CHAPTER 3

PRICING

Pricing is the process of converting the quantity takeoff into dollar values. It is not about making wild guesses, but identifying all cost items to determine the most accurate price, regardless of the project's size.

An important principle to keep in mind is that you are pricing labor and material according to the time when the work is expected to be done, not when the job is being estimated. Some work is done several months after the bid is submitted. It is impossible to predict what the prices will be in three to six months. Therefore, if you expect a price escalation or labor shortage in the future, it is better to make allowances now, or obtain a written price guarantee from your suppliers or subcontractors.

In this chapter, the following topics will be covered.

- Estimating material costs
- Evaluating material suppliers
- Estimating labor costs
- Man-hour estimates and adjustments
- Estimating equipment costs
- Combined pricing summary worksheet

PRICING PROCEDURES

The following are general guidelines for pricing.

1. Finish takeoff first. Summarize the material quantities.
2. Combine quantities for the same items and allow for reasonable waste.
3. Transfer only the total quantities to your pricing sheets.
4. Pricing materials based on the quotes you received from the suppliers.
5. Pricing labor based on the adjusted productivity (man-hour) information.
6. Add quotes from subcontractors or suppliers if necessary.
7. Add indirect costs (e.g., overhead, bond, insurance, permits).
8. Allow costs for items that are not shown on drawings but required.
9. Add owner's cash allowance for this portion of work.
10. Allow contingencies due to problems in design and field construction.
11. Add profits to get a total price.

If you are a general contractor self-performing the work, then your costs for this portion of work (e.g., formwork or framing) should not be net. You should include some profit and overhead in the price, just like most subcontractors do.

ESTIMATING MATERIAL COSTS

The basic formula for estimating materials costs is:

$$\text{Material Price} = \text{Quantity} \times \text{Material Unit Price}$$

Do Your Own Takeoff

For self-performed work (or when buying materials and having someone else do the installation), request quotes from at least three material suppliers. It is essential to have your own quantity takeoff. Suppliers may have their own estimating services, but because they do not install, their estimate may omit important items that you have to pay later as extras.

Get Quotes

As mentioned, request quotes from at least three suppliers. Attach a copy of your takeoff. Specify as much additional information as possible (e.g., concrete strengths, lumber grades, product type, model number and make). Sometimes it is necessary to furnish the specs (or even drawings) for your suppliers.

Evaluate Quotes

When quotes come in, read them carefully to verify the following factors.

- Unit price (some conversions might be necessary)
- Delivery charge (ideally it should say FOB jobsite)
- Sales taxes (including federal, state, city, and county taxes)
- Minimum order quantity
- Expected price escalation (e.g., increases for next year)
- Storage costs or standby charges
- Discount rates (apply it with caution)
- What is included (e.g., Are framing connectors included in lumber supply package?)

Certain materials are not available to some suppliers and they may propose an alternate; but it is hard to determine at the time of the bid whether an alternate is equal to the specified item. You may check with the architect or owner to see if the alternate is acceptable, but some bargain items may require too much labor to install or too much effort to get approved.

If one supplier's estimate is too low, then ask him to make corrections to all bidding contractors. To be ethical in your business practices, do not mention any details regarding other quotes to this supplier, as every quote is supposed to be confidential.

MATERIAL PRICING WORKSHEET

ABC Contracting
1 Main Street
Anytown, USA 00000
(555) 555-1234

Job Name: ABC School
Estimate No. 901
Estimator: AD
Date: Jan 1st 20XX
Worksheet Page Number: P1

Item	Quantity	Unit	Unit Price	Extension
A	6	EA	$130.00	$ 780.00
B	2	EA	$ 40.00	$ 80.00
C	4	EA	$ 50.00	$ 200.00
D	15	EA	$135.00	$ 2,025.00
E	3	EA	$ 50.00	$ 150.00
F	1	EA	$ 90.00	$ 90.00
G	3	EA	$100.00	$ 300.00
H	3	EA	$ 25.00	$ 75.00
I	2	EA	$ 35.00	$ 70.00
J	1	EA	$ 40.00	$ 40.00
K	1	EA	$ 69.00	$ 69.00
L	1	EA	$ 75.00	$ 75.00
M	1	EA	$180.00	$ 180.00
N	2	EA	$ 90.00	$ 180.00
O	3	EA	$ 45.00	$ 135.00
P	2	EA	$ 40.00	$ 80.00
Q	6	EA	$ 92.00	$ 552.00
Subtotal				**$5,081.00**
Sales Tax	6%			$ 304.86
Freight	1%			$ 50.81
Total Material Costs				***$5,436.67***

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EVALUATING MATERIALS SUPPLIERS

Item	Quantity	ACME Ltd.		ABC Inc.		XYZ Corp.	
		Unit Price	Extension	Unit Price	Extension	Unit Price	Extension
A	6	$ 125.00	$ 750.00	$ 130.00	$ 780.00	$ 130.00	$ 780.00
B	2	$ 30.25	$ 60.50	$ 35.25	$ 70.50	$ 36.25	$ 72.50
C	4	$ 40.50	$ 162.00	$ 45.50	$ 182.00	$ 46.50	$ 186.00
D	15	$ 121.00	$ 1,815.00	$ 126.00	$ 1,890.00	$ 127.00	$ 1,905.00
E	3	$ 40.00	$ 120.00	$ 45.00	$ 135.00	$ 46.00	$ 138.00
F	1	$ 79.00	$ 79.00	$ 84.00	$ 84.00	$ 82.00	$ 82.00
G	3	$ 94.85	$ 284.55	$ 92.85	$ 278.55	$ 90.85	$ 272.55
H	3	$ 19.95	$ 59.85	$ 17.95	$ 53.85	$ 15.95	$ 47.85
I	2	$ 31.00	$ 62.00	$ 29.00	$ 58.00	$ 27.00	$ 54.00
J	1	$ 34.25	$ 34.25	$ 32.25	$ 32.25	$ 32.75	$ 32.75
K	1	$ 64.00	$ 64.00	$ 62.00	$ 62.00	$ 62.50	$ 62.50
L	1	$ 71.00	$ 71.00	$ 69.00	$ 69.00	$ 69.50	$ 69.50
M	1	$ 175.00	$ 175.00	$ 173.00	$ 173.00	$ 173.50	$ 173.50
N	2	$ 83.00	$ 166.00	$ 84.00	$ 168.00	$ 82.25	$ 164.50
O	3	$ 35.00	$ 105.00	$ 36.00	$ 108.00	$ 35.00	$ 105.00
P	2	$ 38.00	$ 76.00	$ 39.00	$ 78.00	$ 38.00	$ 76.00
Q	6	$ 90.00	$ 540.00	$ 91.00	$ 546.00	$ 90.00	$ 540.00
Subtotal			**$ 4,624.15**		**$ 4,768.15**		**$ 4,761.65**
Sales Tax	6%		$ 277.45		$ 286.09		$ 285.70
Freight	1%		$ 46.24		Included		Included
Total			**$ 4,947.84**		**$ 5,054.24**		**$ 5,047.35**

ESTIMATING LABOR COSTS

The basic formula for estimating labor costs is:

$$\text{Total Man-hours} = \text{Quantity} \times \text{Man-hour/Unit}$$
$$\text{Labor Hourly Rate} = \text{Basic Wage} \times (1 + \text{Labor Burden Rate})$$
$$\text{Total Labor Price} = \text{Total Man-hours} \times \text{Average Crew Hourly Rate}$$

It is more difficult to control labor costs than material costs, because labor is subject to too many variables. Generally the process can be done in five steps.

1. *Determine man-hours per unit:* Man-hour per unit is how long it takes one person to do one unit of work. This can be obtained by tracking historical productivity information from job to job. For example, a carpenter and a helper spent an 8-hour day to install 10 wood doors, so total man-hours are 2 people × 8 hours = 16 man-hours. Thus, one wood door will take 16 hours/10 doors = 1.6 man-hours per door.

2. *Estimate total man-hours:* Adjust historical man-hour numbers for the job at hand. Consider factors that can influence productivity, such as job size, overtime, crew, delays, height, site congestion, and weather. For example, the current job has 800 wood doors, but your carpenter recently quit and new installer is too green. So you decide it will now take 3.2 hours to install one wood door, instead of 1.6 hours originally calculated. So the total man-hours are 800 doors × 3.2 hours/door = 2,560 man-hours.
3. *Figure labor burden rate:* Labor burdens are all the extras involved, such as fringe benefits in addition to the basic wage. Talk with your bookkeeper to obtain the following information.
   A. Total basic wages you paid to your crew last year (excluding any burdens)
   B. Total labor burdens you paid last year, including:
      - Taxable fringe benefits (e.g., vacation pay)
      - Tax-deferred pension or profit sharing plans
      - Medical insurance (health, dental, life, and disability)
      - Worker's compensation insurance
      - General liability insurance
      - Living allowances and cash compensation
      - Social security and Medicare taxes (FICA)
      - Federal unemployment tax (FUTA)
      - State unemployment tax (SUTA)
      - Union dues

   Suppose the total wages you paid last year were $150,000, while labor burden was an additional $36,000. The labor burden rate is then $36,000/$150,000 = 24%.
4. *Calculate crew rate:* First, for each member of the crew, take the basic wage and add labor burden to determine labor hourly rate. The crew rate will be the average of the team. For example, your crew for door installation is made of one carpenter and one helper. The carpenter is earning $30 per hour, so the adjusted wage with labor burden is $30 × (1 + 24%) = $37.20 per hour. The helper is earning $20 per hour, so the adjusted wage with labor burden is $20 × (1 + 24%) = $24.80 per hour. The overall crew rate will be the average of the two: ($37.20 + $24.80)/2 = $31 per hour.
5. *Subtotal labor costs:* To install 800 wood doors, you figured 2,560 man-hours at $31 per hour, so total labor cost is 2,560 × $31 = $79,360.

You may be asking yourself, "Why can't I skip all these troubles and randomly pick a labor unit rate? For example, for 800 wood doors, just say it takes $100 to install for each door, then the labor cost is simply 800 × $100 = $80,000. Isn't that close enough?"

The problem with this shortcut method is that $100 is a guess and not related to the project specific situations. What if labor productivity changes? What if wages increase? Every job is unique, and your pricing should reflect that fact.