

Estimating Materials For Metal Roofing

Estimating material needs for metal roofing can be broken into two categories:

Liquid Coatings

Sealant materials

Liquid Coatings:

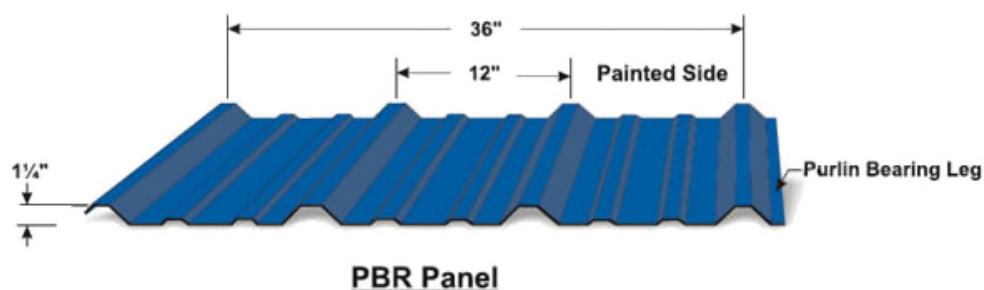
In order to determine the amount of liquid coatings required for a metal roof, it is first necessary to have an accurate measurement of the roof. Since metal roofs generally have some type of profile (ie not flat) additional computations are needed for the true size.

A metal roof that measures 100' x 50' appears to be 5,000 sq ft (or 50 squares)

However the roof is not flat and a “stretch factor” is needed to determine the true surface area.

“Stretch Factors” can add as much as 50% more surface area to the measured roof.

You can figure out the stretch factor by using a soft tape measure and doing some simple math.



Run the soft tape over the metal panel following the curves over a premeasured section that does not follow the curves. In this case the 36” area when measured following the profile may give a reading of 42”

Divide the larger number by the smaller number ($42/36= 1.16$)

1.16 becomes your stretch factor

So the 5,000 square foot roof has a surface area of 5,800 sq ft ($5000 \times 1.16=5800$)

Liquid materials will need to be figured based on the actual coverage area of 5,800 sq ft.



Using roofing squares to easily figure liquid roof coatings:

Many roofing products list material per square.

To convert square feet into roofing squares simply divide by 100

$5800 \text{ sq ft} / 100 = 58 \text{ squares}$

In a Uniflex system for metal roofing, the following materials may be required:

Uniflex 41-320 Gray Elastomeric @ 1 gal/square

Uniflex 41-300 White Elastomeric @ 1.5 gal/square

Based on our 58 square project you would need: (excluding waste)

41-320: 58 gals (58 squares x 1 gal/square)

41-300: 87 gals (58 squares x 1.5 gal/square)

Sealant Materials:

Sealant estimating also requires some roof measurements.

There are generally three areas that require measurements:

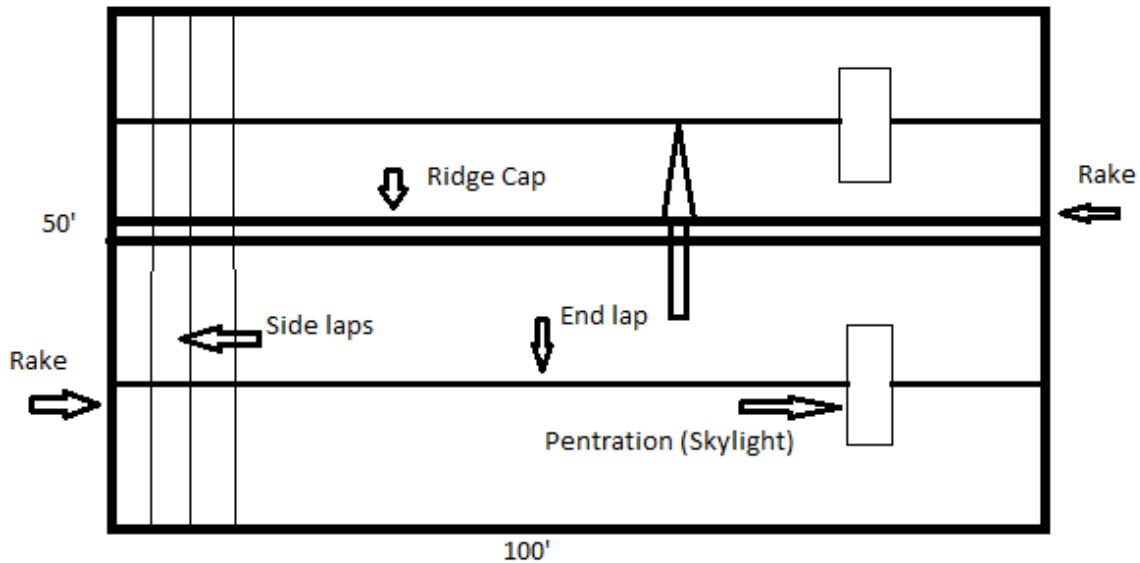
~Lap joints: These are the areas where the metal panels overlap each other. They can be side laps (the lap that runs from the drip edge to the ridge) or end laps (they run horizontal across the roof). There may also be both side and end laps at ridge caps.

~Termination points: These are at the side edges of the roof and also know as rake edges. They run parallel to the side laps but are the final cover piece at the roof edges. Termination points can also be at a parapet wall or at an area divider or expansion joint between roof sections.

~ Penetrations: Penetrations can be items like heat or soil stacks, skylights or mechanical equipment on curbs.

Knowing the dimensions of each is critical to figuring sealant materials.

Metal laps are sealed with 2” wide layer of sealant.



In the diagram (not to scale)

The side laps are each 50’ long. Since they are generally 3’ apart there are approx 34 side laps (always count or measure to be sure).

So 34 side laps at 50’ each = 1,700 linear feet (lf) of side laps

Remember that anytime a measurement runs across the panel profile that we need to add our stretch factor.*

Assume that the skylights are 10’x4’ each and there are 8 of them

Ridge	232 lf
Rakes	100 lf
End Laps	232 lf *
Penetrations	234 lf *
Side Laps	1,700 lf

Total Linear Feet of metal laps: 2,498 lf

Now we know that the total lf we need to cover with 2" wide sealant is 2,498 lineal feet, and the specification tells us that it must be applied at 60 wet mils.

The Sealant data sheet will give us the approx. yields at various widths.
 In this case we would get 25 lf per sausage or 160 lf per gallon of sealant.

$$2,498 / 25 = 100 \text{ sausages}$$

~or~

$$2,498 / 160 = 15.6 \text{ gals}$$

Uniflex One Flash™ Permanent Roof Repair Sealant	
THEORETICAL YIELD FOR SEAMS @ 60 MILS	
PER SAUSAGE	PER GALLON
25 lineal ft. @ 60 mils x 2" wide	160 lineal ft. @ 60 mils x 2" wide
17 lineal ft. @ 60 mils x 3" wide	108 lineal ft. @ 60 mils x 3" wide
13 lineal ft. @ 60 mils x 4" wide	83 lineal ft. @ 60 mils x 4" wide

By knowing the stretch factor we eliminate the possibility of having lower than required dry film thickness at project end and of also running short on patch materials that require extra length to cross the panel profile.

It's also important to add a waste factor, usually 5-10% to cover materials that may be over-sprayed or left in containers.

This informational sheet is designed to assist contractors in the factors necessary to estimate materials for irregular surfaces such as metal roofing. Contractors are ultimately responsible for correctly determining material needs for their projects.