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Estimating and Bidding SPF Projects

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Robert Naini has a degree in Mechanical Engineering and an MBA. He has been in the SPF industry for more than 2 decades and has helped hundreds of owners and managers grow their businesses leveraging his unique knowledge base including spray foam sales and marketing, employee and applicator training, building science awareness and building code expertise. Mr. Naini is committed to helping SPF professionals improve their knowledge and skills to solve more problems; in this endeavor he has created Spray Foam Advisor, which offers web-based training and education, available on demand - 24 hours a day, 7 days a week - to fit your schedule, with videos, articles, blogs and more.

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What Is the Typical Process?

Quote = Material x Multiplier

Or

Quote = Material + Labor + Profit

But…

These are shortcuts

These methods are missing important components

What is the Problem?

Quote = Material x Multiplier

Quote = Material + Labor + Profit

These methods do not include all Job Costs

What is the Problem?

Have you ever made it to the end of the year and not had any money to show for it?

What is the Problem?

Have you ever made it to the end of the year and not had any money to show for it?

- Taxes
- Overhead
- Equipment
- Project Variability
- Sales Commission

What Do We Do?

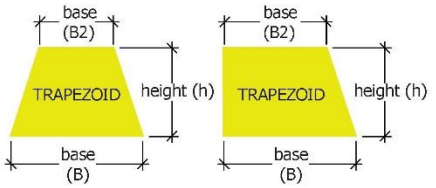
Job Costing!!!

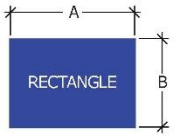
Estimating

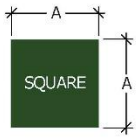
The Process of Identifying the Resources You Need to Complete a Job

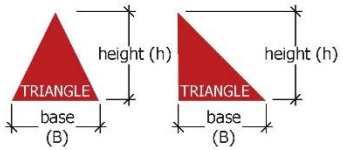
Roof Area Calculations Chart

OBJECT	AREA
RECTANGLE	Area = (A) x (B)
SQUARE	Area = (A) x (A)
TRIANGLE	Area = (B) x (h) x (1/2)
TRAPEZOID	Area = (B1 + B2) x (h) x (1/2)

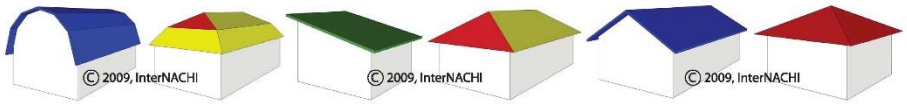








Common Roof Types



Gambrel (can also be square) | Mansard | Shed (can also be rectangle) | Hip | Gable (can also be square) | Pyramid

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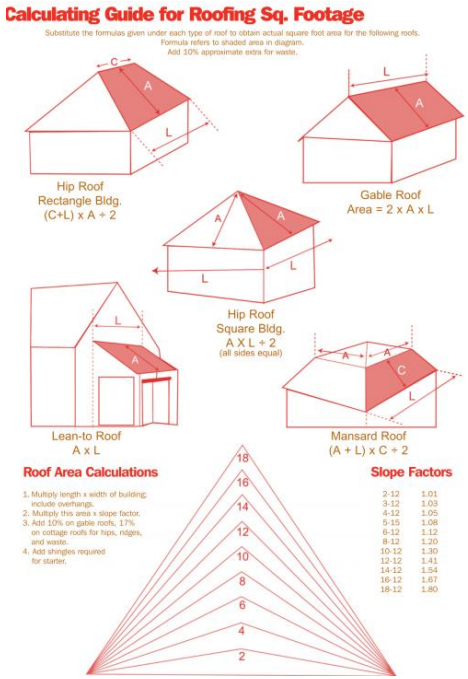
Estimating

The Process of Identifying the Resources You Need to Complete a Job

- Materials
- Labor
- Consumables
- Equipment



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Bidding

Converting the Resources Needed

into a Form of Payment that You Value

Bidding

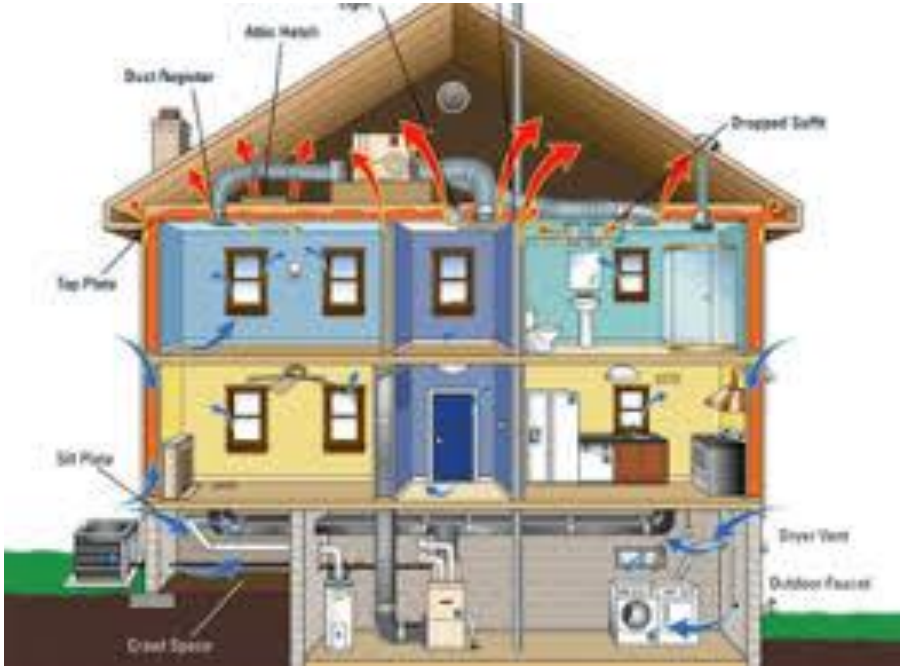
Converting the Resources Needed

into a Form of Payment that You Value

- Job Cost (Materials, Labor, Consumables, Equipment)
- Overhead
- Sales
- Profit

Strategy

- Understand the Building Envelope

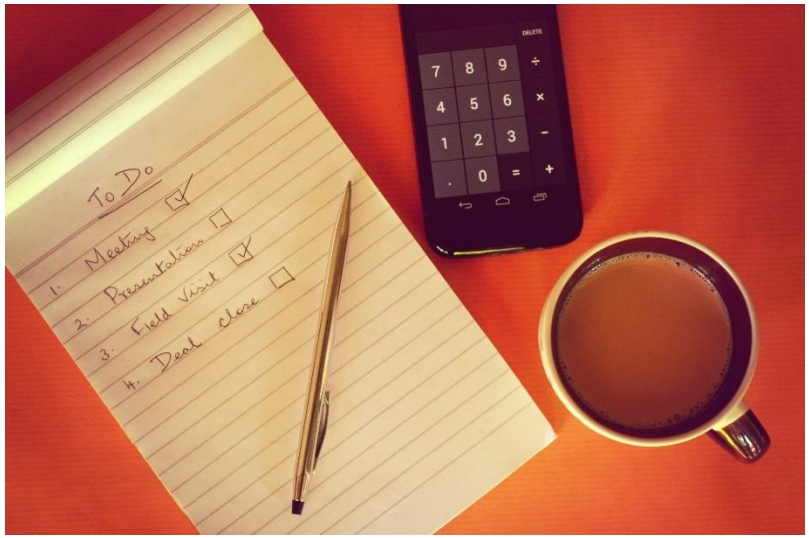


Strategy

- Understand the Building Envelope
- Types of Applications

Strategy

- Understand the Building Envelope
- Types of Applications
- Have a Plan

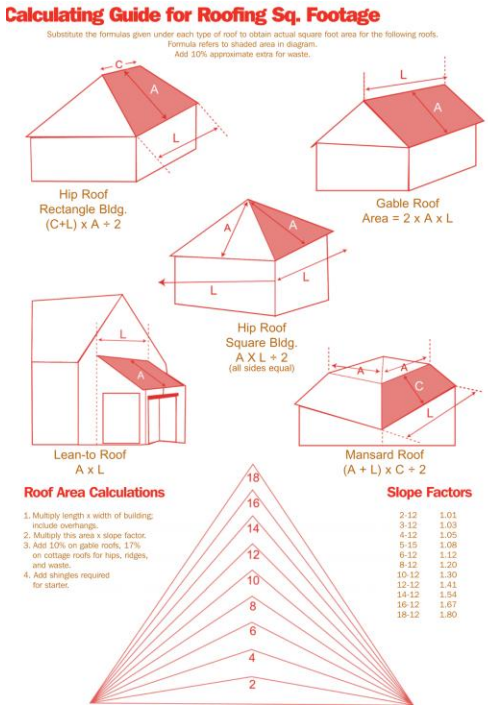


Strategy

- Understand the Building Envelope
- Types of Applications
- Have a Plan
- Take Measurements

Strategy

- Understand the Building Envelope
- Types of Applications
- Have a Plan
- Take Measurements
- Calculate Size of the Project



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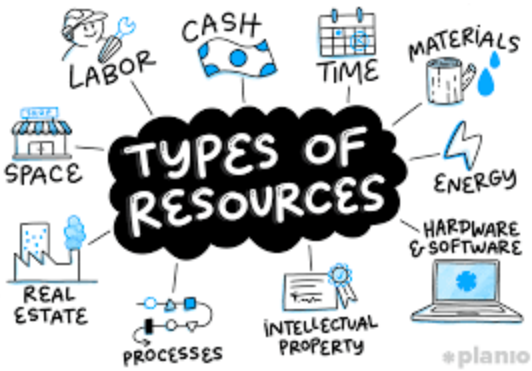
Strategy

- Understand the Building Envelope
- Types of Applications
- Have a Plan
- Take Measurements
- Calculate Size of the Project
- Estimate the Resources Needed



Strategy

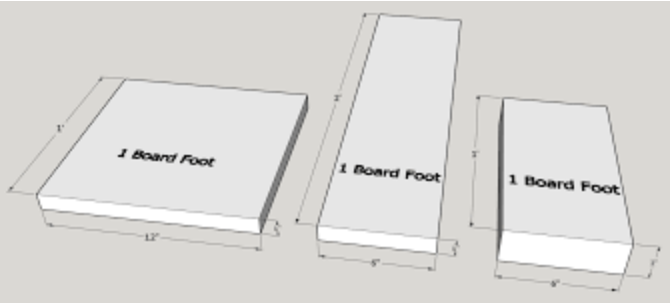
- Understand the Building Envelope
- Types of Applications
- Have a Plan
- Take Measurements
- Calculate Size of the Project
- Estimate the Resources Needed
- Convert these Resources Into a Bid

Measurements

Determine total board foot volume

What is a Board Foot?

12” x 12” x 1” or One sq. ft. at 1” thick



Multiply square footage of applied areas by installation thickness, the result is volume, measured in board foot

Sample Project

WALL

Area of Wall = Length x Height

Volume of foam in bd. Ft. =

Area of Wall x Thickness of foam in inches

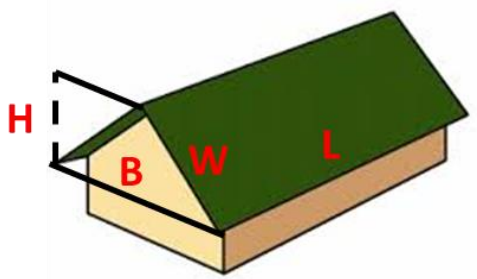
If the perimeter of the building is 200 linear ft., the wall is 8 ft. tall and you are filling a 2x4 stud cavity, the volume of spray foam is:

200 ft. x 8 ft. x 3 ½” = 5600 bd. Ft. for the walls

Sample Project

The building is 52’ long x 48’ wide with a gable roof on a 6/12 pitch.

Let’s identify all the values: L = 52’, B = 48’

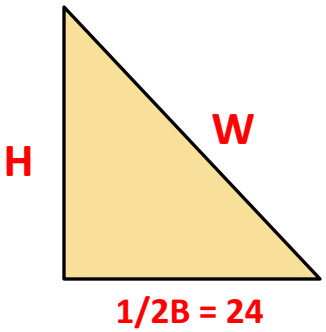


We can use the 6/12 pitch to identify H.

H increases 6” for every 12” from the outside edge to the center of the gable.

$$\frac{6}{12} = \frac{H}{24} \qquad H = 12’$$

Let’s break the gable end down into a triangle:



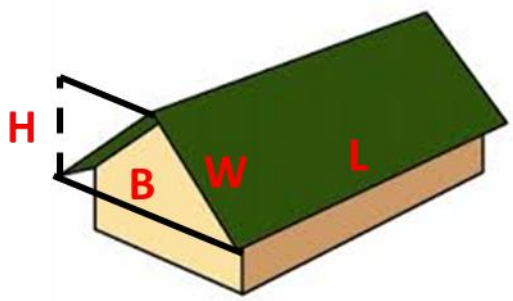
Now we can use the Pythagorean Theorem, to identify W.

$W^2 = H^2 + (1/2\ B)^2 \rightarrow W^2 = 12^2 + 24^2 \rightarrow W^2 = 144 + 576 = 720$

$W = \sqrt{720} = 26.8’$

Sample Project

ROOF



L = 52’

B = 48’

H = 12’

W = 26.8’

Area of Roof = 52’ x 26.8’ x 2 = 2787.2 ft^2

Area of Gable Ends = ½(48’ x 12’) x 2 = 576 ft^2

Volume of foam in bd. Ft. =

(2787.2 ft^2 + 576 ft^2) x 5 ½” thick = 18497.6 bd. Ft.

Sample Project

5600 bd. Ft. for the walls + 18498 bd. Ft. for the roof =
24098 bd. Ft. total

How many sets of open cell foam do we need?

What is your estimated yield per set?

24098 bd. Ft. / yield per set = Sets of material needed

Don’t forget coatings or other materials

Estimate

Estimate/Quote =	
Material	$ 3,560
+ Labor	
+ Equipment Depreciation	
+ Overhead	
+ Consumables	
+ Sales Commission	
+ Profit	

Labor

How long will it take to complete the job?

- How fast do we spray foam?
- Lots of masking & prepping
- Moving scaffolding
- Moving portable equipment
- Building divider walls
- Multiple mobilizations?
- Extra Time = Extra Labor Cost

Labor

A typical crew can spray about 0.66 set to 1.25 sets of open cell foam per day

Let’s assume 2 days of labor

Labor

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Let's assume 2 days of labor

How much does labor cost?

- Let's assume $600 per day for the crew
- Business Employee costs range from 25% to 40%
- Total cost is $800 per day
- **2 Day job is $1600**

Estimate

Estimate/Quote =	
Material	$ 3,560
+ Labor	$ 1,600
+ Equipment Depreciation	
+ Overhead	
+ Consumables	
+ Sales Commission	
+ Profit	

Equipment Depreciation and Expenses

This is where we distribute the cost and expenses for our equipment across all our jobs the best we can

This should include all upfront costs to acquire the equipment and all maintenance costs to take care of the equipment

It is common to depreciate equipment like a spray foam rig across a 5-year period and we can use that as a guide

Equipment Depreciation and Expenses

Let's assume the rig cost $100,000 with maintenance costs of $10,000 per year

Assume 250 working days per year and 80% working capacity

- The Rig will operate 200 days per year or 1000 days over 5 years

We can determine the daily use depreciation rate by dividing the rig cost by days of expected use:

- $100,000 cost / 1000 days = $100 per day
- $10,000 yearly maintenance / 200 days = $50 per day

So, the equipment costs on average $150 per use day,
or **$300 for the two-day job**

Estimate

Estimate/Quote =	
Material	$ 3,560
+ Labor	$ 1,600
+ Equipment Depreciation	$ 300
+ Overhead	
+ Consumables	
+ Sales Commission	
+ Profit	

Overhead

Warehouse or Office Facilities

General Expenses

Administrative Expenses

Management

Like equipment depreciation you should accumulate your overhead expenses from every hourly or daily use of your equipment

If you have $150,000 in annual expenses, over the same 200 projected use days, this will result in a $750 daily use rate, or **$1500 for the two-day job**

Estimate

Estimate/Quote =	
Material	$ 3,560
+ Labor	$ 1,600
+ Equipment Depreciation	$ 300
+ Overhead	$ 1,500
+ Consumables	
+ Sales Commission	
+ Profit	

Consumables

This should include all materials that your crew consumes for the sake of doing the job

- Fuel
- Plastic
- Disposable gear, like safety suits and face shields
- Rental Equipment
- Etc.

Some consumables might be part of overhead

For this estimate, I will assume $100 per day

So, **$200 for two days**

Estimate

Estimate/Quote =	
Material	$ 3,560
+ Labor	$ 1,600
+ Equipment Depreciation	$ 300
+ Overhead	$ 1,500
+ Consumables	$ 200
+ Sales Commission	
+ Profit	

Job Cost

Estimate/Quote =	
Material	$ 3,560
+ Labor	$ 1,600
+ Equipment Depreciation	$ 300
+ Overhead	$ 1,500
+ Consumables	$ 200
	$ 7,160
+ Sales Commission	
+ Profit	

Factors That Affect Your Desired Profit

How busy are you?

Great customer to work with

Challenging customer to work with

Easy jobs

Difficult jobs

Job Cost

Estimate/Quote =	
Material	$ 3,560
+ Labor	$ 1,600
+ Equipment Depreciation	$ 300
+ Overhead	$ 1,500
+ Consumables	$ 200
	$ 7,160
+ Sales Commission	
+ Profit	

Mark-Up or Margin?

Which of these is right?

Mark-Up or Margin

Comparison of Bids

Shortcut: $ 4000 + $ 1200 + $ 2000 = $ 7200

Mark-Up: $ 7160 x 1.27 = $ 9093.20

Margin: $ 7160 / 0.73 = $ 9808.22

Comparison of Bids

	Shortcut	Mark-Up	Margin
Bid	$ 7,200	$ 9,093.20	$ 9,808.22
Job Costs	$ 7,160	$7,160	$ 7,160
Commission	$ 720	$ 909.32	$ 980.82
Profit	($ 680)	$ 1,023.88	$ 1,667.40

Bidding is the fine line between winning the job and making a profit.

Key Takeaways

Estimating means Gathering Information to Identify the Resources You Need

Bids should include:

Job Costs + Business Expenses + Profit

Winning a Bid **Does NOT**

Mean You Will Make Money

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