

Estimate Like a Pro

Tips from a full-time estimator will help you produce fast and accurate quotes

by Bob Kovacs

While there is no definition of a “typical” deck builder, I would wager that many companies have an owner who sells, estimates, and also swings a hammer — or the owner does the selling and estimating, and one or two crews do the actual installations. If the typical job takes around a week to complete, the owner needs to sell 50 jobs per crew each year to keep everyone working. Even if he’s selling one out of every two jobs he estimates (which is considered to be a great closing ratio), that’s still at least 100 estimates that need to be produced per year!

Methods for estimating can range from counting every nail, board, and widget that will go into a job, to using a cost per square foot for the overall project. The first method may be the most accurate, but it leaves very little time to do anything other than estimating. And though square foot pricing is faster, it can’t account for all the variables that go into building a deck. This is where unit price estimating can

help — by providing a proper balance between accuracy and speed.

What Is Unit Price Estimating?

In this system, projects are broken down into components, or units, that are each assigned a single, installed price that includes 2x6s, man-hours, and hourly rates. A component can be a single item such as a post, or it can be an “assembly” such as a railing system or a deck substructure (**Figure 1, page 2**). The unit price is then multiplied by the quantity of the component to arrive at a total price.

The beauty of a unit price system is that once the prices are established, estimates can be prepared very quickly, and even by someone without an intimate knowledge of the pieces and parts of the project. This is very helpful when expanding a company, as a salesperson who may not understand that you need joist hangers to attach joists to a ledger can still be quickly trained how to design and price a deck from a unit price book. I

know, I make that sound simpler than it really is, but trust me — it’s far easier to teach a salesman how to estimate a deck project when the prices are already assembled for him.

How Do I Get Started?

In order for unit pricing to work well, you need to create a unit price book that will encompass 95 percent of the items in your projects. This is easier to do in specialty trades like decks, swimming pools, or roofing than it is in general remodeling, since the work is of a somewhat limited scope and the same items are used on most projects.

Start by listing the phases that occur on all (or most) projects, and itemizing the parts of each phase (**Figure 2, page 2**). Once you’ve identified the phases, and the parts that make up each phase, list the different options that exist for each part.

When creating parts and phases, try to create “assemblies” that group together all the parts that occur together almost every time. For exam-

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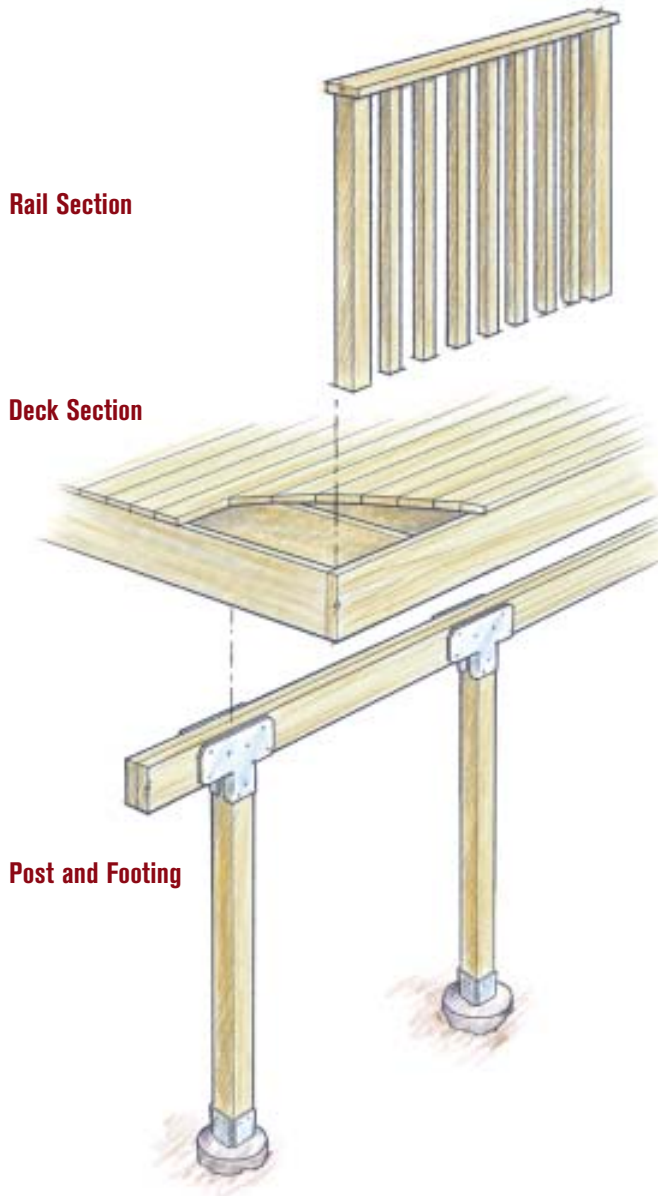


Figure 1. Break the deck into component pieces. Don't count every stick, but figure out things like what goes into one lineal foot of railing, one square foot of deck, or one support post.

ple, concrete post footings likely have a post associated with them, so rather than having separate items for “post footings” and “posts,” group them together into an assembly called “Support Posts With Concrete Footings 3 Feet Deep.” This will reduce the number of items in your unit price book, which is the goal of this exercise.

Next, list all the options available for posts and footings, again with an eye toward limiting the number of entries in the price book. You'll probably have posts in the 3-foot to 5-foot range for first-floor decks, and in the 7-foot to

10-foot range for second-story decks. If you think about just the different lengths of lumber available — say, 8 feet, 10 feet, and 12 feet — you can group the post categories as follows:

- Posts up to 4 feet (8-foot lumber, cut in half)
- Posts 4 feet to 6 feet (12-foot lumber, cut in half)
- Posts 6 feet to 8 feet (8-foot lumber)
- Posts 8 feet to 10 feet (10-foot lumber)
- Posts 10 feet to 12 feet (12-foot lumber)

You've now limited your total post

Deck Components
Foundations
Posts With Footings
Slabs and Pads
Rough Framing
Beams and Girders
Joist Systems
Railing Systems
Railing Posts
Railing Infill Systems
Stair Railings
Stairs
Decking Materials
Specialties
Benches
Planter Boxes
Overhead Structures

Figure 2. A list of the phases and parts that go into building a deck serves as a starting point for developing a unit price book. The next step is to identify the options available for each part.

Costs for a 6-Foot to 8-Foot Post With 3-Foot-Deep Footing							
Item	Quantity	Unit	Material Unit Price	Labor Rate Per Hour	Total Material Price	Total Labor Cost	Total Cost
4x4-8'- Pressure Treated	1	EA	\$12.75		\$12.75		\$12.75
PB44 Post Anchor - Triple Galv.	1	EA	\$ 8.00		\$ 8.00		\$ 8.00
1/2"x6" Expansion Bolt	1	EA	\$ 1.65		\$ 1.65		\$ 1.65
12" Sonotube - 4' Long	1	EA	\$ 6.50		\$ 6.50		\$ 6.50
Concrete Mix - 80# Bag	5	EA	\$ 2.45		\$12.25		\$12.25
1 1/2" Hanger Nails - Triple Galv.	.05	LB	\$ 3.00		\$ 0.15		\$ 0.15
5/4 x3 Spruce Bracing	20	LF	\$ 0.15		\$ 3.00		\$ 3.00
Excavate Hole, Set Tube, Backfill	1	HR		\$22.00		\$22.00	\$22.00
Mix and Place Concrete	.75	HR		\$22.00		\$16.50	\$16.50
Drill and Set Post Base	.25	HR		\$30.00		\$7.50	\$ 7.50
Set and Plumb Post	.25	HR		\$30.00		\$7.50	\$ 7.50
Component Cost					\$44.30	\$53.50	\$97.80

Figure 3. The values shown in this table represent contractor costs for this post-footing option – they don't reflect the "sell" price for the component. A markup will be applied later, either in the unit price book itself, or to the overall cost of the project.

options to five heights, and probably two sizes (4x4 and 6x6), for a total of 10 components. But if you consider the variety of materials you can use for posts, you can see that the number of unit prices can grow very quickly. For this reason, consolidate options wherever possible. It may make sense to reduce the number of post options to three:

- Posts up to 6 feet (12-foot lumber, cut in half)
- Posts 6 feet to 8 feet (8-foot lumber)
- Posts 8 feet to 12 feet (12-foot lumber)

By doing so, you've cut the number of options almost in half. The only issue you've created is that your unit prices for posts in the first and last options will be slightly more expensive because you're using 12-foot lumber where 8-foot or 10-foot lumber would do. The price differences are likely small enough that they won't make or break the sale.

One item to bear in mind from that last exercise is that you won't necessarily buy 12-foot lumber for a bunch of 5-foot posts just because your unit pricing is based on it – you can always buy 10-foot lumber, with the savings going toward your profits. The intent here isn't to generate a precise material list, but rather to simplify the pricing of a deck.

Calculating the Unit Prices

Now that you've assembled a list of components, you need to price them. To do this, break each component into the materials and labor required to construct it. You'll need to know the material prices for the pieces in the component, the labor hours for each piece, and your labor rate for the people actually assembling the component (**Figure 3**).

Posts are fairly straightforward components whose pieces and parts are easily determined. Other components,

such as joist systems, may be harder to price as a unit. Doing so may require you to look at the component in a larger unit than it will be priced as in the unit price book. For example, to generate a price for a 2x8 joist system, you may have to calculate the costs for a large section of joist system, and then reduce that down to a cost per square foot (**Figure 4, page 4**).

For large, complex components like joist systems, which can vary slightly based on the actual dimensions of the deck, you may want to run several different cost models (for decks of various sizes, such as 10x16, 10x20, and 10x24) and use an average to determine the price per square foot for your unit price book. All these configurations would assume the same joist span (and therefore the same joist size), so you'd have to create models for all the various joist sizes you typically encounter, based on varying spans.

Costs for a 2x8 Joist System (Based on a 12'x20' Deck)							
Item	Quantity	Unit	Material Unit Price	Labor Rate Per Hour	Total Material Price	Total Labor Cost	Total Cost
2x8-20' Pressure Treated	3	EA	\$ 30.00		\$ 90.00		\$ 90.00
2x8-12' Pressure Treated	16	EA	\$ 18.00		\$ 288.00		\$ 288.00
1/2" x 4" Lag Screw - Triple Galv.	15	EA	\$ 0.75		\$ 11.25		\$ 11.25
1/2" Washer - Triple Galv.	15	EA	\$ 0.15		\$ 2.25		\$ 2.25
6" Wide Vycor Flashing Tape	20	FT	\$ 2.65		\$ 53.00		\$ 53.00
2x8 Joist Hangers - Triple Galv.	16	EA	\$ 1.95		\$ 31.20		\$ 31.20
1 1/2" Hanger Nails - Triple Galv.	0.80	LB	\$ 3.00		\$ 2.40		\$ 2.40
16d Nails- Triple Galv.	0.65	LB	\$ 3.00		\$ 1.95		\$ 1.95
Cut Siding and Prep for Ledger	1.00	HR		\$30.00		\$ 30.00	\$30.00
Set and Secure Ledger	0.75	HR		\$30.00		\$ 22.50	\$22.50
Lay Out, Cut, Set Joists	4.00	HR		\$30.00		\$ 120.00	\$ 120.00
Install Hangers	1.60	HR		\$30.00		\$ 48.00	\$ 48.00
Cut and Set Mid-Span Blocking	0.75	HR		\$30.00		\$ 22.50	\$ 22.50
Cut and Set Rim Joist	0.50	HR		\$30.00		\$ 15.00	\$ 15.00
Component Cost					\$ 480.05	\$258.00	\$ 738.05
Cost per SF					\$ 2.00	\$ 1.08	\$ 3.08

**Figure 4. Unit pricing of joist systems is more complicated than pricing of a simple post and foot-
ing combination. On this simple spreadsheet, the author calculates the cost of a typical 12' x 20'
section of a 2x8 joist system, and reduces it to a cost per square foot for the unit price book.**

Assembling and Using the Price Book

Once you've generated unit costs for all the components that go into your projects, assemble them into a usable format. The order the components appear in the book should make sense to the user — typically, they're listed in the order that they'll be used to construct the project. This allows the user to walk systematically through the book from front to back, and "build" the project line by line. It also reduces the chance of missing items, as the book serves as a built-in checklist.

In the examples above, the "prices" we were working with were really "costs" — they were the company's actual costs to put the components

into place. These numbers will vary greatly from what the customer actually pays for the project. To arrive at the sales price for the project, you have two options:

- You can assemble the price book using these costs, estimate the job, and apply a markup to the total cost.
- You can apply your company's markup to the individual costs, and assemble the book with the marked-up prices in it, thus allowing you to price the job without having to separately add on the markup.

My preference is to create the price book with the markups already applied, for several reasons.

First, if you plan on preparing esti-

mates right in the customer's house, you can show her a breakdown of prices, or quickly move items into and out of the estimate (to explore options or reduce the overall price) without displaying your overhead and profit. Second, if you grow your company to the point of hiring dedicated salespeople, your markups aren't exposed to the salespeople, and you don't have to worry about them forgetting to apply the markup, or applying it incorrectly. ❖

Bob Kovacs has been managing and estimating residential and commercial construction projects for close to 20 years. Additionally, he frequently consults with contractors on business and estimating solutions.