.

And, having access to the original electrical estimate, change orders, drawings and takeoff documents during production helps track inventory, scheduling and cost overruns.

## Creating an Electrical Estimate

An electrical estimate is a breakdown of expenses that communicates the assumed total cost of an electrical project. It is designed to consider every potential cost in an electrical project. An estimate may vary in format and presentation depending on the specific requirements of the project and preferences of the estimator.

Most likely, an estimate will contain project information including project name, location, client details and relevant dates. An electrical estimate will feature an itemized cost breakdown that lists each electrical component separately accompanied by a description, quantity, unit cost and total cost for each item. This complete list will account for every possible cost an electrical project could require.

## Items Included in an Electrical Estimate

Included in an estimate is a variety of different costs that projects the overall budget of an electrical project. These costs will be analyzed over a period of time before the bid can be submitted, throughout the duration of the project and again at the completion of the project. The numbers will change but typically always include:



### Project Scope:

Defining the project scope helps to determine the goals, constraints, tasks and deliverables of a project. It involves reviewing all the project plans, drawings and specifications. Omitting scope items can be troublesome because a project scope helps to identify the overall requirements for a project.



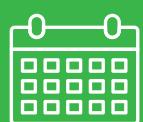
### Takeoff Calculations:

The calculated takeoff should be included next. Because takeoffs lay the groundwork for estimates if they are incomplete or incorrect it can result in an inaccurate determination of labor and equipment needs. Takeoff should always be completed after the project scope is determined to help avoid this.



### Supplier and Vendor Pricing:

Once each item is assigned specific prices to each item, estimators can determine the cost of each aspect of the project. This is where accuracy will be the most crucial factor.



### Contingency:

Perhaps one of the most crucial parts of an estimate is contingency. This means calculating a portion of the budget to be set aside for unexpected costs or possible changes in the project scope. Calculating contingency will help keep the project on schedule and on budget.



### Final Estimate:

Determining the final estimate is done by taking the sum of all the costs and providing a detailed breakdown. This breakdown should include a list of materials, labor rates, and any additional expenses so that the project can be evaluated and reviewed easily.

## The Importance of Accuracy in Electrical Estimating

Since every electrical project is unique, the cost estimate must be carried out individually for each project. The accuracy of the estimate is essential to ensure that the project can be completed within budget and on time. If an estimate is too low, the project may run out of funding before completion. This can lead to delays and cost overruns, among other problems. However, if an estimate is too high, the project runs the risk of being deemed unfeasible and therefore may not be selected.

## Tips for an Electrical Estimator

Successful bids need accurate estimates. To create accurate estimates, estimators need to mitigate risks and inaccuracies as often as possible. Here are a few tips to remember when conducting an estimate:

- **Know the Scope:** One of the most common mistakes in electrical estimating is overlooking the project scope. Items commonly missed include inspection fees, change orders and changing unit costs of supplies and materials. These items help to ensure that all project requirements are identified, and nothing is missed during the estimating process. This can also help to avoid misunderstandings and conflicts that could arise later in the project.
- **Remember Site Conditions:** Failure to consider site conditions, such as the natural environment around the site or access limitations, can result in inaccurate estimates. Every jobsite is different and unknown site conditions can cause unexpected, and costly, issues when work gets underway .
- **Check Local Regulations:** All electrical work must adhere to the National Electrical Code (NEC). Additionally, states, counties and cities may have their own unique amendments to NEC that need to be considered. For a list of these local codes, visit the state, county and city regulatory websites and direct questions to proper local regulatory organizations.
- **Always Have Contingency:** Complete a risk assessment. Electrical estimators should always find ways to consider alternative solutions that can reduce costs without compromising the project's quality or functionality. Having a back-up plan is very important for analyzing cost saving opportunities and time efficient options throughout the estimating process.

Remembering these tips can help to provide more accurate estimates. And to make sure you are producing the best work you possibly can, consider using an estimating software.

## Electrical Estimating Software

There are many sophisticated software tools available to facilitate the estimating and takeoff process. This software allows estimators to digitally measure and calculate quantities, automate the pricing process and generate detailed reports and estimates. These tools can streamline the estimation process and improve accuracy and efficiency.

### *Electrical estimating software helps to:*

- Promote the accuracy and efficiency of an electrical project.
- Automate measurement calculations and provide digital takeoff.
- Reduce errors and inaccuracies.
- Determine a comprehensive cost estimation.
- Create detailed reports and data analysis to see the overall picture more clearly.
- Offer cost-saving opportunities to help budget projects efficiently.
- Quickly deliver results to meet deadlines.
- Increase communication channels across the company.
- Adapt to the changes in a project.
- Allow estimators to easily update quantities and costs as the project evolves.

When looking for estimating software, it will be in your best interest to find a solution that offers trade-specific features. Using software specific to your trade helps to ensure your data matches the project requirements. Picture a warehouse production floor filled with outlets. If you are an electrical estimating trying to measure the wiring you need to run from each outlet back to the electrical box with software designed for painters, you would have a hard time calculating the information you need.

A few important electrical-specific features to look for in an estimating software include:

- A database filled with electrical items and assemblies
- The ability to automatically estimate labor hours and material prices while you design
- Electrical databases specialized for your region

If you work in the electrical trade, consider McCormick. We offer trade specific, customizable databases in electrical estimating and digital takeoff that have helped thousands of estimators create accurate bids. [Assess Your Current Electrical](#)

### **Estimating Process and Adjust Accordingly**

To win more profitable jobs, it's essential to create more accurate estimates. However, before you start adjusting your estimating process, take the time to analyze your current system.

How efficiently are you completing electrical estimates? Historically, how precise are your cost projections? Where are the consistent inaccuracies? By providing some answers to these questions, you'll have a place to start.

If you choose to purchase new software or upgrade to different software, find a solution that directly solves the problems you've identified. As you implement new ways to estimate, always keep track of your estimating success rate.

Overall, whether it's understanding the estimating process, identifying common mistakes and implementing solutions to mitigate errors or finding a different estimation method, knowing all the different aspects of estimating is important for any type of electrical project. ■