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# **2018**

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# **NATIONAL REPAIR & REMODELING ESTIMATOR**

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**by Albert S. Paxton**

SAMPLE

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## Preface

The author has corresponded with manufacturers and wholesalers of building material supplies and surveyed retail pricing services. From these sources, he has developed Average Material Unit Costs which should apply in most parts of the country.

Wherever possible, the author has listed Average Labor Unit Costs which are derived from the Average Manhours per Unit, the Crew Size, and the Wage Rates used in this book. Please read How to Use This Book for a more in-depth explanation of the arithmetic.

If you prefer, you can develop your own local labor unit costs. You can do this by simply multiplying the Average Manhours per Unit by your local crew wage rates per hour. Using your actual local labor wage rates for the trades will make your estimate more accurate.

What is a realistic labor unit cost to one reader may well be low or high to another reader, because of variations in labor efficiency. The Average Manhours per Unit figures were developed by time studies at job sites around the country. To determine the daily production rate for the crew, divide the total crew manhours per day by the Average Manhours per Unit.

The subject topics in this book are arranged in alphabetical order, A to Z. To help you find specific construction items, there is a complete alphabetical index at the end of the book, and a main subject index at the beginning of the book.

## Credits and Acknowledgments

This book has over 12,000 cost estimates for 2018. To develop these estimates, the author and editors relied on information supplied by hundreds of construction cost authorities. We offer our sincere thanks to the contractors, engineers, design professionals, construction estimators,

American Standard Products  
DAP Products  
Outwater Plastic Industries  
Con-Rock Concrete  
Georgia Pacific Products

This manual shows crew, manhours, material, labor and equipment cost estimates based on Large or Small Volume work, then a total cost and a total including overhead and profit. No single price fits all repair and remodeling jobs. Generally, work done on smaller jobs costs more per unit installed and work on larger jobs costs less. The estimates in this book reflect that simple fact. The two estimates you find for each work item show the author's opinion of the likely range of costs for most contractors and for most jobs. So, which cost do you use, High Volume or Low Volume?

The only right price is the one that gets the job and earns a reasonable profit. Finding that price always requires estimating judgment. Use Small Volume cost estimates when some or most of the following conditions are likely:

- The crews won't work more than a few days on site.
- Better quality work is required.
- Productivity will probably be below average.
- Volume discounts on materials aren't available.
- Bidding is less competitive.
- Your overhead is higher than most contractors.

When few or none of those conditions apply, use Large Volume cost estimates.

material suppliers and manufacturers who, in the spirit of cooperation, have assisted in the preparation of this 39th edition of the National Repair & Remodeling Estimator. Our appreciation is extended to those listed below.

Kohler Products  
Wood Mode Cabinets  
Transit Mixed Concrete  
U.S. Gypsum Products  
Henry Roofing Products

**Special thanks to: Dal-Tile Corporation** 1713 Stewart, Santa Monica, California

## About the Author

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UBS clients include property insurance carriers, financial institutions, self-insureds, and private indi-

viduals. The expertise of UBS is in both new and repair/remodel work, for both residential and commercial construction. In addition to daily claims involving individual structures, UBS assignments have included natural disasters such as the Northridge earthquake in California, Hurricanes Charley, Frances, Ivan and Jeanne striking Florida and the southeastern states, the catastrophic Hurricane Katrina, whose impact on the Gulf Coast is still being felt in the building and repair industry, Hurricanes Dolly and Ike, and the cleanup, repair and rebuilding of the massive destruction of Superstorms Sandy, Harvey and Irma.

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# How to Use This Book

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Description	Oper	Unit	Vol	Crew Size	Man- hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P

The descriptions and cost data in this book are arranged in a series of columns, which are described below. The cost data is divided into two categories: Costs Based On Large Volume and Costs Based On Small Volume. These two categories provide the estimator with a pricing range for each construction topic.

The Description column (1) contains the pertinent, specific information necessary to make the pricing information relevant and accurate.

The Operation column (2) contains a description of the construction repair or remodeling operation being performed. Generally the operations are Demolition, Install, and Reset.

The Unit column (3) contains the unit of measurement or quantity which applies to the item described.

The Volume column (4) breaks jobs into Large and Small categories. Based on the information given regarding volume (on page 2), select your job size.

The Crew Size column (5) contains a description of the trade that usually installs or labors on the specified item. It includes information on the labor trade that installs the material and the typical crew size. Letters and numbers are used in the abbreviations in the crew size column. Full descriptions of these abbreviations are in the Crew Compositions and Wage Rates table, beginning on page 15.

The Manhours per Unit column (6) is for the listed operation and listed crew.

The units per day in this book don't take into consideration unusually large or small quantities. But items such as travel, accessibility to work, experience of workers, and protection of undamaged property, which can favorably or adversely affect productivity, have been considered in developing Average Manhours per Unit. For further information about labor, see "Notes — Labor" in the Notes Section of some specific items.

Crew Output per Day (7) is based on how many units, on average, a crew can install or demo in one 8-hour day.

Crew Output per Day and Average Material Unit (8) Cost should assist the estimator in:

1. Checking prices quoted by others.
2. Developing local prices.

The Average Material Unit Cost column contains an average material cost for products (including, in many cases, the by-products used in installing the products) for both large and small volume. It doesn't include an allowance for sales tax, delivery charges, overhead and profit. Percentages for waste, shrinkage, or coverage have been taken into consideration unless indicated. For other information, see "Dimensions" or "Installation" in the Notes Section.

If the item described has many or very unusual by-products which are essential to determining the Average Material Unit Cost, the author has provided examples of material pricing. These examples are placed throughout the book in the Notes Section.

You should verify labor rates and material prices locally. Though the prices in this book are average material prices, prices vary from locality to locality. A local hourly wage rate should normally include taxes, benefits, and insurance. Some contractors may also include overhead and profit in the hourly rate.

The Average Labor Unit Cost column (9) contains an average labor cost based on the Average Manhours per Unit and the Crew Compositions and Wage Rates table. The average labor unit cost equals the Average Manhours per Unit multiplied by the Average Crew Rate per hour. The rates include fringe benefits, taxes, and insurance. Examples that show how to determine the average labor unit cost are provided in the Notes Section.

The Average Equipment Unit Cost column (10) contains an average equipment cost, based on both the average daily rental and the cost per day if owned and depreciated. The costs of daily maintenance and the operator are included.

The Average Total Unit Cost column (11) includes the sum of the Material, Equipment, and Labor Cost columns. It doesn't include an allowance for overhead and profit.

The Average (Total) Price Including Overhead and Profit column (12) results from adding an overhead and profit allowance to Total Cost. This allowance reflects the author's interpretation of average fixed and variable overhead expenses and the labor intensiveness of the operation vs. the costs of materials for the operation. This allowance factor varies throughout the book, depending on the operation. Each contractor interprets O&P differently. The range can be from 15 percent to 80 percent of the Average Total Unit Cost.

# Estimating Techniques

## **Estimating Repair/Remodeling Jobs: The unforeseen, unpredictable, or unexpected can ruin you.**

Each year, the residential repair and remodeling industry grows. It's currently outpacing residential new construction due to increases in land costs, labor wage rates, interest rates, material costs, and economic uncertainty. When people can't afford a new home, they tend to remodel their old one. And there are always houses that need repair, from natural disasters or accidents like fire. The professional repair and remodeling contractor is moving to the forefront of the industry.

Repair and remodeling spawns three occupations: the contractor and his workers, the insurance company property claims adjuster, and the property damage appraiser. Each of these professionals shares common functions, including estimating the cost of the repair or remodeling work.

Estimating isn't an exact science. Yet the estimate determines the profit or loss for the contractor, the fairness of the claim payout by the adjuster, and the amount of grant or loan by the appraiser. Quality estimating must be uppermost in the mind of each of these professionals. And accurate estimates are possible only when you know exactly what materials are needed and the number of manhours required for demolition, removal, and installation. Remember, profits follow the professional. To be profitable you must control costs — and cost control is directly related to accurate, professional estimates.

There are four general types of estimates, each with a different purpose and a corresponding degree of accuracy:

- The guess method: "All bathrooms cost \$5,000." or "It looks like an \$8,000 job to me."
- The per measure method: (I like to call it the surprise package.) "Remodeling costs \$60 per SF, the job is 500 SF, so the price is \$30,000."

These two methods are the least accurate and accomplish little for the adjuster or the appraiser. The contractor might use the methods for qualifying customers (e.g., "I thought a bathroom would only cost \$2,000."), but never as the basis for bidding or negotiating a price.

- The piece estimate or stick-by-stick method.
- The unit cost estimate method.

These two methods yield a detailed estimate itemizing all of the material quantities and costs, the labor manhours and wage rates, the subcontract costs, and the allowance for overhead and profit.

Though time-consuming, the detailed estimate is the most accurate and predictable. It's a very satisfactory

tool for negotiating either the contract price or the adjustment of a building loss. The piece estimate and the unit cost estimate rely on historical data, such as manhours per specific job operation and recent material costs. The successful repair and remodeling contractor, or insurance/appraisal company, maintains records of previous jobs detailing allocation of crew manhours per day and materials expended.

While new estimators don't have historical data records, they can rely on reference books, magazines, and newsletters to estimate manhours and material costs. It is important to remember that **the reference must pertain to repair and remodeling**. This book is designed *specifically* to meet this requirement.

The reference material must specialize in repair and remodeling work because there's a large cost difference between new construction and repair and remodeling. Material and labor construction costs vary radically with the size of the job or project. Economies of scale come into play. The larger the quantity of materials, the better the purchase price should be. The larger the number of units to be installed, the greater the labor efficiency.

Repair and remodeling work, compared to new construction, is more expensive due to a normally smaller volume of work. Typical repair work involves only two or three rooms of a house, or one roof. In new construction, the job size may be three to five complete homes or an entire development. And there's another factor: a lot of repair and remodeling is done with the house occupied, forcing the crew to work around the normal, daily activities of the occupants. In new construction, the approach is systematic and logical — work proceeds from the ground up to the roof and to the inside of the structure.

Since the jobs are small, the repair and remodeling contractor doesn't employ trade specialists. Repairers employ the "jack-of-all-trades" who is less specialized and therefore less efficient. This isn't to say the repairer is less professional than the trade specialist. On the contrary, the repairer must know about many more facets of construction: not just framing, but painting, finish carpentry, roofing, and electrical as well. But because the repairer has to spread his expertise over a greater area, he will be less efficient than the specialist who repeats the same operation all day long.

Another factor reducing worker efficiency is poor access to the work area. With new construction, where building is an orderly "from the ground up" approach, workers have easy access to the work area for any given operation. The workers can spread out as much as needed, which facilitates efficiency and minimizes the manhours required to perform a given operation.

The opposite situation exists with repair and remodeling construction. Consider an example where the work area involves fire damage on the second floor. Materials either go up through the interior stairs or through a second



story window. Neither is easy when the exterior and interior walls have a finished covering such as siding and drywall. That results in greater labor costs with repair and remodeling because it takes more manhours to perform many of the same tasks.

If, as a professional estimator, you want to start collecting historical data, the place to begin is with daily worker time sheets that detail:

1. total hours worked by each worker per day
2. what specific operations each worker performed that day
3. how many hours (to the nearest tenth) each worker used in each operation performed that day.

Second, you must catalog all material invoices daily, being sure that quantities and unit costs per item are clearly indicated.

Third, maintain a record of overhead expenses attributable to the particular project. Then, after a number of jobs, you'll be able to calculate an average percentage of the job's gross amount that's attributable to overhead. Many contractors add 45% for overhead and profit to their total direct costs (direct labor, direct material, and direct subcontract costs). But that figure may not be right for your jobs.

Finally, each week you should reconcile in a job summary file the actual costs versus the estimated costs, and determine why there is any difference. This information can't immediately help you on this job since the contract has been signed, but it will be invaluable to you on your next job.

Up to now I've been talking about general estimating theory. Now let's be more specific. On page 8 is a Building Repair Estimate form. Each line is keyed to an explanation. A filled-out copy of the form is also provided, and on page 10, a blank, full-size copy that you can reproduce for your own use.

You can adapt the Building Repair Estimate form, whether you're a contractor, adjuster, or appraiser. Use of the form will yield a detailed estimate that will identify:

- The room or area involved, including sizes, dimensions and measurements.
- The kind and quality of material to be used.
- The quantities of materials to be used and verification of their prices.
- The type of work to be performed (demolish, remove, install, remove and reset) by what type of crew.
- The crew manhours per job operation and verification of the hourly wage scale.
- All arithmetical calculations that can be verified.
- Areas of difference between your estimate and others.

- Areas that will be a basis for negotiation and discussion of details.

Each job estimate begins with a visual inspection of the work site. If it's a repair job, you've got to see the damage. Without a visual inspection, you can't select a method of repair and you can't properly evaluate the opinions of others regarding repair or replacement. With either repair or remodeling work, the visual inspection is essential to uncover the "hiders" — the unpredictable, unforeseen, and unexpected problems that can turn profit into loss, or simplicity into nightmare. You're looking for the many variables and unknowns that exist behind an exterior or interior wall covering.

Along with the Building Repair Estimate form, use this checklist to make sure you're not forgetting anything.

## Checklist

- Site accessibility: Will you store materials and tools in the garage? Is it secure? You can save a half hour to an hour each day by storing tools in the garage. Will the landscaping prevent trucks from reaching the work site? Are wheelbarrows or concrete pumpers going to be required?
- Soil: What type and how much water content? Will the soil change your excavation estimate?
- Utility lines: What's under the soil and where? Should you schedule the utilities to stake their lines?
- Soundness of the structure: If you're going to remodel, repair or add on, how sound is that portion of the house that you're going to have to work around? Where are the load-bearing walls? Are you going to remove and reset any walls? Do the floor joists sag?
- Roof strength: Can the roof support the weight of another layer of shingles. (Is four layers of composition shingles already too much?)
- Electrical: Is another breaker box required for the additional load?

This checklist is by no means complete, but it is a start. Take pictures! A digital camera will quickly pay for itself. When you're back at the office, the picture helps reconstruct the scene. Before and after pictures are also a sales tool representing your professional expertise.

During the visual inspection always be asking yourself "what if" this or that happened. Be looking for potential problem areas that would be extremely labor intensive or expensive in material to repair or replace.

Also spend some time getting to know your clients and their attitudes. Most of repair and remodeling work occurs while the house is occupied. If the work will be messy, let the homeowners know in advance. Their satisfaction is your ultimate goal — and their satisfaction will provide you a pleasant working atmosphere. You're there to communicate with them. At the end of an estimate and visual inspection, the homeowner should have a clear idea of what you can or can't do, how it will be

done, and approximately how long it will take. Don't discuss costs now! Save the estimating for your quiet office with a print-out calculator and your cost files or reference books.

What you create on your estimate form during a visual inspection is a set of rough notes and diagrams that make the estimate speak. To avoid duplications and omissions, estimate in a *systematic sequence of inspection*. There are two questions to consider. First, where do you start the estimate? Second, in what order will you list the damaged or replaced items? It's customary to start in the room having either the most damage or requiring the most extensive remodeling. The sequence of listing is important. Start with either the floor or the ceiling. When starting with the floor, you might list items in the following sequence: Joists, subfloor, finish floor, base — listing from bottom to top. When starting with the ceiling, you reverse, and list from top to bottom. The important thing is to be consistent as you go from room to room! It's a good idea to figure the roof and foundation separately, instead of by the room.

After completing your visual inspection, go back to your office to cost out the items. Talk to your material supply houses and get unit costs for the quantity involved. Consult your job files or reference books and assign crew manhours to the different job operations.

There's one more reason for creating detailed estimates. Besides an estimate, what else have your notes given you? A material take-off sheet, a lumber list, a plan and specification sheet — the basis for writing a job summary for comparing estimated costs and profit versus actual costs and profit — and a project schedule that minimizes down time.

Here's the last step: Enter an amount for overhead and profit. No matter how small or large your work volume is, be realistic — everyone has overhead and every business entity works to make a fair and reasonable profit. An office, even in your home, costs

money to operate. If family members help out, pay them. Everyone's time is valuable!

If you expect there will be a supervising general contractor on the job, and the overhead and profit is computed as a percentage of the job, then overhead and profit dollars automatically adjust to the job size and the job complexity.

Don't forget to charge for performing your estimate. A professional expects to be paid. You'll render a better product if you know you're being paid for your time. If you want to soften the blow to the owner, say the first hour is free or that the cost of the estimate will be deducted from the job price if you get the job.

In conclusion, whether you're a contractor, adjuster, or appraiser, you're selling your personal service, your ideas, and your reputation. To be successful you must:

- Know yourself and your capabilities.
- Know what the job will require by ferreting out the "hiders."
- Know your products and your work crew.
- Know your productivity and be able to deliver in a reasonable manner and within a reasonable time frame.
- Know your client and make it clear that all change orders, no matter how large or small, will cost money.



*National Estimator* is an easy-to-use estimating program with all the cost estimates in this book. The software will run on PCs using Windows XP, Vista, 7, 8, or 10 operating systems. When the *National Estimator* program has been installed, click Help on the menu bar to see a list of topics that will get you up and running. Or, go online to [www.craftsman-book.com](http://www.craftsman-book.com), click on "Support," then "Tutorials" to view an interactive video for *National Estimator*.





## Keyed Explanations of the Building Repair Estimate Form

1. Insert name of insured(s).
2. Insert claim number or, if claim number is not available, insert policy number or binder number.
3. Insert the page number and the total number of pages.
4. Insert street address, city and state where loss or damage occurred.
5. Insert type of loss (wind, hail, fire, water, etc.)
6. Check YES if there is other insurance, whether collectible or not. Check NO if there's only one insurer.
7. Insert the present replacement cost of the building. What would it cost to build the structure today?
8. Insert present actual cash value of the building.
9. Insert the amount of insurance applicable. If there is more than one insurer, insert the total amount of applicable insurance provided by all insurers.
10. If the amount of insurance required is based on replacement cost value, circle RCV and insert the percent required by the policy, if any.
11. If the amount of insurance required is based on actual cash value, circle ACV and insert the percent required by the policy, if any.  
*Note:* (regarding 10 and 11) if there is a non-concurrency, i.e., one insurer requires insurance to 90% of value while another requires insurance to 80% of value, make a note here. Comment on the non-concurrency in the settlement report.
12. The installed price and/or material price only, as expressed in columns 13 through 15, may include any of the following (expressed in units and unit prices):
  - Material only (no labor)
  - Material and labor to replace
  - Material and labor to remove and replace

*Unit Cost* is determined by dividing dollar cost by quantity. The term cost, as used in unit cost, is not intended to include any allowance, percentage or otherwise, for overhead or profit. Usually, overhead and profit are expressed as a percentage of cost. Cost must be determined first. Insert a line or dash in a space(s) in columns 13, 14, 15, 17, 18 or 19 if the space is not to be used.
13. The *units* column includes both the quantity and the unit of measure, i.e., 100 SF, 100 BF, 200 CF, 100 CY, 20 ea., etc.
14. The *unit price* may be expressed in dollars, cents or both. If the units column has 100 SF and if the unit price column has \$.10, this would indicate the price to be \$.10 per SF.
15. The *total* column is merely the dollar product of the quantity (in column 13) times the price per unit measure (in column 14).
16. 16-19. These columns are normally used to express labor as follows: hours times rate per hour. However, it is possible to express labor as a unit price, i.e., 100 SF in column 13, a dash in column 17, \$.05 in column 18 and \$5.00 in column 19.
20. Under *description of item*, the following may be included:
  - Description of item to be repaired or replaced (studs 2" x 4" 8'0" #2 Fir, Sheetrock 1/2", etc.)
  - Quantities or dimensions (20 pcs., 8'0" x 14'0", etc.)
  - Location within a room or area (north wall, ceiling, etc.)
  - Method of correcting damage (paint - 1 coat; sand, fill and finish; R&R; remove only; replace; resize; etc.)
- 21-22. Dollar totals of columns A and B respectively.
- 23-27. Spaces provided for items not included in the body of the estimate (subtotals, overhead, profit, sales tax, etc.)
28. Total cost of repair.
29. Insert the agreed amount here. The agreement may be between the claim representative and the insured or between the claim rep and the repairer. If the agreed price is different from the grand total, the reason(s) for the difference should be itemized on the estimate sheet. If there is no room, attach an additional estimate sheet.
30. PRINT the name of the insured or the repairer so that it is legible.
31. PRINT the address of the insured or repairer legibly. Include phone number.
32. The insured or a representative of the repairer should sign here indicating agreement with the claim rep's estimate.
33. Insured or representative of the repairer should insert date here.
34. Claim rep should sign here.
35. Claim rep should insert date here.
36. Insert name of service office here.



# Wage Rates Used in This Book

Wage rates listed here and used in this book were compiled in the fall of 2017 and projected to mid-2018. Wage rates are in dollars per hour.

“Base Wage Per Hour” (Col. 1) includes items such as vacation pay and sick leave which are normally taxed as wages. Nationally, these benefits average 5.48% of the Base Wage Per Hour. This amount is paid by the Employer in addition to the Base Wage Per Hour.

“Liability Insurance and Employer Taxes” (Cols. 3 & 4) include national averages for state unemployment insurance (4.00%), federal unemployment insurance (0.60%), Social Security and Medicare tax (7.65%), li-

bility insurance (2.29%), and Workers’ Compensation Insurance which varies by trade. This total percentage (Col. 3) is applied to the sum of Base Wage Per Hour and Taxable Fringe Benefits (Col. 1 + Col. 2) and is listed in Dollars (Col. 4). This amount is paid by the Employer in addition to the Base Wage Per Hour and the Taxable Fringe Benefits.

“Non-Taxable Fringe Benefits” (Col. 5) include employer-sponsored medical insurance and other benefits, which nationally average 4.84% of the Base Wage Per Hour.

“Total Hourly Cost Used In This Book” is the sum of Columns 1, 2, 4, & 5.

Trade	1	2	3	4	5	6
	Base Wage Per Hour	Taxable Fringe Benefits (5.48% of Base Wage)	Liability Insurance & Employer Taxes %	\$	Non-Taxable Fringe Benefits (4.84% of Base Wage)	Total Hourly Cost Used in This Book
Air Tool Operator	\$31.53	\$1.73	26.18%	\$8.71	\$1.53	\$43.50
Bricklayer or Stone Mason	\$27.34	\$1.50	25.30%	\$7.30	\$1.33	\$37.47
Bricktender	\$20.26	\$1.11	25.30%	\$5.41	\$0.98	\$27.76
Carpenter	\$25.72	\$1.41	31.56%	\$8.56	\$1.25	\$36.94
Cement Mason	\$26.00	\$1.43	23.12%	\$6.34	\$1.26	\$35.03
Drywall Installer	\$26.60	\$1.46	23.53%	\$6.60	\$1.29	\$35.95
Drywall Taper	\$26.55	\$1.46	23.53%	\$6.59	\$1.29	\$35.89
Electrician, Journeyman Wireman	\$30.50	\$1.68	19.82%	\$6.38	\$1.48	\$40.04
Equipment Operator	\$30.77	\$1.69	25.18%	\$8.17	\$1.50	\$42.13
Fence Erector	\$27.77	\$1.53	25.97%	\$7.61	\$1.35	\$38.26
Floor Layer: Carpet, Linoleum, Soft Tile	\$24.95	\$1.37	23.79%	\$6.26	\$1.21	\$33.79
Floor Layer: Hardwood	\$26.20	\$1.44	23.79%	\$6.57	\$1.27	\$35.48
Glazier	\$25.95	\$1.43	25.73%	\$7.04	\$1.26	\$35.68
Laborer, General Construction	\$20.67	\$1.14	32.66%	\$7.12	\$1.00	\$29.93
Lather	\$26.69	\$1.47	21.26%	\$5.99	\$1.30	\$35.45
Marble Setter	\$24.67	\$1.36	21.34%	\$5.55	\$1.20	\$32.78
Millwright / Finish Carpenter	\$26.16	\$1.44	21.22%	\$5.86	\$1.27	\$34.73
Mosaic & Terrazzo Setter	\$26.22	\$1.44	21.34%	\$5.90	\$1.27	\$34.83
Mosaic & Terrazzo Setter Helper	\$20.05	\$1.10	21.34%	\$4.51	\$0.97	\$26.63
Painter, Brush	\$27.60	\$1.52	24.85%	\$7.24	\$1.34	\$37.70
Painter, Spray-Gun	\$28.43	\$1.56	24.85%	\$7.45	\$1.38	\$38.82
Paperhanger	\$28.98	\$1.59	24.85%	\$7.60	\$1.41	\$39.58
Plasterer	\$26.33	\$1.45	28.53%	\$7.93	\$1.28	\$36.99
Plasterer Helper	\$20.65	\$1.14	28.53%	\$6.22	\$1.00	\$29.01
Plumber	\$31.53	\$1.73	24.24%	\$8.06	\$1.53	\$42.85
Reinforcing Ironworker	\$27.64	\$1.52	28.56%	\$8.33	\$1.34	\$38.83
Rofer, Foreman	\$28.95	\$1.59	44.02%	\$13.44	\$1.41	\$45.39
Rofer, Journeyman	\$26.32	\$1.45	44.02%	\$12.22	\$1.28	\$41.27
Rofer, Hot Mop Pitch	\$27.11	\$1.49	44.02%	\$12.59	\$1.32	\$42.51
Rofer, Wood Shingles	\$27.64	\$1.52	44.02%	\$12.83	\$1.34	\$43.33
Sheet Metal Worker	\$30.19	\$1.66	25.97%	\$8.27	\$1.47	\$41.59
Tile Setter	\$26.46	\$1.46	21.34%	\$5.96	\$1.29	\$35.17
Tile Setter's Helper	\$20.05	\$1.10	21.34%	\$4.51	\$0.97	\$26.63
Truck Driver	\$22.26	\$1.22	26.18%	\$6.15	\$1.08	\$30.71

# Area Modification Factors

Construction costs are higher in some areas than in other areas. Add or deduct the percentages shown on the following pages to adapt the costs in this book to your job site. Adjust your cost estimate by the appropriate percentages in this table to find the estimated cost for the site selected. Where 0% is shown, it means no modification is required.

Modification factors are listed alphabetically by state and province. Areas within each state are listed by the first three digits of the postal zip code. For convenience, one representative city is identified in each three-digit zip or range of zips. Percentages are based on the average of all data points in the table.

<b>Alabama</b>	<b>-4%</b>	Herlong	961.....-3%
Anniston	362.....-8%	Inglewood	902-905 .....9%
Auburn	368.....-4%	Irvine	926-927 .....13%
Bellamy	369.....5%	Lompoc	934.....3%
Birmingham	350-352 .....2%	Long Beach	907-908 .....9%
Dothan	363.....-6%	Los Angeles	900-901 .....8%
Evergreen	364.....-10%	Marysville	959.....-3%
Gadsden	359.....-9%	Modesto	953.....1%
Huntsville	358.....-1%	Mojave	935.....5%
Jasper	355.....-8%	Novato	949.....11%
Mobile	365-366 .....-2%	Oakland	945-947 .....17%
Montgomery	360-361 .....-2%	Orange	928.....12%
Scottsboro	357.....-4%	Oxnard	930.....2%
Selma	367.....-5%	Pasadena	910-912 .....9%
Sheffield	356.....0%	Rancho Cordova	956-957 .....4%
Tuscaloosa	354.....-4%	Redding	960.....-3%
<b>Alaska</b>	<b>22%</b>	Richmond	948.....17%
Anchorage	995.....27%	Riverside	925.....4%
Fairbanks	997.....27%	Sacramento	958.....3%
Juneau	998.....20%	Salinas	939.....1%
Ketchikan	999.....15%	San Bernardino	923-924 .....2%
King Salmon	996.....23%	San Diego	919-921 .....8%
<b>Arizona</b>	<b>-4%</b>	San Francisco	941.....27%
Chambers	865.....-8%	San Jose	950-951 .....17%
Douglas	855.....-7%	San Mateo	943-944 .....21%
Flagstaff	860.....-7%	Santa Barbara	931.....7%
Kingman	864.....-5%	Santa Rosa	954.....5%
Mesa	852.....3%	Stockton	952.....4%
Phoenix	850.....3%	Sunnyvale	940.....20%
Prescott	863.....-6%	Van Nuys	913-916 .....8%
Show Low	859.....-8%	Whittier	906.....8%
Tucson	856-857 .....-5%	<b>Colorado</b>	<b>1%</b>
Yuma	853.....2%	Aurora	800-801 .....7%
<b>Arkansas</b>	<b>-7%</b>	Boulder	803-804 .....4%
Batesville	725.....-9%	Colorado Springs	808-809 .....0%
Camden	717.....-1%	Denver	802.....8%
Fayetteville	727.....-4%	Durango	813.....-1%
Fort Smith	729.....-7%	Fort Morgan	807.....-2%
Harrison	726.....-12%	Glenwood Springs	816.....4%
Hope	718.....-8%	Grand Junction	814-815 .....0%
Hot Springs	719.....-13%	Greeley	806.....5%
Jonesboro	724.....-9%	Longmont	805.....3%
Little Rock	720-722 .....-3%	Pagosa Springs	811.....-4%
Pine Bluff	716.....-11%	Pueblo	810.....0%
Russellville	728.....-4%	Salida	812.....-6%
West Memphis	723.....-2%	<b>Connecticut</b>	<b>8%</b>
<b>California</b>	<b>7%</b>	Bridgeport	066.....6%
Alhambra	917-918 .....8%	Bristol	060.....12%
Bakersfield	932-933 .....2%	Fairfield	064.....9%
El Centro	922.....0%	Hartford	061.....11%
Eureka	955.....-5%	New Haven	065.....7%
Fresno	936-938 .....-2%		

Factors listed for each state and province are the average of all data points in that state or province. Figures for three-digit zips are the average of all five-digit zips in that area, and are the weighted average of factors for labor, material and equipment.

The National Estimator program will apply an area modification factor for any five-digit zip you select. Click Utilities. Click Options. Then select the Area Modification Factors tab.

These percentages are composites of many costs and will not necessarily be accurate when estimating the cost of any particular part of a building. But when used to modify costs for an entire structure, they should improve the accuracy of your estimates

Norwich	063.....3%	<b>Hawaii</b>	<b>20%</b>
Stamford	068-069 .....12%	Aliamanu	968.....22%
Waterbury	067.....6%	Ewa	967.....20%
West Hartford	062.....5%	Halawa Heights	967.....20%
<b>Delaware</b>	<b>2%</b>	Hilo	967.....20%
Dover	199.....-4%	Honolulu	968.....22%
Newark	197.....6%	Kailua	968.....22%
Wilmington	198.....4%	Lualualei	967.....20%
<b>District of Columbia</b>	<b>12%</b>	Mililani Town	967.....20%
Washington	200-205 .....12%	Pearl City	967.....20%
<b>Florida</b>	<b>-5%</b>	Wahiawa	967.....20%
Altamonte Springs	327.....-3%	Waianae	967.....20%
Bradenton	342.....-6%	Wailuku (Maui)	967.....20%
Brooksville	346.....-7%	<b>Idaho</b>	<b>-9%</b>
Daytona Beach	321.....-9%	Boise	837.....-5%
Fort Lauderdale	333.....2%	Coeur d'Alene	838.....-10%
Fort Myers	339.....-6%	Idaho Falls	834.....-9%
Fort Pierce	349.....-10%	Lewiston	835.....-11%
Gainesville	326.....-9%	Meridian	836.....-9%
Jacksonville	322.....-2%	Pocatello	832.....10%
Lakeland	338.....-8%	Sun Valley	833.....-8%
Melbourne	329.....-8%	<b>Illinois</b>	<b>4%</b>
Miami	330-332 .....1%	Arlington Heights	600.....14%
Naples	341.....-2%	Aurora	605.....14%
Ocala	344.....-12%	Belleville	622.....0%
Orlando	328.....1%	Bloomington	617.....-1%
Panama City	324.....-11%	Carbondale	629.....-4%
Pensacola	325.....-8%	Carol Stream	601.....14%
Saint Augustine	320.....-2%	Centralia	628.....-3%
Saint Cloud	347.....-2%	Champaign	618.....-2%
St Petersburg	337.....-6%	Chicago	606-608 .....15%
Tallahassee	323.....-6%	Decatur	623.....-7%
Tampa	335-336 .....-1%	Galesburg	614.....-4%
W. Palm Beach	334.....-2%	Granite City	620.....3%
<b>Georgia</b>	<b>-4%</b>	Green River	612.....5%
Albany	317.....-6%	Joliet	604.....13%
Athens	306.....-5%	Kankakee	609.....-3%
Atlanta	303.....12%	Lawrenceville	624.....-6%
Augusta	308-309 .....-2%	Oak Park	603.....18%
Buford	305.....-2%	Peoria	615-616 .....6%
Calhoun	307.....-9%	Peru	613.....2%
Calhoun	307.....-9%	Quincy	602.....16%
Columbus	318-319 .....-3%	Rockford	610-611 .....3%
Dublin/ Fort Valley	310.....-8%	Springfield	625-627 .....0%
Hinesville	313.....-6%	Urbana	619.....-4%
Kings Bay	315.....-10%	<b>Indiana</b>	<b>-3%</b>
Macon	312.....-4%	Aurora	470.....-5%
Marietta	300-302 .....4%	Bloomington	474.....-2%
Savannah	314.....-4%	Columbus	472.....-4%
Statesboro	304.....-11%	Elkhart	465.....-4%
Valdosta	316.....-1%	Evansville	476-477 .....4%

Fort Wayne	467-468	-1%	<b>Maine</b>		<b>-5%</b>	Meridian	393	3%	<b>New Mexico</b>		<b>-8%</b>			
Gary	463-464	8%	Auburn	042	-4%	Tupelo	388	-7%	Alamogordo	883	-11%	Albuquerque	870-871	-3%
Indianapolis	460-462	4%	Augusta	043	-5%	<b>Missouri</b>		<b>-3%</b>	Clovis	881	-11%	Farmington	874	-1%
Jasper	475	-7%	Bangor	044	-6%	Cape Girardeau	637	-5%	Fort Sumner	882	-2%	Gallup	873	-7%
Jeffersonville	471	-6%	Bath	045	-6%	Caruthersville	638	-7%	Holman	877	-10%	Las Cruces	880	-8%
Kokomo	469	-8%	Brunswick	039-040	-1%	Chillicothe	646	-4%	La Santa Fe	875	-8%	Socorro	878	-14%
Lafayette	479	-5%	Camden	048	-10%	Columbia	652	-4%	Truth or Consequences	879	-8%	Tucumcari	884	-8%
Muncie	473	-8%	Cutler	046	-7%	East Lynne	647	4%	<b>New York</b>		<b>6%</b>	Albany	120-123	7%
South Bend	466	-2%	Dexter	049	-4%	Farmington	636	-8%	Amityville	117	9%	Batavia	140	1%
Terre Haute	478	-3%	Northern Area	047	-8%	Hannibal	634	-2%	Binghamton	137-139	-2%	Bronx	104	10%
<b>Iowa</b>		<b>-3%</b>	Portland	041	2%	Independence	640	5%	Brooklyn	112	7%	Buffalo	142	1%
Burlington	526	1%	<b>Maryland</b>		<b>2%</b>	Jefferson City	650-651	-5%	Elmira	149	-3%	Flushing	113	15%
Carroll	514	-11%	Annapolis	214	8%	Joplin	648	-6%	Garden City	115	15%	Hicksville	118	14%
Cedar Falls	506	-4%	Baltimore	210-212	7%	Kansas City	641	6%	Ithaca	148	-5%	Jamaica	114	14%
Cedar Rapids	522-524	2%	Bethesda	208-209	13%	Kirksville	635	-15%	Jamestown	147	-7%	Jamestown	147	-7%
Cherokee	510	1%	Church Hill	216	-4%	Knob Noster	653	3%	Kingston	124	-4%	Long Island	111	30%
Council Bluffs	515	-1%	Cumberland	215	-8%	Lebanon	654-655	-12%	Montauk	119	7%	New York (Manhattan)	100-102	31%
Creston	508	1%	Elkton	219	-5%	Poplar Bluff	639	-10%	New York City	100-102	31%	Newcomb	128	0%
Davenport	527-528	1%	Frederick	217	7%	Saint Charles	633	1%	Niagara Falls	143	-6%	Plattsburgh	129	-1%
Decorah	521	-8%	Laurel	206-207	8%	Saint Joseph	644-645	-1%	Poughkeepsie	125-126	1%	Queens	110	17%
Des Moines	500-503	5%	Salisbury	218	-6%	Springfield	656-658	-8%	Rochester	144-146	2%	Rockaway	116	10%
Dubuque	520	-4%	<b>Massachusetts</b>		<b>12%</b>	St Louis	630-631	8%	Rome	133-134	-4%	Staten Island	103	8%
Fort Dodge	505	-3%	Ayer	015-016	6%	<b>Montana</b>		<b>-3%</b>	Stewart	127	-5%	Syracuse	130-132	2%
Mason City	504	-3%	Bedford	017	15%	Billings	590-591	-2%	Tonawanda	141	-1%	Utica	135	-6%
Ottumwa	525	-6%	Boston	021-022	37%	Butte	597	-3%	Watertown	136	-1%	West Point	109	6%
Sheldon	512	-7%	Brockton	023-024	20%	Fairview	592	12%	White Plains	105-108	14%	<b>North Carolina</b>		<b>-4%</b>
Shenandoah	516	-14%	Cape Cod	026	4%	Great Falls	594	-6%	Asheville	287-289	-7%	Charlotte	280-282	7%
Sioux City	511	5%	Chicopee	010	7%	Havre	595	-9%	Durham	277	0%	Elizabeth City	279	-8%
Spencer	513	-7%	Dedham	019	18%	Helena	596	-2%	Fayetteville	283	-6%	Goldsboro	275	0%
Waterloo	507	-3%	Fitchburg	014	11%	Kalispell	599	-6%	Greensboro	274	-3%	Hickory	286	-8%
<b>Kansas</b>		<b>-2%</b>	Hingham	020	19%	Miles City	593	-7%	Kinston	285	-9%	Raleigh	276	3%
Colby	677	-8%	Lawrence	018	14%	Missoula	598	-6%	Rocky Mount	278	-6%	Wilmington	284	-6%
Concordia	669	-12%	Nantucket	025	9%	<b>Nebraska</b>		<b>-8%</b>	Winston-Salem	270-273	-5%	<b>North Dakota</b>		<b>4%</b>
Dodge City	678	-4%	New Bedford	027	6%	Alliance	693	-10%	Bismarck	585	3%	Dickinson	586	15%
Emporia	668	8%	Northfield	013	2%	Columbus	686	-7%	Fargo	580-581	0%	Grand Forks	582	-1%
Fort Scott	667	-6%	Pittsfield	012	1%	Grand Island	688	-8%	<b>New Hampshire</b>		<b>-1%</b>			
Hays	676	-13%	Springfield	011	8%	Hastings	689	-9%	Charlestown	036	-5%			
Hutchinson	675	-6%	<b>Michigan</b>		<b>1%</b>	Lincoln	683-685	-4%	Concord	034	-3%			
Independence	673	16%	Battle Creek	490-491	-1%	McCook	690	-9%	Dover	038	1%			
Kansas City	660-662	5%	Detroit	481-482	7%	Norfolk	687	-10%	Lebanon	037	-3%			
Liberal	679	10%	Flint	484-485	-4%	North Platte	691	-6%	Littleton	035	-6%			
Salina	674	-7%	Grand Rapids	493-495	1%	Omaha	680-681	0%	Manchester	032-033	2%			
Topeka	664-666	-1%	Grayling	497	-7%	Valentine	692	-15%	New Boston	030-031	3%			
Wichita	670-672	-4%	Jackson	492	-1%	<b>Nevada</b>		<b>1%</b>	Atlantic City	080-084	4%			
<b>Kentucky</b>		<b>-4%</b>	Lansing	488-489	0%	Carson City	897	-4%	Brick	087	2%			
Ashland	411-412	-4%	Marquette	498-499	3%	Elko	898	9%	Dover	078	9%			
Bowling Green	421	-5%	Pontiac	483	12%	Ely	893	-3%	Edison	088-089	13%			
Campton	413-414	-11%	Royal Oak	480	7%	Fallon	894	0%	Hackensack	076	10%			
Covington	410	2%	Saginaw	486-487	-5%	Las Vegas	889-891	3%	Monmouth	077	12%			
Elizabethtown	427	-10%	Traverse City	496	-2%	Reno	895	-1%	Newark	071-073	11%			
Frankfort	406	7%	<b>Minnesota</b>		<b>-1%</b>	<b>New Hampshire</b>		<b>-1%</b>	Passaic	070	12%			
Hazard	417-418	10%	Bemidji	566	-6%	Charlestown	036	-5%	Princeton	085	10%			
Hopkinsville	422	-5%	Brainerd	564	-3%	Concord	034	-3%	Summit	079	16%			
Lexington	403-405	1%	Duluth	556-558	2%	Dover	038	1%	Trenton	086	7%			
London	407-409	-7%	Fergus Falls	565	-10%	Lebanon	037	-3%						
Louisville	400-402	2%	Magnolia	561	-8%	Littleton	035	-6%						
Owensboro	423	-4%	Mankato	560	-4%	Manchester	032-033	2%						
Paducah	420	0%	Minneapolis	553-555	13%	New Boston	030-031	3%						
Pikeville	415-416	-8%	Rochester	559	-1%	Atlantic City	080-084	4%						
Somersset	425-426	-11%	St Cloud	563	2%	Brick	087	2%						
White Plains	424	-4%	St Paul	550-551	12%	Dover	078	9%						
<b>Louisiana</b>		<b>2%</b>	Thief River Falls	567	-2%	Edison	088-089	13%						
Alexandria	713-714	5%	Willmar	562	-6%	Hackensack	076	10%						
Baton Rouge	707-708	10%	<b>Mississippi</b>		<b>-6%</b>	Monmouth	077	12%						
Houma	703	4%	Clarksdale	386	-9%	Newark	071-073	11%						
Lafayette	705	9%	Columbus	397	0%	Passaic	070	12%						
Lake Charles	706	14%	Greenville	387	-14%	Princeton	085	10%						
Mandeville	704	-3%	Greenwood	389	-10%	Summit	079	16%						
Minden	710	-5%	Gulfport	395	-6%	Trenton	086	7%						
Monroe	712	-8%	Jackson	390-392	-3%									
New Orleans	700-701	2%	Laurel	394	-7%									
Shreveport	711	-4%	McComb	396	-11%									



Jamestown	584.....-4%	New Castle	161.....-3%	Greenville	754.....-3%	Fairmont	266.....-11%
Minot	587.....-9%	Philadelphia	190-191.....11%	Houston	770-772.....28%	Huntington	255-257.....-4%
Nekoma	583.....-10%	Pittsburgh	152.....-6%	Huntsville	773.....-28%	Lewisburg	249.....-14%
Williston	588.....-21%	Pottsville	179.....-8%	Longview	756.....-1%	Martinsburg	254.....-5%
<b>Ohio</b>	<b>-1%</b>	Punxsutawney	157.....-3%	Lubbock	793-794.....-7%	Morgantown	265.....-4%
Akron	442-443.....1%	Reading	195-196.....2%	Lufkin	759.....-9%	New Martinsville	262.....-9%
Canton	446-447.....-3%	Scranton	184-185.....1%	McAllen	785.....-5%	Parkersburg	261.....1%
Chillicothe	456.....-2%	Somerset	155.....-9%	Midland	797.....10%	Romney	267.....-7%
Cincinnati	450-452.....3%	Southeastern	193.....-8%	Palatine	758.....-2%	Sugar Grove	268.....-8%
Cleveland	440-441.....3%	Uniontown	154.....-6%	Plano	750.....-7%	Wheeling	260.....-5%
Columbus	432.....-5%	Valley Forge	194.....11%	San Angelo	769.....-6%	<b>Wisconsin</b>	<b>0%</b>
Dayton	453-455.....1%	Warminster	189.....11%	San Antonio	780-782.....9%	Amery	540.....-1%
Lima	458.....-5%	Warrendale	150-151.....5%	Texarkana	755.....-8%	Beloit	535.....-5%
Marietta	457.....-5%	Washington	153.....8%	Tyler	757.....-7%	Clam Lake	545.....-8%
Marion	433.....-6%	Wilkes Barre	186-187.....-1%	Victoria	779.....14%	Eau Claire	547.....-2%
Newark	430-431.....3%	Williamsport	177.....-2%	Waco	765-767.....-3%	Green Bay	541-543.....3%
Sandusky	448-449.....-3%	York	173-174.....-1%	Wichita Falls	763.....-9%	La Crosse	546.....0%
Steubenville	439.....1%	<b>Rhode Island</b>	<b>5%</b>	Woodson	764.....-3%	Ladysmith	548.....-2%
Toledo	434-436.....7%	Bristol	028.....5%	<b>Utah</b>	<b>-3%</b>	Madison	537.....8%
Warren	444.....-5%	Coventry	028.....5%	Clearfield	840.....0%	Milwaukee	530-534.....6%
Youngstown	445.....-3%	Cranston	029.....6%	Green River	845.....-3%	Oshkosh	549.....-4%
Zanesville	437-438.....-1%	Davisville	028.....5%	Ogden	843-844.....-9%	Portage	539.....0%
<b>Oklahoma</b>	<b>-5%</b>	Narragansett	028.....5%	Provo	846-847.....-6%	Prairie du Chien	538.....-7%
Adams	739.....-10%	Newport	028.....5%	Salt Lake City	841.....1%	Wausau	544.....-3%
Ardmore	734.....-1%	Providence	029.....6%	<b>Vermont</b>	<b>-5%</b>	<b>Wyoming</b>	<b>-1%</b>
Clinton	736.....-3%	Warwick	028.....5%	Albany	058.....-7%	Casper	826.....1%
Durant	747.....-11%	<b>South Carolina</b>	<b>-1%</b>	Battleboro	053.....-4%	Cheyenne/ Laramie	820.....-2%
Enid	737.....-4%	Aiken	298.....4%	Beecher Falls	059.....-8%	Gillette	827.....-3%
Lawton	735.....-8%	Beaufort	299.....-2%	Bennington	052.....-6%	Powell	824.....-3%
McAlester	745.....-7%	Charleston	294.....-1%	Burlington	054.....-3%	Rawlins	823.....-8%
Muskogee	744.....-8%	Columbia	290-292.....-2%	Montpelier	056.....-4%	Riverton	825.....-6%
Norman	730.....-4%	Greenville	296.....8%	Rutland	057.....-7%	Rock Springs	829-831.....1%
Oklahoma City	731.....-3%	Myrtle Beach	295.....-8%	Springfield	051.....-6%	Sheridan	828.....-3%
Ponca City	746.....-1%	Rock Hill	297.....-6%	White River Junction	050.....-5%	Wheatland	822.....-3%
Poteau	749.....-7%	Spartanburg	293.....-3%	<b>Virginia</b>	<b>-4%</b>	<b>CANADIAN AREA MODIFIERS</b>	
Pryor	743.....-6%	<b>South Dakota</b>	<b>-6%</b>	Abingdon	242.....-9%	These figures assume an exchange rate of \$1.00 Canadian to \$0.76 U.S.	
Shawnee	748.....-8%	Aberdeen	574.....-7%	Alexandria	220-223.....10%	<b>Alberta</b>	<b>13%</b>
Tulsa	740-741.....0%	Mitchell	573.....-6%	Charlottesville	229.....-6%	Calgary	.....14%
Woodward	738.....5%	Mobridge	576.....-9%	Chesapeake	233.....-4%	Edmonton	.....14%
<b>Oregon</b>	<b>-3%</b>	Pierre	575.....-10%	Culpeper	227.....-5%	Fort McMurray	.....12%
Adrian	979.....-12%	Rapid City	577.....-8%	Farmville	239.....-12%	<b>British Columbia</b>	<b>7%</b>
Bend	977.....-5%	Sioux Falls	570-571.....-1%	Fredericksburg	224-225.....-5%	Fraser Valley	.....6%
Eugene	974.....-3%	Watertown	572.....-4%	Galax	243.....-10%	Okanagan	.....6%
Grants Pass	975.....-5%	<b>Tennessee</b>	<b>-2%</b>	Harrisonburg	228.....-6%	Vancouver	.....9%
Klamath Falls	976.....-8%	Chattanooga	374.....2%	Lynchburg	245.....-9%	<b>Manitoba</b>	<b>0%</b>
Pendleton	978.....-3%	Clarksville	370.....1%	Norfolk	235-237.....-2%	North Manitoba	.....0%
Portland	970-972.....10%	Cleveland	373.....-1%	Petersburg	238.....-3%	South Manitoba	.....0%
Salem	973.....-2%	Columbia	384.....-7%	Radford	241.....-9%	Selkirk	.....0%
<b>Pennsylvania</b>	<b>-1%</b>	Cookeville	385.....-8%	Reston	201.....7%	Winnipeg	.....0%
Allentown	181.....3%	Jackson	383.....-2%	Richmond	232.....2%	<b>New Brunswick</b>	<b>-13%</b>
Altoona	166.....-8%	Kingsport	376.....-5%	Roanoke	240.....-9%	Moncton	.....-13%
Beaver Springs	178.....-5%	Knoxville	377-379.....-2%	Staunton	244.....-7%	<b>Nova Scotia</b>	<b>-8%</b>
Bethlehem	180.....4%	McKenzie	382.....-8%	Tazewell	246.....-6%	Amherst	.....-8%
Bradford	167.....-8%	Memphis	380-381.....1%	Virginia Beach	234.....-3%	Nova Scotia	.....-7%
Butler	160.....-2%	Nashville	371-372.....2%	Williamsburg	230-231.....-3%	Sydney	.....-8%
Chambersburg	172.....-7%	<b>Texas</b>	<b>5%</b>	Winchester	226.....4%	<b>Newfoundland/ Labrador</b>	<b>-3%</b>
Clearfield	168.....-3%	Abilene	795-796.....-2%	<b>Washington</b>	<b>0%</b>	<b>Ontario</b>	<b>7%</b>
DuBois	158.....-10%	Amarillo	790-791.....-2%	Clarkston	994.....-8%	London	.....7%
East Stroudsburg	183.....-5%	Arlington	760.....1%	Everett	982.....2%	Thunder Bay	.....6%
Erie	164-165.....-6%	Austin	786-787.....13%	Olympia	985.....-2%	Toronto	.....7%
Genesee	169.....-4%	Bay City	774.....41%	Pasco	993.....1%	<b>Quebec</b>	<b>-1%</b>
Greensburg	156.....-4%	Beaumont	776-777.....20%	Seattle	980-981.....11%	Montreal	.....-1%
Harrisburg	170-171.....3%	Brownwood	768.....-8%	Spokane	990-992.....-3%	Quebec City	.....-1%
Hazleton	182.....-3%	Bryan	778.....10%	Tacoma	983-984.....2%	<b>Saskatchewan</b>	<b>4%</b>
Johnstown	159.....-9%	Childress	792.....-14%	Vancouver	986.....3%	La Ronge	.....3%
Kittanning	162.....-6%	Corpus Christi	783-784.....19%	Wenatchee	988.....-6%	Prince Albert	.....2%
Lancaster	175-176.....-1%	Dallas	751-753.....6%	Yakima	989.....-5%	Saskatoon	.....5%
Meadville	163.....-9%	Del Rio	788.....0%	<b>West Virginia</b>	<b>-5%</b>		
Montrose	188.....-4%	El Paso	798-799.....1%	Beckley	258-259.....-5%		
		Fort Worth	761-762.....2%	Bluefield	247-248.....0%		
		Galveston	775.....25%	Charleston	250-253.....4%		
		Giddings	789.....-1%	Clarksburg	263-264.....-7%		

# Crew Compositions & Wage Rates

Crew Code		Manhours per day	Total costs \$/Hr.	\$/Day	Average Crew Rate (ACR) per Hour	Average Crew Rate (ACROP) per Hour w/O&P
AB	1 Air tool operator	8.00	\$43.50	\$348.00		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>16.00</b>		<b>\$587.44</b>	<b>\$36.72</b>	<b>\$51.40</b>
AD	2 Air tool operators	16.00	\$43.50	\$696.00		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>24.00</b>		<b>\$935.44</b>	<b>\$38.98</b>	<b>\$54.57</b>
BD	3 Bricklayers	24.00	\$37.47	\$899.28		
	2 Bricktenders	16.00	\$27.76	\$444.16		
	<b>TOTAL</b>	<b>40.00</b>		<b>\$1,343.44</b>	<b>\$33.59</b>	<b>\$47.69</b>
BK	1 Bricklayer	8.00	\$37.47	\$299.76		
	1 Bricktender	8.00	\$27.76	\$222.08		
	<b>TOTAL</b>	<b>16.00</b>		<b>\$521.84</b>	<b>\$32.62</b>	<b>\$46.31</b>
BO	2 Bricklayers	16.00	\$37.47	\$599.52		
	2 Bricktenders	16.00	\$27.76	\$444.16		
	<b>TOTAL</b>	<b>32.00</b>		<b>\$1,043.68</b>	<b>\$32.62</b>	<b>\$46.31</b>
2C	2 Carpenters	16.00	\$36.94	\$591.04	\$36.94	\$51.72
CA	1 Carpenter	8.00	\$36.94	\$295.52	\$36.94	\$51.72
CH	1 Carpenter	8.00	\$36.94	\$295.52		
	1/2 Laborer	4.00	\$29.93	\$119.72		
	<b>TOTAL</b>	<b>12.00</b>		<b>\$415.24</b>	<b>\$34.60</b>	<b>\$48.44</b>
CJ	1 Carpenter	8.00	\$36.94	\$295.52		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>16.00</b>		<b>\$534.96</b>	<b>\$33.44</b>	<b>\$46.81</b>
CN	2 Carpenters	16.00	\$36.94	\$591.04		
	1/2 Laborer	4.00	\$29.93	\$119.72		
	<b>TOTAL</b>	<b>20.00</b>		<b>\$710.76</b>	<b>\$35.54</b>	<b>\$49.75</b>
CS	2 Carpenters	16.00	\$36.94	\$591.04		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>24.00</b>		<b>\$830.48</b>	<b>\$34.60</b>	<b>\$48.44</b>
CT	1 Mosaic & terrazzo setter	8.00	\$34.83	\$278.64	\$34.83	\$49.46
CU	4 Carpenters	32.00	\$36.94	\$1,182.08		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>40.00</b>		<b>\$1,421.52</b>	<b>\$35.54</b>	<b>\$49.75</b>
CW	2 Carpenters	16.00	\$36.94	\$591.04		
	2 Laborers	16.00	\$29.93	\$478.88		
	<b>TOTAL</b>	<b>32.00</b>		<b>\$1,069.92</b>	<b>\$33.44</b>	<b>\$46.81</b>
CX	4 Carpenters	32.00	\$36.94	\$1,182.08	\$36.94	\$51.72

Crew Code		Manhours per day	Total costs \$/Hr.	\$/Day	Average Crew Rate (ACR) per Hour	Average Crew Rate (ACROP) per Hour w/O&P
CY	3 Carpenters	24.00	\$36.94	\$886.56		
	2 Laborers	16.00	\$29.93	\$478.88		
	1 Equipment operator	8.00	\$42.13	\$337.04		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>56.00</b>		<b>\$1,941.92</b>	<b>\$34.68</b>	<b>\$48.55</b>
CZ	4 Carpenters	32.00	\$36.94	\$1,182.08		
	3 Laborers	24.00	\$29.93	\$718.32		
	1 Equipment operator	8.00	\$42.13	\$337.04		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>72.00</b>		<b>\$2,476.88</b>	<b>\$34.40</b>	<b>\$48.16</b>
DD	2 Cement masons	16.00	\$35.03	\$560.48		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>24.00</b>		<b>\$799.92</b>	<b>\$33.33</b>	<b>\$47.33</b>
DF	3 Cement masons	24.00	\$35.03	\$840.72		
	5 Laborers	40.00	\$29.93	\$1,197.20		
	<b>TOTAL</b>	<b>64.00</b>		<b>\$2,037.92</b>	<b>\$31.84</b>	<b>\$45.22</b>
DI	1 Drywall installer	8.00	\$35.95	\$287.60	\$35.95	\$50.33
DJ	1 Drywall installer	8.00	\$35.95	\$287.60		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>16.00</b>		<b>\$527.04</b>	<b>\$32.94</b>	<b>\$46.12</b>
DK	1 Drywall installer	8.00	\$35.95	\$287.60		
	1 Drywall taper	8.00	\$35.89	\$287.12		
	<b>TOTAL</b>	<b>16.00</b>		<b>\$574.72</b>	<b>\$35.92</b>	<b>\$50.29</b>
DL	2 Drywall installers	16.00	\$35.95	\$575.20		
	1 Drywall taper	8.00	\$35.89	\$287.12		
	<b>TOTAL</b>	<b>24.00</b>		<b>\$862.32</b>	<b>\$35.93</b>	<b>\$50.30</b>
DM	2 Drywall installers	16.00	\$35.95	\$575.20	\$35.95	\$50.33
DT	1 Drywall taper	8.00	\$35.89	\$287.12	\$35.89	\$50.25
DU	2 Drywall tapers	16.00	\$35.89	\$574.24	\$35.89	\$50.25
EA	1 Electrician	8.00	\$40.04	\$320.32	\$40.04	\$58.06
EB	2 Electricians	16.00	\$40.04	\$640.64	\$40.04	\$58.06
ED	1 Electrician	8.00	\$40.04	\$320.32		
	1 Carpenter	8.00	\$36.94	\$295.52		
	<b>TOTAL</b>	<b>16.00</b>		<b>\$615.84</b>	<b>\$38.49</b>	<b>\$55.81</b>
FA	1 Floorlayer	8.00	\$33.79	\$270.32	\$33.79	\$47.31
FB	2 Floorlayers	16.00	\$33.79	\$540.64		
	1/4 Laborer	2.00	\$29.93	\$59.86		
	<b>TOTAL</b>	<b>18.00</b>		<b>\$600.50</b>	<b>\$33.36</b>	<b>\$46.71</b>
FC	1 Floorlayer (hardwood)	8.00	\$35.48	\$283.82	\$35.48	\$50.38

Crew Code		Manhours per day	Total costs \$/Hr.	\$/Day	Average Crew Rate (ACR) per Hour	Average Crew Rate (ACROP) per Hour w/O&P
FD	2 Floorlayers (hardwood)	16.00	\$35.48	\$567.64		
	1/4 Laborer	2.00	\$29.93	\$59.86		
<b>TOTAL</b>		<b>18.00</b>		<b>\$627.50</b>	<b>\$34.86</b>	<b>\$49.50</b>
GA	1 Glazier	8.00	\$35.68	\$285.44	\$35.68	\$50.67
GB	2 Glaziers	16.00	\$35.68	\$570.88	\$35.68	\$50.67
GC	3 Glaziers	24.00	\$35.68	\$856.32	\$35.68	\$50.67
HA	1 Fence erector	8.00	\$38.26	\$306.12	\$38.26	\$54.34
HB	1 Fence erector	8.00	\$38.26	\$306.12		
	1 Laborer	8.00	\$29.93	\$239.44		
<b>TOTAL</b>		<b>16.00</b>		<b>\$545.56</b>	<b>\$34.10</b>	<b>\$48.42</b>
HD	2 Fence erectors	16.00	\$38.26	\$612.24		
	1 Laborer	8.00	\$29.93	\$239.44		
<b>TOTAL</b>		<b>24.00</b>		<b>\$851.68</b>	<b>\$35.49</b>	<b>\$50.39</b>
1L	1 Laborer	8.00	\$29.93	\$239.44	\$29.93	\$41.90
LB	2 Laborers	16.00	\$29.93	\$478.88	\$29.93	\$41.90
LC	2 Laborers	16.00	\$29.93	\$478.88		
	1 Carpenter	8.00	\$36.94	\$295.52		
<b>TOTAL</b>		<b>24.00</b>		<b>\$774.40</b>	<b>\$32.27</b>	<b>\$45.17</b>
LD	2 Laborers	16.00	\$29.93	\$478.88		
	2 Carpenters	16.00	\$36.94	\$591.04		
<b>TOTAL</b>		<b>32.00</b>		<b>\$1,069.92</b>	<b>\$33.44</b>	<b>\$46.81</b>
LG	5 Laborers	40.00	\$29.93	\$1,197.20		
	1 Carpenter	8.00	\$36.94	\$295.52		
<b>TOTAL</b>		<b>48.00</b>		<b>\$1,492.72</b>	<b>\$31.10</b>	<b>\$43.54</b>
LH	3 Laborers	24.00	\$29.93	\$718.32	\$29.93	\$41.90
LJ	4 Laborers	32.00	\$29.93	\$957.76	\$29.93	\$41.90
LK	2 Laborers	16.00	\$29.93	\$478.88		
	2 Carpenters	16.00	\$36.94	\$591.04		
	1 Equipment operator	8.00	\$42.13	\$337.04		
	1 Laborer	8.00	\$29.93	\$239.44		
<b>TOTAL</b>		<b>48.00</b>		<b>\$1,646.40</b>	<b>\$34.30</b>	<b>\$48.02</b>
LL	3 Laborers	24.00	\$29.93	\$718.32		
	1 Carpenter	8.00	\$36.94	\$295.52		
	1 Equipment operator	8.00	\$42.13	\$337.04		
	1 Laborer	8.00	\$29.93	\$239.44		
<b>TOTAL</b>		<b>48.00</b>		<b>\$1,590.32</b>	<b>\$33.13</b>	<b>\$46.38</b>
LR	1 Lather	8.00	\$35.45	\$283.60	\$35.45	\$50.34
MB	1 Millwright finish carpenter	8.00	\$34.73	\$277.84		
	1 Laborer	8.00	\$29.93	\$239.44		
<b>TOTAL</b>		<b>16.00</b>		<b>\$517.28</b>	<b>\$32.33</b>	<b>\$45.91</b>

Crew Code		Manhours per day	Total costs \$/Hr.	\$/Day	Average Crew Rate (ACR) per Hour	Average Crew Rate (ACROP) per Hour w/O&P
<b>ML</b>	2 Bricklayers	16.00	\$37.47	\$599.52		
	1 Bricktender	8.00	\$27.76	\$222.08		
	<b>TOTAL</b>	<b>24.00</b>		<b>\$821.60</b>	<b>\$34.23</b>	<b>\$48.61</b>
<b>MR</b>	1 Millwright finish carpenter	8.00	\$34.73	\$277.84	\$34.73	\$49.32
<b>NA</b>	1 Painter (brush)	8.00	\$37.70	\$301.60	\$37.70	\$52.78
<b>NC</b>	1 Painter (spray)	8.00	\$38.82	\$310.54	\$38.82	\$54.35
<b>PD</b>	2 Plasterers	16.00	\$36.99	\$591.84		
	1 Plasterer helper	8.00	\$29.01	\$232.08		
	<b>TOTAL</b>	<b>24.00</b>		<b>\$823.92</b>	<b>\$34.33</b>	<b>\$48.75</b>
<b>PE</b>	3 Plasterers	24.00	\$36.99	\$887.76		
	2 Plasterer helpers	16.00	\$29.01	\$464.16		
	<b>TOTAL</b>	<b>40.00</b>		<b>\$1,351.92</b>	<b>\$33.80</b>	<b>\$47.99</b>
<b>QA</b>	1 Paperhanger	8.00	\$39.58	\$316.64	\$39.58	\$57.39
<b>2R</b>	2 Roofers (journeyman)	16.00	\$41.27	\$660.32	\$41.27	\$60.67
<b>RG</b>	2 Roofers (journeyman)	16.00	\$41.27	\$660.32		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>24.00</b>		<b>\$899.76</b>	<b>\$37.49</b>	<b>\$55.11</b>
<b>RJ</b>	2 Roofers (wood shingles)	16.00	\$43.33	\$693.22	\$43.33	\$63.69
<b>RL</b>	2 Roofers (journeyman)	16.00	\$41.27	\$660.32		
	1/2 Laborer	4.00	\$29.93	\$119.72		
	<b>TOTAL</b>	<b>20.00</b>		<b>\$780.04</b>	<b>\$39.00</b>	<b>\$57.33</b>
<b>RM</b>	2 Roofers (wood shingles)	16.00	\$43.33	\$693.22		
	1/2 Laborer	4.00	\$29.93	\$119.72		
	<b>TOTAL</b>	<b>20.00</b>		<b>\$812.94</b>	<b>\$40.65</b>	<b>\$59.75</b>
<b>RQ</b>	2 Roofers (wood shingles)	16.00	\$43.33	\$693.22		
	7/8 Laborer	7.00	\$29.93	\$209.51		
	<b>TOTAL</b>	<b>23.00</b>		<b>\$902.73</b>	<b>\$39.25</b>	<b>\$57.70</b>
<b>RS</b>	1 Roofer (foreman)	8.00	\$45.39	\$363.14		
	3 Roofers (pitch)	24.00	\$42.51	\$1,020.23		
	2 Laborers	16.00	\$29.93	\$478.88		
	<b>TOTAL</b>	<b>48.00</b>		<b>\$1,862.25</b>	<b>\$38.80</b>	<b>\$57.03</b>
<b>RT</b>	2 Roofers (pitch)	16.00	\$42.51	\$680.15		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>24.00</b>		<b>\$919.59</b>	<b>\$38.32</b>	<b>\$56.33</b>
<b>SA</b>	1 Plumber	8.00	\$42.85	\$342.80	\$42.85	\$62.13
<b>SB</b>	1 Plumber	8.00	\$42.85	\$342.80		
	1 Laborer	8.00	\$29.93	\$239.44		
	<b>TOTAL</b>	<b>16.00</b>		<b>\$582.24</b>	<b>\$36.39</b>	<b>\$52.77</b>



Crew Code		Manhours per day	Total costs \$/Hr.	\$/Day	Average Crew Rate (ACR) per Hour	Average Crew Rate (ACROP) per Hour w/O&P
<b>SC</b>	1 Plumber	8.00	\$42.85	\$342.80		
	1 Electrician	8.00	\$40.04	\$320.32		
<b>TOTAL</b>		<b>16.00</b>		<b>\$663.12</b>	<b>\$41.45</b>	<b>\$60.10</b>
<b>SD</b>	1 Plumber	8.00	\$42.85	\$342.80		
	1 Laborer	8.00	\$29.93	\$239.44		
	1 Electrician	8.00	\$40.04	\$320.32		
<b>TOTAL</b>		<b>24.00</b>		<b>\$902.56</b>	<b>\$37.61</b>	<b>\$54.53</b>
<b>SE</b>	2 Plumbers	16.00	\$42.85	\$685.60		
	1 Laborer	8.00	\$29.93	\$239.44		
	1 Electrician	8.00	\$40.04	\$320.32		
<b>TOTAL</b>		<b>32.00</b>		<b>\$1,245.36</b>	<b>\$38.92</b>	<b>\$56.43</b>
<b>SF</b>	2 Plumbers	16.00	\$42.85	\$685.60		
	1 Laborer	8.00	\$29.93	\$239.44		
<b>TOTAL</b>		<b>24.00</b>		<b>\$925.04</b>	<b>\$38.54</b>	<b>\$55.89</b>
<b>SG</b>	3 Plumbers	24.00	\$42.85	\$1,028.40		
	1 Laborer	8.00	\$29.93	\$239.44		
<b>TOTAL</b>		<b>32.00</b>		<b>\$1,267.84</b>	<b>\$39.62</b>	<b>\$57.45</b>
<b>TB</b>	1 Tile setter (ceramic)	8.00	\$35.17	\$281.36		
	1 Tile setter helper (ceramic)	8.00	\$26.63	\$213.04		
<b>TOTAL</b>		<b>16.00</b>		<b>\$494.40</b>	<b>\$30.90</b>	<b>\$43.88</b>
<b>UA</b>	1 Sheet metal worker	8.00	\$41.59	\$332.72	\$41.59	\$59.06
<b>UB</b>	2 Sheet metal workers	16.00	\$41.59	\$665.44	\$41.59	\$59.06
<b>UC</b>	2 Sheet metal workers	16.00	\$41.59	\$665.44		
	2 Laborers	16.00	\$29.93	\$478.88		
<b>TOTAL</b>		<b>32.00</b>		<b>\$1,144.32</b>	<b>\$35.76</b>	<b>\$50.78</b>
<b>UD</b>	1 Sheet metal worker	8.00	\$41.59	\$332.72		
	1 Laborer	8.00	\$29.93	\$239.44		
<b>TOTAL</b>		<b>16.00</b>		<b>\$572.16</b>	<b>\$35.76</b>	<b>\$50.78</b>
<b>UE</b>	1 Sheet metal worker	8.00	\$41.59	\$332.72		
	1 Laborer	8.00	\$29.93	\$239.44		
	1/2 Electrician	4.00	\$40.04	\$160.16		
<b>TOTAL</b>		<b>20.00</b>		<b>\$732.32</b>	<b>\$36.62</b>	<b>\$51.99</b>
<b>UF</b>	2 Sheet metal workers	16.00	\$41.59	\$665.44		
	1 Laborer	8.00	\$29.93	\$239.44		
<b>TOTAL</b>		<b>24.00</b>		<b>\$904.88</b>	<b>\$37.70</b>	<b>\$53.54</b>
<b>VB</b>	1 Equipment operator	8.00	\$42.13	\$337.04		
	1 Laborer	8.00	\$29.93	\$239.44		
<b>TOTAL</b>		<b>16.00</b>		<b>\$576.48</b>	<b>\$36.03</b>	<b>\$50.44</b>

# Abbreviations Used in This Book

<b>ABS</b>	acrylonitrile butadiene styrene	<b>F.H.A.</b>	Federal Housing Administration	<b>PSI</b>	per square inch
<b>ACR</b>	average crew rate	<b>fl. oz.</b>	fluid ounce	<b>PVC</b>	polyvinyl chloride
<b>AGA</b>	American Gas Association	<b>flt</b>	flight	<b>Qt.</b>	quart
<b>AMP</b>	ampere	<b>ft.</b>	foot	<b>R.E.</b>	rounded edge
<b>Approx.</b>	approximately	<b>ga.</b>	gauge	<b>R/L</b>	random length
<b>ASME</b>	American Society of Mechanical Engineers	<b>gal</b>	gallon	<b>RS</b>	rapid start (lamps)
<b>auto.</b>	automatic	<b>galv.</b>	galvanized	<b>R/W/L</b>	random width and length
<b>Avg.</b>	average	<b>GFI</b>	ground fault interrupter	<b>S4S</b>	surfaced-four-sides
<b>Bdle.</b>	bundle	<b>GPH</b>	gallons per hour	<b>SF</b>	square foot
<b>BTU</b>	British thermal unit	<b>GPM</b>	gallons per minute	<b>SL</b>	slimline (lamps)
<b>BTUH</b>	British thermal unit per hour	<b>H</b>	height or high	<b>Sq.</b>	1 square or 100 square feet
<b>C</b>	100	<b>HP, hp</b>	horsepower	<b>S.S.B.</b>	single strength, B quality
<b>cc</b>	center to center or cubic centimeter	<b>Hr.</b>	hour	<b>std.</b>	standard
<b>CF</b>	cubic foot	<b>HVAC</b>	heating, ventilating, air conditioning	<b>SY</b>	square yard
<b>CFM</b>	cubic foot per minute	<b>i.d.</b>	inside diameter	<b>T</b>	thick
<b>CLF</b>	100 linear feet	<b>i.e.</b>	that is	<b>T&amp;G</b>	tongue and groove
<b>Const.</b>	construction	<b>Inst</b>	install	<b>U</b>	thermal conductivity
<b>Corr.</b>	corrugated	<b>I.P.S.</b>	iron pipe size	<b>U.I.</b>	united inches
<b>CSF</b>	100 square feet	<b>KD</b>	knocked down	<b>UL</b>	Underwriters Laboratories
<b>CSY</b>	100 square yards	<b>KW, kw</b>	kilowatts	<b>U.S.G.</b>	United States Gypsum
<b>Ctn</b>	carton	<b>L</b>	length or long	<b>VLF</b>	vertical linear feet
<b>CWT</b>	100 pounds	<b>lb, lbs.</b>	pound(s)	<b>W</b>	width or wide
<b>CY</b>	cubic yard	<b>LF</b>	linear feet	<b>yr.</b>	year
<b>Cu.</b>	cubic	<b>LS</b>	lump sum		
<b>d</b>	penny	<b>M</b>	1000		
<b>D</b>	deep or depth	<b>Mat'l</b>	material		
<b>Demo</b>	demolish	<b>Max.</b>	maximum		
<b>dia.</b>	diameter	<b>MBF</b>	1000 board feet		
<b>D.S.A.</b>	double strength, A grade	<b>MBHP</b>	1000 boiler horsepower		
<b>D.S.B.</b>	double strength, B grade	<b>Mi</b>	miles		
<b>Ea</b>	each	<b>Min.</b>	minimum		
<b>e.g.</b>	for example	<b>MSF</b>	1000 square feet		
<b>etc.</b>	et cetera	<b>O.B.</b>	opposed blade		
<b>exp.</b>	exposure	<b>oc</b>	on center		
<b>FAS</b>	First and Select grade	<b>o.d.</b>	outside dimension		
		<b>oz.</b>	ounce		
		<b>pcs.</b>	pieces		
		<b>pkg.</b>	package		

## Symbols

/	per
%	percent
"	inches
'	foot or feet
x	by
o	degree
#	number or pounds
\$	dollar
+/-	plus or minus

For crew abbreviations, please see Crew Compositions & Wage Rates chart, pages 15 to 19.

# Acoustical and insulating tile

## 1. Dimensions

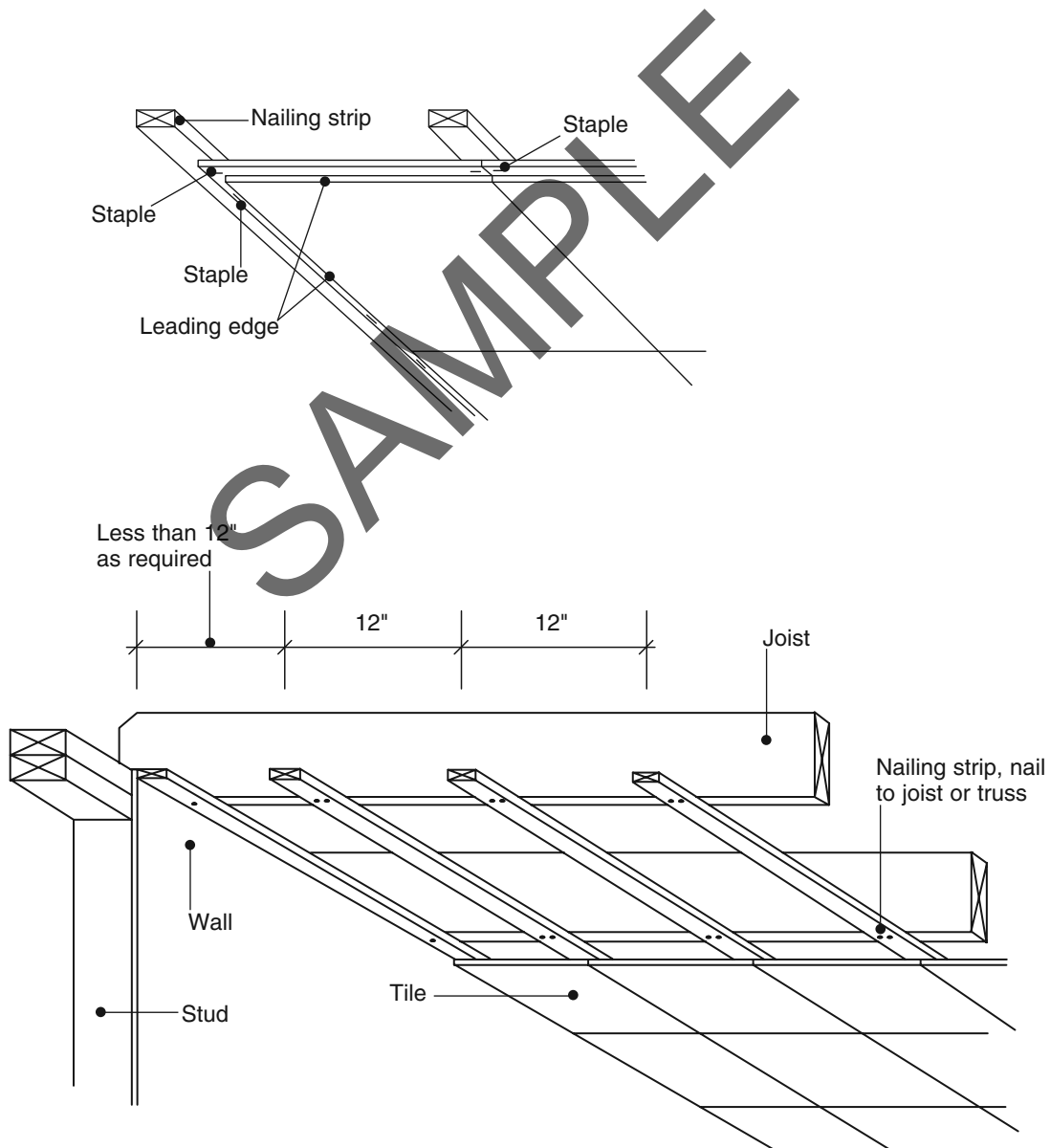
- a. Acoustical tile.  $\frac{1}{2}$ " thick x 12" x 12", 24".
- b. Insulating tile, decorative.  $\frac{1}{2}$ " thick x 12" x 12", 24";  $\frac{1}{2}$ " thick x 16" x 16", 32".

2. **Installation.** Tile may be applied to existing plaster (if joist spacing is suitable) or to wood furring strips. Tile may have a square edge or flange. Depending on the type and shape of the tile, you can use adhesive, staples, nails or clips to attach the tile.

3. **Estimating Technique.** Determine area and add 5 percent to 10 percent for waste.

4. **Notes on Material Pricing.** A material price of \$20.00 a gallon for adhesive was used to compile the Average Material Cost/Unit on the following pages. Here are the coverage rates:

12" x 12"	1.25 Gal/CSF
12" x 24"	0.95 Gal/CSF
16" x 16"	0.75 Gal/CSF
16" x 32"	0.55 Gal/CSF



Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
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## Acoustical treatment

See also *Suspended ceiling systems*, page 439

### Ceiling and wall tile

#### Adhesive set

Tile only, no grid system

Demo	SF	Lg	LB	.012	1300	---	.36	---	.36	.50
Demo	SF	Sm	LB	.018	910.0	---	.54	---	.54	.75

Tile on furring strips

Demo	SF	Lg	LB	.009	1710	---	.27	---	.27	.38
Demo	SF	Sm	LB	.013	1197	---	.39	---	.39	.54

#### Mineral fiber, vinyl coated, tile only

Applied in square pattern by adhesive to solid backing; 5% tile waste  
 1/2" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.018	880.0	.92	.66	---	1.58	1.99
	Inst	SF	Sm	2C	.026	616.0	1.01	.96	---	1.97	2.51
Standard, random perforated	Inst	SF	Lg	2C	.018	880.0	1.53	.66	---	2.19	2.69
	Inst	SF	Sm	2C	.026	616.0	1.68	.96	---	2.64	3.28
Designer, swirl perforation	Inst	SF	Lg	2C	.018	880.0	2.12	.66	---	2.78	3.37
	Inst	SF	Sm	2C	.026	616.0	2.33	.96	---	3.29	4.02
Deluxe, sculptured face	Inst	SF	Lg	2C	.018	880.0	2.88	.66	---	3.54	4.24
	Inst	SF	Sm	2C	.026	616.0	3.16	.96	---	4.12	4.98

5/8" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.018	880.0	1.11	.66	---	1.77	2.21
	Inst	SF	Sm	2C	.026	616.0	1.22	.96	---	2.18	2.75
Standard, random perforated	Inst	SF	Lg	2C	.018	880.0	1.88	.66	---	2.54	3.09
	Inst	SF	Sm	2C	.026	616.0	2.06	.96	---	3.02	3.71
Designer, swirl perforation	Inst	SF	Lg	2C	.018	880.0	2.61	.66	---	3.27	3.93
	Inst	SF	Sm	2C	.026	616.0	2.87	.96	---	3.83	4.65
Deluxe, sculptured face	Inst	SF	Lg	2C	.018	880.0	3.56	.66	---	4.22	5.02
	Inst	SF	Sm	2C	.026	616.0	3.91	.96	---	4.87	5.84

3/4" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.018	880.0	1.22	.66	---	1.88	2.33
	Inst	SF	Sm	2C	.026	616.0	1.34	.96	---	2.30	2.89
Standard, random perforated	Inst	SF	Lg	2C	.018	880.0	2.08	.66	---	2.74	3.32
	Inst	SF	Sm	2C	.026	616.0	2.28	.96	---	3.24	3.97
Designer, swirl perforation	Inst	SF	Lg	2C	.018	880.0	2.91	.66	---	3.57	4.28
	Inst	SF	Sm	2C	.026	616.0	3.19	.96	---	4.15	5.01
Deluxe, sculptured face	Inst	SF	Lg	2C	.018	880.0	3.97	.66	---	4.63	5.50
	Inst	SF	Sm	2C	.026	616.0	4.36	.96	---	5.32	6.36

Applied by adhesive to furring strips ADD

Inst	SF	Lg	2C	.002	---	---	---	.07	---	.07	.10
Inst	SF	Sm	2C	.002	---	---	---	.07	---	.07	.10

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
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### Stapled

Tile only, no grid system	Demo	SF	Lg	LB	.014	1170	---	.42	---	.42	.59
	Demo	SF	Sm	LB	.020	819	---	.60	---	.60	.84
Tile on furring strips	Demo	SF	Lg	LB	.010	1540	---	.30	---	.30	.42
	Demo	SF	Sm	LB	.015	1078	---	.45	---	.45	.63

### Mineral fiber, vinyl coated, tile only

Applied in square pattern by staples, nails, or clips; 5% tile waste

1/2" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.017	960.0	.84	.63	---	1.47	1.85
	Inst	SF	Sm	2C	.024	672.0	.92	.89	---	1.81	2.30
Standard, random perforated	Inst	SF	Lg	2C	.017	960.0	1.45	.63	---	2.08	2.55
	Inst	SF	Sm	2C	.024	672.0	1.59	.89	---	2.48	3.07
Designer, swirl perforation	Inst	SF	Lg	2C	.017	960.0	2.04	.63	---	2.67	3.23
	Inst	SF	Sm	2C	.024	672.0	2.24	.89	---	3.13	3.82
Deluxe, sculptured face	Inst	SF	Lg	2C	.017	960.0	2.79	.63	---	3.42	4.09
	Inst	SF	Sm	2C	.024	672.0	3.07	.89	---	3.96	4.77

5/8" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.017	960.0	1.03	.63	---	1.66	2.06
	Inst	SF	Sm	2C	.024	672.0	1.13	.89	---	2.02	2.54
Standard, random perforated	Inst	SF	Lg	2C	.017	960.0	1.80	.63	---	2.43	2.95
	Inst	SF	Sm	2C	.024	672.0	1.97	.89	---	2.86	3.51
Designer, swirl perforation	Inst	SF	Lg	2C	.017	960.0	2.53	.63	---	3.16	3.79
	Inst	SF	Sm	2C	.024	672.0	2.78	.89	---	3.67	4.44
Deluxe, sculptured face	Inst	SF	Lg	2C	.017	960.0	3.48	.63	---	4.11	4.88
	Inst	SF	Sm	2C	.024	672.0	3.82	.89	---	4.71	5.63

3/4" thick, 12" x 12" or 12" x 24"

Economy, mini perforated	Inst	SF	Lg	2C	.017	960.0	1.14	.63	---	1.77	2.19
	Inst	SF	Sm	2C	.024	672.0	1.25	.89	---	2.14	2.68
Standard, random perforated	Inst	SF	Lg	2C	.017	960.0	2.00	.63	---	2.63	3.18
	Inst	SF	Sm	2C	.024	672.0	2.20	.89	---	3.09	3.77
Designer, swirl perforation	Inst	SF	Lg	2C	.017	960.0	2.83	.63	---	3.46	4.13
	Inst	SF	Sm	2C	.024	672.0	3.10	.89	---	3.99	4.81
Deluxe, sculptured face	Inst	SF	Lg	2C	.017	960.0	3.89	.63	---	4.52	5.35
	Inst	SF	Sm	2C	.024	672.0	4.27	.89	---	5.16	6.15

Applied by staples, nails or clips to furring strips ADD

	Inst	SF	Lg	2C	.017	960.0	---	.63	---	.63	.88
	Inst	SF	Sm	2C	.024	672.0	---	.89	---	.89	1.24

### Tile patterns, effect on labor

Herringbone, Increase manhours	Inst	%	Lg	2C	25.0	---	---	---	---	---	---
	Inst	%	Sm	2C	25.0	---	---	---	---	---	---
Diagonal, Increase manhours	Inst	%	Lg	2C	20.0	---	---	---	---	---	---
	Inst	%	Sm	2C	20.0	---	---	---	---	---	---
Ashlar, Increase manhours	Inst	%	Lg	2C	30.0	---	---	---	---	---	---
	Inst	%	Sm	2C	30.0	---	---	---	---	---	---



Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
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### Furring strips, 8% waste included

Over wood

1" x 4", 12" oc	Inst	SF	Lg	2C	.010	1600	.29	.37	---	.66	.85
	Inst	SF	Sm	2C	.014	1120	.31	.52	---	.83	1.08
1" x 4", 16" oc	Inst	SF	Lg	2C	.008	1920	.24	.30	---	.54	.69
	Inst	SF	Sm	2C	.012	1344	.27	.44	---	.71	.93

Over plaster

1" x 4", 12" oc	Inst	SF	Lg	2C	.013	1280	.29	.48	---	.77	1.01
	Inst	SF	Sm	2C	.018	896	.31	.66	---	.97	1.29
1" x 4", 16" oc	Inst	SF	Lg	2C	.010	1600	.24	.37	---	.61	.79
	Inst	SF	Sm	2C	.014	1120	.27	.52	---	.79	1.03

### Adhesives

*Better quality, gun-applied in continuous bead to wood or metal framing or furring members.  
 Per 100 SF of surface area including 6% waste.*

#### Panel adhesives

##### Subfloor adhesives, on floors

12" oc members

1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.075	106.0	3.85	2.77	---	6.62	8.19
	Inst	CSF	Sm	CA	.101	79.50	4.22	3.73	---	7.95	9.95
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.075	106.0	15.30	2.77	---	18.07	21.10
	Inst	CSF	Sm	CA	.101	79.50	16.80	3.73	---	20.53	24.10
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.075	106.0	34.60	2.77	---	37.37	42.60
	Inst	CSF	Sm	CA	.101	79.50	38.00	3.73	---	41.73	47.80
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.075	106.0	61.20	2.77	---	63.97	72.40
	Inst	CSF	Sm	CA	.101	79.50	67.20	3.73	---	70.93	80.50

16" oc members

1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.056	143.0	3.08	2.07	---	5.15	6.35
	Inst	CSF	Sm	CA	.075	107.3	3.38	2.77	---	6.15	7.66
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.056	143.0	12.30	2.07	---	14.37	16.60
	Inst	CSF	Sm	CA	.075	107.3	13.50	2.77	---	16.27	19.00
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.056	143.0	27.70	2.07	---	29.77	33.90
	Inst	CSF	Sm	CA	.075	107.3	30.40	2.77	---	33.17	37.90
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.056	143.0	49.00	2.07	---	51.07	57.70
	Inst	CSF	Sm	CA	.075	107.3	53.80	2.77	---	56.57	64.10

24" oc members

1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.052	154.0	2.31	1.92	---	4.23	5.28
	Inst	CSF	Sm	CA	.069	115.5	2.53	2.55	---	5.08	6.40
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.052	154.0	9.20	1.92	---	11.12	13.00
	Inst	CSF	Sm	CA	.069	115.5	10.10	2.55	---	12.65	14.90
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.052	154.0	20.80	1.92	---	22.72	25.90
	Inst	CSF	Sm	CA	.069	115.5	22.80	2.55	---	25.35	29.10
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.052	154.0	36.70	1.92	---	38.62	43.80
	Inst	CSF	Sm	CA	.069	115.5	40.30	2.55	---	42.85	48.70

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

**Wall sheathing or shear panel wall adhesive on walls, floors or ceilings**

12" oc members

1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	2.75	3.69	---	6.44	<b>8.25</b>
	Inst	CSF	Sm	CA	.133	60.00	3.02	4.91	---	7.93	<b>10.30</b>
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	11.00	3.69	---	14.69	<b>17.40</b>
	Inst	CSF	Sm	CA	.133	60.00	12.00	4.91	---	16.91	<b>20.40</b>
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	24.70	3.69	---	28.39	<b>32.90</b>
	Inst	CSF	Sm	CA	.133	60.00	27.10	4.91	---	32.01	<b>37.30</b>
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	43.70	3.69	---	47.39	<b>54.20</b>
	Inst	CSF	Sm	CA	.133	60.00	48.00	4.91	---	52.91	<b>60.70</b>

16" oc members

1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	2.20	3.36	---	5.56	<b>7.17</b>
	Inst	CSF	Sm	CA	.121	66.00	2.42	4.47	---	6.89	<b>8.97</b>
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	8.76	3.36	---	12.12	<b>14.50</b>
	Inst	CSF	Sm	CA	.121	66.00	9.62	4.47	---	14.09	<b>17.00</b>
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	19.80	3.36	---	23.16	<b>26.90</b>
	Inst	CSF	Sm	CA	.121	66.00	21.70	4.47	---	26.17	<b>30.60</b>
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	35.00	3.36	---	38.36	<b>43.90</b>
	Inst	CSF	Sm	CA	.121	66.00	38.40	4.47	---	42.87	<b>49.30</b>

24" oc members

1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	1.65	3.10	---	4.75	<b>6.19</b>
	Inst	CSF	Sm	CA	.112	71.25	1.81	4.14	---	5.95	<b>7.82</b>
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	6.57	3.10	---	9.67	<b>11.70</b>
	Inst	CSF	Sm	CA	.112	71.25	7.21	4.14	---	11.35	<b>13.90</b>
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	14.80	3.10	---	17.90	<b>21.00</b>
	Inst	CSF	Sm	CA	.112	71.25	16.30	4.14	---	20.44	<b>24.00</b>
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	26.20	3.10	---	29.30	<b>33.70</b>
	Inst	CSF	Sm	CA	.112	71.25	28.80	4.14	---	32.94	<b>38.10</b>

**Polystyrene or polyurethane foam panel adhesive, on walls**

12" oc members

1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	3.96	3.69	---	7.65	<b>9.61</b>
	Inst	CSF	Sm	CA	.133	60.00	4.35	4.91	---	9.26	<b>11.80</b>
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	15.80	3.69	---	19.49	<b>22.90</b>
	Inst	CSF	Sm	CA	.133	60.00	17.30	4.91	---	22.21	<b>26.30</b>
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	35.60	3.69	---	39.29	<b>45.00</b>
	Inst	CSF	Sm	CA	.133	60.00	39.10	4.91	---	44.01	<b>50.60</b>
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	63.00	3.69	---	66.69	<b>75.70</b>
	Inst	CSF	Sm	CA	.133	60.00	69.10	4.91	---	74.01	<b>84.30</b>

16" oc members

1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	3.16	3.36	---	6.52	<b>8.25</b>
	Inst	CSF	Sm	CA	.121	66.00	3.47	4.47	---	7.94	<b>10.10</b>
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	12.60	3.36	---	15.96	<b>18.80</b>
	Inst	CSF	Sm	CA	.121	66.00	13.90	4.47	---	18.37	<b>21.80</b>
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	28.50	3.36	---	31.86	<b>36.60</b>
	Inst	CSF	Sm	CA	.121	66.00	31.30	4.47	---	35.77	<b>41.30</b>
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	50.40	3.36	---	53.76	<b>61.10</b>
	Inst	CSF	Sm	CA	.121	66.00	55.30	4.47	---	59.77	<b>68.20</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>24" oc members</b>											
1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	2.38	3.10	---	5.48	<b>7.01</b>
	Inst	CSF	Sm	CA	.129	62.00	2.61	4.77	---	7.38	<b>9.60</b>
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	9.47	3.10	---	12.57	<b>15.00</b>
	Inst	CSF	Sm	CA	.129	62.00	10.40	4.77	---	15.17	<b>18.30</b>
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	21.40	3.10	---	24.50	<b>28.30</b>
	Inst	CSF	Sm	CA	.129	62.00	23.40	4.77	---	28.17	<b>32.90</b>
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	37.80	3.10	---	40.90	<b>46.70</b>
	Inst	CSF	Sm	CA	.129	62.00	41.50	4.77	---	46.27	<b>53.10</b>
<b>Gypsum drywall adhesive, on ceilings</b>											
<b>12" oc members</b>											
1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	2.42	3.69	---	6.11	<b>7.88</b>
	Inst	CSF	Sm	CA	.133	60.00	2.65	4.91	---	7.56	<b>9.85</b>
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	9.64	3.69	---	13.33	<b>16.00</b>
	Inst	CSF	Sm	CA	.133	60.00	10.60	4.91	---	15.51	<b>18.70</b>
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	21.80	3.69	---	25.49	<b>29.50</b>
	Inst	CSF	Sm	CA	.133	60.00	23.90	4.91	---	28.81	<b>33.60</b>
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	38.50	3.69	---	42.19	<b>48.30</b>
	Inst	CSF	Sm	CA	.133	60.00	42.30	4.91	---	47.21	<b>54.20</b>
<b>16" oc members</b>											
1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	1.94	3.36	---	5.30	<b>6.88</b>
	Inst	CSF	Sm	CA	.121	66.00	2.13	4.47	---	6.60	<b>8.64</b>
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	7.71	3.36	---	11.07	<b>13.30</b>
	Inst	CSF	Sm	CA	.121	66.00	8.47	4.47	---	12.94	<b>15.70</b>
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	17.40	3.36	---	20.76	<b>24.20</b>
	Inst	CSF	Sm	CA	.121	66.00	19.10	4.47	---	23.57	<b>27.70</b>
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	30.80	3.36	---	34.16	<b>39.20</b>
	Inst	CSF	Sm	CA	.121	66.00	33.80	4.47	---	38.27	<b>44.10</b>
<b>24" oc members</b>											
1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	1.45	3.10	---	4.55	<b>5.97</b>
	Inst	CSF	Sm	CA	.112	71.25	1.59	4.14	---	5.73	<b>7.57</b>
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	5.78	3.10	---	8.88	<b>10.80</b>
	Inst	CSF	Sm	CA	.112	71.25	6.35	4.14	---	10.49	<b>12.90</b>
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	13.10	3.10	---	16.20	<b>19.00</b>
	Inst	CSF	Sm	CA	.112	71.25	14.30	4.14	---	18.44	<b>21.80</b>
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	23.10	3.10	---	26.20	<b>30.20</b>
	Inst	CSF	Sm	CA	.112	71.25	25.40	4.14	---	29.54	<b>34.20</b>
<b>Gypsum drywall adhesive, on walls</b>											
<b>12" oc members</b>											
1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	2.42	3.69	---	6.11	<b>7.88</b>
	Inst	CSF	Sm	CA	.133	60.00	2.65	4.91	---	7.56	<b>9.85</b>
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	9.64	3.69	---	13.33	<b>16.00</b>
	Inst	CSF	Sm	CA	.133	60.00	10.60	4.91	---	15.51	<b>18.70</b>
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	21.80	3.69	---	25.49	<b>29.50</b>
	Inst	CSF	Sm	CA	.133	60.00	23.90	4.91	---	28.81	<b>33.60</b>
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	38.50	3.69	---	42.19	<b>48.30</b>
	Inst	CSF	Sm	CA	.133	60.00	42.30	4.91	---	47.21	<b>54.20</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>16" oc members</b>											
1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	1.94	3.36	---	5.30	<b>6.88</b>
	Inst	CSF	Sm	CA	.121	66.00	2.13	4.47	---	6.60	<b>8.64</b>
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	7.71	3.36	---	11.07	<b>13.30</b>
	Inst	CSF	Sm	CA	.121	66.00	8.47	4.47	---	12.94	<b>15.70</b>
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	17.40	3.36	---	20.76	<b>24.20</b>
	Inst	CSF	Sm	CA	.121	66.00	19.10	4.47	---	23.57	<b>27.70</b>
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	30.80	3.36	---	34.16	<b>39.20</b>
	Inst	CSF	Sm	CA	.121	66.00	33.80	4.47	---	38.27	<b>44.10</b>
<b>24" oc members</b>											
1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	1.45	3.10	---	4.55	<b>5.97</b>
	Inst	CSF	Sm	CA	.112	71.25	1.59	4.14	---	5.73	<b>7.57</b>
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	5.78	3.10	---	8.88	<b>10.80</b>
	Inst	CSF	Sm	CA	.112	71.25	6.35	4.14	---	10.49	<b>12.90</b>
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	13.10	3.10	---	16.20	<b>19.00</b>
	Inst	CSF	Sm	CA	.112	71.25	14.30	4.14	---	18.44	<b>21.80</b>
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	23.10	3.10	---	26.20	<b>30.20</b>
	Inst	CSF	Sm	CA	.112	71.25	25.40	4.14	---	29.54	<b>34.20</b>
<b>Hardboard or plastic panel adhesive, on walls</b>											
<b>12" oc members</b>											
1/8" diameter (11 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	3.96	3.69	---	7.65	<b>9.61</b>
	Inst	CSF	Sm	CA	.133	60.00	4.35	4.91	---	9.26	<b>11.80</b>
1/4" diameter (43 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	15.80	3.69	---	19.49	<b>22.90</b>
	Inst	CSF	Sm	CA	.133	60.00	17.30	4.91	---	22.21	<b>26.30</b>
3/8" diameter (97 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	35.60	3.69	---	39.29	<b>45.00</b>
	Inst	CSF	Sm	CA	.133	60.00	39.10	4.91	---	44.01	<b>50.60</b>
1/2" diameter (172 fl.oz./CSF)	Inst	CSF	Lg	CA	.100	80.00	63.00	3.69	---	66.69	<b>75.70</b>
	Inst	CSF	Sm	CA	.133	60.00	69.10	4.91	---	74.01	<b>84.30</b>
<b>16" oc members</b>											
1/8" diameter (9 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	3.16	3.36	---	6.52	<b>8.25</b>
	Inst	CSF	Sm	CA	.121	66.00	3.47	4.47	---	7.94	<b>10.10</b>
1/4" diameter (34 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	12.60	3.36	---	15.96	<b>18.80</b>
	Inst	CSF	Sm	CA	.121	66.00	13.90	4.47	---	18.37	<b>21.80</b>
3/8" diameter (78 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	28.50	3.36	---	31.86	<b>36.60</b>
	Inst	CSF	Sm	CA	.121	66.00	31.30	4.47	---	35.77	<b>41.30</b>
1/2" diameter (137 fl.oz./CSF)	Inst	CSF	Lg	CA	.091	88.00	50.40	3.36	---	53.76	<b>61.10</b>
	Inst	CSF	Sm	CA	.121	66.00	55.30	4.47	---	59.77	<b>68.20</b>
<b>24" oc members</b>											
1/8" diameter (7 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	2.38	3.10	---	5.48	<b>7.01</b>
	Inst	CSF	Sm	CA	.112	71.25	2.61	4.14	---	6.75	<b>8.72</b>
1/4" diameter (26 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	9.47	3.10	---	12.57	<b>15.00</b>
	Inst	CSF	Sm	CA	.112	71.25	10.40	4.14	---	14.54	<b>17.40</b>
3/8" diameter (58 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	21.40	3.10	---	24.50	<b>28.30</b>
	Inst	CSF	Sm	CA	.112	71.25	23.40	4.14	---	27.54	<b>32.10</b>
1/2" diameter (103 fl.oz./CSF)	Inst	CSF	Lg	CA	.084	95.00	37.80	3.10	---	40.90	<b>46.70</b>
	Inst	CSF	Sm	CA	.112	71.25	41.50	4.14	---	45.64	<b>52.30</b>

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

## Air conditioning and ventilating systems

### System components

#### Condensing units

##### Air cooled, compressor, standard controls

1.0 ton	Inst	Ea	Lg	SB	8.00	2.00	666.00	291.00	---	957.00	<b>1190.00</b>
	Inst	Ea	Sm	SB	10.0	1.60	730.00	364.00	---	1094.00	<b>1260.00</b>
1.5 ton	Inst	Ea	Lg	SB	9.14	1.75	816.00	333.00	---	1149.00	<b>1420.00</b>
	Inst	Ea	Sm	SB	11.4	1.40	895.00	415.00	---	1310.00	<b>1500.00</b>
2.0 ton	Inst	Ea	Lg	SB	10.7	1.50	936.00	389.00	---	1325.00	<b>1640.00</b>
	Inst	Ea	Sm	SB	13.3	1.20	1030.00	484.00	---	1514.00	<b>1730.00</b>
2.5 ton	Inst	Ea	Lg	SB	12.8	1.25	1120.00	466.00	---	1586.00	<b>1960.00</b>
	Inst	Ea	Sm	SB	16.0	1.00	1230.00	582.00	---	1812.00	<b>2070.00</b>
3.0 ton	Inst	Ea	Lg	SB	16.0	1.00	1330.00	582.00	---	1912.00	<b>2370.00</b>
	Inst	Ea	Sm	SB	20.0	0.80	1450.00	728.00	---	2178.00	<b>2510.00</b>
4.0 ton	Inst	Ea	Lg	SB	21.3	0.75	1740.00	775.00	---	2515.00	<b>3130.00</b>
	Inst	Ea	Sm	SB	26.7	0.60	1910.00	972.00	---	2882.00	<b>3320.00</b>
5.0 ton	Inst	Ea	Lg	SB	32.0	0.50	2130.00	1160.00	---	3290.00	<b>4140.00</b>
	Inst	Ea	Sm	SB	40.0	0.40	2340.00	1460.00	---	3800.00	<b>4450.00</b>
<i>Minimum Job Charge</i>											
	Inst	Job	Lg	SB	5.33	3.00	---	194.00	---	194.00	<b>281.00</b>
	Inst	Job	Sm	SB	6.67	2.40	---	243.00	---	243.00	<b>352.00</b>

#### Diffusers

##### Aluminum, opposed blade damper, unless otherwise noted

##### Ceiling or sidewall, linear

2" wide	Inst	LF	Lg	UA	.267	30.00	24.40	11.10	---	35.50	<b>43.90</b>
	Inst	LF	Sm	UA	.333	24.00	26.80	13.90	---	40.70	<b>46.50</b>
4" wide	Inst	LF	Lg	UA	.296	27.00	32.80	12.30	---	45.10	<b>55.20</b>
	Inst	LF	Sm	UA	.370	21.60	35.90	15.40	---	51.30	<b>57.80</b>
6" wide	Inst	LF	Lg	UA	.333	24.00	40.60	13.90	---	54.50	<b>66.30</b>
	Inst	LF	Sm	UA	.417	19.20	44.50	17.30	---	61.80	<b>69.10</b>
8" wide	Inst	LF	Lg	UA	.400	20.00	47.30	16.60	---	63.90	<b>78.00</b>
	Inst	LF	Sm	UA	.500	16.00	51.90	20.80	---	72.70	<b>81.40</b>

##### Perforated, 24" x 24" panel size

6" x 6"	Inst	Ea	Lg	UA	.500	16.00	66.60	20.80	---	87.40	<b>106.00</b>
	Inst	Ea	Sm	UA	.625	12.80	73.00	26.00	---	99.00	<b>110.00</b>
8" x 8"	Inst	Ea	Lg	UA	.571	14.00	68.60	23.80	---	92.40	<b>113.00</b>
	Inst	Ea	Sm	UA	.714	11.20	75.20	29.70	---	104.90	<b>117.00</b>
10" x 10"	Inst	Ea	Lg	UA	.667	12.00	69.70	27.70	---	97.40	<b>120.00</b>
	Inst	Ea	Sm	UA	.833	9.60	76.40	34.60	---	111.00	<b>126.00</b>
12" x 12"	Inst	Ea	Lg	UA	.800	10.00	72.30	33.30	---	105.60	<b>130.00</b>
	Inst	Ea	Sm	UA	1.00	8.00	79.20	41.60	---	120.80	<b>138.00</b>
18" x 18"	Inst	Ea	Lg	UA	1.00	8.00	96.20	41.60	---	137.80	<b>170.00</b>
	Inst	Ea	Sm	UA	1.25	6.40	105.00	52.00	---	157.00	<b>179.00</b>



Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>Rectangular, one- to four-way blow</b>											
6" x 6"	Inst	Ea	Lg	UA	.500	16.00	39.00	20.80	---	59.80	74.40
	Inst	Ea	Sm	UA	.625	12.80	42.80	26.00	---	68.80	79.70
12" x 6"	Inst	Ea	Lg	UA	.571	14.00	49.90	23.80	---	73.70	91.10
	Inst	Ea	Sm	UA	.714	11.20	54.70	29.70	---	84.40	96.90
12" x 9"	Inst	Ea	Lg	UA	.667	12.00	58.80	27.70	---	86.50	107.00
	Inst	Ea	Sm	UA	.833	9.60	64.40	34.60	---	99.00	114.00
12" x 12"	Inst	Ea	Lg	UA	.800	10.00	68.60	33.30	---	101.90	126.00
	Inst	Ea	Sm	UA	1.00	8.00	75.20	41.60	---	116.80	134.00
24" x 12"	Inst	Ea	Lg	UA	1.00	8.00	116.00	41.60	---	157.60	193.00
	Inst	Ea	Sm	UA	1.25	6.40	128.00	52.00	---	180.00	202.00
<b>T-bar mounting, 24" x 24" lay in frame</b>											
6" x 6"	Inst	Ea	Lg	UA	.500	16.00	62.90	20.80	---	83.70	102.00
	Inst	Ea	Sm	UA	.625	12.80	69.00	26.00	---	95.00	106.00
9" x 9"	Inst	Ea	Lg	UA	.571	14.00	70.20	23.80	---	94.00	114.00
	Inst	Ea	Sm	UA	.714	11.20	77.00	29.70	---	106.70	119.00
12" x 12"	Inst	Ea	Lg	UA	.667	12.00	92.00	27.70	---	119.70	145.00
	Inst	Ea	Sm	UA	.833	9.60	101.00	34.60	---	135.60	150.00
15" x 15"	Inst	Ea	Lg	UA	.800	10.00	95.70	33.30	---	129.00	157.00
	Inst	Ea	Sm	UA	1.00	8.00	105.00	41.60	---	146.60	164.00
18" x 18"	Inst	Ea	Lg	UA	1.00	8.00	126.00	41.60	---	167.60	204.00
	Inst	Ea	Sm	UA	1.25	6.40	138.00	52.00	---	190.00	212.00
<i>Minimum Job Charge</i>											
	Inst	Job	Lg	UA	2.29	3.50	---	95.20	---	95.20	135.00
	Inst	Job	Sm	UA	2.86	2.80	---	119.00	---	119.00	169.00
<b>Ductwork</b>											
<b>Fabricated rectangular, includes fittings, joints, supports</b>											
<b>Aluminum alloy</b>											
Under 100 lbs	Inst	Lb	Lg	UF	.343	70.00	3.64	12.90	---	16.54	22.60
	Inst	Lb	Sm	UF	.429	56.00	3.99	16.20	---	20.19	27.00
100 to 500 lbs	Inst	Lb	Lg	UF	.267	90.00	2.63	10.10	---	12.73	17.30
	Inst	Lb	Sm	UF	.333	72.00	2.88	12.60	---	15.48	20.70
500 to 1,000 lbs	Inst	Lb	Lg	UF	.218	110.0	1.89	8.22	---	10.11	13.90
	Inst	Lb	Sm	UF	.273	88.00	2.07	10.30	---	12.37	16.70
Over 1,000 lbs	Inst	Lb	Lg	UF	.185	130.0	1.40	6.97	---	8.37	11.50
	Inst	Lb	Sm	UF	.231	104.0	1.54	8.71	---	10.25	13.90
<b>Galvanized steel</b>											
Under 400 lbs	Inst	Lb	Lg	UF	.120	200.0	1.09	4.52	---	5.61	7.68
	Inst	Lb	Sm	UF	.150	160.0	1.20	5.66	---	6.86	9.23
400 to 1,000 lbs	Inst	Lb	Lg	UF	.112	215.0	.70	4.22	---	4.92	6.80
	Inst	Lb	Sm	UF	.140	172.0	.76	5.28	---	6.04	8.26
1,000 to 2,000 lbs	Inst	Lb	Lg	UF	.104	230.0	.52	3.92	---	4.44	6.17
	Inst	Lb	Sm	UF	.130	184.0	.57	4.90	---	5.47	7.53
2,000 to 5,000 lbs	Inst	Lb	Lg	UF	.100	240.0	.42	3.77	---	4.19	5.84
	Inst	Lb	Sm	UF	.125	192.0	.46	4.71	---	5.17	7.15
Over 10,000 lbs	Inst	Lb	Lg	UF	.096	250.0	.36	3.62	---	3.98	5.55
	Inst	Lb	Sm	UF	.120	200.0	.40	4.52	---	4.92	6.82

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>Flexible, coated fabric on spring steel, aluminum, or corrosion-resistant metal</b>											
<b>Non-insulated</b>											
3" diameter	Inst	LF	Lg	UD	.058	275.0	.81	2.07	---	2.88	<b>3.88</b>
	Inst	LF	Sm	UD	.073	220.0	.89	2.61	---	3.50	<b>4.60</b>
5" diameter	Inst	LF	Lg	UD	.071	225.0	.95	2.54	---	3.49	<b>4.70</b>
	Inst	LF	Sm	UD	.089	180.0	1.04	3.18	---	4.22	<b>5.56</b>
6" diameter	Inst	LF	Lg	UD	.080	200.0	1.06	2.86	---	3.92	<b>5.28</b>
	Inst	LF	Sm	UD	.100	160.0	1.16	3.58	---	4.74	<b>6.24</b>
7" diameter	Inst	LF	Lg	UD	.091	175.0	1.39	3.25	---	4.64	<b>6.22</b>
	Inst	LF	Sm	UD	.114	140.0	1.53	4.08	---	5.61	<b>7.32</b>
8" diameter	Inst	LF	Lg	UD	.107	150.0	1.45	3.83	---	5.28	<b>7.10</b>
	Inst	LF	Sm	UD	.133	120.0	1.58	4.76	---	6.34	<b>8.33</b>
10" diameter	Inst	LF	Lg	UD	.128	125.0	1.85	4.58	---	6.43	<b>8.63</b>
	Inst	LF	Sm	UD	.160	100.0	2.03	5.72	---	7.75	<b>10.20</b>
12" diameter	Inst	LF	Lg	UD	.160	100.0	2.19	5.72	---	7.91	<b>10.60</b>
	Inst	LF	Sm	UD	.200	80.0	2.41	7.15	---	9.56	<b>12.60</b>
<b>Insulated</b>											
3" diameter	Inst	LF	Lg	UD	.064	250.0	1.39	2.29	---	3.68	<b>4.85</b>
	Inst	LF	Sm	UD	.080	200.0	1.53	2.86	---	4.39	<b>5.59</b>
4" diameter	Inst	LF	Lg	UD	.071	225.0	1.39	2.54	---	3.93	<b>5.20</b>
	Inst	LF	Sm	UD	.089	180.0	1.53	3.18	---	4.71	<b>6.05</b>
5" diameter	Inst	LF	Lg	UD	.080	200.0	1.63	2.86	---	4.49	<b>5.94</b>
	Inst	LF	Sm	UD	.100	160.0	1.79	3.58	---	5.37	<b>6.87</b>
6" diameter	Inst	LF	Lg	UD	.091	175.0	1.80	3.25	---	5.05	<b>6.69</b>
	Inst	LF	Sm	UD	.114	140.0	1.97	4.08	---	6.05	<b>7.76</b>
7" diameter	Inst	LF	Lg	UD	.107	150.0	2.19	3.83	---	6.02	<b>7.95</b>
	Inst	LF	Sm	UD	.133	120.0	2.41	4.76	---	7.17	<b>9.16</b>
8" diameter	Inst	LF	Lg	UD	.128	125.0	2.25	4.58	---	6.83	<b>9.09</b>
	Inst	LF	Sm	UD	.160	100.0	2.46	5.72	---	8.18	<b>10.60</b>
10" diameter	Inst	LF	Lg	UD	.160	100.0	2.92	5.72	---	8.64	<b>11.50</b>
	Inst	LF	Sm	UD	.200	80.0	3.20	7.15	---	10.35	<b>13.40</b>
12" diameter	Inst	LF	Lg	UD	.213	75.00	3.40	7.62	---	11.02	<b>14.70</b>
	Inst	LF	Sm	UD	.267	60.00	3.73	9.55	---	13.28	<b>17.30</b>
14" diameter	Inst	LF	Lg	UD	.320	50.00	4.12	11.40	---	15.52	<b>21.00</b>
	Inst	LF	Sm	UD	.400	40.00	4.51	14.30	---	18.81	<b>24.80</b>
<b>Duct accessories</b>											
<b>Air extractors</b>											
12" x 4"	Inst	Ea	Lg	UA	.333	24.00	12.70	13.90	---	26.60	<b>34.30</b>
	Inst	Ea	Sm	UA	.417	19.20	14.00	17.30	---	31.30	<b>38.60</b>
8" x 6"	Inst	Ea	Lg	UA	.400	20.00	12.70	16.60	---	29.30	<b>38.30</b>
	Inst	Ea	Sm	UA	.500	16.00	14.00	20.80	---	34.80	<b>43.50</b>
20" x 8"	Inst	Ea	Lg	UA	.500	16.00	28.60	20.80	---	49.40	<b>62.40</b>
	Inst	Ea	Sm	UA	.625	12.80	31.40	26.00	---	57.40	<b>68.30</b>
18" x 10"	Inst	Ea	Lg	UA	.571	14.00	28.10	23.80	---	51.90	<b>66.00</b>
	Inst	Ea	Sm	UA	.714	11.20	30.80	29.70	---	60.50	<b>73.00</b>
24" x 12"	Inst	Ea	Lg	UA	.800	10.00	39.00	33.30	---	72.30	<b>92.10</b>
	Inst	Ea	Sm	UA	1.00	8.00	42.80	41.60	---	84.40	<b>102.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
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### Portable front loading

#### Convertible, front loading, portable dishwashers; hardwood top, front & side panels

Six cycles											
White	Inst	Ea	Lg	SC	4.00	4.00	674.00	166.00	---	840.00	1020.00
	Inst	Ea	Sm	SC	5.33	3.00	786.00	221.00	---	1007.00	1220.00
Colors	Inst	Ea	Lg	SC	4.00	4.00	720.00	166.00	---	886.00	1070.00
	Inst	Ea	Sm	SC	5.33	3.00	840.00	221.00	---	1061.00	1290.00
Four cycles											
White	Inst	Ea	Lg	SC	4.00	4.00	593.00	166.00	---	759.00	922.00
	Inst	Ea	Sm	SC	5.33	3.00	692.00	221.00	---	913.00	1120.00
Colors	Inst	Ea	Lg	SC	4.00	4.00	656.00	166.00	---	822.00	995.00
	Inst	Ea	Sm	SC	5.33	3.00	765.00	221.00	---	986.00	1200.00
Three cycles											
White	Inst	Ea	Lg	SC	4.00	4.00	503.00	166.00	---	669.00	819.00
	Inst	Ea	Sm	SC	5.33	3.00	587.00	221.00	---	808.00	995.00
Colors	Inst	Ea	Lg	SC	4.00	4.00	536.00	166.00	---	702.00	856.00
	Inst	Ea	Sm	SC	5.33	3.00	625.00	221.00	---	846.00	1040.00

### Front loading portables

Three cycles with hardwood top											
White	Inst	Ea	Lg	SC	4.00	4.00	503.00	166.00	---	669.00	819.00
	Inst	Ea	Sm	SC	5.33	3.00	587.00	221.00	---	808.00	995.00
Colors	Inst	Ea	Lg	SC	4.00	4.00	536.00	166.00	---	702.00	856.00
	Inst	Ea	Sm	SC	5.33	3.00	625.00	221.00	---	846.00	1040.00
Two cycles with porcelain top											
White	Inst	Ea	Lg	SC	4.00	4.00	449.00	166.00	---	615.00	757.00
	Inst	Ea	Sm	SC	5.33	3.00	524.00	221.00	---	745.00	923.00
Colors	Inst	Ea	Lg	SC	4.00	4.00	512.00	166.00	---	678.00	829.00
	Inst	Ea	Sm	SC	5.33	3.00	597.00	221.00	---	818.00	1010.00

### Dishwasher - sink combination, includes good quality fittings, 36"-42" cabinet, faucets and water supply kit

Six cycles											
White	Inst	Ea	Lg	SC	10.7	1.50	1650.00	444.00	---	2094.00	2540.00
	Inst	Ea	Sm	SC	14.2	1.13	1920.00	589.00	---	2509.00	3060.00
Colors	Inst	Ea	Lg	SC	10.7	1.50	1730.00	444.00	---	2174.00	2640.00
	Inst	Ea	Sm	SC	14.2	1.13	2020.00	589.00	---	2609.00	3180.00
Three cycles											
White	Inst	Ea	Lg	SC	10.7	1.50	1370.00	444.00	---	1814.00	2220.00
	Inst	Ea	Sm	SC	14.2	1.13	1590.00	589.00	---	2179.00	2690.00
Remove and reset combination dishwasher - sink only											
	Reset	Ea	Lg	SA	2.22	3.60	---	95.10	---	95.10	138.00
	Reset	Ea	Sm	SA	2.96	2.70	---	127.00	---	127.00	184.00
Remove only, d/w - sink combo											
	Demo	Ea	Lg	SA	1.33	6.00	---	57.00	---	57.00	82.60
	Demo	Ea	Sm	SA	1.78	4.50	---	76.30	---	76.30	111.00
Material adjustments											
For standard quality, DEDUCT	Inst	%	Lg	---	---	---	-20.0	---	---	---	---
	Inst	%	Sm	---	---	---	-20.0	---	---	---	---
For economy quality, DEDUCT	Inst	%	Lg	---	---	---	-30.0	---	---	---	---
	Inst	%	Sm	---	---	---	-30.0	---	---	---	---

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
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## Door frames

### Exterior wood door frames

#### Exterior frame with exterior trim

##### 5/4 x 4-9/16" deep

Pine	Inst	LF	Lg	2C	.046	350.0	3.77	1.70	---	5.47	<b>6.71</b>
	Inst	LF	Sm	2C	.070	227.5	4.06	2.59	---	6.65	<b>8.29</b>
Oak	Inst	LF	Lg	2C	.049	325.0	6.45	1.81	---	8.26	<b>9.95</b>
	Inst	LF	Sm	2C	.076	211.3	6.94	2.81	---	9.75	<b>11.90</b>
Walnut	Inst	LF	Lg	2C	.053	300.0	8.06	1.96	---	10.02	<b>12.00</b>
	Inst	LF	Sm	2C	.082	195.0	8.68	3.03	---	11.71	<b>14.20</b>

##### 5/4 x 5-3/16" deep

Pine	Inst	LF	Lg	2C	.046	350.0	4.10	1.70	---	5.80	<b>7.09</b>
	Inst	LF	Sm	2C	.070	227.5	4.41	2.59	---	7.00	<b>8.69</b>
Oak	Inst	LF	Lg	2C	.049	325.0	6.96	1.81	---	8.77	<b>10.50</b>
	Inst	LF	Sm	2C	.076	211.3	7.49	2.81	---	10.30	<b>12.50</b>
Walnut	Inst	LF	Lg	2C	.053	300.0	10.50	1.96	---	12.46	<b>14.80</b>
	Inst	LF	Sm	2C	.082	195.0	11.30	3.03	---	14.33	<b>17.20</b>

##### 5/4 x 6-9/16" deep

Pine	Inst	LF	Lg	2C	.046	350.0	4.78	1.70	---	6.48	<b>7.88</b>
	Inst	LF	Sm	2C	.070	227.5	5.15	2.59	---	7.74	<b>9.54</b>
Oak	Inst	LF	Lg	2C	.049	325.0	8.19	1.81	---	10.00	<b>12.00</b>
	Inst	LF	Sm	2C	.076	211.3	8.82	2.81	---	11.63	<b>14.10</b>
Walnut	Inst	LF	Lg	2C	.053	300.0	12.30	1.96	---	14.26	<b>16.90</b>
	Inst	LF	Sm	2C	.082	195.0	13.20	3.03	---	16.23	<b>19.50</b>

### Exterior sills

#### 8/4 x 8" deep

No horns	Inst	LF	Lg	2C	.200	80.00	10.70	7.39	---	18.09	<b>22.70</b>
	Inst	LF	Sm	2C	.308	52.00	11.60	11.40	---	23.00	<b>29.20</b>
2" horns	Inst	LF	Lg	2C	.200	80.00	11.50	7.39	---	18.89	<b>23.60</b>
	Inst	LF	Sm	2C	.308	52.00	12.40	11.40	---	23.80	<b>30.20</b>
3" horns	Inst	LF	Lg	2C	.200	80.00	12.50	7.39	---	19.89	<b>24.70</b>
	Inst	LF	Sm	2C	.308	52.00	13.40	11.40	---	24.80	<b>31.40</b>

#### 8/4 x 10" deep

No horns	Inst	LF	Lg	2C	.267	60.00	13.90	9.86	---	23.76	<b>29.80</b>
	Inst	LF	Sm	2C	.410	39.00	15.00	15.20	---	30.20	<b>38.40</b>
2" horns	Inst	LF	Lg	2C	.267	60.00	15.30	9.86	---	25.16	<b>31.40</b>
	Inst	LF	Sm	2C	.410	39.00	16.50	15.20	---	31.70	<b>40.10</b>
3" horns	Inst	LF	Lg	2C	.267	60.00	16.70	9.86	---	26.56	<b>33.00</b>
	Inst	LF	Sm	2C	.410	39.00	18.00	15.20	---	33.20	<b>41.90</b>

### Exterior, colonial frame and trim

3' opening, in swing	Inst	Ea	Lg	2C	.800	20.00	540.00	29.60	---	569.60	<b>662.00</b>
	Inst	Ea	Sm	2C	1.23	13.00	581.00	45.40	---	626.40	<b>732.00</b>
5' 4" opening, in/out swing	Inst	Ea	Lg	2C	1.07	15.00	871.00	39.50	---	910.50	<b>1060.00</b>
	Inst	Ea	Sm	2C	1.64	9.75	938.00	60.60	---	998.60	<b>1160.00</b>
6' opening, in/out swing	Inst	Ea	Lg	2C	1.60	10.00	1080.00	59.10	---	1139.10	<b>1320.00</b>
	Inst	Ea	Sm	2C	2.46	6.50	1160.00	90.90	---	1250.90	<b>1460.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

## Interior wood door frames

### Interior frame

#### 11/16" x 3-5/8" deep

Pine	Inst	LF	Lg	2C	.046	350.0	3.81	1.70	---	5.51	<b>6.76</b>
	Inst	LF	Sm	2C	.070	227.5	4.10	2.59	---	6.69	<b>8.34</b>
Oak	Inst	LF	Lg	2C	.049	325.0	4.68	1.81	---	6.49	<b>7.92</b>
	Inst	LF	Sm	2C	.076	211.3	5.04	2.81	---	7.85	<b>9.73</b>
Walnut	Inst	LF	Lg	2C	.053	300.0	7.02	1.96	---	8.98	<b>10.80</b>
	Inst	LF	Sm	2C	.082	195.0	7.56	3.03	---	10.59	<b>12.90</b>

#### 11/16" x 4-9/16" deep

Pine	Inst	LF	Lg	2C	.046	350.0	3.93	1.70	---	5.63	<b>6.90</b>
	Inst	LF	Sm	2C	.070	227.5	4.23	2.59	---	6.82	<b>8.48</b>
Oak	Inst	LF	Lg	2C	.049	325.0	4.68	1.81	---	6.49	<b>7.92</b>
	Inst	LF	Sm	2C	.076	211.3	5.04	2.81	---	7.85	<b>9.73</b>
Walnut	Inst	LF	Lg	2C	.053	300.0	7.02	1.96	---	8.98	<b>10.80</b>
	Inst	LF	Sm	2C	.082	195.0	7.56	3.03	---	10.59	<b>12.90</b>

#### 11/16" x 5-3/16" deep

Pine	Inst	LF	Lg	2C	.046	350.0	4.45	1.70	---	6.15	<b>7.50</b>
	Inst	LF	Sm	2C	.070	227.5	4.79	2.59	---	7.38	<b>9.13</b>
Oak	Inst	LF	Lg	2C	.049	325.0	4.81	1.81	---	6.62	<b>8.07</b>
	Inst	LF	Sm	2C	.076	211.3	5.18	2.81	---	7.99	<b>9.89</b>
Walnut	Inst	LF	Lg	2C	.053	300.0	7.28	1.96	---	9.24	<b>11.10</b>
	Inst	LF	Sm	2C	.082	195.0	7.84	3.03	---	10.87	<b>13.30</b>

### Pocket door frame

2'-0" to 3'-0" x 6'-8"	Inst	Ea	Lg	2C	1.33	12.00	97.50	49.10	---	146.60	<b>181.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	105.00	75.70	---	180.70	<b>227.00</b>
3'-6" x 6'-8"	Inst	Ea	Lg	2C	1.33	12.00	179.00	49.10	---	228.10	<b>275.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	193.00	75.70	---	268.70	<b>328.00</b>
4'-0" x 6'-8"	Inst	Ea	Lg	2C	1.33	12.00	182.00	49.10	---	231.10	<b>278.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	196.00	75.70	---	271.70	<b>331.00</b>

### Threshold, oak

5/8" x 3-5/8" deep	Inst	LF	Lg	2C	.100	160.0	2.55	3.69	---	6.24	<b>8.10</b>
	Inst	LF	Sm	2C	.154	104.0	2.74	5.69	---	8.43	<b>11.10</b>
5/8" x 4-5/8" deep	Inst	LF	Lg	2C	.107	150.0	3.32	3.95	---	7.27	<b>9.35</b>
	Inst	LF	Sm	2C	.164	97.50	3.57	6.06	---	9.63	<b>12.60</b>
5/8" x 5-5/8" deep	Inst	LF	Lg	2C	.114	140.0	3.95	4.21	---	8.16	<b>10.40</b>
	Inst	LF	Sm	2C	.176	91.00	4.26	6.50	---	10.76	<b>14.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
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## Door hardware

### Locksets

#### Outside locks

##### Knobs (pin tumbler)

Excellent quality	Inst	Ea	Lg	CA	.667	12.00	158.00	24.60	---	182.60	<b>216.00</b>
	Inst	Ea	Sm	CA	1.03	7.80	178.00	38.10	---	216.10	<b>258.00</b>
Good quality	Inst	Ea	Lg	CA	.500	16.00	117.00	18.50	---	135.50	<b>160.00</b>
	Inst	Ea	Sm	CA	.769	10.40	132.00	28.40	---	160.40	<b>192.00</b>
Average quality	Inst	Ea	Lg	CA	.500	16.00	81.90	18.50	---	100.40	<b>120.00</b>
	Inst	Ea	Sm	CA	.769	10.40	92.40	28.40	---	120.80	<b>146.00</b>

#### Handlesets

Excellent quality	Inst	Ea	Lg	CA	.667	12.00	205.00	24.60	---	229.60	<b>270.00</b>
	Inst	Ea	Sm	CA	1.03	7.80	231.00	38.10	---	269.10	<b>319.00</b>
Good quality	Inst	Ea	Lg	CA	.500	16.00	129.00	18.50	---	147.50	<b>174.00</b>
	Inst	Ea	Sm	CA	.769	10.40	145.00	28.40	---	173.40	<b>207.00</b>
Average quality	Inst	Ea	Lg	CA	.500	16.00	93.60	18.50	---	112.10	<b>134.00</b>
	Inst	Ea	Sm	CA	.769	10.40	106.00	28.40	---	134.40	<b>161.00</b>

#### Bath or bedroom locks

Excellent quality	Inst	Ea	Lg	CA	.533	15.00	117.00	19.70	---	136.70	<b>162.00</b>
	Inst	Ea	Sm	CA	.821	9.75	132.00	30.30	---	162.30	<b>194.00</b>
Good quality	Inst	Ea	Lg	CA	.400	20.00	99.50	14.80	---	114.30	<b>135.00</b>
	Inst	Ea	Sm	CA	.615	13.00	112.00	22.70	---	134.70	<b>161.00</b>
Average quality	Inst	Ea	Lg	CA	.400	20.00	76.10	14.80	---	90.90	<b>108.00</b>
	Inst	Ea	Sm	CA	.615	13.00	85.80	22.70	---	108.50	<b>130.00</b>

#### Passage latches

Excellent quality	Inst	Ea	Lg	CA	.400	20.00	135.00	14.80	---	149.80	<b>175.00</b>
	Inst	Ea	Sm	CA	.615	13.00	152.00	22.70	---	174.70	<b>206.00</b>
Good quality	Inst	Ea	Lg	CA	.308	26.00	101.00	11.40	---	112.40	<b>132.00</b>
	Inst	Ea	Sm	CA	.473	16.90	114.00	17.50	---	131.50	<b>155.00</b>
Average quality	Inst	Ea	Lg	CA	.308	26.00	70.20	11.40	---	81.60	<b>96.70</b>
	Inst	Ea	Sm	CA	.473	16.90	79.20	17.50	---	96.70	<b>116.00</b>

#### Dead locks (double key)

Excellent quality	Inst	Ea	Lg	CA	.533	15.00	135.00	19.70	---	154.70	<b>182.00</b>
	Inst	Ea	Sm	CA	.821	9.75	152.00	30.30	---	182.30	<b>217.00</b>
Good quality	Inst	Ea	Lg	CA	.400	20.00	105.00	14.80	---	119.80	<b>142.00</b>
	Inst	Ea	Sm	CA	.615	13.00	119.00	22.70	---	141.70	<b>168.00</b>
Average quality	Inst	Ea	Lg	CA	.400	20.00	71.40	14.80	---	86.20	<b>103.00</b>
	Inst	Ea	Sm	CA	.615	13.00	80.50	22.70	---	103.20	<b>124.00</b>

### Kickplates, 8" x 30"

Aluminum	Inst	Ea	Lg	CA	.308	26.00	18.40	11.40	---	29.80	<b>37.10</b>
	Inst	Ea	Sm	CA	.473	16.90	20.70	17.50	---	38.20	<b>48.30</b>
Brass or bronze	Inst	Ea	Lg	CA	.308	26.00	26.20	11.40	---	37.60	<b>46.10</b>
	Inst	Ea	Sm	CA	.473	16.90	29.60	17.50	---	47.10	<b>58.50</b>



Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

### Thresholds

Aluminum, pre-notched, draft-proof, standard  
3/4" high

32" long	Inst	Ea	Lg	CA	.250	32.00	12.10	9.24	---	21.34	<b>26.80</b>
	Inst	Ea	Sm	CA	.385	20.80	13.60	14.20	---	27.80	<b>35.60</b>
36" long	Inst	Ea	Lg	CA	.250	32.00	13.80	9.24	---	23.04	<b>28.80</b>
	Inst	Ea	Sm	CA	.385	20.80	15.60	14.20	---	29.80	<b>37.80</b>
42" long	Inst	Ea	Lg	CA	.250	32.00	16.40	9.24	---	25.64	<b>31.80</b>
	Inst	Ea	Sm	CA	.385	20.80	18.60	14.20	---	32.80	<b>41.20</b>
48" long	Inst	Ea	Lg	CA	.250	32.00	18.80	9.24	---	28.04	<b>34.60</b>
	Inst	Ea	Sm	CA	.385	20.80	21.30	14.20	---	35.50	<b>44.40</b>
60" long	Inst	Ea	Lg	CA	.250	32.00	23.40	9.24	---	32.64	<b>39.80</b>
	Inst	Ea	Sm	CA	.385	20.80	26.40	14.20	---	40.60	<b>50.30</b>
72" long	Inst	Ea	Lg	CA	.250	32.00	27.70	9.24	---	36.94	<b>44.80</b>
	Inst	Ea	Sm	CA	.385	20.80	31.30	14.20	---	45.50	<b>55.90</b>
For high rug-type, 1-1/8"											
ADD	Inst	%	Lg	CA	---	---	25.0	---	---	25.0	---
	Inst	%	Sm	CA	---	---	25.0	---	---	25.0	---

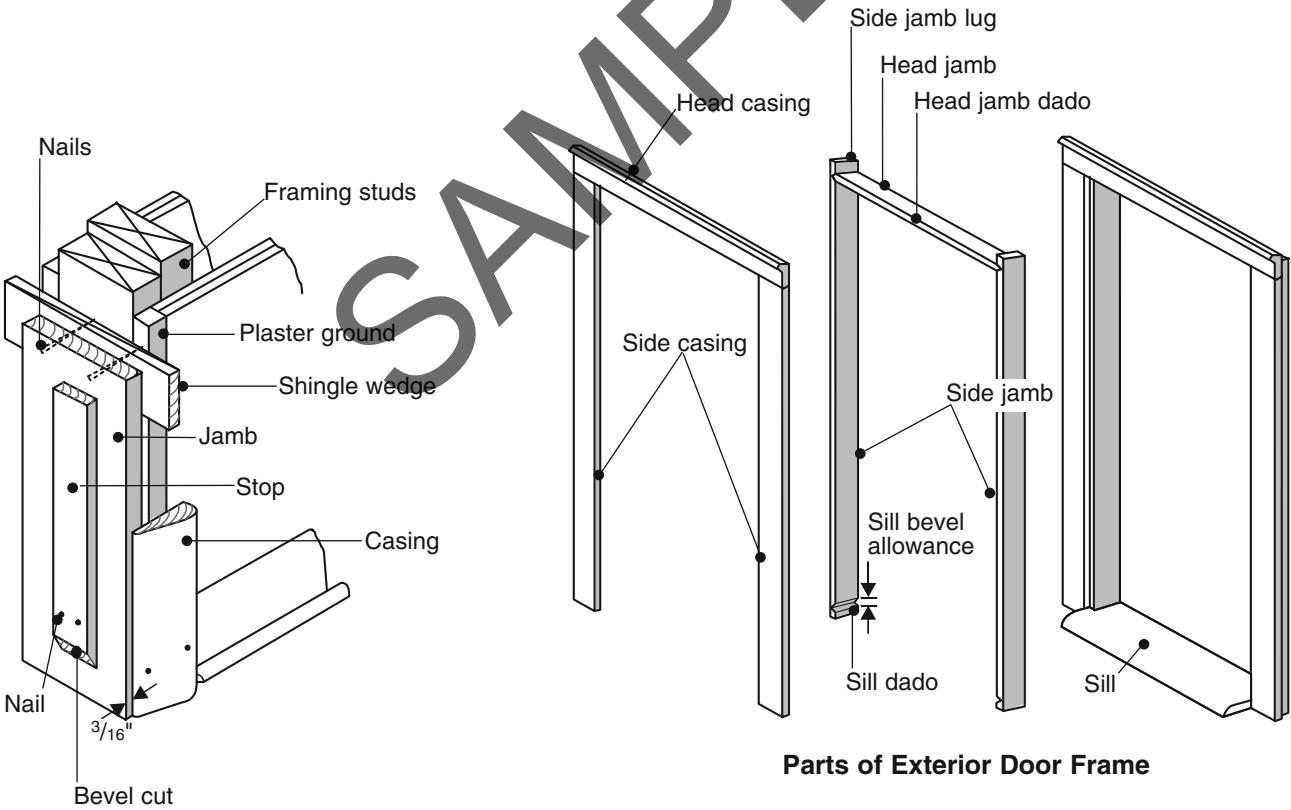
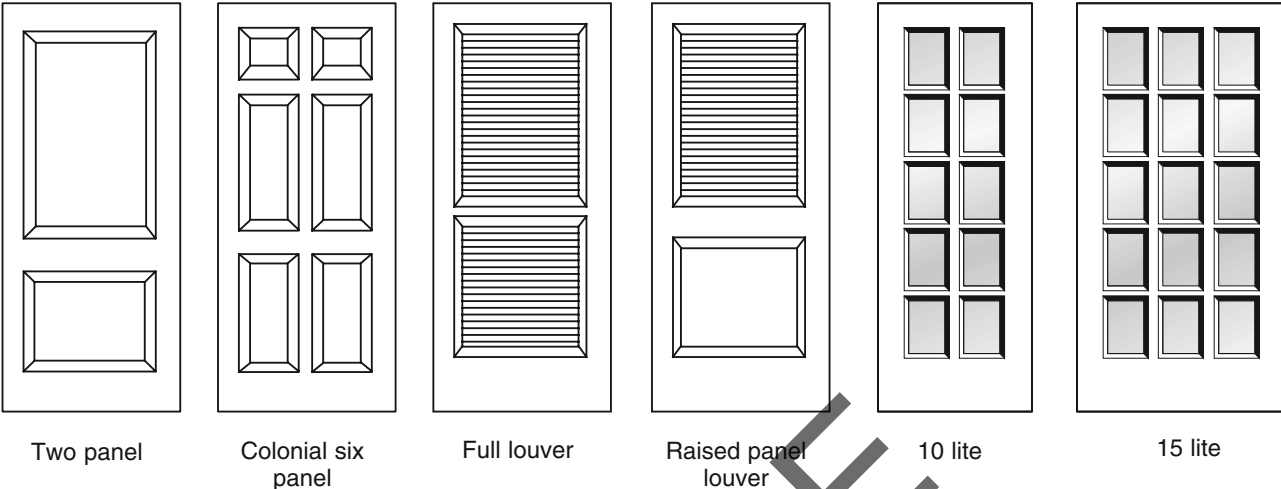
Wood, oak threshold with vinyl weather seal

5/8" x 3-1/2"

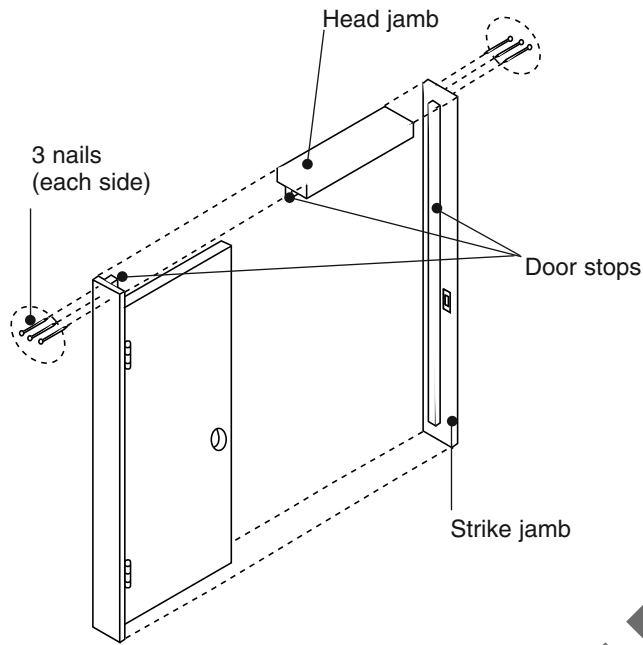
33" long	Inst	Ea	Lg	CA	.250	32.00	14.00	9.24	---	23.24	<b>29.10</b>
	Inst	Ea	Sm	CA	.385	20.80	15.80	14.20	---	30.00	<b>38.10</b>
37" long	Inst	Ea	Lg	CA	.250	32.00	15.80	9.24	---	25.04	<b>31.10</b>
	Inst	Ea	Sm	CA	.385	20.80	17.90	14.20	---	32.10	<b>40.40</b>
43" long	Inst	Ea	Lg	CA	.250	32.00	17.00	9.24	---	26.24	<b>32.50</b>
	Inst	Ea	Sm	CA	.385	20.80	19.20	14.20	---	33.40	<b>42.00</b>
49" long	Inst	Ea	Lg	CA	.250	32.00	19.50	9.24	---	28.74	<b>35.30</b>
	Inst	Ea	Sm	CA	.385	20.80	22.00	14.20	---	36.20	<b>45.20</b>
61" long	Inst	Ea	Lg	CA	.250	32.00	24.70	9.24	---	33.94	<b>41.40</b>
	Inst	Ea	Sm	CA	.385	20.80	27.90	14.20	---	42.10	<b>52.00</b>
73" long	Inst	Ea	Lg	CA	.250	32.00	29.60	9.24	---	38.84	<b>47.00</b>
	Inst	Ea	Sm	CA	.385	20.80	33.40	14.20	---	47.60	<b>58.30</b>
3/4" x 3-1/2"											
33" long	Inst	Ea	Lg	CA	.250	32.00	14.90	9.24	---	24.14	<b>30.10</b>
	Inst	Ea	Sm	CA	.385	20.80	16.80	14.20	---	31.00	<b>39.20</b>
37" long	Inst	Ea	Lg	CA	.250	32.00	16.70	9.24	---	25.94	<b>32.10</b>
	Inst	Ea	Sm	CA	.385	20.80	18.80	14.20	---	33.00	<b>41.60</b>

# Doors

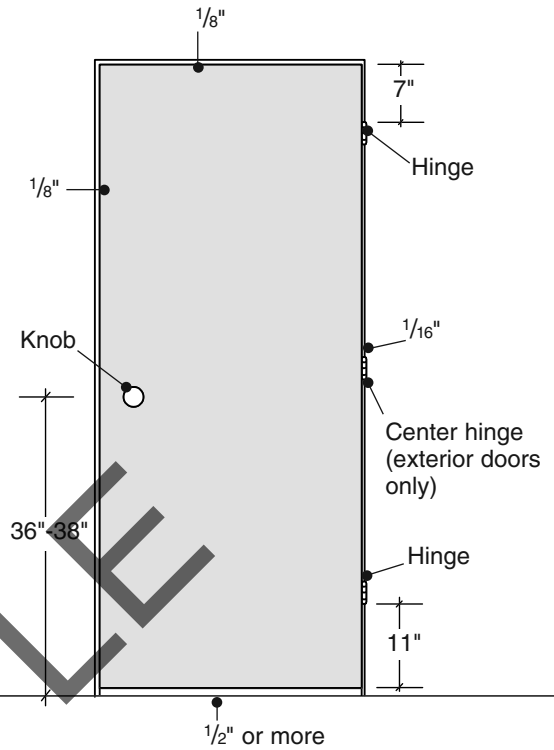
## Interior Door Systems



**Assembled Package Door Units (Interior)**

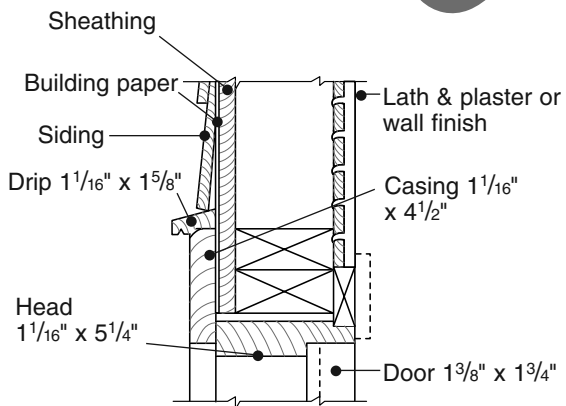


**Door Clearances**

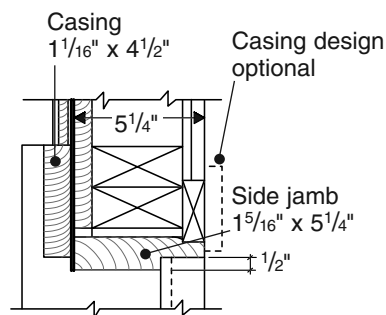


**Unit Includes:**

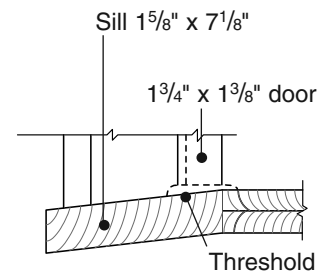
- Jamb:**  $4^{9/16}"$  finger joint pine w/ stops applied.
- Butts:** 1 pair  $3^{1/2}" \times 3^{1/2}"$  applied to door and jamb.
- Door:** 3 degree bevel one side  $3/16"$  under std. width - net 80"  
H center bored -  $2^{1/8}"$  bore  
 $2^{3/8}"$  backset - 1" edge bore



**Head jamb**



**Side jamb**



**Sill**

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

## Doors

### Entrance doors

#### Decorative glass doors and matching sidelights

##### Lafayette collection, 1-3/8" panels

Astoria style

2'-6", 2'-8", 3' W x 6'-8" H doors

Fir & pine	Inst	Ea	Lg	2C	1.33	12.00	1350.00	49.10	---	1399.10	<b>1630.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	1530.00	75.70	---	1605.70	<b>1860.00</b>
Oak	Inst	Ea	Lg	2C	1.33	12.00	1780.00	49.10	---	1829.10	<b>2110.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	2000.00	75.70	---	2075.70	<b>2410.00</b>

1', 1'-2" x 6'-8-1/2" sidelights

Fir & pine	Inst	Ea	Lg	2C	1.00	16.00	599.00	36.90	---	635.90	<b>741.00</b>
	Inst	Ea	Sm	2C	1.54	10.40	676.00	56.90	---	732.90	<b>857.00</b>
Oak	Inst	Ea	Lg	2C	1.00	16.00	762.00	36.90	---	798.90	<b>928.00</b>
	Inst	Ea	Sm	2C	1.54	10.40	859.00	56.90	---	915.90	<b>1070.00</b>

Bourbon Royale style

2'-6", 2'-8", 3' W x 6'-8" H doors

Fir & pine	Inst	Ea	Lg	2C	1.33	12.00	1330.00	49.10	---	1379.10	<b>1600.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	1500.00	75.70	---	1575.70	<b>1830.00</b>
Oak	Inst	Ea	Lg	2C	1.33	12.00	1760.00	49.10	---	1809.10	<b>2090.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	1980.00	75.70	---	2055.70	<b>2380.00</b>

1', 1'-2" x 6'-8-1/2" sidelights

Fir & pine	Inst	Ea	Lg	2C	1.00	16.00	631.00	36.90	---	667.90	<b>777.00</b>
	Inst	Ea	Sm	2C	1.54	10.40	711.00	56.90	---	767.90	<b>898.00</b>
Oak	Inst	Ea	Lg	2C	1.00	16.00	782.00	36.90	---	818.90	<b>951.00</b>
	Inst	Ea	Sm	2C	1.54	10.40	882.00	56.90	---	938.90	<b>1090.00</b>

Jubilee style

2'-6", 2'-8", 3' W x 6'-8" H doors

Fir & pine	Inst	Ea	Lg	2C	1.33	12.00	1400.00	49.10	---	1449.10	<b>1680.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	1580.00	75.70	---	1655.70	<b>1920.00</b>
Oak	Inst	Ea	Lg	2C	1.33	12.00	1830.00	49.10	---	1879.10	<b>2170.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	2060.00	75.70	---	2135.70	<b>2470.00</b>

1', 1'-2" x 6'-8-1/2" sidelights

Fir & pine	Inst	Ea	Lg	2C	1.00	16.00	587.00	36.90	---	623.90	<b>727.00</b>
	Inst	Ea	Sm	2C	1.54	10.40	663.00	56.90	---	719.90	<b>842.00</b>
Oak	Inst	Ea	Lg	2C	1.00	16.00	893.00	36.90	---	929.90	<b>1080.00</b>
	Inst	Ea	Sm	2C	1.54	10.40	1010.00	56.90	---	1066.90	<b>1240.00</b>

Lexington style

2'-6", 2'-8", 3' W x 6'-8" H doors

Fir & pine	Inst	Ea	Lg	2C	1.33	12.00	1400.00	49.10	---	1449.10	<b>1670.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	1570.00	75.70	---	1645.70	<b>1920.00</b>
Oak	Inst	Ea	Lg	2C	1.33	12.00	1820.00	49.10	---	1869.10	<b>2160.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	2060.00	75.70	---	2135.70	<b>2470.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
1', 1'-2" x 6'-8-1/2" sidelights											
Fir & pine	Inst	Ea	Lg	2C	1.00	16.00	626.00	36.90	---	662.90	772.00
	Inst	Ea	Sm	2C	1.54	10.40	706.00	56.90	---	762.90	892.00
Oak	Inst	Ea	Lg	2C	1.00	16.00	777.00	36.90	---	813.90	945.00
	Inst	Ea	Sm	2C	1.54	10.40	876.00	56.90	---	932.90	1090.00
Marquis style											
2'-6", 2'-8", 3' W x 6'-8" H doors											
Fir & pine	Inst	Ea	Lg	2C	1.33	12.00	1460.00	49.10	---	1509.10	1750.00
	Inst	Ea	Sm	2C	2.05	7.80	1650.00	75.70	---	1725.70	2000.00
Oak	Inst	Ea	Lg	2C	1.33	12.00	1890.00	49.10	---	1939.10	2240.00
	Inst	Ea	Sm	2C	2.05	7.80	2130.00	75.70	---	2205.70	2550.00
1', 1'-2" x 6'-8-1/2" sidelights											
Fir & pine	Inst	Ea	Lg	2C	1.00	16.00	659.00	36.90	---	695.90	809.00
	Inst	Ea	Sm	2C	1.54	10.40	743.00	56.90	---	799.90	934.00
Oak	Inst	Ea	Lg	2C	1.00	16.00	734.00	36.90	---	770.90	895.00
	Inst	Ea	Sm	2C	1.54	10.40	828.00	56.90	---	884.90	1030.00
Monaco style											
2'-6", 2'-8", 3'-0" W x 6'-8" H doors											
Fir & pine	Inst	Ea	Lg	2C	1.33	12.00	1710.00	49.10	---	1759.10	2040.00
	Inst	Ea	Sm	2C	2.05	7.80	1930.00	75.70	---	2005.70	2330.00
Oak	Inst	Ea	Lg	2C	1.33	12.00	2130.00	49.10	---	2179.10	2510.00
	Inst	Ea	Sm	2C	2.05	7.80	2400.00	75.70	---	2475.70	2870.00
1', 1'-2" x 6'-8-1/2" sidelights											
Fir & pine	Inst	Ea	Lg	2C	1.00	16.00	785.00	36.90	---	821.90	955.00
	Inst	Ea	Sm	2C	1.54	10.40	886.00	56.90	---	942.90	1100.00
Oak	Inst	Ea	Lg	2C	1.00	16.00	936.00	36.90	---	972.90	1130.00
	Inst	Ea	Sm	2C	1.54	10.40	1060.00	56.90	---	1116.90	1290.00
Windsor style											
2'-6", 2'-8", 3' W x 6'-8" H doors											
Fir & pine	Inst	Ea	Lg	2C	1.33	12.00	1440.00	49.10	---	1489.10	1730.00
	Inst	Ea	Sm	2C	2.05	7.80	1630.00	75.70	---	1705.70	1980.00
Oak	Inst	Ea	Lg	2C	1.33	12.00	1860.00	49.10	---	1909.10	2210.00
	Inst	Ea	Sm	2C	2.05	7.80	2100.00	75.70	---	2175.70	2520.00
1', 1'-2" x 6'-8-1/2" sidelights											
Fir & pine	Inst	Ea	Lg	2C	1.00	16.00	619.00	36.90	---	655.90	763.00
	Inst	Ea	Sm	2C	1.54	10.40	698.00	56.90	---	754.90	883.00
Oak	Inst	Ea	Lg	2C	1.00	16.00	773.00	36.90	---	809.90	941.00
	Inst	Ea	Sm	2C	1.54	10.40	873.00	56.90	---	929.90	1080.00

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>Stile and rail raised panels</b>											
<b>No lites</b>											
<b>2 raised panels</b>											
2'-6" to 3' x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.33	12.00	379.00	49.10	---	428.10	<b>505.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	428.00	75.70	---	503.70	<b>598.00</b>
3'-6" x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.45	11.00	379.00	53.60	---	432.60	<b>511.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	428.00	82.80	---	510.80	<b>608.00</b>
<b>4 raised panels</b>											
2'-6" to 3' x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.33	12.00	345.00	49.10	---	394.10	<b>466.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	389.00	75.70	---	464.70	<b>554.00</b>
3'-6" x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.45	11.00	507.00	53.60	---	560.60	<b>658.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	572.00	82.80	---	654.80	<b>773.00</b>
<b>6 raised panels</b>											
2' to 2'-8" x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.33	12.00	333.00	49.10	---	382.10	<b>452.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	376.00	75.70	---	451.70	<b>539.00</b>
3' x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.45	11.00	343.00	53.60	---	396.60	<b>469.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	387.00	82.80	---	469.80	<b>561.00</b>
3'-6" x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.60	10.00	502.00	59.10	---	561.10	<b>660.00</b>
	Inst	Ea	Sm	2C	2.46	6.50	566.00	90.90	---	656.90	<b>778.00</b>
<b>8 raised panels</b>											
2'-6" to 2'-8" x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.33	12.00	335.00	49.10	---	384.10	<b>454.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	378.00	75.70	---	453.70	<b>540.00</b>
3' x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.45	11.00	343.00	53.60	---	396.60	<b>469.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	387.00	82.80	---	469.80	<b>561.00</b>
3'-6" x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.60	10.00	502.00	59.10	---	561.10	<b>660.00</b>
	Inst	Ea	Sm	2C	2.46	6.50	566.00	90.90	---	656.90	<b>778.00</b>
2'-6" to 2'-8" x 7' x 1-3/4" T	Inst	Ea	Lg	2C	1.33	12.00	362.00	49.10	---	411.10	<b>485.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	408.00	75.70	---	483.70	<b>575.00</b>
3' x 7' x 1-3/4" T	Inst	Ea	Lg	2C	1.45	11.00	390.00	53.60	---	443.60	<b>523.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	440.00	82.80	---	522.80	<b>621.00</b>
3'-6" x 7' x 1-3/4" T	Inst	Ea	Lg	2C	1.60	10.00	528.00	59.10	---	587.10	<b>690.00</b>
	Inst	Ea	Sm	2C	2.46	6.50	595.00	90.90	---	685.90	<b>812.00</b>
<b>10 raised panels</b>											
2'-6" to 2'-8" x 8' x 1-3/4" T	Inst	Ea	Lg	2C	1.45	11.00	439.00	53.60	---	492.60	<b>580.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	495.00	82.80	---	577.80	<b>685.00</b>
3' x 8' x 1-3/4" T	Inst	Ea	Lg	2C	1.60	10.00	460.00	59.10	---	519.10	<b>612.00</b>
	Inst	Ea	Sm	2C	2.46	6.50	519.00	90.90	---	609.90	<b>724.00</b>
3'-6" x 8' x 1-3/4" T	Inst	Ea	Lg	2C	1.78	9.00	583.00	65.80	---	648.80	<b>762.00</b>
	Inst	Ea	Sm	2C	2.74	5.85	657.00	101.00	---	758.00	<b>898.00</b>



Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

**Lites**

1 raised panel, 1 lite  
 2'-6" to 3' x 6'-8" x 1-3/4" T

Open w/stops	Inst	Ea	Lg	2C	1.33	12.00	331.00	49.10	---	380.10	<b>450.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	374.00	75.70	---	449.70	<b>536.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	345.00	49.10	---	394.10	<b>466.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	389.00	75.70	---	464.70	<b>554.00</b>
Acrylic or tempered amber	Inst	Ea	Lg	2C	1.33	12.00	414.00	49.10	---	463.10	<b>545.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	467.00	75.70	---	542.70	<b>643.00</b>

1 raised panel, 6 lites  
 2'-6" to 3' x 6'-8" x 1-3/4" T

Open w/stops	Inst	Ea	Lg	2C	1.33	12.00	357.00	49.10	---	406.10	<b>479.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	403.00	75.70	---	478.70	<b>569.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	381.00	49.10	---	430.10	<b>507.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	430.00	75.70	---	505.70	<b>601.00</b>
Acrylic or tempered amber	Inst	Ea	Lg	2C	1.33	12.00	433.00	49.10	---	482.10	<b>567.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	488.00	75.70	---	563.70	<b>668.00</b>

1 raised panel, 9 lites  
 2'-6" to 3' x 6'-8" x 1-3/4" T

Open w/stops	Inst	Ea	Lg	2C	1.33	12.00	363.00	49.10	---	412.10	<b>486.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	409.00	75.70	---	484.70	<b>577.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	391.00	49.10	---	440.10	<b>518.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	441.00	75.70	---	516.70	<b>613.00</b>
Acrylic or tempered amber	Inst	Ea	Lg	2C	1.33	12.00	474.00	49.10	---	523.10	<b>614.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	535.00	75.70	---	610.70	<b>721.00</b>

1 raised panel, 12 diamond lites  
 2'-6" to 3' x 6'-8" x 1-3/4" T

Open w/stops	Inst	Ea	Lg	2C	1.33	12.00	372.00	49.10	---	421.10	<b>497.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	420.00	75.70	---	495.70	<b>589.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	474.00	49.10	---	523.10	<b>614.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	535.00	75.70	---	610.70	<b>721.00</b>
Acrylic or tempered amber	Inst	Ea	Lg	2C	1.33	12.00	591.00	49.10	---	640.10	<b>748.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	667.00	75.70	---	742.70	<b>873.00</b>

**Dutch doors, country style, fir, stile and rail**

**Two raised panels in lower door**

1 lite in upper door  
 2'-6" to 3' x 6'-8" x 1-3/4" T

Empty	Inst	Ea	Lg	2C	1.33	12.00	456.00	49.10	---	505.10	<b>594.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	515.00	75.70	---	590.70	<b>698.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	474.00	49.10	---	523.10	<b>614.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	535.00	75.70	---	610.70	<b>721.00</b>
Tempered amber	Inst	Ea	Lg	2C	1.33	12.00	591.00	49.10	---	640.10	<b>748.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	667.00	75.70	---	742.70	<b>873.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>4 lites in upper door</b>											
2'-6" to 3' x 6'-8" x 1-3/4" T											
Empty	Inst	Ea	Lg	2C	1.33	12.00	467.00	49.10	---	516.10	<b>606.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	527.00	75.70	---	602.70	<b>712.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	510.00	49.10	---	559.10	<b>655.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	576.00	75.70	---	651.70	<b>768.00</b>
Tempered amber	Inst	Ea	Lg	2C	1.33	12.00	538.00	49.10	---	587.10	<b>688.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	607.00	75.70	---	682.70	<b>804.00</b>
<b>9 lites in upper door</b>											
2'-6" to 3' x 6'-8" x 1-3/4" T											
Empty	Inst	Ea	Lg	2C	1.33	12.00	462.00	49.10	---	511.10	<b>600.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	521.00	75.70	---	596.70	<b>706.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	480.00	49.10	---	529.10	<b>620.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	541.00	75.70	---	616.70	<b>728.00</b>
Tempered amber	Inst	Ea	Lg	2C	1.33	12.00	596.00	49.10	---	645.10	<b>754.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	672.00	75.70	---	747.70	<b>879.00</b>
<b>12 diamond lites in upper door</b>											
2'-6" to 3' x 6'-8" x 1-3/4" T											
Empty	Inst	Ea	Lg	2C	1.33	12.00	508.00	49.10	---	557.10	<b>653.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	573.00	75.70	---	648.70	<b>765.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	545.00	49.10	---	594.10	<b>696.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	615.00	75.70	---	690.70	<b>813.00</b>
Tempered amber	Inst	Ea	Lg	2C	1.33	12.00	674.00	49.10	---	723.10	<b>844.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	760.00	75.70	---	835.70	<b>980.00</b>
<b>Four diamond-shaped raised panels in lower door</b>											
<b>1 lite in upper door</b>											
2'-6" to 3' x 6'-8" x 1-3/4" T											
Empty	Inst	Ea	Lg	2C	1.33	12.00	460.00	49.10	---	509.10	<b>598.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	519.00	75.70	---	594.70	<b>703.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	477.00	49.10	---	526.10	<b>618.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	539.00	75.70	---	614.70	<b>725.00</b>
Tempered amber	Inst	Ea	Lg	2C	1.33	12.00	594.00	49.10	---	643.10	<b>752.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	671.00	75.70	---	746.70	<b>877.00</b>
<b>6 lites in upper door</b>											
2'-6" to 3' x 6'-8" x 1-3/4" T											
Empty	Inst	Ea	Lg	2C	1.33	12.00	497.00	49.10	---	546.10	<b>641.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	561.00	75.70	---	636.70	<b>751.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	516.00	49.10	---	565.10	<b>662.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	582.00	75.70	---	657.70	<b>775.00</b>
Tempered amber	Inst	Ea	Lg	2C	1.33	12.00	639.00	49.10	---	688.10	<b>803.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	721.00	75.70	---	796.70	<b>935.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>9 lites in upper door</b>											
<i>2'-6" to 3' x 6'-8" x 1-3/4" T</i>											
Empty	Inst	Ea	Lg	2C	1.33	12.00	463.00	49.10	---	512.10	<b>602.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	523.00	75.70	---	598.70	<b>707.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	483.00	49.10	---	532.10	<b>624.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	545.00	75.70	---	620.70	<b>733.00</b>
Tempered amber	Inst	Ea	Lg	2C	1.33	12.00	599.00	49.10	---	648.10	<b>758.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	676.00	75.70	---	751.70	<b>883.00</b>
<b>12 diamond lites in upper door</b>											
<i>2'-6" to 3' x 6'-8" x 1-3/4" T</i>											
Empty	Inst	Ea	Lg	2C	1.33	12.00	511.00	49.10	---	560.10	<b>657.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	577.00	75.70	---	652.70	<b>769.00</b>
Tempered clear	Inst	Ea	Lg	2C	1.33	12.00	550.00	49.10	---	599.10	<b>701.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	620.00	75.70	---	695.70	<b>819.00</b>
Tempered amber	Inst	Ea	Lg	2C	1.33	12.00	679.00	49.10	---	728.10	<b>849.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	766.00	75.70	---	841.70	<b>986.00</b>
<b>French doors</b>											
<i>Douglas fir or hemlock 4-1/2" stiles and top rail, 9-1/2" bottom rail, tempered glass with stops</i>											
<b>1 lite</b>											
<i>1-3/8" T and 1-3/4" T</i>											
2' x 6'-8"	Inst	Ea	Lg	2C	1.14	14.00	249.00	42.10	---	291.10	<b>346.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	281.00	65.00	---	346.00	<b>414.00</b>
2'-4", 2'-6", 2'-8" x 6'-8"	Inst	Ea	Lg	2C	1.33	12.00	255.00	49.10	---	304.10	<b>362.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	288.00	75.70	---	363.70	<b>437.00</b>
3' x 6'-8"	Inst	Ea	Lg	2C	1.60	10.00	259.00	59.10	---	318.10	<b>380.00</b>
	Inst	Ea	Sm	2C	2.46	6.50	292.00	90.90	---	382.90	<b>463.00</b>
<b>5 lites, 5 high</b>											
<i>1-3/8" T and 1-3/4" T</i>											
2' x 6'-8"	Inst	Ea	Lg	2C	1.14	14.00	220.00	42.10	---	262.10	<b>312.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	248.00	65.00	---	313.00	<b>376.00</b>
2'-4", 2'-6", 2'-8" x 6'-8"	Inst	Ea	Lg	2C	1.33	12.00	222.00	49.10	---	271.10	<b>324.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	251.00	75.70	---	326.70	<b>394.00</b>
3' x 6'-8"	Inst	Ea	Lg	2C	1.60	10.00	226.00	59.10	---	285.10	<b>342.00</b>
	Inst	Ea	Sm	2C	2.46	6.50	255.00	90.90	---	345.90	<b>420.00</b>
<b>10 lites, 5 high</b>											
<i>1-3/8" T and 1-3/4" T</i>											
2' x 6'-8"	Inst	Ea	Lg	2C	1.14	14.00	245.00	42.10	---	287.10	<b>340.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	276.00	65.00	---	341.00	<b>408.00</b>
2'-4", 2'-6", 2'-8" x 6'-8"	Inst	Ea	Lg	2C	1.33	12.00	252.00	49.10	---	301.10	<b>358.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	284.00	75.70	---	359.70	<b>432.00</b>
3' x 6'-8"	Inst	Ea	Lg	2C	1.60	10.00	257.00	59.10	---	316.10	<b>379.00</b>
	Inst	Ea	Sm	2C	2.46	6.50	290.00	90.90	---	380.90	<b>461.00</b>
<b>15 lites, 5 high</b>											
<i>1-3/8" T and 1-3/4" T</i>											
2'-6", 2'-8" x 6'-8"	Inst	Ea	Lg	2C	1.33	12.00	281.00	49.10	---	330.10	<b>392.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	317.00	75.70	---	392.70	<b>470.00</b>
3' x 6'-8"	Inst	Ea	Lg	2C	1.60	10.00	293.00	59.10	---	352.10	<b>419.00</b>
	Inst	Ea	Sm	2C	2.46	6.50	330.00	90.90	---	420.90	<b>507.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
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### French sidelites

*Douglas fir or hemlock 4-1/2" stiles and top rail, 9-1/2" bottom rail, tempered glass with stops*

1 lite

1-3/4" T

1', 1'-2" x 6'-8"	Inst	Ea	Lg	2C	1.00	16.00	170.00	36.90	---	206.90	247.00
	Inst	Ea	Sm	2C	1.54	10.40	191.00	56.90	---	247.90	300.00
1'-4", 1'-6" x 6'-8"	Inst	Ea	Lg	2C	1.00	16.00	181.00	36.90	---	217.90	260.00
	Inst	Ea	Sm	2C	1.54	10.40	205.00	56.90	---	261.90	315.00

5 lites, 5 high

1-3/4" T

1', 1'-2" x 6'-8"	Inst	Ea	Lg	2C	1.00	16.00	164.00	36.90	---	200.90	240.00
	Inst	Ea	Sm	2C	1.54	10.40	185.00	56.90	---	241.90	292.00
1'-4", 1'-6" x 6'-8"	Inst	Ea	Lg	2C	1.00	16.00	178.00	36.90	---	214.90	256.00
	Inst	Ea	Sm	2C	1.54	10.40	201.00	56.90	---	257.90	310.00

### Garden doors

1 door, "X" unit

2'-6" x 6'-8"	Inst	LS	Lg	2C	1.33	12.00	328.00	49.10	---	377.10	446.00
	Inst	LS	Sm	2C	2.05	7.80	370.00	75.70	---	445.70	531.00
3' x 6'-8"	Inst	LS	Lg	2C	1.60	10.00	351.00	59.10	---	410.10	486.00
	Inst	LS	Sm	2C	2.46	6.50	396.00	90.90	---	486.90	583.00

2 doors, "XO/OX" unit

5' x 6'-8"	Inst	LS	Lg	2C	2.42	6.60	614.00	89.40	---	703.40	832.00
	Inst	LS	Sm	2C	3.73	4.29	693.00	138.00	---	831.00	990.00
6' x 6'-8"	Inst	LS	Lg	2C	2.91	5.50	655.00	108.00	---	763.00	904.00
	Inst	LS	Sm	2C	4.47	3.58	739.00	165.00	---	904.00	1080.00

3 doors, "XOX" unit

7'-6" x 6'-8"	Inst	LS	Lg	2C	3.64	4.40	872.00	134.00	---	1006.00	1190.00
	Inst	LS	Sm	2C	5.59	2.86	983.00	206.00	---	1189.00	1420.00
9' x 6'-8"	Inst	LS	Lg	2C	4.32	3.70	936.00	160.00	---	1096.00	1300.00
	Inst	LS	Sm	2C	6.64	2.41	1060.00	245.00	---	1305.00	1560.00

### Sliding doors

**Glass sliding doors, with 5-1/2" anodized aluminum frame, trim, weatherstripping, tempered 3/16" T clear single-glazed glass, with screen**

6'-8" H

5' W, 2 lites, 1 sliding	Inst	Set	Lg	2C	4.00	4.00	480.00	148.00	---	628.00	759.00
	Inst	Set	Sm	2C	6.15	2.60	541.00	227.00	---	768.00	940.00
6' W, 2 lites, 1 sliding	Inst	Set	Lg	2C	4.00	4.00	535.00	148.00	---	683.00	822.00
	Inst	Set	Sm	2C	6.15	2.60	603.00	227.00	---	830.00	1010.00
7' W, 2 lites, 1 sliding	Inst	Set	Lg	2C	4.00	4.00	574.00	148.00	---	722.00	868.00
	Inst	Set	Sm	2C	6.15	2.60	648.00	227.00	---	875.00	1060.00
8' W, 2 lites, 1 sliding	Inst	Set	Lg	2C	4.00	4.00	617.00	148.00	---	765.00	916.00
	Inst	Set	Sm	2C	6.15	2.60	696.00	227.00	---	923.00	1120.00
10' W, 2 lites, 1 sliding	Inst	Set	Lg	2C	4.00	4.00	801.00	148.00	---	949.00	1130.00
	Inst	Set	Sm	2C	6.15	2.60	904.00	227.00	---	1131.00	1360.00

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
9' W, 3 lites, 1 sliding	Inst	Set	Lg	2C	5.33	3.00	710.00	197.00	---	907.00	<b>1090.00</b>
	Inst	Set	Sm	2C	8.21	1.95	801.00	303.00	---	1104.00	<b>1350.00</b>
12' W, 3 lites, 1 sliding	Inst	Set	Lg	2C	5.33	3.00	833.00	197.00	---	1030.00	<b>1230.00</b>
	Inst	Set	Sm	2C	8.21	1.95	940.00	303.00	---	1243.00	<b>1510.00</b>
15' W, 3 lites, 1 sliding	Inst	Set	Lg	2C	5.33	3.00	1110.00	197.00	---	1307.00	<b>1560.00</b>
	Inst	Set	Sm	2C	8.21	1.95	1260.00	303.00	---	1563.00	<b>1870.00</b>
<b>8' H</b>											
5' W, 2 lites, 1 sliding	Inst	Set	Lg	2C	4.00	4.00	565.00	148.00	---	713.00	<b>857.00</b>
	Inst	Set	Sm	2C	6.15	2.60	638.00	227.00	---	865.00	<b>1050.00</b>
6' W, 2 lites, 1 sliding	Inst	Set	Lg	2C	4.00	4.00	607.00	148.00	---	755.00	<b>905.00</b>
	Inst	Set	Sm	2C	6.15	2.60	685.00	227.00	---	912.00	<b>1110.00</b>
7' W, 2 lites, 1 sliding	Inst	Set	Lg	2C	4.00	4.00	718.00	148.00	---	866.00	<b>1030.00</b>
	Inst	Set	Sm	2C	6.15	2.60	810.00	227.00	---	1037.00	<b>1250.00</b>
8' W, 2 lites, 1 sliding	Inst	Set	Lg	2C	4.00	4.00	831.00	148.00	---	979.00	<b>1160.00</b>
	Inst	Set	Sm	2C	6.15	2.60	937.00	227.00	---	1164.00	<b>1400.00</b>
10' W, 2 lites, 1 sliding	Inst	Set	Lg	2C	4.00	4.00	958.00	148.00	---	1106.00	<b>1310.00</b>
	Inst	Set	Sm	2C	6.15	2.60	1080.00	227.00	---	1307.00	<b>1560.00</b>
9' W, 3 lites, 1 sliding	Inst	Set	Lg	2C	5.33	3.00	833.00	197.00	---	1032.00	<b>1240.00</b>
	Inst	Set	Sm	2C	8.21	1.95	942.00	303.00	---	1245.00	<b>1510.00</b>
12' W, 3 lites, 1 sliding	Inst	Set	Lg	2C	5.33	3.00	1120.00	197.00	---	1317.00	<b>1560.00</b>
	Inst	Set	Sm	2C	8.21	1.95	1260.00	303.00	---	1563.00	<b>1870.00</b>
15' W, 3 lites, 1 sliding	Inst	Set	Lg	2C	5.33	3.00	1300.00	197.00	---	1497.00	<b>1770.00</b>
	Inst	Set	Sm	2C	8.21	1.95	1470.00	303.00	---	1773.00	<b>2110.00</b>

**French sliding door units**

*Douglas fir doors, solid brass hardware, screen, frames, and exterior molding included*

1 lite, 2 panels, single glazed  
1-3/4" T

5' x 6'-8"	Inst	Ea	Lg	2C	5.33	3.00	2580.00	197.00	---	2777.00	<b>3240.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	2910.00	303.00	---	3213.00	<b>3770.00</b>
6' x 6'-8"	Inst	Ea	Lg	2C	5.33	3.00	2750.00	197.00	---	2947.00	<b>3440.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3100.00	303.00	---	3403.00	<b>3990.00</b>
7' x 6'-8"	Inst	Ea	Lg	2C	5.33	3.00	2970.00	197.00	---	3167.00	<b>3690.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3350.00	303.00	---	3653.00	<b>4280.00</b>
8' x 6'-8"	Inst	Ea	Lg	2C	5.33	3.00	3130.00	197.00	---	3327.00	<b>3880.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3530.00	303.00	---	3833.00	<b>4490.00</b>
5' x 7'	Inst	Ea	Lg	2C	5.33	3.00	2640.00	197.00	---	2837.00	<b>3310.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	2980.00	303.00	---	3283.00	<b>3850.00</b>
6' x 7'	Inst	Ea	Lg	2C	5.33	3.00	2780.00	197.00	---	2977.00	<b>3470.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3130.00	303.00	---	3433.00	<b>4030.00</b>
7' x 7'	Inst	Ea	Lg	2C	5.33	3.00	3060.00	197.00	---	3257.00	<b>3790.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3450.00	303.00	---	3753.00	<b>4390.00</b>
8' x 7'	Inst	Ea	Lg	2C	5.33	3.00	3250.00	197.00	---	3447.00	<b>4010.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3660.00	303.00	---	3963.00	<b>4640.00</b>
5' x 8'	Inst	Ea	Lg	2C	5.33	3.00	2990.00	197.00	---	3187.00	<b>3710.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3370.00	303.00	---	3673.00	<b>4300.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
6' x 8'	Inst	Ea	Lg	2C	5.33	3.00	3200.00	197.00	---	3397.00	<b>3960.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3610.00	303.00	---	3913.00	<b>4580.00</b>
7' x 8'	Inst	Ea	Lg	2C	5.33	3.00	3440.00	197.00	---	3637.00	<b>4230.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3880.00	303.00	---	4183.00	<b>4890.00</b>
8' x 8'	Inst	Ea	Lg	2C	5.33	3.00	3660.00	197.00	---	3857.00	<b>4480.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	4130.00	303.00	---	4433.00	<b>5170.00</b>
10 lites, 2 panels, single glazed 1-3/4" T											
5' x 6'-8"	Inst	Ea	Lg	2C	5.33	3.00	2790.00	197.00	---	2987.00	<b>3480.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3140.00	303.00	---	3443.00	<b>4040.00</b>
6' x 6'-8"	Inst	Ea	Lg	2C	5.33	3.00	2910.00	197.00	---	3107.00	<b>3620.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3280.00	303.00	---	3583.00	<b>4200.00</b>
5' x 7'	Inst	Ea	Lg	2C	5.33	3.00	2830.00	197.00	---	3027.00	<b>3530.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3200.00	303.00	---	3503.00	<b>4100.00</b>
6' x 7'	Inst	Ea	Lg	2C	5.33	3.00	2990.00	197.00	---	3187.00	<b>3710.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3370.00	303.00	---	3673.00	<b>4300.00</b>
5' x 8'	Inst	Ea	Lg	2C	5.33	3.00	3150.00	197.00	---	3347.00	<b>3900.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3560.00	303.00	---	3863.00	<b>4520.00</b>
6' x 8'	Inst	Ea	Lg	2C	5.33	3.00	3320.00	197.00	---	3517.00	<b>4090.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3750.00	303.00	---	4053.00	<b>4730.00</b>
15 lites, 2 panels, single glazed 1-3/4" T											
5' x 6'-8"	Inst	Ea	Lg	2C	5.33	3.00	2930.00	197.00	---	3127.00	<b>3640.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3300.00	303.00	---	3603.00	<b>4220.00</b>
6' x 6'-8"	Inst	Ea	Lg	2C	5.33	3.00	3060.00	197.00	---	3257.00	<b>3800.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3450.00	303.00	---	3753.00	<b>4400.00</b>
7' x 6'-8"	Inst	Ea	Lg	2C	5.33	3.00	3260.00	197.00	---	3457.00	<b>4020.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3680.00	303.00	---	3983.00	<b>4650.00</b>
8' x 6'-8"	Inst	Ea	Lg	2C	5.33	3.00	3400.00	197.00	---	3597.00	<b>4190.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3840.00	303.00	---	4143.00	<b>4840.00</b>
5' x 7'	Inst	Ea	Lg	2C	5.33	3.00	2990.00	197.00	---	3187.00	<b>3710.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3370.00	303.00	---	3673.00	<b>4300.00</b>
6' x 7'	Inst	Ea	Lg	2C	5.33	3.00	3140.00	197.00	---	3337.00	<b>3890.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3540.00	303.00	---	3843.00	<b>4500.00</b>
7' x 7'	Inst	Ea	Lg	2C	5.33	3.00	3350.00	197.00	---	3547.00	<b>4120.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3780.00	303.00	---	4083.00	<b>4770.00</b>
8' x 7'	Inst	Ea	Lg	2C	5.33	3.00	3510.00	197.00	---	3707.00	<b>4310.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3960.00	303.00	---	4263.00	<b>4980.00</b>
5' x 8'	Inst	Ea	Lg	2C	5.33	3.00	3310.00	197.00	---	3507.00	<b>4080.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3730.00	303.00	---	4033.00	<b>4720.00</b>
6' x 8'	Inst	Ea	Lg	2C	5.33	3.00	3470.00	197.00	---	3667.00	<b>4270.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	3920.00	303.00	---	4223.00	<b>4930.00</b>
7' x 8'	Inst	Ea	Lg	2C	5.33	3.00	3730.00	197.00	---	3927.00	<b>4560.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	4200.00	303.00	---	4503.00	<b>5260.00</b>
8' x 8'	Inst	Ea	Lg	2C	5.33	3.00	3870.00	197.00	---	4067.00	<b>4720.00</b>
	Inst	Ea	Sm	2C	8.21	1.95	4360.00	303.00	---	4663.00	<b>5440.00</b>



Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
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### Fire doors, natural birch

#### 1 hour rating

2'-6" x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.23	13.00	250.00	45.40	---	295.40	<b>352.00</b>
	Inst	Ea	Sm	2C	1.89	8.45	282.00	69.80	---	351.80	<b>423.00</b>
3'-6" x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.45	11.00	312.00	53.60	---	365.60	<b>434.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	352.00	82.80	---	434.80	<b>521.00</b>
2'-6" x 7' x 1-3/4" T	Inst	Ea	Lg	2C	1.23	13.00	262.00	45.40	---	307.40	<b>365.00</b>
	Inst	Ea	Sm	2C	1.89	8.45	296.00	69.80	---	365.80	<b>438.00</b>
3'-6" x 7' x 1-3/4" T	Inst	Ea	Lg	2C	1.45	11.00	326.00	53.60	---	379.60	<b>450.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	368.00	82.80	---	450.80	<b>539.00</b>

#### 1.5 hour rating

2'-6" x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.23	13.00	356.00	45.40	---	401.40	<b>473.00</b>
	Inst	Ea	Sm	2C	1.89	8.45	401.00	69.80	---	470.80	<b>559.00</b>
3'-6" x 6'-8" x 1-3/4" T	Inst	Ea	Lg	2C	1.45	11.00	397.00	53.60	---	450.60	<b>531.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	447.00	82.80	---	529.80	<b>630.00</b>
2'-6" x 7' x 1-3/4" T	Inst	Ea	Lg	2C	1.23	13.00	374.00	45.40	---	419.40	<b>494.00</b>
	Inst	Ea	Sm	2C	1.89	8.45	422.00	69.80	---	491.80	<b>584.00</b>
3'-6" x 7' x 1-3/4" T	Inst	Ea	Lg	2C	1.45	11.00	468.00	53.60	---	521.60	<b>613.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	528.00	82.80	---	610.80	<b>723.00</b>

### Interior doors

*Passage doors, flush face, includes hinge hardware*

#### Hollow core prehung door units

##### Hardboard

2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.07	15.00	45.30	39.50	---	84.80	<b>107.00</b>
	Inst	Ea	Sm	2C	1.64	9.75	51.20	60.60	---	111.80	<b>144.00</b>
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	48.20	42.10	---	90.30	<b>114.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	54.40	65.00	---	119.40	<b>154.00</b>
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	50.90	42.10	---	93.00	<b>118.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	57.40	65.00	---	122.40	<b>157.00</b>
2'-6" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.07	15.00	57.70	39.50	---	97.20	<b>122.00</b>
	Inst	Ea	Sm	2C	1.64	9.75	65.10	60.60	---	125.70	<b>160.00</b>
2'-8" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	60.60	42.10	---	102.70	<b>129.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	68.30	65.00	---	133.30	<b>170.00</b>
3' x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	63.30	42.10	---	105.40	<b>132.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	71.40	65.00	---	136.40	<b>173.00</b>

##### Lauan

2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.07	15.00	60.10	39.50	---	99.60	<b>124.00</b>
	Inst	Ea	Sm	2C	1.64	9.75	67.80	60.60	---	128.40	<b>163.00</b>
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	62.40	42.10	---	104.50	<b>131.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	70.40	65.00	---	135.40	<b>172.00</b>
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	66.90	42.10	---	109.00	<b>136.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	75.40	65.00	---	140.40	<b>178.00</b>
2'-6" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.07	15.00	71.10	39.50	---	110.60	<b>137.00</b>
	Inst	Ea	Sm	2C	1.64	9.75	80.30	60.60	---	140.90	<b>177.00</b>
2'-8" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	73.70	42.10	---	115.80	<b>144.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	83.20	65.00	---	148.20	<b>187.00</b>
3' x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	78.30	42.10	---	120.40	<b>149.00</b>
	Inst	Ea	Sm	2C	1.76	9.10	88.40	65.00	---	153.40	<b>193.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>Birch</b>											
2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.07	15.00	72.60	39.50	---	112.10	139.00
	Inst	Ea	Sm	2C	1.64	9.75	81.90	60.60	---	142.50	179.00
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	75.10	42.10	---	117.20	145.00
	Inst	Ea	Sm	2C	1.76	9.10	84.70	65.00	---	149.70	188.00
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	79.50	42.10	---	121.60	150.00
	Inst	Ea	Sm	2C	1.76	9.10	89.70	65.00	---	154.70	194.00
2'-6" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.07	15.00	90.30	39.50	---	129.80	159.00
	Inst	Ea	Sm	2C	1.64	9.75	102.00	60.60	---	162.60	202.00
2'-8" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	93.70	42.10	---	135.80	167.00
	Inst	Ea	Sm	2C	1.76	9.10	106.00	65.00	---	171.00	213.00
3' x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	98.90	42.10	---	141.00	173.00
	Inst	Ea	Sm	2C	1.76	9.10	112.00	65.00	---	177.00	219.00
<b>Solid core prehung door units</b>											
<b>Hardboard</b>											
2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	92.50	42.10	---	134.60	165.00
	Inst	Ea	Sm	2C	1.76	9.10	104.00	65.00	---	169.00	211.00
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	95.90	45.40	---	141.30	174.00
	Inst	Ea	Sm	2C	1.89	8.45	108.00	69.80	---	177.80	222.00
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	98.20	45.40	---	143.60	177.00
	Inst	Ea	Sm	2C	1.89	8.45	111.00	69.80	---	180.80	225.00
2'-6" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	102.00	42.10	---	144.10	177.00
	Inst	Ea	Sm	2C	1.76	9.10	116.00	65.00	---	181.00	224.00
2'-8" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	105.00	45.40	---	150.40	185.00
	Inst	Ea	Sm	2C	1.89	8.45	119.00	69.80	---	188.80	234.00
3' x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	105.00	45.40	---	150.40	185.00
	Inst	Ea	Sm	2C	1.89	8.45	119.00	69.80	---	188.80	234.00
<b>Lauan</b>											
2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	106.00	42.10	---	148.10	180.00
	Inst	Ea	Sm	2C	1.76	9.10	119.00	65.00	---	184.00	228.00
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	109.00	45.40	---	154.40	189.00
	Inst	Ea	Sm	2C	1.89	8.45	123.00	69.80	---	192.80	239.00
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	113.00	45.40	---	158.40	194.00
	Inst	Ea	Sm	2C	1.89	8.45	128.00	69.80	---	197.80	245.00
2'-6" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	116.00	42.10	---	158.10	192.00
	Inst	Ea	Sm	2C	1.76	9.10	131.00	65.00	---	196.00	241.00
2'-8" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	119.00	45.40	---	164.40	200.00
	Inst	Ea	Sm	2C	1.89	8.45	134.00	69.80	---	203.80	252.00
3' x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	123.00	45.40	---	168.40	205.00
	Inst	Ea	Sm	2C	1.89	8.45	139.00	69.80	---	208.80	257.00
<b>Birch</b>											
2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	115.00	42.10	---	157.10	192.00
	Inst	Ea	Sm	2C	1.76	9.10	130.00	65.00	---	195.00	241.00
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	118.00	45.40	---	163.40	199.00
	Inst	Ea	Sm	2C	1.89	8.45	133.00	69.80	---	202.80	251.00
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	123.00	45.40	---	168.40	205.00
	Inst	Ea	Sm	2C	1.89	8.45	138.00	69.80	---	207.80	257.00
2'-6" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.14	14.00	125.00	42.10	---	167.10	203.00
	Inst	Ea	Sm	2C	1.76	9.10	142.00	65.00	---	207.00	254.00
2'-8" x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	128.00	45.40	---	173.40	211.00
	Inst	Ea	Sm	2C	1.89	8.45	144.00	69.80	---	213.80	264.00
3' x 7' x 1-3/8" T	Inst	Ea	Lg	2C	1.23	13.00	133.00	45.40	---	178.40	217.00
	Inst	Ea	Sm	2C	1.89	8.45	150.00	69.80	---	219.80	271.00

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
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### Prehung package door units

#### Hollow core, flush face door units

##### Hardboard

2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	142.00	49.10	---	191.10	<b>232.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	160.00	75.70	---	235.70	<b>290.00</b>
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	145.00	49.10	---	194.10	<b>235.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	163.00	75.70	---	238.70	<b>294.00</b>
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	147.00	49.10	---	196.10	<b>238.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	166.00	75.70	---	241.70	<b>297.00</b>

##### Lauan

2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	156.00	49.10	---	205.10	<b>249.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	177.00	75.70	---	252.70	<b>309.00</b>
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	159.00	49.10	---	208.10	<b>251.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	179.00	75.70	---	254.70	<b>312.00</b>
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	163.00	49.10	---	212.10	<b>257.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	184.00	75.70	---	259.70	<b>318.00</b>

##### Birch

2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	169.00	49.10	---	218.10	<b>263.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	191.00	75.70	---	266.70	<b>325.00</b>
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	172.00	49.10	---	221.10	<b>266.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	194.00	75.70	---	269.70	<b>329.00</b>
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	176.00	49.10	---	225.10	<b>271.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	198.00	75.70	---	273.70	<b>334.00</b>

##### Ash

2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	190.00	49.10	---	239.10	<b>288.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	215.00	75.70	---	290.70	<b>353.00</b>
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	199.00	49.10	---	248.10	<b>298.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	225.00	75.70	---	300.70	<b>365.00</b>
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.33	12.00	204.00	49.10	---	253.10	<b>304.00</b>
	Inst	Ea	Sm	2C	2.05	7.80	230.00	75.70	---	305.70	<b>371.00</b>

#### Solid core, flush face door units

##### Hardboard

2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	191.00	53.60	---	244.60	<b>295.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	215.00	82.80	---	297.80	<b>364.00</b>
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	194.00	53.60	---	247.60	<b>299.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	219.00	82.80	---	301.80	<b>368.00</b>
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	197.00	53.60	---	250.60	<b>301.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	222.00	82.80	---	304.80	<b>371.00</b>

##### Lauan

2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	204.00	53.60	---	257.60	<b>310.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	230.00	82.80	---	312.80	<b>381.00</b>
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	208.00	53.60	---	261.60	<b>314.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	234.00	82.80	---	316.80	<b>385.00</b>
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	212.00	53.60	---	265.60	<b>319.00</b>
	Inst	Ea	Sm	2C	2.24	7.15	239.00	82.80	---	321.80	<b>391.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>Birch</b>											
2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	214.00	53.60	---	267.60	321.00
	Inst	Ea	Sm	2C	2.24	7.15	241.00	82.80	---	323.80	393.00
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	216.00	53.60	---	269.60	324.00
	Inst	Ea	Sm	2C	2.24	7.15	244.00	82.80	---	326.80	396.00
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	221.00	53.60	---	274.60	329.00
	Inst	Ea	Sm	2C	2.24	7.15	249.00	82.80	---	331.80	403.00
<b>Ash</b>											
2'-6" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	232.00	53.60	---	285.60	341.00
	Inst	Ea	Sm	2C	2.24	7.15	261.00	82.80	---	343.80	416.00
2'-8" x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	236.00	53.60	---	289.60	347.00
	Inst	Ea	Sm	2C	2.24	7.15	267.00	82.80	---	349.80	422.00
3' x 6'-8" x 1-3/8" T	Inst	Ea	Lg	2C	1.45	11.00	244.00	53.60	---	297.60	356.00
	Inst	Ea	Sm	2C	2.24	7.15	276.00	82.80	---	358.80	433.00
<b>Adjustments</b>											
For mitered casing, both sides, supplied but not applied											
9/16" x 1-1/2" finger joint, ADD	Inst	Ea	Lg	---	---	---	25.00	---	---	25.00	28.80
	Inst	Ea	Sm	---	---	---	33.00	---	---	33.00	38.00
9/16" x 2-1/4" solid pine, ADD	Inst	Ea	Lg	---	---	---	41.00	---	---	41.00	47.10
	Inst	Ea	Sm	---	---	---	46.20	---	---	46.20	53.10
9/16" x 2-1/2" solid pine, ADD	Inst	Ea	Lg	---	---	---	38.60	---	---	38.60	44.40
	Inst	Ea	Sm	---	---	---	43.60	---	---	43.60	50.10
For solid fir jamb, 4-9/16", ADD											
	Inst	Ea	Lg	---	---	---	37.70	---	---	37.70	43.30
	Inst	Ea	Sm	---	---	---	42.50	---	---	42.50	48.90
<b>Screen doors</b>											
Aluminum frame with fiberglass wire screen, and plain grille, includes hardware, hinges, closer and latch											
3' x 7'	Inst	Ea	Lg	2C	1.00	16.00	70.20	36.90	---	107.10	132.00
	Inst	Ea	Sm	2C	1.54	10.40	79.20	56.90	---	136.10	171.00
<b>Wood screen doors, pine, aluminum wire screen, 1-1/8" T</b>											
2'-6" x 6'-9"	Inst	Ea	Lg	2C	1.00	16.00	117.00	36.90	---	153.90	186.00
	Inst	Ea	Sm	2C	1.54	10.40	132.00	56.90	---	188.90	231.00
2'-8" x 6'-9"	Inst	Ea	Lg	2C	1.00	16.00	117.00	36.90	---	153.90	186.00
	Inst	Ea	Sm	2C	1.54	10.40	132.00	56.90	---	188.90	231.00
3' x 6'-9"	Inst	Ea	Lg	2C	1.00	16.00	129.00	36.90	---	165.90	200.00
	Inst	Ea	Sm	2C	1.54	10.40	145.00	56.90	---	201.90	247.00
<b>Half screen</b>											
2'-6" x 6'-9"	Inst	Ea	Lg	2C	1.00	16.00	146.00	36.90	---	182.90	220.00
	Inst	Ea	Sm	2C	1.54	10.40	165.00	56.90	---	221.90	269.00
2'-8" x 6'-9"	Inst	Ea	Lg	2C	1.00	16.00	146.00	36.90	---	182.90	220.00
	Inst	Ea	Sm	2C	1.54	10.40	165.00	56.90	---	221.90	269.00
3' x 6'-9"	Inst	Ea	Lg	2C	1.00	16.00	176.00	36.90	---	212.90	254.00
	Inst	Ea	Sm	2C	1.54	10.40	198.00	56.90	---	254.90	307.00

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
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## Resilient flooring

### Adhesive set sheet products

Demo	SY	Lg	LB	.100	160.0	---	2.99	---	2.99	<b>4.19</b>
Demo	SY	Sm	LB	.133	120.0	---	3.98	---	3.98	<b>5.57</b>

### Adhesive set tile products

Demo	SF	Lg	LB	.011	1500	---	.33	---	.33	<b>.46</b>
Demo	SF	Sm	LB	.014	1125	---	.42	---	.42	<b>.59</b>

## Install over smooth concrete subfloor

### Tile

#### Asphalt, 9" x 9", 1/8" thick, marbled

Group B colors, dark	Inst	SF	Lg	FB	.020	896.0	1.13	.67	---	1.80	<b>2.23</b>
	Inst	SF	Sm	FB	.027	672.0	1.25	.90	---	2.15	<b>2.70</b>
Group C colors, medium	Inst	SF	Lg	FB	.020	896.0	1.28	.67	---	1.95	<b>2.41</b>
	Inst	SF	Sm	FB	.027	672.0	1.42	.90	---	2.32	<b>2.89</b>
Group D colors, light	Inst	SF	Lg	FB	.020	896.0	1.28	.67	---	1.95	<b>2.41</b>
	Inst	SF	Sm	FB	.027	672.0	1.42	.90	---	2.32	<b>2.89</b>

#### Vinyl tile, 12" x 12", including adhesive

##### 1/16" thick

Vega II	Inst	SF	Lg	FB	.013	1344.0	1.03	.43	---	1.46	<b>1.79</b>
	Inst	SF	Sm	FB	.018	1008.0	1.13	.60	---	1.73	<b>2.14</b>

##### .080" thick

Designer slate	Inst	SF	Lg	FB	.013	1344.0	2.20	.43	---	2.63	<b>3.14</b>
	Inst	SF	Sm	FB	.018	1008.0	2.44	.60	---	3.04	<b>3.65</b>

##### 1/8" thick

Embassy oak	Inst	SF	Lg	FB	.013	1344.0	2.72	.43	---	3.15	<b>3.74</b>
	Inst	SF	Sm	FB	.018	1008.0	3.00	.60	---	3.60	<b>4.29</b>
Majestic slate	Inst	SF	Lg	FB	.013	1344.0	2.20	.43	---	2.63	<b>3.14</b>
	Inst	SF	Sm	FB	.018	1008.0	2.44	.60	---	3.04	<b>3.65</b>
Mediterranean marble	Inst	SF	Lg	FB	.013	1344.0	2.41	.43	---	2.84	<b>3.38</b>
	Inst	SF	Sm	FB	.018	1008.0	2.67	.60	---	3.27	<b>3.91</b>
Pecan	Inst	SF	Lg	FB	.013	1344.0	2.82	.43	---	3.25	<b>3.85</b>
	Inst	SF	Sm	FB	.018	1008.0	3.12	.60	---	3.72	<b>4.43</b>
Plaza brick	Inst	SF	Lg	FB	.013	1344.0	4.26	.43	---	4.69	<b>5.51</b>
	Inst	SF	Sm	FB	.018	1008.0	4.70	.60	---	5.30	<b>6.25</b>
Plymouth plank	Inst	SF	Lg	FB	.013	1344.0	3.08	.43	---	3.51	<b>4.15</b>
	Inst	SF	Sm	FB	.018	1008.0	3.40	.60	---	4.00	<b>4.75</b>
Teak	Inst	SF	Lg	FB	.013	1344.0	2.61	.43	---	3.04	<b>3.61</b>
	Inst	SF	Sm	FB	.018	1008.0	2.89	.60	---	3.49	<b>4.16</b>
Terrazzo	Inst	SF	Lg	FB	.013	1344.0	2.10	.43	---	2.53	<b>3.02</b>
	Inst	SF	Sm	FB	.018	1008.0	2.32	.60	---	2.92	<b>3.51</b>

#### Vinyl tile, 12" x 12", self-stick

##### .080" thick

Elite	Inst	SF	Lg	FB	.016	1120.0	1.64	.53	---	2.17	<b>2.63</b>
	Inst	SF	Sm	FB	.021	840.0	1.82	.70	---	2.52	<b>3.07</b>
Stylglo	Inst	SF	Lg	FB	.016	1120.0	1.24	.53	---	1.77	<b>2.17</b>
	Inst	SF	Sm	FB	.021	840.0	1.37	.70	---	2.07	<b>2.56</b>

##### 1/16" thick

Decorator	Inst	SF	Lg	FB	.016	1120.0	.82	.53	---	1.35	<b>1.69</b>
	Inst	SF	Sm	FB	.021	840.0	.90	.70	---	1.60	<b>2.02</b>
Proclaim	Inst	SF	Lg	FB	.016	1120.0	1.07	.53	---	1.60	<b>1.98</b>
	Inst	SF	Sm	FB	.021	840.0	1.19	.70	---	1.89	<b>2.35</b>

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
<b>Composition vinyl tile, 12" x 12"</b>											
<b>3/32" thick</b>											
Designer colors	Inst	SF	Lg	FB	.013	1344.0	.92	.43	---	1.35	<b>1.67</b>
	Inst	SF	Sm	FB	.018	1008.0	1.02	.60	---	1.62	<b>2.01</b>
Standard colors (marbleized)	Inst	SF	Lg	FB	.013	1344.0	1.18	.43	---	1.61	<b>1.96</b>
	Inst	SF	Sm	FB	.018	1008.0	1.30	.60	---	1.90	<b>2.34</b>
<b>1/8" thick</b>											
Designer colors, pebbled	Inst	SF	Lg	FB	.013	1344.0	1.75	.43	---	2.18	<b>2.62</b>
	Inst	SF	Sm	FB	.018	1008.0	1.93	.60	---	2.53	<b>3.06</b>
Standard colors (marbleized)	Inst	SF	Lg	FB	.013	1344.0	1.03	.43	---	1.46	<b>1.79</b>
	Inst	SF	Sm	FB	.018	1008.0	1.13	.60	---	1.73	<b>2.14</b>
Solid black or white	Inst	SF	Lg	FB	.013	1344.0	1.64	.43	---	2.07	<b>2.49</b>
	Inst	SF	Sm	FB	.018	1008.0	1.82	.60	---	2.42	<b>2.93</b>
Solid colors	Inst	SF	Lg	FB	.013	1344.0	1.80	.43	---	2.23	<b>2.68</b>
	Inst	SF	Sm	FB	.018	1008.0	1.98	.60	---	2.58	<b>3.12</b>
<b>Sheet vinyl</b>											
<b>Armstrong, no-wax, 6' wide</b>											
Designer Solarian (.070")	Inst	SY	Lg	FB	.145	124.44	28.70	4.84	---	33.54	<b>39.80</b>
	Inst	SY	Sm	FB	.193	93.33	31.80	6.44	---	38.24	<b>45.50</b>
Designer Solarian II (.090")	Inst	SY	Lg	FB	.145	124.44	36.90	4.84	---	41.74	<b>49.30</b>
	Inst	SY	Sm	FB	.193	93.33	40.80	6.44	---	47.24	<b>56.00</b>
Imperial Accotone (.065")	Inst	SY	Lg	FB	.145	124.44	9.23	4.84	---	14.07	<b>17.40</b>
	Inst	SY	Sm	FB	.193	93.33	10.20	6.44	---	16.64	<b>20.80</b>
Solarian Supreme (.090")	Inst	SY	Lg	FB	.145	124.44	39.00	4.84	---	43.84	<b>51.60</b>
	Inst	SY	Sm	FB	.193	93.33	43.10	6.44	---	49.54	<b>58.60</b>
Sundial Solarian (.077")	Inst	SY	Lg	FB	.145	124.44	14.40	4.84	---	19.24	<b>23.30</b>
	Inst	SY	Sm	FB	.193	93.33	15.90	6.44	---	22.34	<b>27.30</b>
<b>Mannington, 6' wide</b>											
Vega (.080")	Inst	SY	Lg	FB	.145	124.44	8.21	4.84	---	13.05	<b>16.20</b>
	Inst	SY	Sm	FB	.193	93.33	9.07	6.44	---	15.51	<b>19.50</b>
Vinyl Ease (.073")	Inst	SY	Lg	FB	.145	124.44	7.18	4.84	---	12.02	<b>15.00</b>
	Inst	SY	Sm	FB	.193	93.33	7.94	6.44	---	14.38	<b>18.20</b>
<b>Tarkett, 6' wide</b>											
Preference (.065")	Inst	SY	Lg	FB	.145	124.44	6.67	4.84	---	11.51	<b>14.40</b>
	Inst	SY	Sm	FB	.193	93.33	7.37	6.44	---	13.81	<b>17.50</b>
Softred (.062")	Inst	SY	Lg	FB	.145	124.44	8.21	4.84	---	13.05	<b>16.20</b>
	Inst	SY	Sm	FB	.193	93.33	9.07	6.44	---	15.51	<b>19.50</b>



Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output					
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

## Install over wood subfloor

### Tile

Asphalt, 9" x 9", 1/8" thick, marbled

Group B colors, dark	Inst	SF	Lg	FB	.027	672.0	1.13	.90	---	2.03	2.56
	Inst	SF	Sm	FB	.036	504.0	1.25	1.20	---	2.45	3.12
Group C colors, medium	Inst	SF	Lg	FB	.027	672.0	1.28	.90	---	2.18	2.73
	Inst	SF	Sm	FB	.036	504.0	1.42	1.20	---	2.62	3.31
Group D colors, light	Inst	SF	Lg	FB	.027	672.0	1.28	.90	---	2.18	2.73
	Inst	SF	Sm	FB	.036	504.0	1.42	1.20	---	2.62	3.31

Vinyl tile, 12" x 12", including adhesive  
1/16" thick

Vega II	Inst	SF	Lg	FB	.016	1120.0	1.03	.53	---	1.56	1.93
	Inst	SF	Sm	FB	.021	840.0	1.13	.70	---	1.83	2.28

.080" thick

Designer slate	Inst	SF	Lg	FB	.016	1120.0	2.20	.53	---	2.73	3.28
	Inst	SF	Sm	FB	.021	840.0	2.44	.70	---	3.14	3.79

1/8" thick

Embassy oak	Inst	SF	Lg	FB	.016	1120.0	2.72	.53	---	3.25	3.88
	Inst	SF	Sm	FB	.021	840.0	3.00	.70	---	3.70	4.43
Majestic slate	Inst	SF	Lg	FB	.016	1120.0	2.20	.53	---	2.73	3.28
	Inst	SF	Sm	FB	.021	840.0	2.44	.70	---	3.14	3.79
Mediterranean marble	Inst	SF	Lg	FB	.016	1120.0	2.41	.53	---	2.94	3.52
	Inst	SF	Sm	FB	.021	840.0	2.67	.70	---	3.37	4.05
Pecan	Inst	SF	Lg	FB	.016	1120.0	2.82	.53	---	3.35	3.99
	Inst	SF	Sm	FB	.021	840.0	3.12	.70	---	3.82	4.57
Plaza brick	Inst	SF	Lg	FB	.016	1120.0	4.26	.53	---	4.79	5.65
	Inst	SF	Sm	FB	.021	840.0	4.70	.70	---	5.40	6.39
Plymouth plank	Inst	SF	Lg	FB	.016	1120.0	3.08	.53	---	3.61	4.29
	Inst	SF	Sm	FB	.021	840.0	3.40	.70	---	4.10	4.89
Teak	Inst	SF	Lg	FB	.016	1120.0	2.61	.53	---	3.14	3.75
	Inst	SF	Sm	FB	.021	840.0	2.89	.70	---	3.59	4.30
Terrazzo	Inst	SF	Lg	FB	.016	1120.0	2.10	.53	---	2.63	3.16
	Inst	SF	Sm	FB	.021	840.0	2.32	.70	---	3.02	3.65

Vinyl tile, 12" x 12", self-stick  
.080" thick

Elite	Inst	SF	Lg	FB	.020	896.0	1.64	.67	---	2.31	2.82
	Inst	SF	Sm	FB	.027	672.0	1.82	.90	---	2.72	3.35
Stylglo	Inst	SF	Lg	FB	.020	896.0	1.24	.67	---	1.91	2.36
	Inst	SF	Sm	FB	.027	672.0	1.37	.90	---	2.27	2.84

1/16" thick

Decorator	Inst	SF	Lg	FB	.020	896.0	.82	.67	---	1.49	1.88
	Inst	SF	Sm	FB	.027	672.0	.90	.90	---	1.80	2.30
Proclaim	Inst	SF	Lg	FB	.020	896.0	1.07	.67	---	1.74	2.16
	Inst	SF	Sm	FB	.027	672.0	1.19	.90	---	2.09	2.63

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					
<b>Composition vinyl tile, 12" x 12"</b>											
<b>3/32" thick</b>											
Designer colors	Inst	SF	Lg	FB	.016	1120.0	.92	.53	---	1.45	<b>1.81</b>
	Inst	SF	Sm	FB	.021	840.0	1.02	.70	---	1.72	<b>2.15</b>
Standard colors (marbleized)	Inst	SF	Lg	FB	.016	1120.0	1.18	.53	---	1.71	<b>2.10</b>
	Inst	SF	Sm	FB	.021	840.0	1.30	.70	---	2.00	<b>2.48</b>
<b>1/8" thick</b>											
Designer colors, pebbled	Inst	SF	Lg	FB	.016	1120.0	1.75	.53	---	2.28	<b>2.76</b>
	Inst	SF	Sm	FB	.021	840.0	1.93	.70	---	2.63	<b>3.20</b>
Standard colors (marbleized)	Inst	SF	Lg	FB	.016	1120.0	1.03	.53	---	1.56	<b>1.93</b>
	Inst	SF	Sm	FB	.021	840.0	1.13	.70	---	1.83	<b>2.28</b>
Solid black or white	Inst	SF	Lg	FB	.016	1120.0	1.64	.53	---	2.17	<b>2.63</b>
	Inst	SF	Sm	FB	.021	840.0	1.82	.70	---	2.52	<b>3.07</b>
Solid colors	Inst	SF	Lg	FB	.016	1120.0	1.80	.53	---	2.33	<b>2.82</b>
	Inst	SF	Sm	FB	.021	840.0	1.98	.70	---	2.68	<b>3.26</b>
<b>Sheet vinyl</b>											
<b>Armstrong, no-wax, 6' wide</b>											
Designer Solarian (.070")	Inst	SY	Lg	FB	.181	99.56	28.70	6.04	---	34.74	<b>41.50</b>
	Inst	SY	Sm	FB	.241	74.67	31.80	8.04	---	39.84	<b>47.80</b>
Designer Solarian II (.090")	Inst	SY	Lg	FB	.181	99.56	36.90	6.04	---	42.94	<b>50.90</b>
	Inst	SY	Sm	FB	.241	74.67	40.80	8.04	---	48.84	<b>58.20</b>
Imperial Accotone (.065")	Inst	SY	Lg	FB	.181	99.56	9.23	6.04	---	15.27	<b>19.10</b>
	Inst	SY	Sm	FB	.241	74.67	10.20	8.04	---	18.24	<b>23.00</b>
Solarian Supreme (.090")	Inst	SY	Lg	FB	.181	99.56	39.00	6.04	---	45.04	<b>53.30</b>
	Inst	SY	Sm	FB	.241	74.67	43.10	8.04	---	51.14	<b>60.80</b>
Sundial Solarian (.077")	Inst	SY	Lg	FB	.181	99.56	14.40	6.04	---	20.44	<b>25.00</b>
	Inst	SY	Sm	FB	.241	74.67	15.90	8.04	---	23.94	<b>29.50</b>
<b>Mannington, 6' wide</b>											
Vega (.080")	Inst	SY	Lg	FB	.181	99.56	8.21	6.04	---	14.25	<b>17.90</b>
	Inst	SY	Sm	FB	.241	74.67	9.07	8.04	---	17.11	<b>21.70</b>
Vinyl Ease (.073")	Inst	SY	Lg	FB	.181	99.56	7.18	6.04	---	13.22	<b>16.70</b>
	Inst	SY	Sm	FB	.241	74.67	7.94	8.04	---	15.98	<b>20.40</b>
<b>Tarkett, 6' wide</b>											
Preference (.065")	Inst	SY	Lg	FB	.181	99.56	6.67	6.04	---	12.71	<b>16.10</b>
	Inst	SY	Sm	FB	.241	74.67	7.37	8.04	---	15.41	<b>19.70</b>
Softred (.062")	Inst	SY	Lg	FB	.181	99.56	8.21	6.04	---	14.25	<b>17.90</b>
	Inst	SY	Sm	FB	.241	74.67	9.07	8.04	---	17.11	<b>21.70</b>

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

### Related materials and operations

Top set base

Vinyl

2-1/2" H

Colors	Inst	LF	Lg	FB	.036	500.0	.39	1.20	---	1.59	<b>2.13</b>
	Inst	LF	Sm	FB	.048	375.0	.43	1.60	---	2.03	<b>2.74</b>
Wood grain	Inst	LF	Lg	FB	.036	500.0	.52	1.20	---	1.72	<b>2.28</b>
	Inst	LF	Sm	FB	.048	375.0	.58	1.60	---	2.18	<b>2.91</b>

4" H

Colors	Inst	LF	Lg	FB	.036	500.0	.46	1.20	---	1.66	<b>2.21</b>
	Inst	LF	Sm	FB	.048	375.0	.50	1.60	---	2.10	<b>2.82</b>
Wood grain	Inst	LF	Lg	FB	.036	500.0	.62	1.20	---	1.82	<b>2.39</b>
	Inst	LF	Sm	FB	.048	375.0	.68	1.60	---	2.28	<b>3.02</b>

Linoleum cove, 7/16" x 1-1/4"

Softwood	Inst	LF	Lg	FB	.051	350.0	.46	1.70	---	2.16	<b>2.91</b>
	Inst	LF	Sm	FB	.069	262.5	.50	2.30	---	2.80	<b>3.80</b>

Retaining walls, see Concrete, page 100, or Masonry, page 290

SAMPLE

## Roofing

### Fiberglass Shingles, 225 lb., three tab strip. Three bundle/square; 20 year

1. **Dimensions.** Each shingle is 12" x 36". With a 5" exposure to the weather, 80 shingles are required to cover one square (100 SF).
2. **Installation**
  - a. Over wood. After scatter-nailing one ply of 15 lb. felt, the shingles are installed. Four nails per shingle is customary.
  - b. Over existing roofing. 15 lb. felt is not required. Shingles are installed the same as over wood, except longer nails are used, i.e., 1<sup>1</sup>/<sub>4</sub>" in lieu of 1".
3. **Estimating Technique.** Determine roof area and add a percentage for starters, ridge, and valleys. The percent to be added varies, but generally:
  - a. For plain gable and hip – add 10%.
  - b. For gable or hip with dormers or intersecting roof(s) – add 15%.
  - c. For gable or hip with dormers and intersecting roof(s) – add 20%.

When ridge or hip shingles are special ordered, reduce the above percentages by approximately 50%. Then apply unit costs to the area calculated (including the allowance above).

### Mineral Surfaced Roll Roofing, 90 lb.

1. **Dimensions.** A roll is 36" wide x 36'-0" long, or 108 SF. It covers one square (100 SF), after including 8 SF for head and end laps.
2. **Installation.** Usually, lap cement and 7/8" galvanized nails are furnished with each roll.
  - a. Over wood. Roll roofing is usually applied directly to sheathing with 7/8" galvanized nails. End and head laps are normally 6" and 2" or 3" respectively.
  - b. Over existing roofing. Applied the same as over wood, except nails are not less than 1<sup>1</sup>/<sub>4</sub>" long.
  - c. Roll roofing may be installed by the exposed nail or the concealed nail method. In the exposed nail method, nails are visible at laps, and head laps are usually 2". In the concealed nail method, no nails are visible, the head lap is a minimum of 3", and there is a 9"-wide strip of roll installed along rakes and eaves.
3. **Estimating Technique.** Determine the area and add a percentage for hip and/or ridge. The percentage to be added varies, but generally:
  - a. For plain gable or hip — add 5%.

- b. For cut-up roof – add 10%.

If metal ridge and/or hip are used, reduce the above percentages by approximately 50%. Then apply unit costs to the area calculated (including the allowance above).

### Wood Shingles

1. **Dimensions.** Shingles are available in 16", 18", and 24" lengths and in uniform widths of 4", 5", or 6". But they are commonly furnished in random widths averaging 4" wide.
2. **Installation.** The normal exposure to weather for 16", 18" and 24" shingles on roofs with 1/4 or steeper pitch is 5", 5<sup>1</sup>/<sub>2</sub>", and 7<sup>1</sup>/<sub>2</sub>" respectively. Where the slope is less than 1/4, the exposure is usually reduced. Generally, 3d commons are used when shingles are applied to strip sheathing. 5d commons are used when shingles are applied over existing shingles. Two nails per shingle is the general rule, but on some roofs, one nail per shingle is used.
3. **Estimating Technique.** Determine the roof area and add a percentage for waste, starters, ridge, and hip shingles.
  - a. Wood shingles. The amount of exposure determines the percentage of 1 square of shingles required to cover 100 SF of roof. Multiply the material cost per square of shingles by the appropriate percent (from the table on the next page) to determine the cost to cover 100 SF of roof with wood shingles. The table does not include cutting waste. NOTE: Nails and the exposure factors in this table have already been calculated into the Average Unit Material Costs.
  - b. Nails. The weight of nails required per square varies with the size of the nail and with the shingle exposure. Multiply cost per pound of nails by the appropriate pounds per square. In the table on the next page, pounds of nails per square are based on two nails per shingle. For one nail per shingle, deduct 50%.
  - c. The percentage to be added for starters, hip, and ridge shingles varies, but generally:
    - 1) Plain gable and hip — add 10%.
    - 2) Gable or hip with dormers or intersecting roof(s) — add 15%.
    - 3) Gable or hip with dormers and intersecting roof(s) — add 20%.

When ridge and/or hip shingles are special ordered, reduce these percentages by 50%. Then

Shingle Length	Exposure	% of Sq. Required to Cover 100 SF	Lbs of Nails per Square (2 Nails/Shingle)	
			3d	5d
24"	7½"	100	2.3	2.7
24"	7"	107	2.4	2.9
24"	6½"	115	2.6	3.2
24"	6"	125	2.8	3.4
24"	5¾"	130	2.9	3.6
18"	5½"	100	3.1	3.7
18"	5"	110	3.4	4.1
18"	4½"	122	3.8	4.6
16"	5"	100	3.4	4.1
16"	4½"	111	3.8	4.6
16"	4"	125	4.2	5.1
16"	3¾"	133	4.5	5.5

apply unit costs to the area calculated (including the allowance above).

### Built-Up Roofing

#### 1. Dimensions

- a. 15 lb. felt. Rolls are 36" wide x 144'-0" long or 432 SF – 4 squares per roll. 32 SF (or 8 SF/sq) is for laps.
- b. 30 lb. felt. Rolls are 36" wide x 72'-0" long or 216 SF – 2 squares per roll. 16 SF (or 8 SF/sq) is for laps.
- c. Asphalt. Available in 100 lb. cartons. Average asphalt usage is:
  - 1) Top coat without gravel – 35 lbs. per square.
  - 2) Top coat with gravel – 60 lbs. per square.
  - 3) Each coat (except top coat) – 25 lbs. per square.
- d. Tar. Available in 550 lb. kegs. Average tar usage is:
  - 1) Top coat without gravel – 40 lbs. per square.
  - 2) Top coat without gravel – 75 lbs. per square.

3) Each coat (except top coat) – 30 lbs. per square.

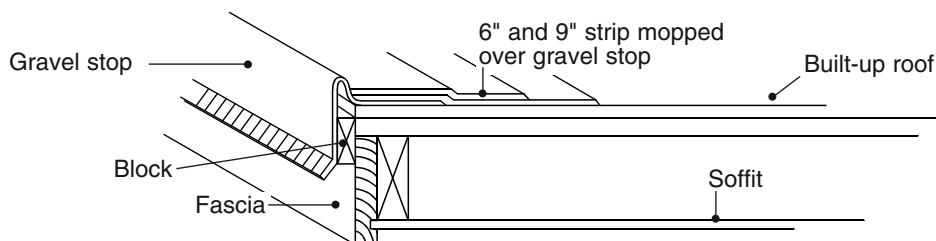
- e. Gravel or slag. Normally, 400 lbs. of gravel or 275 lbs. of slag are used to cover one square.

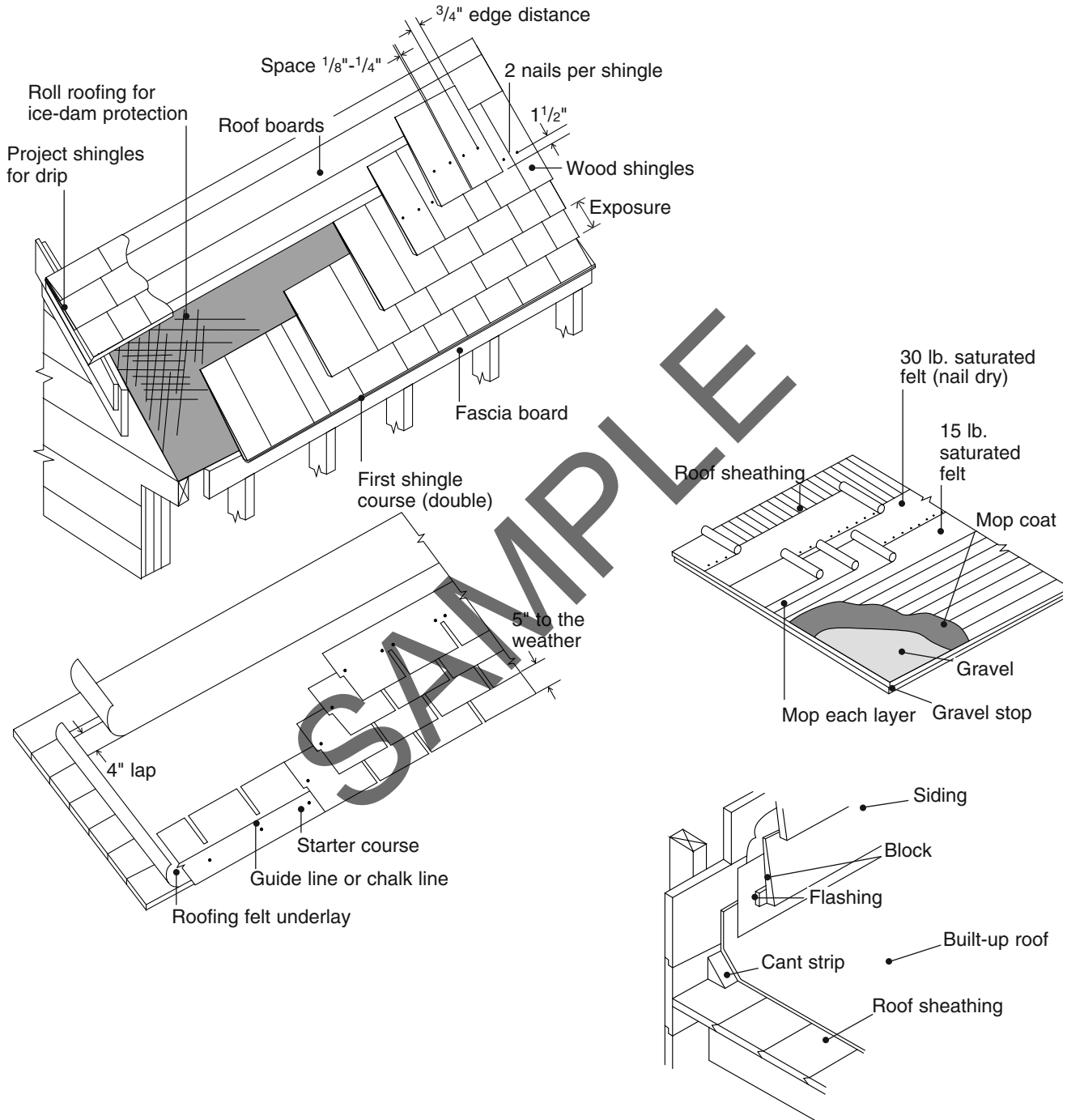
#### 2. Installation

- a. Over wood. Normally, one or two plies of felt are applied by scatter nailing before hot mopping is commenced. Subsequent plies of felt and gravel or slag are imbedded in hot asphalt or tar.
- b. Over concrete. Every ply of felt and gravel or slag is imbedded in hot asphalt or tar.

#### 3. Estimating Technique

- a. For buildings with parapet walls, use the outside dimensions of the building to determine the area. This area is usually sufficient to include the flashing.
- b. For buildings without parapet walls, determine the area.
- c. Don't deduct any opening less than 10'-0" x 10'-0" (100 SF). Deduct 50% of the opening for openings larger than 100 SF but smaller than 300 SF, and 100% of the openings exceeding 300 SF.







Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
					hours per Unit	Output per Day					

## Roofing

### Aluminum, nailed to wood

Corrugated (2-1/2"), 26" W, with 3-3/4" side lap and 6" end lap

Demo	Sq	Lg	LB	1.36	11.80	---	40.70	---	40.70	<b>57.00</b>
Demo	Sq	Sm	LB	1.60	10.00	---	47.90	---	47.90	<b>67.00</b>

Corrugated (2-1/2"), 26" W, with 3-3/4" side lap and 6" end lap  
0.0175" thick

Natural	Inst	Sq	Lg	UC	1.81	17.70	157.00	64.70	---	221.70	<b>273.00</b>
	Inst	Sq	Sm	UC	2.13	15.00	182.00	76.20	---	258.20	<b>317.00</b>
Painted	Inst	Sq	Lg	UC	1.81	17.70	203.00	64.70	---	267.70	<b>325.00</b>
	Inst	Sq	Sm	UC	2.13	15.00	234.00	76.20	---	310.20	<b>377.00</b>

0.019" thick

Natural	Inst	Sq	Lg	UC	1.81	17.70	157.00	64.70	---	221.70	<b>273.00</b>
	Inst	Sq	Sm	UC	2.13	15.00	182.00	76.20	---	258.20	<b>317.00</b>
Painted	Inst	Sq	Lg	UC	1.81	17.70	203.00	64.70	---	267.70	<b>325.00</b>
	Inst	Sq	Sm	UC	2.13	15.00	234.00	76.20	---	310.20	<b>377.00</b>

### Composition shingle roofing, 3 tab strip, 12" x 36", nailed, seal down

#### Demo Shingle, to deck

5" exposure	Demo	Sq	Lg	LB	0.85	18.88	---	25.40	---	25.40	<b>35.60</b>
	Demo	Sq	Sm	LB	1.00	16.00	---	29.90	---	29.90	<b>41.90</b>

#### Install 25-year shingles, 240 lb/sq

##### Over existing roofing

Gable, plain	Inst	Sq	Lg	RL	1.13	17.70	81.10	44.10	---	125.20	<b>158.00</b>
	Inst	Sq	Sm	RL	1.33	15.00	93.70	51.90	---	145.60	<b>184.00</b>
Gable with dormers	Inst	Sq	Lg	RL	1.26	15.93	81.90	49.10	---	131.00	<b>166.00</b>
	Inst	Sq	Sm	RL	1.48	13.50	94.50	57.70	---	152.20	<b>194.00</b>
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.26	15.93	82.60	49.10	---	131.70	<b>167.00</b>
	Inst	Sq	Sm	RL	1.48	13.50	95.40	57.70	---	153.10	<b>195.00</b>
Gable w/dormers & intersections	Inst	Sq	Lg	RL	1.41	14.16	83.40	55.00	---	138.40	<b>177.00</b>
	Inst	Sq	Sm	RL	1.67	12.00	96.30	65.10	---	161.40	<b>206.00</b>
Hip, plain	Inst	Sq	Lg	RL	1.18	16.91	81.90	46.00	---	127.90	<b>162.00</b>
	Inst	Sq	Sm	RL	1.40	14.33	94.50	54.60	---	149.10	<b>189.00</b>
Hip with dormers	Inst	Sq	Lg	RL	1.32	15.10	82.60	51.50	---	134.10	<b>171.00</b>
	Inst	Sq	Sm	RL	1.56	12.80	95.40	60.80	---	156.20	<b>199.00</b>
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.32	15.10	83.40	51.50	---	134.90	<b>172.00</b>
	Inst	Sq	Sm	RL	1.56	12.80	96.30	60.80	---	157.10	<b>200.00</b>
Hip with dormers & intersections	Inst	Sq	Lg	RL	1.50	13.33	84.10	58.50	---	142.60	<b>183.00</b>
	Inst	Sq	Sm	RL	1.77	11.30	97.10	69.00	---	166.10	<b>213.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>Over wood decks, includes felt</b>											
Gable, plain	Inst	Sq	Lg	RL	1.21	16.52	84.60	47.20	---	131.80	167.00
	Inst	Sq	Sm	RL	1.43	14.00	97.70	55.80	---	153.50	194.00
Gable with dormers	Inst	Sq	Lg	RL	1.36	14.75	85.30	53.00	---	138.30	176.00
	Inst	Sq	Sm	RL	1.60	12.50	98.50	62.40	---	160.90	205.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.36	14.75	86.10	53.00	---	139.10	177.00
	Inst	Sq	Sm	RL	1.60	12.50	99.40	62.40	---	161.80	206.00
Gable w/dormers & intersections											
	Inst	Sq	Lg	RL	1.54	12.98	86.80	60.10	---	146.90	188.00
	Inst	Sq	Sm	RL	1.82	11.00	100.00	71.00	---	171.00	220.00
Hip, plain	Inst	Sq	Lg	RL	1.27	15.73	85.30	49.50	---	134.80	171.00
	Inst	Sq	Sm	RL	1.50	13.33	98.50	58.50	---	157.00	199.00
Hip with dormers	Inst	Sq	Lg	RL	1.44	13.92	86.10	56.20	---	142.30	182.00
	Inst	Sq	Sm	RL	1.69	11.80	99.40	65.90	---	165.30	211.00
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.44	13.92	86.80	56.20	---	143.00	182.00
	Inst	Sq	Sm	RL	1.69	11.80	100.00	65.90	---	165.90	212.00
Hip with dormers & intersections											
	Inst	Sq	Lg	RL	1.65	12.15	87.60	64.40	---	152.00	195.00
	Inst	Sq	Sm	RL	1.94	10.30	101.00	75.70	---	176.70	228.00
<b>Install 30-year laminated shingles</b>											
<b>Over existing roofing</b>											
Gable, plain	Inst	Sq	Lg	RL	1.13	17.70	89.30	44.10	---	133.40	167.00
	Inst	Sq	Sm	RL	1.33	15.00	103.00	51.90	---	154.90	195.00
Gable with dormers	Inst	Sq	Lg	RL	1.26	15.93	90.10	49.10	---	139.20	176.00
	Inst	Sq	Sm	RL	1.48	13.50	104.00	57.70	---	161.70	205.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.26	15.93	91.00	49.10	---	140.10	177.00
	Inst	Sq	Sm	RL	1.48	13.50	105.00	57.70	---	162.70	206.00
Gable w/dormers & intersections											
	Inst	Sq	Lg	RL	1.41	14.16	91.80	55.00	---	146.80	186.00
	Inst	Sq	Sm	RL	1.67	12.00	106.00	65.10	---	171.10	218.00
Hip, plain	Inst	Sq	Lg	RL	1.18	16.91	90.10	46.00	---	136.10	171.00
	Inst	Sq	Sm	RL	1.40	14.33	104.00	54.60	---	158.60	200.00
Hip with dormers	Inst	Sq	Lg	RL	1.32	15.10	91.00	51.50	---	142.50	180.00
	Inst	Sq	Sm	RL	1.56	12.80	105.00	60.80	---	165.80	210.00
Hip with intersecting roofs	Inst	Sq	Lg	RL	1.32	15.10	91.80	51.50	---	143.30	181.00
	Inst	Sq	Sm	RL	1.56	12.80	106.00	60.80	---	166.80	211.00
Hip with dormers & intersections											
	Inst	Sq	Lg	RL	1.50	13.33	92.60	58.50	---	151.10	193.00
	Inst	Sq	Sm	RL	1.77	11.30	107.00	69.00	---	176.00	224.00
<b>Over wood decks, includes felt</b>											
Gable, plain	Inst	Sq	Lg	RL	1.21	16.52	92.80	47.20	---	140.00	176.00
	Inst	Sq	Sm	RL	1.43	14.00	107.00	55.80	---	162.80	205.00
Gable with dormers	Inst	Sq	Lg	RL	1.36	14.75	93.60	53.00	---	146.60	186.00
	Inst	Sq	Sm	RL	1.60	12.50	108.00	62.40	---	170.40	216.00
Gable with intersecting roofs	Inst	Sq	Lg	RL	1.36	14.75	94.40	53.00	---	147.40	187.00
	Inst	Sq	Sm	RL	1.60	12.50	109.00	62.40	---	171.40	217.00
Gable w/dormers & intersections											
	Inst	Sq	Lg	RL	1.54	12.98	95.30	60.10	---	155.40	198.00
	Inst	Sq	Sm	RL	1.82	11.00	110.00	71.00	---	181.00	231.00
Hip, plain	Inst	Sq	Lg	RL	1.27	15.73	93.60	49.50	---	143.10	180.00
	Inst	Sq	Sm	RL	1.50	13.33	108.00	58.50	---	166.50	210.00

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>104" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	2.50	6.40	1360.00	83.60	---	1443.60	<b>1680.00</b>
	Inst	Set	Sm	CJ	3.85	4.16	1460.00	129.00	---	1589.00	<b>1860.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.00	8.00	1260.00	66.90	---	1326.90	<b>1540.00</b>
	Inst	Set	Sm	CJ	3.08	5.20	1350.00	103.00	---	1453.00	<b>1690.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	1.67	9.60	1050.00	55.80	---	1105.80	<b>1290.00</b>
	Inst	Set	Sm	CJ	2.56	6.24	1120.00	85.60	---	1205.60	<b>1410.00</b>
<b>112" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	2.50	6.40	1380.00	83.60	---	1463.60	<b>1700.00</b>
	Inst	Set	Sm	CJ	3.85	4.16	1470.00	129.00	---	1599.00	<b>1870.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.00	8.00	1270.00	66.90	---	1336.90	<b>1560.00</b>
	Inst	Set	Sm	CJ	3.08	5.20	1360.00	103.00	---	1463.00	<b>1710.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	1.67	9.60	1060.00	55.80	---	1115.80	<b>1300.00</b>
	Inst	Set	Sm	CJ	2.56	6.24	1130.00	85.60	---	1215.60	<b>1420.00</b>
<b>48" H</b>											
<b>88" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	2.50	6.40	1310.00	83.60	---	1393.60	<b>1630.00</b>
	Inst	Set	Sm	CJ	3.85	4.16	1400.00	129.00	---	1529.00	<b>1790.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.00	8.00	1210.00	66.90	---	1276.90	<b>1490.00</b>
	Inst	Set	Sm	CJ	3.08	5.20	1300.00	103.00	---	1403.00	<b>1640.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	1.67	9.60	1010.00	55.80	---	1065.80	<b>1240.00</b>
	Inst	Set	Sm	CJ	2.56	6.24	1080.00	85.60	---	1165.60	<b>1360.00</b>
<b>96" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	2.86	5.60	1330.00	95.60	---	1425.60	<b>1660.00</b>
	Inst	Set	Sm	CJ	4.40	3.64	1420.00	147.00	---	1567.00	<b>1840.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.29	7.00	1230.00	76.60	---	1306.60	<b>1520.00</b>
	Inst	Set	Sm	CJ	3.52	4.55	1310.00	118.00	---	1428.00	<b>1670.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	1.90	8.40	1020.00	63.50	---	1083.50	<b>1270.00</b>
	Inst	Set	Sm	CJ	2.93	5.46	1090.00	98.00	---	1188.00	<b>1400.00</b>
<b>104" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	2.86	5.60	1540.00	95.60	---	1635.60	<b>1910.00</b>
	Inst	Set	Sm	CJ	4.40	3.64	1650.00	147.00	---	1797.00	<b>2100.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.29	7.00	1430.00	76.60	---	1506.60	<b>1750.00</b>
	Inst	Set	Sm	CJ	3.52	4.55	1530.00	118.00	---	1648.00	<b>1920.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	1.90	8.40	1190.00	63.50	---	1253.50	<b>1460.00</b>
	Inst	Set	Sm	CJ	2.93	5.46	1270.00	98.00	---	1368.00	<b>1600.00</b>
<b>112" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	2.86	5.60	1560.00	95.60	---	1655.60	<b>1930.00</b>
	Inst	Set	Sm	CJ	4.40	3.64	1670.00	147.00	---	1817.00	<b>2120.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.29	7.00	1440.00	76.60	---	1516.60	<b>1770.00</b>
	Inst	Set	Sm	CJ	3.52	4.55	1540.00	118.00	---	1658.00	<b>1940.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	1.90	8.40	1200.00	63.50	---	1263.50	<b>1470.00</b>
	Inst	Set	Sm	CJ	2.93	5.46	1280.00	98.00	---	1378.00	<b>1610.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>60" H</b>											
<b>88" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	2.86	5.60	1550.00	95.60	---	1645.60	<b>1920.00</b>
	Inst	Set	Sm	CJ	4.40	3.64	1660.00	147.00	---	1807.00	<b>2110.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.29	7.00	1440.00	76.60	---	1516.60	<b>1760.00</b>
	Inst	Set	Sm	CJ	3.52	4.55	1530.00	118.00	---	1648.00	<b>1930.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	1.90	8.40	1200.00	63.50	---	1263.50	<b>1460.00</b>
	Inst	Set	Sm	CJ	2.93	5.46	1280.00	98.00	---	1378.00	<b>1610.00</b>
<b>96" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	2.86	5.60	1570.00	95.60	---	1665.60	<b>1930.00</b>
	Inst	Set	Sm	CJ	4.40	3.64	1670.00	147.00	---	1817.00	<b>2130.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.29	7.00	1450.00	76.60	---	1526.60	<b>1770.00</b>
	Inst	Set	Sm	CJ	3.52	4.55	1550.00	118.00	---	1668.00	<b>1950.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	1.90	8.40	1210.00	63.50	---	1273.50	<b>1480.00</b>
	Inst	Set	Sm	CJ	2.93	5.46	1290.00	98.00	---	1388.00	<b>1620.00</b>
<b>104" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	3.33	4.80	1960.00	111.00	---	2071.00	<b>2420.00</b>
	Inst	Set	Sm	CJ	5.13	3.12	2100.00	172.00	---	2272.00	<b>2660.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.67	6.00	1820.00	89.30	---	1909.30	<b>2220.00</b>
	Inst	Set	Sm	CJ	4.10	3.90	1940.00	137.00	---	2077.00	<b>2430.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	2.22	7.20	1520.00	74.20	---	1594.20	<b>1850.00</b>
	Inst	Set	Sm	CJ	3.42	4.68	1620.00	114.00	---	1734.00	<b>2020.00</b>
<b>112" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	3.33	4.80	1980.00	111.00	---	2091.00	<b>2430.00</b>
	Inst	Set	Sm	CJ	5.13	3.12	2120.00	172.00	---	2292.00	<b>2670.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.67	6.00	1830.00	89.30	---	1919.30	<b>2230.00</b>
	Inst	Set	Sm	CJ	4.10	3.90	1960.00	137.00	---	2097.00	<b>2440.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	2.22	7.20	1530.00	74.20	---	1604.20	<b>1860.00</b>
	Inst	Set	Sm	CJ	3.42	4.68	1630.00	114.00	---	1744.00	<b>2040.00</b>
<b>72" H</b>											
<b>88" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	3.33	4.80	1830.00	111.00	---	1941.00	<b>2260.00</b>
	Inst	Set	Sm	CJ	5.13	3.12	1950.00	172.00	---	2122.00	<b>2490.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.67	6.00	1690.00	89.30	---	1779.30	<b>2070.00</b>
	Inst	Set	Sm	CJ	4.10	3.90	1810.00	137.00	---	1947.00	<b>2270.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	2.22	7.20	1410.00	74.20	---	1484.20	<b>1720.00</b>
	Inst	Set	Sm	CJ	3.42	4.68	1510.00	114.00	---	1624.00	<b>1890.00</b>
<b>96" W</b>											
High quality workmanship	Inst	Set	Lg	CJ	3.33	4.80	1840.00	111.00	---	1951.00	<b>2270.00</b>
	Inst	Set	Sm	CJ	5.13	3.12	1970.00	172.00	---	2142.00	<b>2500.00</b>
Good quality workmanship	Inst	Set	Lg	CJ	2.67	6.00	1700.00	89.30	---	1789.30	<b>2080.00</b>
	Inst	Set	Sm	CJ	4.10	3.90	1820.00	137.00	---	1957.00	<b>2290.00</b>
Average quality workmanship	Inst	Set	Lg	CJ	2.22	7.20	1420.00	74.20	---	1494.20	<b>1740.00</b>
	Inst	Set	Sm	CJ	3.42	4.68	1520.00	114.00	---	1634.00	<b>1910.00</b>
<b>Material adjustments</b>											
<b>For glazed 1/2" insulated flankers,</b>											
ADD	Inst	%	Lg	---	---	---	15.0	---	---	---	---
	Inst	%	Sm	---	---	---	15.0	---	---	---	---
<b>For screen per flanker,</b>											
ADD	Inst	Ea	Lg	---	---	---	7.25	---	---	7.25	<b>8.34</b>
	Inst	Ea	Sm	---	---	---	7.75	---	---	7.75	<b>8.91</b>

Description	Oper	Unit	Vol	Crew Size	Man-	Crew	Avg	Avg	Avg	Avg	Avg
					hours	Output	Mat'l	Labor	Equip	Total	Price
					per	per	Unit	Unit	Unit	Unit	Incl
					Unit	Day	Cost	Cost	Cost	Cost	O&P

**Garden windows, unit extends out 13-1/4" from wall, bronze tempered glass in top panels of all units, wood shelves included**

**1 fixed lite**

Single glazed

3'-0" x 3'-0" H

High quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	605.00	148.00	---	753.00	<b>903.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	646.00	229.00	---	875.00	<b>1060.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	3.56	4.50	554.00	119.00	---	673.00	<b>804.00</b>
	Inst	Ea	Sm	CJ	5.46	2.93	592.00	183.00	---	775.00	<b>937.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	2.96	5.40	463.00	99.00	---	562.00	<b>670.00</b>
	Inst	Ea	Sm	CJ	4.56	3.51	494.00	152.00	---	646.00	<b>782.00</b>

3'-0" x 4'-0" H

High quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	655.00	148.00	---	803.00	<b>962.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	701.00	229.00	---	930.00	<b>1130.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	3.56	4.50	602.00	119.00	---	721.00	<b>859.00</b>
	Inst	Ea	Sm	CJ	5.46	2.93	643.00	183.00	---	826.00	<b>995.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	2.96	5.40	503.00	99.00	---	602.00	<b>717.00</b>
	Inst	Ea	Sm	CJ	4.56	3.51	538.00	152.00	---	690.00	<b>832.00</b>

4'-0" x 3'-0" H

High quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	684.00	148.00	---	832.00	<b>995.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	732.00	229.00	---	961.00	<b>1160.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	3.56	4.50	628.00	119.00	---	747.00	<b>889.00</b>
	Inst	Ea	Sm	CJ	5.46	2.93	671.00	183.00	---	854.00	<b>1030.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	2.96	5.40	523.00	99.00	---	622.00	<b>741.00</b>
	Inst	Ea	Sm	CJ	4.56	3.51	560.00	152.00	---	712.00	<b>857.00</b>

4'-0" x 4'-0" H

High quality workmanship	Inst	Ea	Lg	CJ	5.00	3.20	702.00	167.00	---	869.00	<b>1040.00</b>
	Inst	Ea	Sm	CJ	7.69	2.08	750.00	257.00	---	1007.00	<b>1220.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.00	4.00	644.00	134.00	---	778.00	<b>928.00</b>
	Inst	Ea	Sm	CJ	6.15	2.60	688.00	206.00	---	894.00	<b>1080.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.33	4.80	537.00	111.00	---	648.00	<b>773.00</b>
	Inst	Ea	Sm	CJ	5.13	3.12	574.00	172.00	---	746.00	<b>900.00</b>

4'-0" x 5'-0" H

High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	753.00	191.00	---	944.00	<b>1130.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	804.00	294.00	---	1098.00	<b>1340.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	690.00	153.00	---	843.00	<b>1010.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	738.00	235.00	---	973.00	<b>1180.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	576.00	127.00	---	703.00	<b>840.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	615.00	196.00	---	811.00	<b>982.00</b>

5'-0" x 3'-0" H

High quality workmanship	Inst	Ea	Lg	CJ	5.00	3.20	699.00	167.00	---	866.00	<b>1040.00</b>
	Inst	Ea	Sm	CJ	7.69	2.08	747.00	257.00	---	1004.00	<b>1220.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.00	4.00	641.00	134.00	---	775.00	<b>924.00</b>
	Inst	Ea	Sm	CJ	6.15	2.60	685.00	206.00	---	891.00	<b>1080.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.33	4.80	535.00	111.00	---	646.00	<b>771.00</b>
	Inst	Ea	Sm	CJ	5.13	3.12	572.00	172.00	---	744.00	<b>898.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>5'-0" x 3'-8" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	741.00	191.00	---	932.00	<b>1120.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	792.00	294.00	---	1086.00	<b>1320.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	680.00	153.00	---	833.00	<b>996.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	727.00	235.00	---	962.00	<b>1160.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	567.00	127.00	---	694.00	<b>830.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	606.00	196.00	---	802.00	<b>971.00</b>
<b>5'-0" x 4'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	753.00	191.00	---	944.00	<b>1130.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	804.00	294.00	---	1098.00	<b>1340.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	690.00	153.00	---	843.00	<b>1010.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	738.00	235.00	---	973.00	<b>1180.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	576.00	127.00	---	703.00	<b>840.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	615.00	196.00	---	811.00	<b>982.00</b>
<b>5'-0" x 5'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	6.67	2.40	819.00	223.00	---	1042.00	<b>1250.00</b>
	Inst	Ea	Sm	CJ	10.3	1.56	876.00	344.00	---	1220.00	<b>1490.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	5.33	3.00	751.00	178.00	---	929.00	<b>1110.00</b>
	Inst	Ea	Sm	CJ	8.21	1.95	803.00	275.00	---	1078.00	<b>1310.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	626.00	148.00	---	774.00	<b>928.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	670.00	229.00	---	899.00	<b>1090.00</b>
<b>6'-0" x 3'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	747.00	191.00	---	938.00	<b>1130.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	798.00	294.00	---	1092.00	<b>1330.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	684.00	153.00	---	837.00	<b>1000.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	732.00	235.00	---	967.00	<b>1170.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	571.00	127.00	---	698.00	<b>835.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	611.00	196.00	---	807.00	<b>977.00</b>
<b>6'-0" x 3'-8" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	6.15	2.60	780.00	206.00	---	986.00	<b>1190.00</b>
	Inst	Ea	Sm	CJ	9.47	1.69	834.00	317.00	---	1151.00	<b>1400.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	5.00	3.20	716.00	167.00	---	883.00	<b>1060.00</b>
	Inst	Ea	Sm	CJ	7.69	2.08	766.00	257.00	---	1023.00	<b>1240.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	4.21	3.80	597.00	141.00	---	738.00	<b>884.00</b>
	Inst	Ea	Sm	CJ	6.48	2.47	639.00	217.00	---	856.00	<b>1040.00</b>
<b>6'-0" x 4'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	6.67	2.40	813.00	223.00	---	1036.00	<b>1250.00</b>
	Inst	Ea	Sm	CJ	10.3	1.56	870.00	344.00	---	1214.00	<b>1480.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	5.33	3.00	745.00	178.00	---	923.00	<b>1110.00</b>
	Inst	Ea	Sm	CJ	8.21	1.95	797.00	275.00	---	1072.00	<b>1300.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	622.00	148.00	---	770.00	<b>923.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	665.00	229.00	---	894.00	<b>1080.00</b>



Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>Dual glazed</b>											
<b>3'-0" x 3'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	828.00	148.00	---	976.00	<b>1160.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	885.00	229.00	---	1114.00	<b>1340.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	3.56	4.50	760.00	119.00	---	879.00	<b>1040.00</b>
	Inst	Ea	Sm	CJ	5.46	2.93	812.00	183.00	---	995.00	<b>1190.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	2.96	5.40	634.00	99.00	---	733.00	<b>867.00</b>
	Inst	Ea	Sm	CJ	4.56	3.51	677.00	152.00	---	829.00	<b>992.00</b>
<b>3'-0" x 4'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	912.00	148.00	---	1060.00	<b>1260.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	975.00	229.00	---	1204.00	<b>1440.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	3.56	4.50	837.00	119.00	---	956.00	<b>1130.00</b>
	Inst	Ea	Sm	CJ	5.46	2.93	894.00	183.00	---	1077.00	<b>1280.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	2.96	5.40	697.00	99.00	---	796.00	<b>941.00</b>
	Inst	Ea	Sm	CJ	4.56	3.51	746.00	152.00	---	898.00	<b>1070.00</b>
<b>4'-0" x 3'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	903.00	148.00	---	1051.00	<b>1250.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	966.00	229.00	---	1195.00	<b>1430.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	3.56	4.50	829.00	119.00	---	948.00	<b>1120.00</b>
	Inst	Ea	Sm	CJ	5.46	2.93	887.00	183.00	---	1070.00	<b>1280.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	2.96	5.40	692.00	99.00	---	791.00	<b>934.00</b>
	Inst	Ea	Sm	CJ	4.56	3.51	739.00	152.00	---	891.00	<b>1060.00</b>
<b>4'-0" x 4'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.00	3.20	980.00	167.00	---	1147.00	<b>1360.00</b>
	Inst	Ea	Sm	CJ	7.69	2.08	1050.00	257.00	---	1307.00	<b>1560.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.00	4.00	899.00	134.00	---	1033.00	<b>1220.00</b>
	Inst	Ea	Sm	CJ	6.15	2.60	961.00	206.00	---	1167.00	<b>1390.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.33	4.80	750.00	111.00	---	861.00	<b>1020.00</b>
	Inst	Ea	Sm	CJ	5.13	3.12	801.00	172.00	---	973.00	<b>1160.00</b>
<b>4'-0" x 5'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	1080.00	191.00	---	1271.00	<b>1500.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	1150.00	294.00	---	1444.00	<b>1730.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	987.00	153.00	---	1140.00	<b>1350.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	1060.00	235.00	---	1295.00	<b>1540.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	824.00	127.00	---	951.00	<b>1130.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	880.00	196.00	---	1076.00	<b>1290.00</b>
<b>5'-0" x 3'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.00	3.20	972.00	167.00	---	1139.00	<b>1350.00</b>
	Inst	Ea	Sm	CJ	7.69	2.08	1040.00	257.00	---	1297.00	<b>1550.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.00	4.00	890.00	134.00	---	1024.00	<b>1210.00</b>
	Inst	Ea	Sm	CJ	6.15	2.60	952.00	206.00	---	1158.00	<b>1380.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.33	4.80	742.00	111.00	---	853.00	<b>1010.00</b>
	Inst	Ea	Sm	CJ	5.13	3.12	794.00	172.00	---	966.00	<b>1150.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>5'-0" x 3'-8" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	1040.00	191.00	---	1231.00	<b>1460.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	1110.00	294.00	---	1404.00	<b>1690.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	951.00	153.00	---	1104.00	<b>1310.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	1020.00	235.00	---	1255.00	<b>1500.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	793.00	127.00	---	920.00	<b>1090.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	848.00	196.00	---	1044.00	<b>1250.00</b>
<b>5'-0" x 4'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	1060.00	191.00	---	1251.00	<b>1480.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	1130.00	294.00	---	1424.00	<b>1710.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	972.00	153.00	---	1125.00	<b>1330.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	1040.00	235.00	---	1275.00	<b>1520.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	809.00	127.00	---	936.00	<b>1110.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	865.00	196.00	---	1061.00	<b>1270.00</b>
<b>5'-0" x 5'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	6.67	2.40	1180.00	223.00	---	1403.00	<b>1670.00</b>
	Inst	Ea	Sm	CJ	10.3	1.56	1260.00	344.00	---	1604.00	<b>1930.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	5.33	3.00	1080.00	178.00	---	1258.00	<b>1490.00</b>
	Inst	Ea	Sm	CJ	8.21	1.95	1150.00	275.00	---	1425.00	<b>1710.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	900.00	148.00	---	1048.00	<b>1240.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	963.00	229.00	---	1192.00	<b>1430.00</b>
<b>6'-0" x 3'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	1060.00	191.00	---	1251.00	<b>1480.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	1130.00	294.00	---	1424.00	<b>1710.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	972.00	153.00	---	1125.00	<b>1330.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	1040.00	235.00	---	1275.00	<b>1520.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	809.00	127.00	---	936.00	<b>1110.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	865.00	196.00	---	1061.00	<b>1270.00</b>
<b>6'-0" x 3'-8" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	6.15	2.60	1120.00	206.00	---	1326.00	<b>1570.00</b>
	Inst	Ea	Sm	CJ	9.47	1.69	1190.00	317.00	---	1507.00	<b>1820.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	5.00	3.20	1020.00	167.00	---	1187.00	<b>1410.00</b>
	Inst	Ea	Sm	CJ	7.69	2.08	1090.00	257.00	---	1347.00	<b>1620.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	4.21	3.80	854.00	141.00	---	995.00	<b>1180.00</b>
	Inst	Ea	Sm	CJ	6.48	2.47	913.00	217.00	---	1130.00	<b>1350.00</b>
<b>6'-0" x 4'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	6.67	2.40	1170.00	223.00	---	1393.00	<b>1660.00</b>
	Inst	Ea	Sm	CJ	10.3	1.56	1260.00	344.00	---	1604.00	<b>1930.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	5.33	3.00	1080.00	178.00	---	1258.00	<b>1490.00</b>
	Inst	Ea	Sm	CJ	8.21	1.95	1150.00	275.00	---	1425.00	<b>1710.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	898.00	148.00	---	1046.00	<b>1240.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	959.00	229.00	---	1188.00	<b>1420.00</b>

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>1 fixed lite, 1 sliding lite</b>											
Single glazed											
3'-0" x 3'-0" H											
High quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	771.00	148.00	---	919.00	1090.00
	Inst	Ea	Sm	CJ	6.84	2.34	825.00	229.00	---	1054.00	1270.00
Good quality workmanship	Inst	Ea	Lg	CJ	3.56	4.50	708.00	119.00	---	827.00	980.00
	Inst	Ea	Sm	CJ	5.46	2.93	756.00	183.00	---	939.00	1130.00
Average quality workmanship	Inst	Ea	Lg	CJ	2.96	5.40	590.00	99.00	---	689.00	817.00
	Inst	Ea	Sm	CJ	4.56	3.51	631.00	152.00	---	783.00	939.00
3'-0" x 4'-0" H											
High quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	848.00	148.00	---	996.00	1180.00
	Inst	Ea	Sm	CJ	6.84	2.34	907.00	229.00	---	1136.00	1360.00
Good quality workmanship	Inst	Ea	Lg	CJ	3.56	4.50	777.00	119.00	---	896.00	1060.00
	Inst	Ea	Sm	CJ	5.46	2.93	831.00	183.00	---	1014.00	1210.00
Average quality workmanship	Inst	Ea	Lg	CJ	2.96	5.40	648.00	99.00	---	747.00	884.00
	Inst	Ea	Sm	CJ	4.56	3.51	693.00	152.00	---	845.00	1010.00
4'-0" x 3'-0" H											
High quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	829.00	148.00	---	977.00	1160.00
	Inst	Ea	Sm	CJ	6.84	2.34	887.00	229.00	---	1116.00	1340.00
Good quality workmanship	Inst	Ea	Lg	CJ	3.56	4.50	760.00	119.00	---	879.00	1040.00
	Inst	Ea	Sm	CJ	5.46	2.93	812.00	183.00	---	995.00	1190.00
Average quality workmanship	Inst	Ea	Lg	CJ	2.96	5.40	634.00	99.00	---	733.00	867.00
	Inst	Ea	Sm	CJ	4.56	3.51	677.00	152.00	---	829.00	992.00
4'-0" x 4'-0" H											
High quality workmanship	Inst	Ea	Lg	CJ	5.00	3.20	898.00	167.00	---	1065.00	1270.00
	Inst	Ea	Sm	CJ	7.69	2.08	959.00	257.00	---	1216.00	1460.00
Good quality workmanship	Inst	Ea	Lg	CJ	4.00	4.00	825.00	134.00	---	959.00	1140.00
	Inst	Ea	Sm	CJ	6.15	2.60	882.00	206.00	---	1088.00	1300.00
Average quality workmanship	Inst	Ea	Lg	CJ	3.33	4.80	687.00	111.00	---	798.00	946.00
	Inst	Ea	Sm	CJ	5.13	3.12	735.00	172.00	---	907.00	1090.00
4'-0" x 5'-0" H											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	987.00	191.00	---	1178.00	1400.00
	Inst	Ea	Sm	CJ	8.79	1.82	1060.00	294.00	---	1354.00	1630.00
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	906.00	153.00	---	1059.00	1260.00
	Inst	Ea	Sm	CJ	7.02	2.28	969.00	235.00	---	1204.00	1440.00
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	755.00	127.00	---	882.00	1050.00
	Inst	Ea	Sm	CJ	5.86	2.73	808.00	196.00	---	1004.00	1200.00
5'-0" x 3'-0" H											
High quality workmanship	Inst	Ea	Lg	CJ	5.00	3.20	886.00	167.00	---	1053.00	1250.00
	Inst	Ea	Sm	CJ	7.69	2.08	947.00	257.00	---	1204.00	1450.00
Good quality workmanship	Inst	Ea	Lg	CJ	4.00	4.00	812.00	134.00	---	946.00	1120.00
	Inst	Ea	Sm	CJ	6.15	2.60	868.00	206.00	---	1074.00	1290.00
Average quality workmanship	Inst	Ea	Lg	CJ	3.33	4.80	677.00	111.00	---	788.00	935.00
	Inst	Ea	Sm	CJ	5.13	3.12	724.00	172.00	---	896.00	1070.00

Description	Oper	Unit	Vol	Crew Size	Man-hours per Unit	Crew Output per Day	Avg Mat'l Unit Cost	Avg Labor Unit Cost	Avg Equip Unit Cost	Avg Total Unit Cost	Avg Price Incl O&P
<b>5'-0" x 3'-8" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	950.00	191.00	---	1141.00	<b>1360.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	1020.00	294.00	---	1314.00	<b>1580.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	871.00	153.00	---	1024.00	<b>1220.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	932.00	235.00	---	1167.00	<b>1400.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	726.00	127.00	---	853.00	<b>1010.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	777.00	196.00	---	973.00	<b>1170.00</b>
<b>5'-0" x 4'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	960.00	191.00	---	1151.00	<b>1370.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	1030.00	294.00	---	1324.00	<b>1590.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	880.00	153.00	---	1033.00	<b>1230.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	941.00	235.00	---	1176.00	<b>1410.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	734.00	127.00	---	861.00	<b>1020.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	784.00	196.00	---	980.00	<b>1180.00</b>
<b>5'-0" x 5'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	6.67	2.40	1080.00	223.00	---	1303.00	<b>1550.00</b>
	Inst	Ea	Sm	CJ	10.3	1.56	1150.00	344.00	---	1494.00	<b>1810.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	5.33	3.00	990.00	178.00	---	1168.00	<b>1390.00</b>
	Inst	Ea	Sm	CJ	8.21	1.95	1060.00	275.00	---	1335.00	<b>1600.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	800.00	148.00	---	948.00	<b>1130.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	856.00	229.00	---	1085.00	<b>1300.00</b>
<b>6'-0" x 3'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	5.71	2.80	931.00	191.00	---	1122.00	<b>1340.00</b>
	Inst	Ea	Sm	CJ	8.79	1.82	995.00	294.00	---	1289.00	<b>1560.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	4.57	3.50	854.00	153.00	---	1007.00	<b>1200.00</b>
	Inst	Ea	Sm	CJ	7.02	2.28	913.00	235.00	---	1148.00	<b>1380.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	3.81	4.20	712.00	127.00	---	839.00	<b>997.00</b>
	Inst	Ea	Sm	CJ	5.86	2.73	761.00	196.00	---	957.00	<b>1150.00</b>
<b>6'-0" x 3'-8" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	6.67	2.40	987.00	223.00	---	1210.00	<b>1450.00</b>
	Inst	Ea	Sm	CJ	10.3	1.56	1060.00	344.00	---	1404.00	<b>1700.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	5.33	3.00	906.00	178.00	---	1084.00	<b>1290.00</b>
	Inst	Ea	Sm	CJ	8.21	1.95	969.00	275.00	---	1244.00	<b>1500.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	755.00	148.00	---	903.00	<b>1080.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	808.00	229.00	---	1037.00	<b>1250.00</b>
<b>6'-0" x 4'-0" H</b>											
High quality workmanship	Inst	Ea	Lg	CJ	6.67	2.40	1010.00	223.00	---	1233.00	<b>1480.00</b>
	Inst	Ea	Sm	CJ	10.3	1.56	1080.00	344.00	---	1424.00	<b>1730.00</b>
Good quality workmanship	Inst	Ea	Lg	CJ	5.33	3.00	928.00	178.00	---	1106.00	<b>1320.00</b>
	Inst	Ea	Sm	CJ	8.21	1.95	992.00	275.00	---	1267.00	<b>1530.00</b>
Average quality workmanship	Inst	Ea	Lg	CJ	4.44	3.60	774.00	148.00	---	922.00	<b>1100.00</b>
	Inst	Ea	Sm	CJ	6.84	2.34	828.00	229.00	---	1057.00	<b>1270.00</b>

Wiring. See Electrical, page 156

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