



2020

NATIONAL RENOVATION & INSURANCE REPAIR ESTIMATOR

edited by Jonathan Russell

Online Preview

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about this book

WHAT'S NEW IN 2020

A robust new construction and remodeling market heading into 2020, bolstered by a multi-year stream of above-normal catastrophes, is making it increasingly difficult to find and keep enough skilled construction labor. Many contractors are building at full capacity, with room to grow, but cost pressures are eroding margins and making it difficult to expand. Now more than ever it's crucial to monitor your costs and embrace new technologies that make estimating faster and easier, with comprehensive and up-to-date pricing information that informs those systems. To access updated pricing for all construction types, go to www.craftsman-book.com.

A TOOL

This book is a tool, and like all tools it can be misused. It is an excellent tool for the renovation and repair professional. It is not a substitute for experience, skill, and knowledge.

Prices in this book are based on research of actual jobs and successful estimates. They represent an average of the typical conditions. Estimators should compare the conditions described in this book with actual conditions on site and adjust the price accordingly.

UNIQUE TO RENOVATION AND REPAIR WORK

This book is compiled specifically for the unique problems and conditions found in renovation and repair work. It is not a new construction cost book.

Renovation and repair work involve completely different circumstances than those found in new construction.

For example, the renovation or repair professional must work around existing conditions including home contents, access problems, out-of-plumb or out-of-square buildings, outdated materials, existing conditions that violate current building codes.

New-construction professionals have the luxury of placing items in a logical order, but renovation, remodel, or repair professionals must deal with conditions as they find them.

This means that joists have to be replaced in an existing floor system, paint has to be applied in a room where stain-grade base and carpeting are already installed, structures may have to be braced, contents have to be moved or worked around and materials and installation techniques must be matched.

DETERMINING COSTS

All costs in this book are based on typical conditions and typical problems found when remodeling or repairing a structure.

This means a door takes 10 to 15 minutes longer to install than it would in the ideal circumstances found in new construction.

Stairs are more difficult to install around pre-existing walls, wall framing takes longer when walls are typically splicing into existing work, and so on.

Some prices in this book will very closely match prices used in new construction. Other prices will reflect the complex conditions found in renovation and repair and will be dramatically different.

For example, using this book's stair building prices to estimate stair work in a series of 150 tract homes will result in an estimate that is far too high.

THE ART OF ESTIMATING

Estimating is part art, part science. Estimators must consider many factors, including access, crew productivity, special techniques, special abilities, temperament of the owner, and how busy the company is.

A contractor who is desperate for work will estimate much lower than a contractor who is swamped with work.

All of these factors — and many other similar ones — cannot be included in this or any other price book. They are part of the art of estimating.

The science of estimating, which includes prices, typical techniques, and materials, is included in this book.

This book is designed to make the science of estimating easier, which allows you to spend much more time focusing on the art of estimating, where your skill is crucial to the success of your company.

GENERAL VS. SPECIFIC

It is important to note that the more specific the estimator is, the more accurate the final estimate will be.

For example, when an estimator calculates all electrical costs for a typical home using a square foot cost, it may not be as accurate as if the estimator priced each fixture, outlet, and appliance hook-up.

Since the square foot price is based on a typical installation, it will not be exact for a home that is atypical in any way — for example, one with special outdoor lighting or with an expensive crystal fixture in the entry.

The more specific the item, the more exact the prices. The more general an item, the more assumptions must be made.

To help ensure the accuracy of your estimates, we describe any assumptions made when determining general items.

For example, the Rough Carpentry chapter contains a square foot price for estimating 2" by 4" wall framing. To help you make sure that this price will work for you, we describe our assumptions: the stud centers, the number of openings, headers, corners, plates and so forth, that would typically be found in a wall.

rounding

This book rounds hourly wage rates and the material, labor, and equipment components of a unit price.

These prices are rounded to "three significant digits." This means that prices under three digits (including two to the right of the decimal) are not rounded. Prices four digits and larger are rounded to the third digit from the left.

For example:

.23 is not rounded
 2.33 is not rounded
 23.33 is rounded to 23.30
 233.33 is rounded to 233.00
 2,333.33 is rounded to 2,330.00
 23,333.33 is rounded to 23,300.00

In most cases, the square foot price will apply, but you will always want to carefully consider items that are more general, and if needed, adjust them to fit the conditions.

In the case above, the estimator may want to use the square foot price for average fixtures, then add an allowance for the crystal fixture and the outdoor lighting.

TIME AND MATERIAL CHARTS

Almost all chapters include time and material charts at the end. These time and material charts are designed to show you the materials used, waste, labor rates, labor burden costs, and labor productivity.

When materials with a range of sizes appear, only the small and large size are usually listed.

When materials with a range of qualities appear, only the low and high prices are usually listed.

These charts are designed to give you accurate detail on the exact prices used. When prices change, this book does not become obsolete. Compare current prices with those used and factor accordingly.

MATERIAL COSTS

National average material costs are compiled from surveys of suppliers throughout the country.

Costs for some materials, such as clay tile, building stone and hardwood, will vary a great deal from region to region.

For example, clay tile plants are located near naturally occurring clay sources. Because clay tiles are heavy, the further the tiles have to be shipped, the more expensive the tiles will be. The user of this book must be aware of local price variations.

Materials commonly found in every city are priced based on local delivery. In most cases this will be delivery no greater than 20 miles away from a local source. However, many rural areas have lumber yards that will deliver to a wider area at no additional charge.

Materials that are not commonly available locally, like hand-carved moldings or historical wallpaper, include shipping costs anywhere in North America. Estimators in Hawaii, Alaska and remote areas of Canada should add for additional shipping costs when applicable.

Material waste is often indicated with the items, but it's always a good idea to check the time and material charts for the exact waste calculated for all the components of an item.

Waste indicates material that is discarded during installation. It does not include waste that occurs when materials are taken to storage and ruined, run over at the job site, spilled, improperly cut, or damaged due to mishandling.

These types of occurrences are kept to a minimum by every good contractor, but will still occur on any job site.

Another common waste issue in renovation and repair is when a contractor must buy a minimum quantity for a small repair. For example, to replace a six-inch section of base, it is necessary to buy a piece of base that is eight-feet long or longer. In these cases, use the minimum price.

Material prices may not be listed with the time and material charts in some chapters. In these chapters, little new information would be provided by the materials chart so the space is saved for other information.

For example, a materials chart in the Appliance chapter will not provide an estimator with any new information.

The materials component of the unit price for an oven as listed in the main body of the chapter will tell the estimator how much the oven and connections cost.

Relisting these appliances in a materials chart wastes valuable space.

LABOR COSTS

Labor costs are national average rates that usually are consistent with union labor wages.

See the time and material charts for specific benefit costs and labor rates.

Crew labor rates are an average hourly rate for each member of the crew. For example, a masonry crew might consist of a mason, a mason's helper, and a hod carrier.

The hourly rate for this crew is the average cost of all three. In other words, the hourly rate is for 20 minutes work by the mason, 20 minutes work by the mason's helper, and 20 minutes work by the hod carrier.

Separation of labor in renovation and insurance repair work is much more difficult than is separation of labor on large commercial construction projects.

On a typical repair or renovation job a carpenter may participate in demolition, frame walls, set doors, set toilets, install electrical outlets and fixtures, and do a little painting.

In the jobs analyzed for this cost book, well over 40 percent of the demolition work was done by skilled workers. This is because demolition is often selective, requiring a skilled worker to ensure that additional damage does not occur.

Many renovation and repair companies are relatively small, so skilled workers participate in all phases of construction.

These realities are reflected in the labor costs used in this book. This means that a demolition laborer's hourly rate may seem higher than is normal for an unskilled worker.

The time and material charts show all items that are built into each labor rate.

Some contractors may not provide health insurance or retirement plans to some or all of their workers. Estimators can "back-out" these expenses from the labor costs.

It is critical that estimators examine the Workers' Compensation costs calculated in the wage rates. Some states have Workers' Compensation rates that are double, triple, or even quadruple the national average rates used in this book.

Workers' Compensation rates should be adjusted to match local conditions.

Labor productivity is based on observation of work performed in renovation and repair conditions.

These conditions differ from new construction in many ways, but a few of the most common are:

❶ difficulty matching existing work, ❷ access problems, ❸ materials that must be more carefully shaped and attached than is typical in new construction, ❹ out-of-plumb or out-of-square structures, ❺ reinforcing, ❻ more trips and effort are required to find materials, ❼ much more travel time is required because most jobs will have a relatively small amount of work in some trades, ❽ more vehicles are required by the renovation or repair contractor because many tradespeople are often traveling between jobs, compared to new construction where crews may spend weeks or months on one job, and because crews tend to be smaller and each crew may need a vehicle, ❾ more unexpected problems, ❿ more restrictions in established neighborhoods.

Labor productivity is based on a clean job site where tools are put away and secured at the end of each day.

Depending on the trade, 20 to 30 minutes per eight hours is allowed for clean-up and putting away tools. Normally, skilled workers spend half as much time cleaning up as do unskilled workers.

As is typical in new construction, labor includes unpacking materials, in some cases unloading materials from a truck on site, some travel to pick up minor materials (e.g. a forgotten tube of caulk, or a forgotten tool), typical breaks, lay-out, planning, discussion, coordination, mobilization (many companies meet at a central location each morning to receive instructions), recording hours (including specific information needed for job costing), occasional correction of mistakes in installation, and so forth.

Supervision is not included in these costs but should not generally be required. This is because each crew includes a skilled tradesperson who

normally would not require supervision beyond the normal dispatch and mobilization discussed previously.

EQUIPMENT COSTS

Equipment costs are included only when equipment will be used that is not typically a part of the tools used by the majority of renovation or repair contractors.

For example, each carpenter should have a worm-drive saw, miter box, compressor, nail guns, and so forth. These types of tools are not included in the equipment costs.

However, equipment like cranes, backhoes, concrete saws, and jack hammers are not assumed to be part of the equipment and tools owned by a typical renovation or repair contractor. When these are needed, equipment rates are included in the unit price.

Equipment costs include the typical cost to rent the equipment from a local equipment rental shop. When applicable, they also include fuel or blade costs.

Check each item to determine if it includes delivery to the job site or operator labor. Also be careful to note minimum costs for work where rented equipment is needed.

MARKUP

Prices in this book do not include markup. Insurance repair markup is almost always 20 percent: 10 percent for overhead and 10 percent for profit.

In renovation work on historical structures, markup may be as high as 30 percent, although markup over 20 percent may be "hidden" inside the unit cost. Typical remodeling work markup varies from 15 percent to 25 percent. The most common markup for all types of work is 20 percent.

THE COST LINES

The cost tables in each section of this manual consist of individual tasks or items followed by a description.

Beneath the description is a list of the items to be replaced or removed. For instance, under Appliances on page 17, you'll see Electric range, followed by a list of different ranges. Looking across, you'll see five columns of numbers and symbols. Let me explain how to read the numbers and symbols in those columns.

First let's look at the column headed Craft@Hrs. The Craft@Hrs column shows the recommended crew and manhours per unit for installation. For example, 2A in the Craft@Hrs column means that we recommend a crew of one appliance installer. The crew composition, with the cost per hour, is listed on page 12.

The manhours (following the @ symbol) is our estimate of the crew time required for installation (or demolition) of each unit. Manhours are listed in hundredths of an hour rather than minutes because it's easier to add, subtract, multiply and divide hundredths of a unit. For example, if the Craft@Hrs column shows 2A@.250, the Labor Cost column will show \$15.15. That's the labor cost per unit for a crew of one appliance installer at \$60.60 per hour multiplied by .250 manhours, rounded to the nearest penny. The unit is listed right after the Craft@Hrs, and may be the cost per square foot (sf), linear foot (lf), each (ea), or another unit of measurement.

The crew costs include the basic wage, taxable fringe benefits (vacation pay), Workers' Compensation insurance, liability insurance, taxes (state and federal unemployment, Social Security and Medicare), and typical nontaxable fringe benefits such as medical insurance and retirement. A breakdown of these expenses is included as a percentage in the footnote beneath the Labor table at the end of each section.

If your hourly crew cost is much lower or much higher, you can adjust your totals. For example, if your hourly labor cost is 25 percent less, reduce the labor figures in the cost tables by 25 percent to find your local cost.

The Material column shows your material cost for the item described under the heading.

The Total column is the sum of the Material and Labor cost columns.

CHARTS

Material charts show the material description, the material cost priced per typical unit purchased, the gross coverage, the typical waste, the net coverage after waste has been subtracted, and the resulting materials price including waste and often converted to a different unit of measure.

Equipment charts show the cost to rent equipment, the amount of work that can be done with the equipment per a period of time, and the resulting unit price.

Labor charts show the base wage, then add all additional costs that are based on wage. More information is always listed below this chart. It's important to note the "True" wage before adding labor related expenses. The true wage is the wage rate plus an allowance for vacation time. Since all the other costs must be paid even when an employee is on vacation, it is important that they become a component in the cost calculations when estimating work.

Labor productivity charts show the description of the work, the laborer or crew who will do the work, the average cost per man hour, the productivity and the resulting cost per unit.

REGIONAL DIFFERENCES

Construction techniques vary from region to region. Different cli-

mates and different local customs provide a variety of unique regional methods.

For example, in southern Florida it is common to build the first floor of a home from concrete block capped with a grade beam. This method won't be found in Colorado.

Similarly, coral stone walls won't be commonly found in Denver, although they are widely used in Miami.

Slate roofs are common on historical homes and newer custom homes in Philadelphia but are virtually nonexistent in Rapid City.

Homes in the south often include screened porches which aren't nearly so common in the west.

A Georgia home is much more likely to include a series of architecturally-correct columns with Corinthian capitals than is a home in Minnesota.

A Hawaii home may be built entirely from treated wood, when an Arizona home only uses treated lumber when it contacts dirt or concrete.

Many regional materials and techniques are priced in this book. Keep in mind that you should not use these prices if the item is not common to your area.

NATIONAL ESTIMATOR '19

The National Estimator program makes it easy to copy and paste these costs into an estimate, or bid, and then add whatever markup you select.

The software will run on PCs using Windows XP, Vista, 7, 8, or 10 operating systems.

When you've installed the National Estimator program, 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, click on "Support," then "Tutorials" to view an interactive video for National Estimator.

If you have any problems using National Estimator, we'll be glad to help. Free telephone assistance is available from 8 a.m. until 5 p.m. Pacific time, Monday through Friday (except holidays). Call 760-438-7828.

WE WANT TO HEAR FROM YOU

If you have questions or concerns about this cost book, let us hear from you. Send letters to:

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abbreviations

ABSAcrylonitrile butadiene styrene	lflineal foot	SBSstyrene butyl styrene
acalternating current	lilineal inch	sfsquare foot
bfboard foot	mone thousand	shsheet
BtuBritish thermal units	mbf1,000 board feet	sisquare inch
CECCalifornia Earthquake Code	mBtu1,000 British thermal units	sq100 square feet
.....(also see page 56)	mhman hour	ststep
cfcubic foot	mimile	sysquare yard
cfmcubic foot per minute	mlf1,000 linear feet	t&gtongue-&-groove edge
cicubic inch	mmmillimeter(s)	TVtelevision
cycubic yard	momonth	UBCUniform Building Code
eaeach	mphmiles per hour	ULUnderwriters' Laboratory
FUTAFederal Unemployment	msf1,000 square feet	vlfvertical linear foot
.....Compensation Act tax	no.number	wkweek
galgallon	ocon center	w/with
GFCIground fault circuit interrupter	ozounce	xby or times
gphgallon(s) per hour	prpair	
gpmgallon(s) per minute	psipounds per square inch	SYMBOLS
hphorsepower	PVCpolyvinyl chloride	/.....per
hr(s)hour(s)	qtquart	-.....through or to
IMCintermediate metal conduit	R/Lrandom length(s)	@.....at
kdkiln dried	R/W/Lrandom widths and lengths	%.....percent
<b(kv)< b="">.....kilovolt(s)</b(kv)<>	RSCrigid steel conduit	\$.....U.S. dollars
kva1,000 volt amps	S1S2Esurfaced 1 side, 2 edges	'.....feet
kwkilowatt(s)	S2Ssurfaced 2 sides	".....inches
lb(s)pound(s)	S4Ssurfaced 4 sides	#.....pound or number

acknowledgements

The editor wishes to gratefully acknowledge the contribution of the following: 18th Century Hardware Co., Inc. - A-Ball Plumbing Supply - A&Y Lumber - American Building Restoration Chemicals, Inc. - American Custom Millwork, Inc. - American Society for Testing and Materials (ASTM) - Anderson Windows - Anthony Lombardo Architectural Paneling Inc. - Anthony Wood Products Incorporated - The Antique Hardware Store - Architectural Components, Inc. - Architectural Woodwork Institute - The Balmer Architectural Art Studios - Bathroom Hardware, Inc. - Bathroom Machineries - Bendix Mouldings, Inc. - Brass Reproductions - Brick Institute of America - C & H Roofing, Inc. - C. G. Girolami & Sons - Caradco - Cataumet Sawmills - CertainTeed - Chadsworth Incorporated - Chelsea Decorative Metal Company - Classic Accents, Inc. - Classic Ceilings - CMW, Inc. - Conant Custom Brass - Conklin Metal Industries - Craftsman Lumber Company - Crown City Hardware Co. - Cumberland General Stores - Cumberland Woodcraft Co. Inc. - Designs in Tile - Dimension Hardwood - Donnell's Clapboard Mill - Driwood Moulding - Eisenhart Wallcoverings - Empire Wood Works - Raymond Enkeboll Designs - James Facenelli, CGR #28 - Focal Point Architectural Products - Four Seasons Sun Rooms - Futurbilt - Garland - Gates Moore - General Electric Company - George Taylor Specialties Co. - Goodwin Heart Pine Company - Gougeon Brothers, Inc. - Grand Era, Inc. - Granville Manufacturing Company - Groff & Hearne Lumber - Hampton Decor - Harris-Tarkett, Inc. - Heatway - Heritage Vinyl Products - Michael Higuera - Italian Tile Center - J. G. Braun Company - Jeffries Wood Works, Inc. - Jennifer's Glass Works - JGR Enterprises - Johnson Paint Company, Inc. - Joseph Biunno Ltd - Kenmore Industries - King's Chandelier Company - Kraftmaid Cabinetry, Inc. - David Lawrence, illustrator - Lasting Impression Doors - Lehman's - Linoleum City, Inc. - Ludowici-Celadon, Inc. - MCA, Inc. - Millwork Specialties - The Millworks, Inc. - Mountain Lumber Co. - National Oak Flooring Manufacturers Association (NOFMA) - National Wood Flooring Association - Northwest Energy, Inc. - Oak Flooring Institute - The Old Fashioned Milk Paint Company, Inc. - Ole Fashion Things - Omega Too - Pagliacco Turning & Milling - Pella Corporation - Permaglaze - Piedmont Home Products, Inc. - Piedmont Mantel & Millwork Ltd - Pinecrest - Radiantec - The Readybuilt Products Company - Rejuvenation Lamp & Fixture, Co. - Runtal Radiators - The Saltbox - Salvage One Architectural Artifacts - Silvertown Victorian Millworks - Stairways Inc. - Steptoe and Wife Antiques Ltd - Stromberg's Architectural Stone - The Structural Slate Co. - Sunbilt - Supradur Manufacturing Corporation - Taylor Door - Brian Thaut - Touchstone Woodworks - Turncraft - USG Company - Vande Hey's Roofing Tile Co., Inc. - Velux-America Inc. - Vixen Hill Manufacturing Co. - W. F. Norman Corporation - Watercolors, Inc. - WELco - Western Wood Products Association - Williamsburg Blacksmiths - Windy Hill Forge - Wolverine Technologies - The Wood Factory - Worthington Group Ltd

area modification factors

Construction costs are higher in some cities than in other cities. Use the factors on this and the following page to adapt the costs listed in this book to your job site. Increase or decrease your estimated total project cost by the percentage listed for the appropriate city in this table to find your estimated building cost.

These factors were compiled by comparing the actual construction cost of residential, institutional and commercial buildings in communities throughout the United States. Because these factors are based on completed project costs, they consider all construction cost variables, including labor, equipment and material cost, labor productivity, climate, job conditions and markup.

Use the factor for the nearest or most comparable city. If the city you need is not listed in the table, use the factor for the appropriate state. Note that these location factors 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 all estimated costs on a job, they should improve the accuracy of your estimates.

ALABAMA -4%	Pine Bluff -11%	Durango -1%	Pensacola -8%	ILLINOIS 4%
Annonis -8%	Russellville -4%	Fort Morgan -2%	Saint Augustine -2%	Arlington Heights 14%
Auburn -4%	West Memphis -2%	Glenwood Springs 4%	Saint Cloud -2%	Aurora 14%
Bellamy 5%		Grand Junction 0%	St. Petersburg -6%	Belleville 0%
Birmingham 2%	CALIFORNIA 9%	Greeley -5%	Tallahassee -6%	Bloomington -1%
Dothan -7%	Alhambra 8%	Longmont 2%	Tampa -1%	Carbondale -4%
Evergreen -10%	Bakersfield 2%	Pagosa Springs -4%	West Palm Beach -2%	Carol Stream 14%
Gadsden -9%	El Centro 0%	Pueblo 0%		Centralia -3%
Huntsville -1%	Eureka 7%	Salida -6%	GEORGIA -4%	Champaign -2%
Jasper -8%	Fresno -2%		Albany -6%	Chicago 15%
Mobile -2%	Herlong 9%	CONNECTICUT 8%	Athens -5%	Decatur -7%
Montgomery -2%	Inglewood 9%	Bridgeport 6%	Atlanta 12%	Galesburg -4%
Scottsboro -4%	Irvine 13%	Bristol 12%	Augusta -2%	Granite City 3%
Selma -5%	Lompoc 3%	Fairfield 9%	Buford -2%	Green River 5%
Sheffield 0%	Long Beach 9%	Hartford 11%	Calhoun -9%	Joliet 13%
Tuscaloosa -4%	Los Angeles 8%	New Haven 7%	Columbus -3%	Kankakee -3%
	Marysville 9%	Norwich 3%	Dublin/Fort Valley -8%	Lawrenceville -6%
ALASKA 23%	Modesto 1%	Stamford 12%	Hinesville -6%	Oak Park 18%
Anchorage 26%	Mojave 5%	Waterbury 6%	Kings Bay -10%	Peoria 6%
Fairbanks 27%	Novato 18%	West Hartford 5%	Macon -4%	Peru 2%
Juneau 19%	Oakland 24%		Marietta 4%	Quincy 16%
Ketchikan 18%	Orange 12%	DELAWARE 2%	Savannah -4%	Rockford 3%
King Salmon 23%	Oxnard 2%	Dover -4%	Statesboro -11%	Springfield 0%
	Pasadena 9%	Newark 6%	Valdosta -1%	Urbana -4%
ARIZONA -4%	Rancho Cordova 4%	Wilmington 4%		
Chambers -8%	Redding -3%		HAWAII 20%	INDIANA -3%
Douglas -8%	Richmond 17%	DISTRICT OF COLUMBIA	Aliamanu 22%	Aurora -5%
Flagstaff -7%	Riverside 4%	Washington 12%	Ewa 20%	Bloomington -2%
Kingman -5%	Sacramento 3%		Halawa Heights 20%	Columbus -4%
Mesa 3%	Salinas 1%	FLORIDA -5%	Hilo 20%	Elkhart -4%
Phoenix 3%	San Bernardino 2%	Altamonte Springs -3%	Honolulu 22%	Evansville 4%
Prescott -6%	San Diego 8%	Bradenton -6%	Kailua 22%	Fort Wayne -1%
Show Low -7%	San Francisco 27%	Brooksville -7%	Lualualei 20%	Gary 8%
Tucson -5%	San Jose 17%	Daytona Beach -9%	Mililani Town 20%	Indianapolis 4%
Yuma 2%	San Mateo 21%	Fort Lauderdale 2%	Pearl City 20%	Jasper -8%
	Santa Barbara 7%	Fort Myers -6%	Wahiawa 20%	Jeffersonville -5%
ARKANSAS -7%	Santa Rosa 16%	Fort Pierce -10%	Waianae 20%	Kokomo -8%
Batesville -9%	Stockton 4%	Gainesville -9%	Wailuku (Maui) 20%	Lafayette -5%
Camden -2%	Sunnyvale 20%	Jacksonville -2%		Muncie -8%
Fayetteville -4%	Van Nuys 8%	Lakeland -8%	IDAHO -9%	South Bend -2%
Fort Smith -7%	Whittier 8%	Melbourne -8%	Boise -5%	Terre Haute -3%
Harrison -12%		Miami 1%	Coeur d'Alene -10%	
Hope -8%	COLORADO 1%	Naples -2%	Idaho Falls -9%	IOWA -3%
Hot Springs -13%	Aurora 7%	Ocala -12%	Lewiston -11%	Burlington 1%
Jonesboro -9%	Boulder 4%	Orlando 1%	Meridian -9%	Carroll -11%
Little Rock -3%	Colorado Springs 0%	Panama City -11%	Pocatello -10%	Cedar Falls -4%
	Denver 8%		Sun Valley -8%	

Cedar Rapids.....2%	MAINE-5%	Mankato.....-4%	North Platte.....-6%	Ithaca.....-5%
Cherokee.....1%	Auburn.....-4%	Minneapolis.....13%	Omaha.....0%	Jamaica.....14%
Council Bluffs.....-1%	Augusta.....-5%	Rochester.....-1%	Valentine.....-15%	Jamestown.....-7%
Creston.....1%	Bangor.....-6%	St Cloud.....2%	NEVADA1%	Kingston.....-4%
Davenport.....1%	Bath.....-6%	St Paul.....12%	Carson City.....-4%	Long Island.....30%
Decorah.....-8%	Brunswick.....-1%	Thief River Falls.....-2%	Elko.....9%	Montauk.....7%
Des Moines.....5%	Camden.....-10%	Willmar.....-6%	Ely.....-3%	New York (Manhattan) ...31%
Dubuque.....-4%	Cutler.....-7%	MISSISSIPPI-6%	Fallon.....0%	New York City.....31%
Fort Dodge.....-3%	Dexter.....-4%	Clarksdale.....-9%	Las Vegas.....3%	Newcomb.....0%
Mason City.....-3%	Northern Area.....-8%	Columbus.....0%	Reno.....-1%	Niagara Falls.....-6%
Ottumwa.....-6%	Portland.....2%	Greenville.....-14%	NEW HAMPSHIRE-1%	Plattsburgh.....-1%
Sheldon.....-7%	MARYLAND2%	Greenwood.....-10%	Charlestown.....-5%	Poughkeepsie.....1%
Shenandoah.....-14%	Annapolis.....8%	Gulfport.....-6%	Concord.....-3%	Queens.....17%
Sioux City.....5%	Baltimore.....7%	Jackson.....-3%	Dover.....1%	Rochester.....2%
Spencer.....-7%	Bethesda.....13%	Laurel.....-7%	Lebanon.....-3%	Rockaway.....10%
Waterloo.....-3%	Church Hill.....-4%	McComb.....-11%	Littleton.....-6%	Rome.....-4%
KANSAS0%	Cumberland.....-8%	Meridian.....3%	Manchester.....2%	Staten Island.....8%
Colby.....-8%	Elkton.....-5%	Tupelo.....-7%	New Boston.....3%	Stewart.....-5%
Concordia.....-12%	Frederick.....7%	MISSOURI-3%	NEW JERSEY9%	Syracuse.....2%
Dodge City.....-4%	Laurel.....8%	Cape Girardeau.....-5%	Atlantic City.....4%	Tonawanda.....-1%
Emporia.....8%	Salisbury.....-6%	Caruthersville.....-7%	Brick.....2%	Utica.....-6%
Fort Scott.....-6%	MASSACHUSETTS ...12%	Chillicothe.....-4%	Dover.....9%	Watertown.....-1%
Hays.....-13%	Ayer.....6%	Columbia.....-4%	Edison.....13%	West Point.....6%
Hutchinson.....-6%	Bedford.....15%	East Lynne.....4%	Hackensack.....10%	White Plains.....14%
Independence.....29%	Boston.....37%	Farmington.....-8%	Monmouth.....12%	NORTH CAROLINA-4%
Kansas City.....5%	Brockton.....20%	Hannibal.....-2%	Newark.....11%	Asheville.....-7%
Liberal.....14%	Cape Cod.....4%	Independence.....5%	Passaic.....12%	Charlotte.....7%
Salina.....-7%	Chicopee.....7%	Jefferson City.....-5%	Paterson.....7%	Durham.....0%
Topeka.....-1%	Dedham.....18%	Joplin.....-6%	Princeton.....10%	Elizabeth City.....-8%
Wichita.....-4%	Fitchburg.....11%	Kansas City.....6%	Summit.....16%	Fayetteville.....-6%
KENTUCKY-4%	Hingham.....19%	Kirksville.....-15%	Trenton.....7%	Goldsboro.....0%
Ashland.....-4%	Lawrence.....14%	Knob Noster.....3%	NEW MEXICO-8%	Greensboro.....-3%
Bowling Green.....-5%	Nantucket.....9%	Lebanon.....-12%	Alamogordo.....-11%	Hickory.....-8%
Campton.....-11%	New Bedford.....6%	Poplar Bluff.....-10%	Albuquerque.....-3%	Kinston.....-9%
Covington.....2%	Northfield.....2%	Saint Charles.....1%	Clovis.....-11%	Raleigh.....3%
Elizabethtown.....-10%	Pittsfield.....1%	Saint Joseph.....-1%	Farmington.....-1%	Rocky Mount.....-7%
Frankfort.....7%	Springfield.....8%	Springfield.....-8%	Fort Sumner.....-2%	Wilmington.....-6%
Hazard.....-10%	MICHIGAN1%	St Louis.....8%	Gallup.....-7%	Winston-Salem.....-5%
Hopkinsville.....-5%	Battle Creek.....-1%	MONTANA-3%	Holman.....-10%	NORTH DAKOTA4%
Lexington.....1%	Detroit.....7%	Billings.....-2%	Las Cruces.....-8%	Bismarck.....3%
London.....-7%	Flint.....-4%	Butte.....-3%	Santa Fe.....-8%	Dickinson.....15%
Louisville.....2%	Grand Rapids.....1%	Fairview.....12%	Socorro.....-14%	Fargo.....0%
Owensboro.....-4%	Grayling.....-7%	Great Falls.....-6%	Truth or Consequences.....-8%	Grand Forks.....-1%
Paducah.....0%	Jackson.....-1%	Havre.....-9%	Tucumcari.....-8%	Jamestown.....-4%
Pikeville.....-8%	Lansing.....0%	Helena.....-2%	NEW YORK6%	Minot.....9%
Somerset.....-11%	Marquette.....3%	Kalispell.....-6%	Albany.....7%	Nekoma.....-10%
White Plains.....-4%	Pontiac.....12%	Miles City.....-7%	Amityville.....9%	Williston.....21%
LOUISIANA2%	Royal Oak.....7%	Missoula.....-6%	Batavia.....1%	OHIO0%
Alexandria.....4%	Saginaw.....-5%	NEBRASKA-8%	Binghamton.....-2%	Akron.....1%
Baton Rouge.....10%	Traverse City.....-2%	Alliance.....-10%	Bronx.....10%	Canton.....-2%
Houma.....4%	MINNESOTA-1%	Columbus.....-7%	Brooklyn.....7%	Chillicothe.....-2%
Lafayette.....8%	Bemidji.....-6%	Grand Island.....-8%	Buffalo.....1%	Cincinnati.....3%
Lake Charles.....13%	Brainerd.....-3%	Hastings.....-9%	Elmira.....-3%	Cleveland.....3%
Mandeville.....-3%	Duluth.....2%	Lincoln.....-4%	Flushing.....15%	Columbus.....5%
Minden.....-5%	Fergus Falls.....-10%	McCook.....-9%	Garden City.....15%	Dayton.....1%
Monroe.....-8%	Magnolia.....-8%	Norfolk.....-10%	Hicksville.....14%	Lima.....-5%
New Orleans.....2%				Marietta.....-5%
Shreveport.....-4%				Marion.....-6%

Newark.....3%	Punxsutawney.....-3%	Austin.....12%	Lynchburg.....-9%	Powell.....-3%
Sandusky.....-3%	Reading.....2%	Bay City.....39%	Norfolk.....-2%	Rawlins.....8%
Steubenville.....1%	Scranton.....1%	Beaumont.....18%	Petersburg.....-3%	Riverton.....-6%
Toledo.....7%	Somerset.....-9%	Brownwood.....-8%	Radford.....-9%	Rock Springs.....1%
Warren.....-5%	Southeastern.....8%	Bryan.....8%	Reston.....7%	Sheridan.....-3%
Youngstown.....-3%	Uniontown.....-6%	Childress.....-14%	Richmond.....2%	Wheatland.....-3%
Zanesville.....-1%	Valley Forge.....11%	Corpus Christi.....18%	Roanoke.....-9%	
OKLAHOMA.....-5%	Warminster.....11%	Dallas.....6%	Staunton.....-7%	CANADIAN AREA MODIFIERS
Adams.....-10%	Warrendale.....5%	Del Rio.....0%	Tazewell.....-6%	These figures assume an
Ardmore.....-1%	Washington.....8%	El Paso.....-7%	Virginia Beach.....-3%	exchange rate of \$1.00 Canadian
Clinton.....-3%	Wilkes Barre.....-1%	Fort Worth.....2%	Williamsburg.....-3%	to \$0.76 U.S.
Durant.....-11%	Williamsport.....-2%	Galveston.....24%	Winchester.....4%	
Enid.....-4%	York.....-1%	Giddings.....6%		ALBERTA AVERAGE... 13%
Lawton.....-8%	RHODE ISLAND..... 5%	Greenville.....3%	WASHINGTON..... 0%	Calgary.....14%
McAlester.....-7%	Bristol.....5%	Houston.....26%	Clarkston.....-8%	Edmonton.....14%
Muskogee.....-8%	Coventry.....5%	Huntsville.....26%	Everett.....2%	Fort McMurray.....12%
Norman.....-4%	Cranston.....6%	Longview.....1%	Olympia.....-2%	
Oklahoma City.....-3%	Cranston.....6%	Lubbock.....-7%	Pasco.....1%	BRITISH COLUMBIA
Ponca City.....-1%	Davisville.....5%	Lufkin.....8%	Seattle.....11%	AVERAGE..... 7%
Poteau.....-7%	Narragansett.....5%	McAllen.....6%	Spokane.....-3%	Fraser Valley.....6%
Pryor.....-6%	Newport.....5%	Midland.....10%	Tacoma.....2%	Okanagan.....6%
Shawnee.....-8%	Providence.....6%	Palestine.....2%	Vancouver.....3%	Vancouver.....9%
Tulsa.....0%	Warwick.....5%	Plano.....7%	Wenatchee.....-6%	
Woodward.....5%	SOUTH CAROLINA -1%	San Angelo.....-6%	Yakima.....-5%	MANITOBA AVERAGE... 0%
OREGON.....-3%	Aiken.....4%	San Antonio.....8%		North Manitoba.....0%
Adrian.....-12%	Beaufort.....-2%	Texarkana.....-8%	WEST VIRGINIA.....-5%	Selkirk.....0%
Bend.....-5%	Charleston.....1%	Tyler.....-7%	Beckley.....-5%	South Manitoba.....0%
Eugene.....-3%	Columbia.....2%	Victoria.....12%	Bluefield.....0%	Winnipeg.....0%
Grants Pass.....-5%	Greenville.....8%	Waco.....-3%	Charleston.....4%	
Klamath Falls.....-8%	Myrtle Beach.....8%	Wichita Falls.....-9%	Clarksburg.....-7%	NEW BRUNSWICK
Pendleton.....-3%	Rock Hill.....-6%	Woodson.....-3%	Fairmont.....-11%	AVERAGE.....-13%
Portland.....10%	Spartanburg.....4%	UTAH.....-3%	Huntington.....-4%	Moncton.....-13%
Salem.....-2%	SOUTH DAKOTA.....-6%	Clearfield.....0%	Lewisburg.....-14%	
PENNSYLVANIA.....-1%	Aberdeen.....-7%	Green River.....-3%	Martinsburg.....-5%	NEWFOUNDLAND/ LABRADOR AVERAGE... -3%
Allentown.....3%	Mitchell.....-6%	Ogden.....-9%	Morgantown.....-4%	
Altoona.....-8%	Mobridge.....-9%	Provo.....-6%	New Martinsville.....-9%	NOVA SCOTIA
Beaver Springs.....-5%	Pierre.....-10%	Salt Lake City.....1%	Parkersburg.....1%	AVERAGE.....-8%
Bethlehem.....4%	Rapid City.....-8%	VERMONT.....-5%	Romney.....-7%	Amherst.....-8%
Bradford.....-8%	Sioux Falls.....-1%	Albany.....-7%	Sugar Grove.....-8%	Nova Scotia.....-7%
Butler.....-2%	Watertown.....-4%	Battleboro.....-4%	Wheeling.....5%	Sydney.....-8%
Chambersburg.....-7%	TENNESSEE.....-2%	Beecher Falls.....-8%	WISCONSIN..... 0%	ONTARIO AVERAGE..... 7%
Clearfield.....-3%	Chattanooga.....2%	Bennington.....-6%	Amery.....-1%	London.....7%
DuBois.....-10%	Clarksville.....1%	Burlington.....4%	Beloit.....5%	Thunder Bay.....6%
East Stroudsburg.....-5%	Cleveland.....-1%	Montpelier.....-4%	Clam Lake.....-8%	Toronto.....7%
Erie.....-6%	Columbia.....-7%	Rutland.....-7%	Eau Claire.....-2%	
Genesee.....-4%	Cookeville.....-8%	Springfield.....-6%	Green Bay.....3%	QUEBEC AVERAGE.....-1%
Greensburg.....-4%	Jackson.....-2%	White River Junction.....-5%	La Crosse.....0%	Montreal.....-1%
Harrisburg.....3%	Kingsport.....-5%	VIRGINIA.....-4%	Ladysmith.....-2%	Quebec City.....-1%
Hazleton.....-3%	Knoxville.....-2%	Abingdon.....-9%	Madison.....8%	
Johnstown.....-9%	McKenzie.....-8%	Alexandria.....10%	Milwaukee.....6%	SASKATCHEWAN
Kittanning.....-6%	Memphis.....1%	Charlottesville.....-6%	Oshkosh.....4%	AVERAGE..... 4%
Lancaster.....-1%	Nashville.....2%	Chesapeake.....-4%	Portage.....0%	La Ronge.....3%
Meadville.....-9%	TEXAS..... 5%	Culpeper.....-5%	Prairie du Chien.....-7%	Prince Albert.....2%
Montrose.....-4%	Abilene.....-2%	Farmville.....-12%	Wausau.....-3%	Saskatoon.....5%
New Castle.....-3%	Amarillo.....-2%	Fredericksburg.....-5%	WYOMING.....-1%	
Philadelphia.....11%	Arlington.....1%	Galax.....-10%	Casper.....1%	
Pittsburgh.....6%		Harrisonburg.....-6%	Cheyenne/Laramie.....-2%	
Pottsville.....-8%			Gillette.....3%	

crews

CRAFT CODE	AVG. COST /HR	CREW COMPOSITION	CRAFT CODE	AVG. COST /HR	CREW COMPOSITION
1A	\$53.20	acoustic ceiling installer	11	\$49.00	insulation installer
2A	\$60.60	appliance installer	21	\$56.30	cabinet installer laborer
3A	\$72.30	appliance refinisher	31	\$65.00	flooring installer
4A	\$62.30	awning installer	41	\$48.30	flooring installer's helper
5A	\$47.10	awning installer's helper	51	\$56.70	flooring installer flooring installer's helper
6A	\$54.70	awning installer awning installer's helper	61	\$67.40	paneling installer
1B	\$38.20	cleaning laborer	71	\$50.40	paneling installer's helper
2B	\$85.20	post & beam carpenter	2L	\$44.90	cabinet installer's helper
3B	\$60.70	post & beam carpenter's helper	3L	\$41.40	masking & moving laborer
4B	\$73.00	post & beam carpenter post & beam carpenter's helper	1M	\$71.10	mason
1C	\$67.60	carpenter	2M	\$65.20	mason's helper
5C	\$50.40	carpenter's helper	3M	\$50.40	hod carrier
6C	\$59.00	carpenter carpenter's helper	4M	\$62.20	mason mason's helper hod carrier / laborer
1D	\$47.20	demolition laborer	5M	\$68.20	mason mason's helper
2D	\$54.90	drywall hanger drywall hanger's helper	6M	\$115.00	stone carver
3D	\$62.60	drywall hanger	7M	\$48.60	mobile home repair specialist
4D	\$47.20	drywall hanger's helper	10	\$88.90	equipment operator
5D	\$63.10	drywall taper	20	\$62.70	concrete saw operator
6D	\$57.60	drywall hanger drywall hanger's helper drywall taper	4P	\$64.70	plasterer
5E	\$44.00	excavation laborer	5P	\$58.30	plasterer's helper
6E	\$66.50	excavation laborer equipment operator	6P	\$61.50	plasterer plasterer's helper
7E	\$72.40	electrician	7P	\$77.40	plumber
8E	\$53.90	electrician's helper	8P	\$58.90	paneling installer paneling installer's helper
9E	\$63.20	electrician electrician's helper	9P	\$59.10	plumber's helper
1F	\$63.60	concrete form installer	3R	\$66.70	retaining wall installer
2F	\$46.30	concrete laborer	4R	\$78.90	roofer
3F	\$55.00	concrete form installer concrete laborer	5R	\$66.90	roofer's helper
4F	\$59.00	carpenter (fence installer) carpenter's helper	6R	\$72.90	roofer roofer's helper
5F	\$65.50	painter	1S	\$54.10	susp. ceiling installer susp. ceiling installer's helper
6F	\$63.40	concrete finisher	2S	\$61.70	susp. ceiling installer
7F	\$52.40	concrete finisher's helper	3S	\$46.40	susp. ceiling installer's helper
8F	\$57.90	concrete finisher concrete finisher's helper	4S	\$66.50	siding installer
9F	\$56.50	concrete form installer concrete laborer concrete finisher concrete finisher's helper	5S	\$49.70	siding installer's helper
1G	\$88.80	compaction grouting specialist	6S	\$58.10	siding installer siding installer's helper
2G	\$67.60	compaction grouting specialist concrete laborer	7S	\$59.70	security system installer
1H	\$57.40	hazardous materials laborer	8S	\$76.10	swimming pool installer
2H	\$70.50	HVAC installer	9S	\$57.50	water extractor
3H	\$52.40	wallpaper hanger	1T	\$62.80	tile layer
			7Z	\$45.90	mildew remediation specialist
			8Z	\$28.50	mildew remediation assistant
			9Z	\$37.20	mildew remediation specialist mildew remediation assistant

	Craft@Hrs	Unit	Material	Labor	Total
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Acoustic Ceilings**Minimum charge.**

for acoustic ceiling tile work	1A@1.25	ea	24.10	66.50	90.60
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1/2" on strips. 12" x 12" tiles stapled in place. Includes 12" x 12" ceiling tiles, staples, and installation labor. Does not include furring strips. Includes 3% waste.

1/2" ceiling tiles on furring strips					
replace, smooth face	1A@.025	sf	1.47	1.33	2.80
replace, fissured face	1A@.025	sf	1.88	1.33	3.21
replace, textured face	1A@.025	sf	2.19	1.33	3.52
replace, patterned face	1A@.025	sf	2.30	1.33	3.63
remove only	1D@.012	sf	—	.57	.57

1/2" on flat ceiling. 12" x 12" tiles glued in place. Includes 12" x 12" ceiling tiles, glue, and installation labor. Includes 3% waste.

1/2" ceiling tiles on flat ceiling					
replace, smooth face	1A@.029	sf	1.47	1.54	3.01
replace, fissured face	1A@.029	sf	1.88	1.54	3.42
replace, textured face	1A@.029	sf	2.19	1.54	3.73
replace, patterned face	1A@.029	sf	2.30	1.54	3.84
remove only	1D@.016	sf	—	.76	.76

5/8" on strips. 12" x 12" tiles stapled in place. Includes 12" x 12" ceiling tiles, staples, and installation labor. Does not include furring strips. Includes 3% waste.

5/8" ceiling tiles on furring strips					
replace, smooth face	1A@.025	sf	1.88	1.33	3.21
replace, fissured face	1A@.025	sf	2.19	1.33	3.52
replace, textured face	1A@.025	sf	2.43	1.33	3.76
replace, patterned face	1A@.025	sf	2.59	1.33	3.92
remove only	1D@.012	sf	—	.57	.57

5/8" on flat ceiling. 12" x 12" tiles glued in place. Includes 12" x 12" ceiling tiles, glue, and installation labor. Includes 3% waste.

5/8" ceiling tiles on flat ceiling					
replace, smooth face	1A@.029	sf	1.88	1.54	3.42
replace, fissured face	1A@.029	sf	2.19	1.54	3.73
replace, textured face	1A@.029	sf	2.43	1.54	3.97
replace, patterned face	1A@.029	sf	2.59	1.54	4.13
remove only	1D@.016	sf	—	.76	.76

3/4" on strips. 12" x 12" tiles stapled in place. Includes 12" x 12" ceiling tiles, staples, and installation labor. Does not include furring strips. Includes 3% waste.

3/4" ceiling tiles on furring strips					
replace, smooth face	1A@.025	sf	2.19	1.33	3.52
replace, fissured face	1A@.025	sf	2.43	1.33	3.76
replace, textured face	1A@.025	sf	2.53	1.33	3.86
replace, patterned face	1A@.025	sf	2.80	1.33	4.13
remove	1D@.012	sf	—	.57	.57

1 - Acoustic Ceilings

	Craft@Hrs	Unit	Material	Labor	Total
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3/4" on flat ceiling. 12" x 12" tiles glued in place. Includes 12" x 12" ceiling tiles, glue, and installation labor. Includes 3% waste.

3/4" ceiling tiles on flat ceiling					
replace, smooth face	1A@.029	sf	2.19	1.54	3.73
replace, fissured face	1A@.029	sf	2.43	1.54	3.97
replace, textured face	1A@.029	sf	2.53	1.54	4.07
replace, patterned face	1A@.029	sf	2.80	1.54	4.34
remove	1D@.016	sf	—	.76	.76

Additional costs for acoustical ceiling tile.

add for 3/4" tiles with fire rating	—	sf	.41	—	.41
add for aluminum-coated tiles	—	sf	.60	—	.60

Furring strips. Includes 1" x 2" furring strips, nails, construction adhesive as needed, and installation labor. Furring strips placed as fireblocking is included. Includes 4% waste.

replace 1" x 2" furring strips 12" on center	1A@.007	sf	.36	.37	.73
remove	1D@.009	sf	—	.42	.42

Repair loose ceiling tile.

repair loose acoustic tile	1A@.253	ea	.16	13.50	13.66
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Angled install for ceiling tile.

- add 24% for diagonal install
- add 31% for chevron install
- add 40% for herringbone install

Time & Material Charts (selected items)**Acoustic Ceiling Materials**

1/2" thick acoustic tile (per 12" x 12" tile)					
smooth face, (\$1.23 each, 1 sf, 3% waste)	—	sf	1.26	—	1.26
fissured face, (\$1.66 each, 1 sf, 3% waste)	—	sf	1.71	—	1.71
textured face, (\$1.90 each, 1 sf, 3% waste)	—	sf	1.95	—	1.95
patterned face, (\$2.05 each, 1 sf, 3% waste)	—	sf	2.12	—	2.12
5/8" thick acoustic tile (per 12" x 12" tile)					
smooth face, (\$1.66 each, 1 sf, 3% waste)	—	sf	1.71	—	1.71
fissured face, (\$1.90 each, 1 sf, 3% waste)	—	sf	1.95	—	1.95
textured face, (\$2.20 each, 1 sf, 3% waste)	—	sf	2.26	—	2.26
patterned face, (\$2.30 each, 1 sf, 3% waste)	—	sf	2.36	—	2.36
3/4" thick acoustic tile (per 12" x 12" tile)					
smooth face, (\$1.90 each, 1 sf, 3% waste)	—	sf	1.95	—	1.95
fissured face, (\$2.20 each, 1 sf, 3% waste)	—	sf	2.26	—	2.26
textured face, (\$2.27 each, 1 sf, 3% waste)	—	sf	2.33	—	2.33
patterned face, (\$2.50 each, 1 sf, 3% waste)	—	sf	2.57	—	2.57

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