

# Life Cycles and Costs

THE FOLLOWING COSTS ARE BALL PARK ESTIMATES FOR A TYPICAL THREE BEDROOM HOME.

WHERE APPROPRIATE, TYPICAL LIFE EXPECTANCIES ARE INCLUDED IN PARENTHESIS.

THE LIFE EXPECTANCY OF SOME COMPONENTS WILL VARY WITH THE SEVERITY OF WEATHER IN THE REGION. THE DESIGN, QUALITY OF INSTALLATION AND LEVEL OF MAINTENANCE CAN ALSO DRASTICALLY AFFECT LIFE EXPECTANCY.

### There are many factors that affect costs:

- Access...How difficult is it to get to? Crawlspace are harder to work in than basements. Three-story roofs are harder to work on than bungalow roofs. Steep roofs are more difficult than low slope roofs.
- Height...If you need to build scaffolding to get to the chimney, chimney repairs will cost more.
- Complexity of job...Roofs with lots of dormers and skylights are more expensive.
- Weight...Heavy roofing materials are hard to carry up the ladder.
- Disposal costs...Costs to get rid of the old materials vary and can be significant.
- Amount and difficulty of preparation work...Painting is not as expensive as stripping, scraping and sanding to get ready to paint.
- Cost of materials...Clear cedar siding costs more than paint grade wood, which costs more than vinyl siding.
- Availability of materials...Cedar roofing is significantly less expensive on the west coast, than in the east.
- Installation technique...It costs more to glue and screw subflooring in place than to nail it. It costs more to put deck posts on a footing than on the ground.
- Amount of labor...It takes longer to lay a ceramic tile floor than a sheet vinyl floor.
- Skill level of labor...It costs more to tape drywall than to hang it. It costs more to paint a faux finish than a flat finish. Plumbers cost more than handymen.
- Scarcity of labor...In many areas it is hard to find people who do plaster rather than drywall, or work on steam boilers rather than forced air heat.
- Quality of system...Furnaces can cost \$2,000 to \$8,000, depending on their quality and features. It's a lot like buying a car.
- Economic conditions...Are trades people generally busy and not looking for work, or very slow and anxious to do any job? Is the market competitive, or are there only one or two companies that can do what you are looking for?
- Time of year...In many areas, there are construction seasons that depend on the weather, and renovations and repairs will be more expensive in the high season.
- Reputation of company...Are you looking for an industry leader or someone just getting started? The folks with good reputations and a long list of satisfied clients referring work to them will be harder to find, and more expensive to engage.

The figures that follow include labor and materials. Many home repairs have a minimum fee based on a visit by a tradesperson.

## HOME IMPROVEMENT PROJECTS

According to Remodeling Magazine, here are some national average costs for common remodeling projects in the U.S. in 2013 (figures have been rounded to the nearest \$500).

<b>BATHROOM</b>	1. Bathroom remodel	\$16,000	Roughly \$450/sq. ft.
	2. Bathroom remodel Premium quality (Larger bathroom)	\$50,000	Roughly \$500/sq. ft.
<b>KITCHEN</b>	3. Major kitchen remodel	\$54,000	Roughly \$275/sq. ft.
	4. Major kitchen remodel Premium quality	\$107,500	Roughly \$550/sq. ft.
<b>BASEMENT AND FAMILY ROOM</b>	5. Basement remodel (includes small bath and wet bar)	\$61,500	Roughly \$100/sq. ft.
	6. Family room addition	\$79,000	Roughly \$200/sq. ft.
<b>GARAGE</b>	7. Garage Addition	\$49,000	Roughly \$80/sq. ft.
	8. Garage – New detached Premium quality	\$80,500	Roughly \$121/sq. ft.
<b>SIDING</b>	9. Re-siding with vinyl	\$11,000	Roughly \$8/sq. ft.
<b>WINDOWS</b>	10. Replace windows with vinyl	\$10,500	Roughly \$1,100/window or \$75/sq. ft.
	11. Replace windows with premium quality vinyl windows	\$13,500	Roughly \$1,700/window or \$110/sq. ft.
<b>DECK</b>	12. Install wood deck (includes railing, bench and steps)	\$9,500	Roughly \$30/sq. ft.
	13. Install composite deck (includes railing, bench and steps)	\$15,000	Roughly \$50/sq. ft.

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## ROOFING/FLASHINGS/CHIMNEYS

<b>SLOPED ROOF</b>	1. Strip asphalt shingles	\$0.75-\$1.50 per sq. ft.
	2. Re-roof with conventional asphalt shingles	\$2.00-\$4.00 per sq. ft. (twelve to twenty yrs)
	3. Re-roof with premium quality asphalt shingles	\$4.00-\$8.00 per sq. ft. (twenty to thirty yrs)
	4. Strip and re-roof with cedar shingles or shakes	\$9.00-\$18.00 per sq. ft. (twenty to thirty-five yrs)
	5. Install concrete tile roofing (assuming no structural reinforcement)	\$8.00-\$16.00 per sq. ft. (fifty yrs and up)
	6. Install new slate roof	\$30-\$60 per sq. ft. (forty to two-hundred yrs)
	7. Repair loose slates or tiles	\$25-50 per slate/tile (minimum \$1000)
	8. Install roll roofing	\$1.50-\$3.00 per sq. ft. (five to ten yrs)
<b>FLAT ROOF</b>	9. Install built-up tar and gravel roof	\$10.00-\$20.00 per sq. ft. (fifteen to twenty yrs) (minimum \$1000)
	10. Install modified bitumen roof membrane	\$8.00-\$16.00 per sq. ft. (fifteen to twenty-five yrs) (minimum \$1000)
	11. Improve flat roof drainage prior to installation of new membrane	\$2.00-\$4.00 per sq. ft.
	12. Paint modified bitumen membrane	\$0.50-\$1.00 per sq. ft. (minimum \$200)
	13. Install sheet metal on small roof surfaces	\$10.00-\$20.00 per sq. ft. (minimum \$1000)
<b>FLASHINGS</b>	14. Reflash standard chimney: - asphalt shingle roof	\$500-\$1000
	- built-up or modified bitumen membrane	\$700-\$1500
	15. Install metal cricket at wide chimney	\$400-\$800
	16. Reflash standard skylight: - asphalt shingle roof	\$500-\$1000
	- built-up or modified bitumen membrane	\$700-\$1500
	18. Repair valley flashings on existing roof	\$25-\$50 per lin. ft. (minimum \$600)
19. Replace parapet wall flashing	\$20-\$50 per lin. ft. (minimum \$600)	

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## ROOFING/FLASHINGS/CHIMNEYS (Continued)

CHIMNEY	20. Rebuild typical chimney above roofline: (scaffolding not included)	
	- single flue (minimum \$1000)	\$150-\$300 per lin. ft.
	- double flue (minimum \$1000)	\$200-\$400 per lin. ft.
	21. Repoint typical chimney above roof line: (scaffolding not included)	
- single flue (minimum \$400)	\$20-\$40 per row	
- double flue (minimum \$400)	\$25-\$50 per row	
22. Install concrete cap on typical chimney:		
- single flue	\$250-\$500	
- double flue	\$400-\$800	
23. Install rain cap on typical chimney	\$200-\$300 each	

## EXTERIOR

GUTTERS AND DOWNSPOUTS	1. Install galvanized or aluminum gutters and downspouts	\$5.00-\$10.00 per lin. ft. (twenty to thirty yrs)
	2. Install copper gutters and downspouts	\$15-\$30 per lin. ft (fifty to one hundred yrs)
	3. Install aluminum soffits and fascia	\$8.00-\$16.00 per lin. ft.
	4. Install	
	- aluminum siding	\$4.00-\$8.00 per sq. ft.
	- vinyl siding	\$6.00-\$12.00 per sq. ft.
	- fiber cement siding	\$7.00-\$14.00 per sq. ft.
	5. Install and finish wood siding using:	
	- cedar	\$8.00-\$16.00 per sq. ft.
- paint grade	\$6.00-\$12.00 per sq. ft.	
6. Install stucco	\$6.00-\$12.00 per sq. ft.	
7. Repointing:		
- Soft mortar (minimum \$500)	\$3.00-\$6.00 per sq. ft.	
- Hard mortar (minimum \$500)	\$5.00-\$10.00 per sq. ft.	
8. Replace deteriorated bricks	\$25-\$50 per sq. ft.	
9. Rebuild parapet wall	\$25-\$50 per sq. ft.	

**EXTERIOR (Continued)**

	10. Painting (exclusive of repairs):	
	- trim only (soffits, fascia, door and window frames)	\$2000 and up (four to six yrs)
	- trim and wall surfaces (wood, brick, stucco)	\$5000 and up (four to six yrs)
<b>BASEMENT</b>	11. Dampproof foundation Dampproof walls and install drainage tiles	\$150-\$300 per lin. ft. (minimum \$3000)
<b>DRIVEWAY</b>	12. Resurface existing asphalt driveway	\$2.00-\$4.00 per sq. ft. (ten to twenty yrs)
	13. Seal asphalt driveway	\$0.30 per sq. ft. and up (one to three yrs)
	14. Install interlocking brick driveway	\$8.00-\$16.00 per sq. ft. (fifteen yrs and up)
	15. Install concrete driveway (no pattern)	\$8.00-\$16.00 per sq. ft. (thirty to forty yrs)
	16. Install drain at bottom of sloped driveway	\$2000 and up
<b>PATIO</b>	17. Install concrete slab patio	\$5.00-\$10.00 per sq. ft. (thirty to forty yrs)
	18. Install concrete patio stones	\$2.50-\$5.00 per sq. ft. (thirty to forty yrs)
	19. Rebuild exterior basement stairwell	\$5000 and up
	20. Install drain at existing basement stairwell	\$750-\$1500
<b>GARAGE</b>	21. Build detached garage	\$70-140 per sq. ft.
	22. Break wood/soil contact at detached garage	\$25-\$50 per lin. ft. (minimum \$1000)
	23. Demolish and remove detached garage	\$1500 and up
	24. Install garage door:	
	- single metal one-piece	\$500-\$1000
	- single wood sectional	\$700-\$1400
	- double wood sectional	\$1200-\$2500
	25. Install garage door opener	\$300-\$600 (eight to twelve yrs)
	26. Build retaining wall:	
	- wood	\$20-\$40 per sq. ft. (minimum \$500)
	- concrete	\$30-\$60 per sq. ft. (minimum \$500)

**EXTERIOR (Continued)**

27. Replace porch steps :	
- wood	\$750 and up
- concrete	\$1500 and up
28. Replace porch flooring	\$4.00-\$8.00 per sq. ft.
29. Replace porch skirting	\$10-\$20 per lin. ft.
30. Replace step railing	\$400-\$800
31. Install fencing:	
- wood	\$20-\$50 per lin. ft.
- chain link	\$10-\$20 per lin. ft.
32. Install lawn sprinkler system	\$2000 and up

**STRUCTURE**

1. Underpin one corner of house	\$5000 and up
2. Underpin or add foundations	\$300 and up per lin. ft. (minimum \$3000)
3. Lower basement floor by underpinning and/or bench footings	\$150-\$300 and up per lin. ft. (minimum \$5000)
4. Replace deteriorating sill beam with concrete	\$60 and up per lin. ft. (minimum \$2000)
5. Replace main beam in basement (unfinished)	\$4000 and up
6. Re-support joist by sistering another alongside	\$250 and up
7. Install basement support post with footing	\$800-\$1600
8. Chemical treatment for termites	\$2000 and up (ten to twenty yrs)
9. Termite inspection performed by a specialist	\$200-\$400
10. Remove or open bearing wall (exclusive of decorating)	\$2000 and up
11. Remove partition wall (exclusive of decorating)	\$2000 and up
12. Install door opening in interior wall (exclusive of decorating)	\$750-\$1500

**STRUCTURE (Continued)**

13. Rebuild arch above window or door opening	\$1000 and up
14. Install lintel above opening in masonry wall	\$1000 and up
15. Install exterior basement stairwell	\$10000 and up
16. Build an addition: - foundation to roof - additional story	\$200-\$400 per sq. ft. \$150-\$300 per sq. ft.
17. Install collar ties	\$30-\$60 each (minimum \$400)
18. Install lateral bracing on collar ties	\$100-\$200
19. Replace roof sheathing	\$4.00-\$8.00 per sq. ft.

**ELECTRICAL**

1. Upgrade electrical service to 100-amps (including new panel and breakers)	\$1500-\$3000
2. Upgrade electrical service to 100-amps (if suitably sized panel already exists)	\$800-\$1600
3. Upgrade electrical service to 200-amps	\$1700-\$3500
4. Replace main ground: - home on public water system - home on private well (Install ground rods)	\$200-\$400 \$300-\$600
5. Install new breaker panel	\$700-\$1400 (add \$200 for 200A panel)
6. Install auxiliary breaker panel	\$350-\$700
7. Replace circuit breaker (20 amp or less)	\$100-\$200
8. Add 120-volt circuit (microwave, freezer, etc.)	\$250-\$300
9. Install exterior outlet with waterproof cover	\$150-\$300
10. Add 240-volt circuit (dryer, stove etc.)	\$300-\$600

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**ELECTRICAL (Continued)**

11. Add conventional receptacle	\$200-\$400
12. Add kitchen split receptacle	\$200-\$400
13. Replace conventional receptacle with ground fault circuit interrupter receptacle	\$70-\$140 (\$200-\$400 for kitchen)
14. Replace conventional receptacle with aluminum compatible type (CO/ALR)	\$60-\$120 each (assuming several are required)
15. Upgrade entire house with aluminum compatible connectors, receptacles etc.	\$1000-\$2000
16. Rewire electrical outlet with reversed polarity	\$5-\$10 each (\$100 minimum)
17. Rewire entire house from aluminum to copper wiring	\$750-\$1500 per room
18. Replace switches (dimmer, standard, lighted etc.)	\$10-\$20 each (\$100 minimum)
19. Install standard light fixture	\$100-\$200
20. Install exterior light	\$250-\$500
21. Install fluorescent light fixture	\$150-\$300
22. Rewire entire house during gut or renovations	\$750-\$1500 per room
23. Replace knob & tube wiring with modern wiring	\$1000-\$2000 per room

**HEATING**

1. Install mid efficiency forced-air furnace	\$2000-\$5000 (eighteen to twenty-five yrs)
2. Install high efficiency forced-air furnace	\$3500-\$8000 (fifteen to twenty yrs)
3. Annual service	\$200 minimum
4. Replace blower and/or motor	\$350-\$700 (ten to twenty yrs)
5. Replace induced draft fan	\$600-\$1200
6. Install humidifier	\$300-\$600 (five to ten yrs)
7. Install electronic air filter	\$800-\$1600 (ten to twenty yrs)
8. Install pleated air filter	\$300-\$1600

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**HEATING (Continued)**

9. Install mid efficiency boiler	\$3500-\$7000 (fifteen to twenty-five yrs)
10. Install high efficiency boiler	\$3500-\$12000 (fifteen to twenty-five yrs)
11. Replace refractory pot	\$300-\$500
12. Install circulating pump	\$400-\$600 (ten to twenty-five yrs)
13. Install expansion tank	\$300-\$600
14. Install backflow preventer	\$250-\$500
15. Install chimney liner (for gas)	\$500-\$1000
16. Install programmable thermostat	\$200-\$400
17. Replace indoor oil tank	\$1200-\$2400
18. Remove oil tank:	
- interior	\$600 and up
- underground	\$10000 and up
19. Replace radiator valve	\$300-\$600
20. Replace radiator	\$750-\$1500
21. Add electric baseboard heater	\$250-\$500
22. Convert from hot water heating to forced air:	
- bungalow	\$10000-\$20000
- two story	\$15000-\$30000
23. Clean ductwork	\$300-\$600
24. Install heat recovery ventilator	\$2500-\$5000

**COOLING/HEAT PUMPS**

1. Add central air conditioning on existing forced-air system	\$3000 and up (ten to fifteen yrs)
2. Add heat pump on existing forced-air system (dependent on source of heat)	\$4000-\$8000 (ten to fifteen yrs)
3. Install independent air conditioning system	\$10000-\$20000 (ten to fifteen yrs)
4. Install ductless air conditioning system	\$3000-\$7000 (ten to fifteen yrs)
5. Annual service	\$200 minimum

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## INSULATION

1. Insulate open attic area to modern standards	\$ .80-\$1.60 per sq. ft.
2. Blow insulation into flat roof, cathedral ceiling or wall cavity	\$2.00-\$4.00 per sq. ft.
3. Improve attic ventilation (supplied while re-roofing)	\$30-\$60 per vent
4. Install spray foam insulation (typical 2 story, 3 bedroom)	\$5000-\$10000
5. Insulate basement from interior	\$1.00 and up per sq. ft.

## PLUMBING

1. Replace galvanized piping with copper: - per kitchen - per bathroom	\$750-\$1500 \$1500-\$3000	NOTE: Figures do not include repairs to finishes after disruption
2. Replace public water supply pipe to house (min \$2000)	\$150-\$300 per lin. ft.	
3. Replace main shut off valve	\$150-\$300	
4. Install conventional water heater	\$500-\$1000 (eight to twelve yrs)	
5. Install induced draft water heater	\$800-\$1600 (eight to twelve yrs)	
6. Install tankless water heater	\$2500-\$3500	
7. Typical monthly rental of conventional water heater	\$10-\$20	
8. Replace toilet	\$500 and up (thirty to forty yrs)	
9. Replace toilet flush mechanism	\$100-\$200	
10. Unclog or remove obstruction from toilet	\$100-\$200	
11. Replace seal on toilet	\$150-\$300	
12. Install bidet	\$700 and up (thirty to forty yrs)	
13. Replace basin: - vanity - pedestal	\$500 and up (twelve to twenty yrs) \$700 and up (twelve to twenty yrs)	

**PLUMBING (Continued)**

14. Replace faucet set	\$250 and up (ten to fifteen yrs)
15. Replace bathtub, including ceramic tile	\$2000 and up (twenty to thirty yrs)
16. Install refinished claw foot bathtub	\$2500 and up (fifteen to twenty yrs)
17. Replace bathtub/shower faucet set	\$400 and up (ten to fifteen yrs)
18. Install whirlpool bath	\$3500 and up (fifteen to twenty-five yrs)
19. Re-tile bathtub enclosure	\$1000-\$2000
20. Replace leaking shower stall pan	\$1000-\$2000
21. Rebuild tile shower stall	\$2500-\$5000
22. Install plastic bathtub enclosure	\$500-\$1000 (ten to fifteen yrs)
23. Install plastic shower stall	\$1000-\$2000 (ten to fifteen yrs)
24. Install bathroom exhaust fan	\$300-\$600 (five to ten yrs)
25. Install modest basement bathroom	\$5000 and up
26. Replace laundry tubs	\$400-\$800 (fifteen to twenty-five yrs)
27. Install laundry facilities	\$1000 and up
28. Install kitchen sink: - single - double	\$500 and up (fifteen to twenty-five yrs) \$800 and up (fifteen to twenty-five yrs)
29. Install solid waste pump	\$1500-\$3000 (five to ten yrs)
30. Connect waste plumbing system to municipal sewers	\$5000 and up
31. Snake out obstruction in main sewer line below yard	\$250-\$500
32. Repair collapsed or damaged section of sewer line below yard	\$2000 and up
33. Install submersible pump in well	\$1000 and up (ten to fifteen yrs)
34. Install suction or jet pump for well	\$700 and up (ten to fifteen yrs)
35. Replace water tank for pump	\$300-\$700

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**PLUMBING (Continued)**

36. Install water softener	\$1000 and up (five to fifteen yrs)
37. Install outdoor faucet	\$300-\$600
38. Replace sump pump	\$350-\$700 (two to seven yrs)
39. Install sauna	\$3000 and up

**INTERIOR**

1. Add drywall over plaster	\$4.00-\$8.00 per sq. ft.
2. Remove old plaster and install drywall	\$5.00-\$10.00 per sq. ft. (plus disposal costs )
3. Add wire lath and new plaster over existing plaster	\$5.00-\$10.00 per sq. ft.
4. Spray stipple on existing ceiling	\$2.00-\$4.00 per sq. ft
5. Install suspended tile ceiling	\$5.00-\$10.00 per sq. ft.
6. Install drywall on unfinished basement ceiling	\$5.00-\$10.00 per sq. ft.
7. Sand and refinish hardwood floors	\$2.00-\$4.00 per sq. ft.
8. Install hardwood floors :	
- 3/8 inch thick	\$8 per sq. ft.
- 3/4 inch thick	\$12 per sq. ft.
9. Install parquet flooring	\$5-\$10 per sq. ft.
10. Install ceramic floor tiles	\$15 and up per sq. ft.
11. Install vinyl floor tiles	\$3 and up per sq. ft.
12. Install sheet vinyl	\$6-\$12 per sq. ft.
13. Install synthetic wall-to-wall carpet	\$25-\$50 per sq. yard
14. Install wool wall-to-wall carpet	\$60 and up per sq. yard
15. Install laminate flooring	\$3.00-\$6.00 per sq. yard
16. Clean carpets	\$30 per room (minimum \$120)

**INTERIOR (Continued)**

17. Replacement windows :	
- Sliding	\$40-\$100 per sq. ft.
- Casement	\$60-\$120 per sq. ft.
- Awning	\$40-\$100 per sq. ft.
- Double hung	\$60-\$120 per sq. ft.
- Fixed	\$35-\$80 per sq. ft.
- Bay	\$40-\$100 per sq. ft.
18. Storm windows	\$200-\$400 each
19. Convert coal-burning fireplace to wood-burning unit (if possible)	\$4000 and up
20. Install masonry fireplace:	
- with single flue chimney	\$7000 and up
- from rough-in	\$3000 and up
21. Install zero clearance fireplace	\$3500 and up
22. Install gas fireplace (excluding interior finishes)	\$4000 and up
23. Install glass doors on fireplace	\$300 and up
24. Clean fireplace chimney flue	\$75-\$150 each
25. Install fireplace damper	\$700 and up
26. Install interior hollow-core door	\$300-\$600
27. Install interior custom wood door	\$450 and up
28. Install exterior door	\$750-\$3000
29. Install closer on garage man door	\$200-\$400
30. Install storm door	\$500-\$1000 (ten to twenty yrs)
31. Install sliding glass doors :	
- brick wall	\$3500-\$7000
- wood frame wall	\$2500-\$5000
32. Replace sliding glass door	\$2000-\$5000 (ten to twenty yrs)
33. Install skylight	\$3000 and up

**INTERIOR (Continued)**

34. Install roof window or ventilating skylight	\$1500 and up
35. Install kitchen cabinets	\$300 and up per lin. ft.
36. Install kitchen counter	\$25 and up per lin. ft.
37. Install ceiling fan	\$500 and up
38. Install conventional alarm system	\$1000 and up
39. Install central vacuum system	\$1000-\$2000
40. Install central vacuum canister only	\$500-\$1000
41. Paint interior (walls, ceilings, doors, trim) of entire house	\$3000 and up (five to ten yrs)
42. Hang wallpaper	\$3.00 and up per sq. ft.
43. Urethane injection of poured concrete foundation cracks	\$400-\$800 each
44. Excavate and repair foundation cracks	\$1000-\$2000 each
45. Injection repair of tie rod hole	\$250-\$500 each
46. Install interior dampproofing system on inside of foundation walls	\$100-\$150 per lin. ft.
47. Damp-proof foundation walls and install perimeter drainage tiles	\$150-\$300 per lin. ft. (minimum \$3000)