



# **HOW TO BUY A METAL BUILDING LIKE A PRO**

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## INTRODUCTION

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Thank you for downloading my E-Book [How to Buy a Metal Building Like a Pro](#). Whether you are a Do-it-Yourself handyman building a workshop in the back yard or an experienced Commercial Contractor working with a metal building for the first time, you have come to the right place for FREE advice and a great deal on your metal building. The advice in this E-Book comes from more than 30 years in the metal building business. I have erected over 500 metal buildings and dealt with roughly 30 metal building manufacturers in that time.

This E-Book was written to give you the information you will need to plan your project and order a metal building package that meets all of your needs and expectations. I first wrote this E-Book to teach customers how to deal directly with a major metal building manufacturer. Today, I use this E-Book as a way to help my customers plan a more successful project while still getting my assistance in placing their order.

When you are ready to make a building purchase, I am confident that you will find my pricing very competitive. I do not engage in high pressure sales tactics with phony claims of looming price increases or cancelled orders for a building that is magically identical to yours. I simply give you the best price I can at the time I quote your building then give you the time you need to make your decision.

I look forward to working with you.

Dean Byrne  
Owner  
Metal Building Secrets.com

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## PREPLANNING

Before you start shopping for your metal building, let's make sure that you have done your homework. The key to getting the best price on your metal building package is to know in advance what you **want**, what you **need**, and what you can **afford**. It has been my experience that you will get the best price from a building supplier if you can make a purchase with three or less quotes.

### WHAT'S YOUR BUDGET? WHERE ARE YOUR DRAWINGS?

Normally, preparing drawings and establishing a basic budget for your project is something that a metal building dealer or a building contractor would be helping you with. Since you are by-passing that step, you will be doing this work yourself but it is not that difficult, so relax.

### BUDGET

I almost always talk to a heating, plumbing and electrical contractor about my project before I even worry about the metal building. The plumber and electrician will not impact the building design much but the heating (HVAC) contractor sure can. Take a preliminary sketch of your building to a qualified contractor and talk about what kind of heating and cooling units you will be using. If you select a roof mounted unit, you will need to know the weight and location so that you can pass this information along to the building supplier. The roof framing in that location will need to be reinforced for the additional weight. You will also want to ask the HVAC contractor about the size and location of any other mechanical units. You may have several A/C condenser units that will need to sit outside your building. Now is a good time to discuss their location so that you do not interfere with door and window placement. Talking with these three sub contractors as well as your concrete contractor and overhead door installer will give you a good idea what your total project cost should be for their phases of the project.

Unless you plan on erecting the metal building yourself, you are also going to need to budget for the labor cost to erect your building. You have not priced your metal building package yet but when you do, a good rule of thumb is to

budget 45-60% of the building cost for the erection labor. I know that this is not a precise method but it will be close enough for now. Once you have determined that your project will be moving forward, I can help you find a qualified erector in your area or one that is willing to travel to your project.

## DRAWINGS

Now that you have talked to your major subcontractors about their equipment needs, sizes and weights, you are ready to start making some more precise drawings for your building. Don't hyperventilate over these drawings, I have purchased millions of dollars worth of metal buildings using nothing but graph paper (I like to use 11x17). I have also used cheap home design software more recently to make my drawings look more professional but it is not necessary. Concentrate on making your drawing very easy to read and only include the information that the building supplier needs to quote your building. They do not need to know about the site grading or where the sewer and water are coming into the building so leave that off the drawing you send them if you can. Be sure to show column locations as well as overhead and walk door locations, window locations and any roof mounted equipment.

## BUILDING CODE ISSUES

With some good drawings in hand, the next step is to have a conversation with your local building department. Most areas in the US have now adopted some version of the International Code Council (ICC). A quick phone call to your local building department will answer the basic code related questions your building supplier will need to know. Let's review what all of these items are so that you will be familiar with them when talking to your building department. If you live in a rural area that does not fall under any building jurisdiction, my manufacturer can provide you with the recommended structural requirements from the MBMA. MBMA is the Metal Building Manufacturer's Association and they have building loading recommendations for different areas of the country that should be adequate.

### 1. Roof Live Load

This is the load imposed on the building by construction and maintenance workers as well as by moveable objects such as planters, satellite dishes, etc. This does not include wind loads, snow loads, seismic loads or dead loads.

## 2. Snow Load

The snow load for your area will be stated as either ground snow or roof snow so make sure you ask. The newer building codes require all kinds of snow load modeling to be evaluated by the manufacturer in the design of the building.

## 3. Wind Load

This can vary dramatically in some areas. Coastal and Mountainous regions can have a much higher wind load requirement than a site only ten miles away. A wind load of 90 mph is roughly equal to 30 pounds per square foot of pressure against the side of your building. That is higher than the roof loading in some areas.

## 4. Wind Exposure

The wind load against the side of your building is also rated by the amount of natural coverage available to help protect your structure. The ratings are either an A, B, or C with C the least protected and therefore the highest rating.

## 5. Collateral Load

This is basically the loading of the mechanical and electrical equipment that will be suspended from the building frame. This could include ductwork, sprinkler systems, suspended ceilings and light fixtures. These are loads that are evenly distributed through-out the building. I always ask for at least 3lbs, but you may need more (we will get into this later). This **DOES NOT** include the weight of roof top HVAC units or any other equipment sitting on the roof, these are considered "point loads".

## 6. Seismic Loading

If you live in an area with seismic requirements be sure to get a written copy of those requirements from your local building department and include that with this quote request. The information shown on this form may not be enough for your area and is included on this form only to bring your attention to it.

## ADDITIONAL LOADING INFORMATION

1. Will this building have a roof mounted HVAC unit? This question keeps coming up because it can be that big of a problem. If you are going to have roof top units you need to know how many, where at and how much they weigh. I can't tell you how much money I have seen customers spend because this question wasn't asked soon enough. Here is another issue with roof top HVAC

units. Most building departments now require that you install a roof access hatch if you have roof top units. If you supply an access hatch, you also have to provide fall protection for anyone who uses that access hatch. These units make sense for some projects; it's up to you to decide if they are right for you.



*Sometimes the roof top units are separated from each other. Each of these units service a different area in this building.*



*Sometimes the units are very close to each other. You can see why the manufacturer will need to know about these units before the building is ordered.*

*There is another issue to talk about in regards to these two installations. Notice that in the photo on the left the units sit a little higher off the roof and the units on the right seem to be sitting right on the roof panels. The units on the left are sitting on a roof curb that was designed for this roof panel and the roof top unit sitting on it. The units on the right are sitting on some shabby homemade curbs that must have been leaking pretty badly. You can see that someone has installed galvanized flat stock over the sheeting above these units to try and keep water off the high side of the curb.*



*The bigger the building, the more units you are going to have. This building has four more roof top units that are not seen in this photo.*

2. Will this building have a sprinkler system?

If your building is smaller and for personnel or agricultural use, you may not have to install a sprinkler system. If you know that you are going to have a sprinkler system, talk to your local installer and see what size pipe he will be running in your building and ask him for his loading requirements.

3. Will this building have any overhead cranes attached to the building?

An overhead crane presents some clearance issues that are often overlooked. It seems that most of the time, the Owner or Builder will concentrate on just the clearance from the building structure that the crane needs to operate but they forget that they also have to clear light fixtures and overhead heaters (if used). A good rule of thumb for an overhead crane (crane with 10t capacity or less and a span of 50' or less) is to add 8'-10' of side wall height above the desired hook height. This may sound like a lot but consider this, one of the most popular heating systems in metal buildings these days is the overhead radiant tube heating. These units require as much as 60" of clearance below them to any combustible materials. If you crowd your crane right up under a system like this, the electronics will be fried in no time. You could put some type of shielding over the crane or the tube heating but why not spend that money on a little taller building and have plenty of room to spare.

4. Will this building have a mezzanine?

Just like the crane issue, clearance under a mezzanine can be deceiving. Between ductwork for the HVAC system and the sprinkler system and the electrical requirements, you can easily burn up 24"-30" of space, plus the depth of the bar joist and beams that make up the framework of the mezzanine. You will use a total of about 48" for the framing and the mechanical equipment so if your second floor elevation is 12', you should only expect a first floor ceiling height of about 8'.

5. Will this building be attached to an existing building?

The building designers need to know if this new building is the same height as the old building. If the roofs are not at the same height, a condition known as drifting will occur. This will cause a concentrated load on the lower roof structure.



Notice how the snow has "drifted" in along the sidewall where there is a break in the roof line. This pile of snow is not very big right now but the accumulations in areas like this can put a tremendous load on the roof.

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## BUILDING INFORMATION

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### WHAT SIZE SHOULD MY BUILDING BE??

This is the point where a good salesman will ask you just enough questions to sell you a metal building that is sized more for fitting **your budget** than fitting **your needs**. Here's a quick story to make my point.

In the early 90's, I met a woman who lived in North Central Wyoming. She raised and trained barrel racing horses and she wanted to build an Indoor Riding Arena so that she could train her horses year-round. The arena would also allow her to host events sanctioned by an organization dedicated to the sport of barrel racing. Her horses would accumulate points at these events, making them more valuable. Because her budget was so limited, I kept trying to convince her that she could get by with a smaller building than she was asking for. One day she tells me the answer to the most important question that I had failed to ask!

### WHAT DO YOU NEED YOUR BUILDING TO DO??

From the very beginning, she wanted a building 120' wide but her budget kept telling me that she could only afford a building 100' wide. After several conversations, I gave up a little profit and she gave up a little room and we settled on a building 110' wide. I requested anchor bolt and rigid frame elevation drawings from the manufacturer so that I could review them with the Owner before ordering the building. While looking at the cross section drawing, she asked me this question-"how much room is there between these two columns at 7' above the ground?" My response was "how would I know, the drawing only shows the dimension at the base of the column." She needed to know the clearance between the columns at 7' above the ground because the sanctioning association had a minimum requirement she had to meet. I called the manufacturer and found out that we were 9" short of the required distance. We changed the design\*\* of the building without changing the size of the building and we met the minimum distance with 7" to spare.

\*\*we changed the building from by-pass girts to inset girts which moved the columns toward the outside of the building 8" on each side. Look at the photos

on page 21 to see both of these options. I will go into more detail about these two options plus one other option later in this book.

My point is this - nobody really knows what you need from your building better than you do. I have a couple of rules that I like to use when trying to figure this out.

1. Buy as much width and height as you can afford NOW
2. It doesn't cost much to go 2' higher NOW
3. You can NEVER go wider-as a clear span anyway
4. You can ALWAYS go longer

One more item to talk about in regard to the size of your building. When you are talking to anyone about a building's dimensions, you always refer to width first, length second and height last. This may seem like a trivial point but it can have serious consequences. If you need a building that is 100' wide and 150' long but you keep saying that your building is 150x100 you might be in for a big surprise. This same rule applies to overhead doors, walk doors and windows; width first-height second. Nothing worse than getting 16' wide x 14' high overhead doors delivered when you really wanted 14' wide x 16' high.

### **CLEARANCE AT THE HAUNCH**

When you are thinking about the height you need for your building, keep in mind that there are two heights to think about. One is the eave height which is measured on the outside of the building. The other height to consider is the "clearance at the haunch". This is the lowest clearance under the framing where the roof rafter meets the sidewall column. If you can't decide how tall your building should be but know what your minimum inside clearance needs to be, this is your chance to say so. Ask your building supplier to send you a rigid frame cross section drawing so you can see what your internal clearances are. At MBS, we provide a complete set of structural drawings with each price quote.



*This is a 100' wide, clear span building. The rafter is about 18" deep at the peak and just over 30" at the haunch.*

*This building is a 150' wide clear span. You can see that the rafters are getting much taller. At the peak, this rafter is almost 40" and just over 60" at the haunch.*



*This 200' wide building has a rafter depth of just over 6' all the way from the haunch to the peak.*

## ROOF SLOPE

The two most common roof slope profiles are gabled pitch or single slope pitch. There are other roof profiles available but they will cost you more money so I have left them out of this conversation. If you need a special roof pitch, just let me know.



*The single slope roof simply slopes from the front to the back of the building. There are several reasons that you might choose this profile.*

*\*All of the water running off the roof goes to one side*

*\*You can have a large storefront entry on the high side without raising the entire building*

*\*Less volume of space to heat and cool*

*The gabled pitch building has a ridge line down the center of the building with the roof sloping in two directions. This is a more traditional look for most customers*



*Actually, the ridge line does not have to run down the center. On this building, the ridge is offset to one side and the back sidewall is taller than the front sidewall so that the roof slope is steeper on the front side. This makes installing the valley for the connection of the two roof slopes easier to manage and gives the building a unique look*

## ROOF PITCH

Roof slope and roof pitch are kind of in the same boat. You can get anything you want but the Industry Standard is 1:12, 2:12 or 3:12. One of the most common complaints that I hear about metal buildings is that people don't like the look of the flat roof. To this I always say - This is not a pole barn, this is a metal building system; it is designed to take advantage of the strength of the steel. If you do not like the flat roof, go with the 3:12 roof pitch - most people cannot tell the difference between that and a 4:12 pitch anyway.



*You just can't get much flatter than this. This mini storage has a ¼:12 roof pitch. This is very common in the mini storage business but not the rest of the metal building Industry.*



*Another 40% of the buildings I have sold have had a 2:12 pitch such as this one. This is still a very easy roof to walk on if you have equipment that needs maintenance..*



*This building has a 1:12 roof pitch. This is a typical metal building look, I would guess that 40% of the buildings I have sold have been a 1:12 roof pitch.*



*This 3:12 pitch is being requested by more customers for more "curb appeal". This allows gives your building a little more open space on the interior.*

## FRAME TYPE

There are two basic frame designs, gabled pitch and single slope pitch. There are three variations of these two frames and they are: clear span, center column and modular span.

There are other frame designs available, limited only to your imagination. Look at the photos below. This is a building I erected at the Glencoe Campground in Sturgis, SD. Notice that the peak is offset with a 2' drop on one side. The building has lean-to's attached to both sides and hipped roof sections at each end.



*The Pavilion Building at the Glencoe Campground in Sturgis, SD is a very unique metal building. The main building is an 80x200 with 30x200 lean-to's attached to each side and some gabled porch roofs for the entrances.*

*Here you can see how the building has a 2' drop from one roof elevation to the next but yet it has a clear span design. This peak is also offset from the center so the roof has 50' on one side and 30' on the other. Single slope buildings are attached to both sidewall to provide covered seating areas as well as enclosed vendor space.*





*You don't see very many metal buildings with a hipped roof design. This connection required some field fabrication but overall it was fairly easy to assemble. If you look closely, you will see that the purlin directly in line with the hip roof framing is actually an 8" wide flange I beam.*

## EXTERIOR COLUMN ELEVATION

Most metal buildings will have the exterior columns sitting at the same elevation as the finished floor. One exception to this is when you have your building sitting on top of a concrete wall. I have several photos below that show several different buildings, each with a different situation. If you don't say anything, the manufacturer will assume that your columns are sitting at finished floor elevation.



*The base of this column (door jamb actually) is sitting at the finished floor elevation.*

*Although there is no floor here yet, you can see that the base of this column is going to be above the floor, 2' in this case. If your project requires this feature, make sure to tell your supplier that you want your building 2' above finished floor.*





*This is one of the problems you could encounter if you decide to set your building on a concrete wall. This is the base of an overhead door jamb sitting on a 3' stem wall. You can see that the concrete has cracked from the tension put on the anchor bolts as they were tightened. If you are going to have a stem wall, tell your supplier to move the anchor bolts back from the edge a little farther, 2-1/2" to 3" should do the trick.*

*Another option is to have the overhead door jamb extend down to the finished floor like this building.*



## INTERIOR COLUMN ELEVATION

You need to specify what elevation you want your interior columns (if you have any) to sit at as well. Look at the photos below and you see two options, base plate at finished floor and base plate 6" below finished floor. I like to order all interior columns with base plates at 6" below finished floor for two reasons. One, it looks a lot cleaner when you don't see the anchor bolts or the base plate exposed. The other reason is that the interior columns are usually sitting on some rather large footings. If you leave them at floor level, you will see the top of the footing which will not be finished as well as the floor around it. It is also easier to build interior walls around columns that do not have a base plate in the way.



*This center column base plate has been set 6" below the finished floor elevation.*

*This is the finished look after the hole is filled with concrete. You can see the saw cuts in the concrete come into the column at 90 degree angles to help control cracking. Another bonus here, you don't see the footing that the column is sitting on. In this case, the footing is 8'x8' square. I think this looks much cleaner.*



*This is what it looks like when you set interior columns at finished floor elevation. It also shows you why I like to use a round form instead of a square form to block out around these columns. See the crack coming off the lower corner of this footing.*



*This square tube column is going to look much better than the one to the left when it is finished. You can form this circle with a piece of 24" sono-tube, available at most lumber yards or concrete supply stores.*

## BAY SPACING

Bay spacing simply refers to the distance between the support columns and frames as measured along the sidewall of the building. I have found over the years that the 25' spacing will give you the most economical combination of building price, foundation price and labor price. If there is a reason that you need some other spacing, it is available. Some customers like to use 30' bays so they have fewer columns interfering with their floor space. You can also mix bay spacing if you need to. I built a project several years ago that had a building 150' long but all of the bays were a different length because each bay had a specific piece of equipment that had to fit in that area. It may cost you a little more for the building package but you should order the building the way that you need it to work for you.

## GIRT PLACEMENT

What is a girt?? A girt is the secondary framing member that runs horizontally on the walls (it is called a purlin if it is in the roof framing) of a metal building. The girts can be either a Z or a C shape and come in different widths (8"-12") and thickness(16-10 gauge), depending on the engineering requirements.

Remember the story about the woman with the Riding Arena that wasn't quite wide enough and we fixed the problem by using inset girts instead of by pass girts. Well look at the three photos below. There is one other option for your girts and this one is my favorite, the 1-1/2" by-pass girt. This is like the inset girt except that it allows the girt to pass 1-1/2" past the column. This makes sheeting the building much easier because you will not have to put screws into the back side of the column. It also allows room for the insulation to be compressed without bulging the sheeting on the outside of the building. This only applies to the sidewall girts, most endwall girts are already flush so don't let anyone charge you extra for making the endwall girts flush (the 1-1/2" bypass isn't really needed on the endwall because the framing is smaller and lighter gauge so it is easy to drill into.



*This is called a by-pass girt. This is the Industry's default profile for the sidewall girts. This is a strong connection because the 8" Z material overlaps behind the column. The drawback is that the column sits 8" in from the outside of the building, reducing the inside clearance between the columns.*

*This is called a flush girt profile. You can see that the back side of the column is now flush with the back side of the girts. This allows the maximum clearance in between the columns. I like to use flush girts if I am installing cavity fill insulation or spray foam insulation. I do not like to use the flush girts with 4" or 6" vinyl insulation. The compressed insulation makes the sheeting bulge out at the columns and it does not look very good in my opinion. Most manufacturers will send special screws designed to drill through the extra thickness of the column.*



*If you are going to use 4" or 6" vinyl insulation but need maximum clearance between your columns, this is your best choice. This is called a 1-1/2" by-pass girt. You can see that the back side of the girt is 1-1/2" from the back side of the column. This allows the insulation some room to expand. It also allows enough room for the 1-1/4" screw to be installed without hitting the back of the column so sheeting installation is a breeze.*

## 4' GIRT

I like to order the 4' girt and it is as simple as it sounds. It is an extra girt roughly 4' above the ground. It helps support the sheeting at the bottom of the building, right where it takes the most abuse. I think it is worth the small up charge but you can decide for yourself if it is worth the extra money.

*I also like to oversize the window openings by 3" so I can wrap the opening with some wood. This really helps reduce thermal transfer problems and makes it easier to finish on the inside. The C channel girt on the bottom of the window is also the 4' girt that I always order.*



## OVERHEAD DOORS AND OPENINGS

The only time that I will purchase an overhead door from a building manufacturer is if they have a national account with a major door supplier and it is installed by a local company. I prefer to go to the local door installer and make the deal with them. As far as the door opening is concerned, you need to visit your door installer and talk about whether or not you will be using high lift track on your doors. If the sidewall height of your building is more than 6' above the door header, I recommend that you have the manufacturer extend the jambs for you. The door installer can do this but he will charge you a lot more money than it will cost to have it done by the manufacturer. Another issue to talk to the door installer about is the size of flange that he needs to mount his track to. Some larger, insulated overhead doors will have 2-1/2" to 3" reverse angle track but most manufacturers use 2" to 2-1/2" flanges on their door jambs. If you need wider flanges, make sure your building supplier knows this when you place your order.



*This is the standard radius for overhead door tracks, 15". Notice that the radius starts right at the top of the door. For most residential applications (like my garage here), this is fine.*

*This door has 36" of track extending up the wall before the radius starts. Most door companies will either call this hi-lift track or vertical lift track. I recommend this for any overhead door that is more than 6' below the ceiling above it. Notice how the door jamb extends all the way to the rafter, that's because I ordered it that way. Most door installers will charge you \$200-\$300 to install the additional material. All the manufacturer has to do is make the door jambs a little longer. The extra material will cost about \$50.00.*



*Another way to really clean-up your overhead door installation is to order roof slope track. Now the upper section of track is running at the same pitch as your roof instead of horizontally. This will give you maximum clearance inside your building.*

## WELDED CLIPS

I would not let this be a "make or break" deal but I always request welded clips instead of bolt-on clips. Who wants to waste half a day or more sorting and bolting clips when you can be putting iron in the air? This does not mean that every clip will be welded on but most of them will be.

## EXPANDABLE ENDWALL

Remember my rules about how to size your building? **Rule #1** about your building size was to buy as much width and height as you can afford now because you can always go longer later. The easiest way to expand your building in the future is to purchase an expandable endwall right now. This is nothing more than a full-size frame at the endwall instead of a light gauge endwall. When you are ready to add on to your building, you take the sheeting off, bolt the new pieces to the old and away you go. Even if you don't plan to expand your building, you might want to consider this from a resale standpoint. If you have built right up to the edge of your property and can never expand - then forget about it.



*This Owner expects to add on to this building someday so we prepared for that by having an expandable endwall instead of the standard endwall framing. This is nothing more than a full-sized rigid frame, same as any of the interior frames. Now the Owner can add on to this building at anytime without major structural modifications. This building was also built with "resale" in mind. By using a clear span design instead of a center column or modular span, the Owner will be able to attract more potential buyers if he ever decides to sell this building.*

## OVERHANGS (sometimes called extensions)

You have a lot of choice when it comes to overhangs on your building. The bottom line always comes down to cost. Lots of building will only have an overhang on one end or both ends but not the sides, or both ends and one side, or maybe on one bay on one side. The gable overhangs are cheaper because all

the manufacturer has to do is make the purlins a little bit longer. The sidewall overhang takes a little bit more work on the manufacturer's part as well as your erector. Take a look at the overhangs below and you will see what I mean. I like an overhang, I think it helps to get rid of the Industrial look that most metal buildings have. Even a 1' overhang looks really good and it is not that expensive.

Another type of overhang is a vertical face surface called a mansard or façade. The difference is the position of these two overhangs, one projects above the roof line and one below. I did not give this much room on the quote request form because it could take several pages to describe all of the details for this type of overhang. Do your best to show the location of this on your drawing and work out the details with the manufacturer that you choose to fabricate your building.



*The structural aspect of the gabled overhang is nothing more than extending the roof purlins out over the endwall framing. The distance you can extend the purlins will depend on the snow load in your area but for most buildings, you can go at least 6' without any problems.*

*You can see that the sidewall overhang requires more work for the manufacturer. The rafter extension needs to be fabricated, clips welded in place and additional holes drilled. That's why it costs a little bit more than the gabled overhang.*





*This building has a simple 1' overhang that gives the building some character without much expense. What I really like about this overhang is that it installs with just two pieces of trim, much easier than the soffit panels you will have with a larger overhang.*

*Here is a building with 3' overhangs on both the sidewalls and the endwalls. Notice that the soffit panels are installed so that the hi-ribs on the soffit panels line up with the hi-ribs on the wall sheeting. I think this is the best look for the soffit panels.*



*This overhang makes a nice canopy over the entry door to this building. The Owner didn't want to have an enclosed entry but he wanted to protect customers coming into the building from snow that may avalanche off the roof.*



*I like this canopy overhang as well. It provides a good cover for the entrance to this store. Like I said, you can have an overhang almost anywhere that you want it*

*This gable extension overhang makes a nice cover for the loading dock at this furniture store.*



## BASE MATERIAL

The base material is the material attached to the concrete foundation so that the sheeting can be attached to it. This can either be a piece of angle or a piece of 8" C channel, your choice. I always order the C channel whenever I can for two reasons. First, if you are installing liner panel you don't have to put down two pieces of base angle. I also like to order the C channel because it is a more versatile material and you can use it (if you have any left over) in a lot of places that you can not use the base angle.

### Base C channel As A Girt

Take another look at the bottom photo on page 28. This building used a Z member for the base material. That is OK, I just like to use a C member instead. I think the C is easier to work with and let's face it, someone is going to pour a concrete floor in here some day. The C channel base makes this a little easier.



*You can actually use all three of these shapes for a base material, depending on your building conditions. If you are attaching to concrete, you will be using either the C channel on the left or the base angle on the right. I like to use the C channel even though it is a little more money.*

*This wall is 10" thick and I ran out of C channel so I had to install galvanized angle for the inside and outside. I am using the OSB here for security reasons. I couldn't finish off this opening until some additional trim was fabricated.*



*This building had base channel installed when it was erected three years ago. We are installing liner panel now without having to install another piece of base angle.*

*This pier foundation building is where you might find a Z girt as your base material. You have no concrete between the columns to anchor a piece of angle. You could also have a C channel with this pier, your choice.*



## BRACING

All metal buildings will require wall and roof bracing. This is one item that you will need to work with the building supplier on; they are limited in their options for bracing your building. The most common method used to brace a metal building is to use cables that form an X going from the base plates to the top of the columns. A building with a crane or a mezzanine may have heavier rod or angle bracing instead of the lighter cables. If you have lots of doors and windows, you may have to adjust the placement slightly to work around the bracing. If you have to remove the X bracing because of larger door or window

openings, you are going to have larger beams to contend with so be prepared to be a little bit flexible here.



*This type of cable bracing is the Industry Standard. It is adequate for most applications, other than cranes and mezzanines. It is inexpensive and easy to install.*

*No cable bracing for this building. With four 5ton cranes running, it takes some heavier bracing to hold things together. This is 7/8" steel rods instead of the 1/2" cable you would expect to see here.*



*This is the same building but the opposite side of the rod bracing. The building has a mezzanine on this side along with the cranes. With finished office space behind that wall, this 3"x3"x3/8" angle iron bracing will keep those cranes from moving the building all over the place.*

*If you have lots of doors and windows but cannot move them to make room for the "X" bracing, you may end up with this; a portal frame. This is just what it looks like, a frame within a frame. Super strong but hogs up a lot of space. You can see what this looks like on paper by looking at the sidewall framing drawing for the single slope office building.*



## FOUNDATION DESIGN

You really have three basic foundation designs as far as the metal building supplier is concerned.

Piers - This is a good, economical choice if you have a super tight budget. A hay shelter or low budget riding arena would be a good candidate for this foundation. The pictures below show a nice riding arena that is built on a pier foundation.



*This is my idea of a quality pier foundation. It has a footing to distribute the building load, a pilaster for the column to sit on and a concrete crosstie connecting it to the pier on the opposite side of the building. The crosstie will prevent the footing from moving when the building is under a heavy load, like 3' of snow.*

*Here you can see the building being erected on the pier shown above. The back side of the pier is flush with the outside of the building so the sheeting will pass by without any problems.*





*This is not my idea of a quality pier but it will do the job I'm sure. I would like this design better if the Owner had at least formed the top of the pier so that it wasn't so large. This building was only 50' wide and the massive size of this pier made up for the lack of a crosstie. If you are pouring a concrete floor in your building, you may be able to replace the crossties with hairpin rebar tied into the pier and the floor slab.*

Full perimeter wall - I prefer this foundation if the budget will allow it. If you are building a commercial building in a permitted area, you will not have a choice here. Most building codes now require the foundation to go to frost depth for the full perimeter of the building. Most codes also require that your concrete wall extend 6" above the surrounding grade so keep that in mind as you set your wall elevation. Check out the pictures below.



*You can see the footing forms have been set for this full perimeter foundation. There are larger footings at each column location and then a 16" spread footing between the columns.*

*Here you can see that the 4' high wall forms are filled to within about 6" from the top. This 42" high concrete wall on top of the 12" thick footing will meet the 48" frost depth for this area (southern Montana) and still leave 6" above grade for sidewalks and driveways into the building.*



*This building is taking the stem wall design to the extreme. This column sits on a pier 2' above the floor and the concrete wall extends another 4' above that. This building is used as a composting building at a municipal landfill in western South Dakota.*

Stem wall above grade - This is really the same foundation as the full perimeter except that the wall is more than 6" above grade. If you have a lot of equipment running inside or outside of your building, this is a good way to provide some protection to your building. The metal building manufacturer needs to know if you are sitting on a stem wall because it affects there load calculations. A building with 16' sidewalls sitting on a 4' stem wall will have the same reactions as a 20' tall building.

## ROOF PANELS

You have three basic choices when it comes to panels: shape, thickness and color. Let's start with shape. Not counting specialty products like foam panels, you have two options here, either the Industry Standard screw down "PBR" panel or a standing seam roof. Unless an Architect has a gun to your head, go with the "PBR" panel. It is cheaper, easier to install and will last 15-20 years or more without much trouble. If you start having problems down the road, spend a few

bucks and have an elastomeric roof coating applied and get another 20+ years out of your roof. I don't like the standing seam roof for your project unless you have hired a **very good** erector to erect your building. Many erectors, especially those who are willing to work on smaller projects, don't deal with standing seam roofs very often so they are not very good at installing them.

\*\* Look below and you will see several different panel profiles shown. The only difference between an R panel and a PBR panel is that the PBR panel has a leg that extends all the way down to framing. The PB part of PBR stands for "purlin bearing" and it makes a huge difference. DO NOT ACCEPT ANYTHING BUT "PBR" PANELS FOR YOUR ROOF.



*The erector on this building did a horrible job installing this roof sheeting but it makes a great way to illustrate the PBR panel. See how the leg on the bottom sheet is long enough to reach back down to the framing. This prevents the sheet from pushing down when the next sheet is installed over the top. You can also see the 7/8" wide sealant that is placed in between the roof sheets.*

*This is a standing seam roof panel. Notice that there is not a screw in site. Don't get me wrong about the standing seam roof panel, it is an awesome panel, if installed correctly (see below)*





*You can see why they call this a standing seam panel. You can also see the reason why I can't get too excited about this panel. The erector wasn't operating his seaming machine properly (if at all) so the seaming is incomplete. This erector had to remove and replace about 10,000 sq ft of standing seam panels on this project (and it wasn't me either).*

Next choice you have for your roof panel is the thickness. My rules for selecting a roof panel thickness are as follows:

29 gauge-I will only use 29 gauge roof sheeting if I am insulating the building with at least 2" of polyurethane spray foam insulation. If you are using vinyl back fiberglass insulation I think this panel is too weak. Most manufacturers do not offer this as their standard roof panel but will sell it to you if you request it. Be aware though, some manufacturers will try to slip this one past you if they think you are making your decision strictly on price.

26 gauge-This is the most popular panel for the metal building industry. The only reason I would choose a 24 gauge panel instead of 26 gauge is if I were building in a very dirty industrial area. Dirt and dust collecting on a roof will accelerate the corrosion and the heavier panel may be worth the money, or you can just clean the roof off every now and then.

Color is your final choice on the roof panels, so what is your choice? The Industry Standard for roof panels without a doubt is the Galvalume panel. It is a combination of zinc and aluminum that gives the roof a dull silver to chalky white look. The more the roof ages, the whiter it looks, in my opinion. White roof panels are next in line for popularity. They are usually a little more money than the galvalume but cheaper than most other colors. A colored roof is going to cost a little bit more but it is a nice way to go if you are not on a tight budget. If you have decided that you want to go with a 3:12 roof pitch or steeper, I think that the colored roof is your best choice.

## WALL PANELS

The wall panels are really the same as the roof panels except that you get an option for the shape of the panel. The Architectural panel looks a lot like an R panel that is rolled upside down. It gives your building a little different look without adding any cost. The biggest issue on the wall panels as far as I am concerned is the paint quality. No matter what name the manufacturer gives their paint, the two basic choices are Siliconized Polyester or KYNAR 500 (or equal). The KYNAR paint has a better fade warranty and I recommend it where ever the budget allows. If you are stretched to max on your budget, go with the Sil-Poly and pick a lighter color that doesn't show the fading so much.

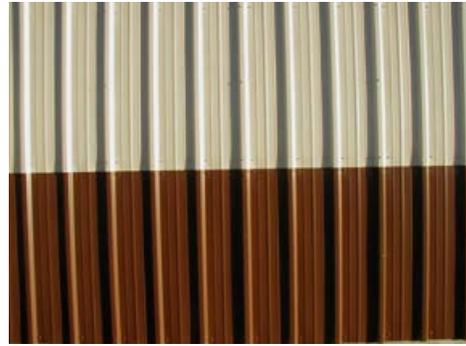
## WAINSCOT PANELS

A wainscot panel is a cheap and easy way to add some color and character to your building. Another advantage to a 3' or 4' high wainscot panel is that the majority of the damage to your building will be in the bottom 3'. If a panel gets damaged and you need to order a replacement, it can be shipped to you by UPS instead of shipping it by truck, saving you huge money. Most erectors charge a little more money for the wainscot panels but it isn't much. You can also use some brick or rock on this area to add some character to your building.



*This riding arena is one of my favorites. You can see that it has a blue wainscot panel all around it. I also had the bottom 3' of the overhead doors painted blue so that when the doors are shut, the wainscot carries all the way through. The 45 degree corners at the top of the overhead door openings are something you can do yourself if you like this look.*

*Normally you install a trim piece in between the top and bottom sheets. This customer, however, didn't want the trim installed because he felt it let too much air infiltration into his building. It required a lot of work to keep the sheeting line exactly straight but I like the looks of this, it's up to you how you have your panels installed.*



*You don't have to use metal sheeting for your wainscot. You can use stone, brick, wood, EFIS or almost any other product that you choose.*

## ACCENT PANELS

This seems to be a trend that comes and goes. It is another easy way to add some color and character to your building. I like the look of the red and white building on the cover of this E-Book but I have done other buildings with the accent panels that I didn't like at all. It is definitely a personal choice on this one.

## SOFFIT PANELS

If you selected an overhang for your building, you are going to have some soffit panels. I prefer the look of the panels that are perpendicular to the wall panel but you will have to pay a little extra for the cutting charge. If this isn't a big deal, just let your building supplier send their standard profile and detail. These photos show several different ways that these panels can be installed.



*I like this soffit panel installation the best, the panels are perpendicular to wall panels (and in line with the wall panels). You can install the trim at the corner on a 45 degree angle but this Owner wanted the panels to come straight down the front overhang.*

*I am not a big fan of running the soffit panel parallel the endwall on this small of an overhang but this Architectural panel looks pretty good. The trim fits the panel really well.*



*With a 4' overhang like this, running the soffit panels parallel to the endwall makes sense to me.*

*Based on that Red, White and Blue theme, I am going to bet that this building was erected in 1976. Check out the flat soffit panel here. This is a very clean looking panel and the trim details would be very easy. I like it.*



## INTERIOR PARTITION WALLS

If you plan to divide your building into several smaller units, you may want to order a partition wall with your building. This is a good option if you are going to finish the wall with metal liner panel. You can also use some 6" 16 gauge metal studs if you plan to sheetrock the wall.



*This building is being divided right down the center by a partition wall supplied by the manufacturer. You can see that the wall is insulated with one side being sheeted the full height and the other side is only sheeted 7'9".*

*These fully lined partition walls make a nice wash bay for this building.*



*Don't let your erector get away with this. I am sure that the manufacturer sent a trim piece to be installed at the top of this wall. LAZY!!!*

## INTERIOR LINER PANELS

These photos show some buildings with liner panel as the interior finish. This is the same panel as you installed on the exterior of your building and it can be ordered in almost any length you choose.

Roof liner panel: If you have a little extra money, you can't beat the look of the roof liner panel.



*Roof and wall liner panel, that's hard to beat. The wainscot panel and the painted frames really give this building a clean look. To dress it up a little more, the conduit for the lights and outlets is concealed behind the liner panel. NICE*

*The liner panel in this shop is really a soffit panel. Each panel locks into the previously installed panel so there are no screws showing. This panel also makes a nice, flat wall. Notice the lighting running full length of the shop walls*





*If you do not need full height liner, just go 7'9" like 90% of the people do. This liner will protect the bottom of your building and it looks good.*

## TRIM

If this is your first metal building and you do not have a specific style of trim that you want, just make the following selections.

1. Select STANDARD for the base, window and overhead door trim
2. Select STANDARD for the wainscot trim if you have a wainscot panel
3. Select YES for the jamb and head wrap for framed openings

If you order your building package from me, I take care of all the trim details for you. If you have a specific trim file that you are trying to match, I will help you try to track down the original supplier for the trim.

## GUTTERS AND DOWNSPOUTS

Most people could care less about the gutter system on their building, until it doesn't do the job. I have a simple rule of thumb that has worked well for me but you have to decide where your downspouts are going to be located before this will work. If the width of the roof that you are draining (peak to sidewall) is greater than the distance between your downspouts, you should use the High Capacity gutter. I like to use the Hi-Cap gutter to reduce the number of downspouts that I need so that the building doesn't look so cluttered. This also makes collection of the run-off water easier to deal with. If you are building a mini-storage or something similar where you can drop a down spout almost anywhere you can use the standard gutter without any problems. Make sure that your erector cuts or drills some overflow holes in the back of your gutter (at the

top of course). If you do get too much water for the down spouts to handle, the excess can run out before it has a chance to back up under your roof panels.

Another gutter option that you will not have to deal with unless you selected the mansard overhang is a concealed gutter. These gutters require considerable maintenance but you have to have them if you have a mansard overhang. Send me an email if you plan to use a mansard overhang and I will assist you in getting the right product for this application.



*This gutter stands a decent chance of surviving an avalanche of snow because it actually hangs just below the surface of the roof sheeting. You can see the light strap that is attached to the roof sheet and the outside of the gutter. Some manufacturers use a heaver clip on the roof sheet and the outside edge of the gutter is the same height as the hi rib of the roof sheet, bad news if the snow comes running off.*

## HEAVY SNOW AREAS

If the snow load in your area is 30#/sqft or higher you are going to have problems keeping gutters on your building. At a minimum, I suggest that you have the manufacturer send gutter clips spaced every 2' (many are spaced at 5'). As an added precaution, I like to install snow guards of some kind to prevent the avalanche of snow that will destroy your gutters.

*This Owner has the right idea, install something to keep the snow on the roof until it melts. This is probably fewer pieces than the supplier recommends but he is on the right track anyway.*



## ACCESSORIES

There are thousands of different accessories that you can purchase for a metal building but most manufacturers are only going to provide the following:

- Fiberglass light panels
- Walk doors-brand of their choice
- Windows-brand of their choice
- Insulation-brand of their choice

### **FIBERGLASS PANELS ( sometimes called TRANSLUCENT panels)**

Every manufacturer that I have dealt with will provide a fiberglass light panel that matches the profile of their wall or roof panels. They are usually 12' long so that they span three purlins if they are installed in the roof or they can be cut down to fit smaller openings in the wall. I have some photos below that show several different installations of these panels. The following are my Pros and Cons of the fiberglass panels

#### Pros

1. Easy to get from the manufacturer
2. Easy to install - they do not require any special tools, trim or handling
3. Provides natural lighting

#### Cons

1. They provide natural lighting but they only allow about 45% of the natural light through. If you purchase the insulated version which is two layers of fiberglass with a light foam sheet in-between, the light transmission is even worse.
2. They are not UV protected so over time they discolor, turning several shades of yellow.
3. If you install them in the roof and you get a couple of inches of snow, you have lost your natural light.

I like to use the multi-wall polycarbonate panels available from several suppliers. They have excellent light transmission but they require special trim details in order to install them and they are more expensive than the fiberglass. If you want to use this panel, I can help you with these details.

Another great choice for natural lighting is to have your overhead door supplier put a lite section in your overhead doors.



*Here is a fiberglass lite panel installed on a roof. You can see the panel is shaped the same as the metal panels so they install fairly easily.*

*This Owner wanted lots of light in this warehouse but didn't want the lite panels in the roof so we put them in the walls. No worries about roof leaks here.*



*Here, the fiberglass panels are installed in 3' tall band all along the top of the sidewall, under the overhang. You will still get some natural lighting into your building even with the shade covering the lite panels most of the day.*



*Now this is my kind of light panel. This polycarbonate material has about 90% light transmission, is UV resistant and is impossible to install in the roof because it is flat; I couldn't be happier. Not only that, it produces a heat gain (that is why green houses use them) so your heating costs are lower.*

*This panel lets so much light in the building that I now install 2' high panels instead 3' panels. The panel is about 5/8" thick and has three layers that create two dead air spaces.*



*If your manufacturer doesn't want to help you get this panel, and the trim you will need to install it, send me an email before you sign your purchase order so I can get you some drawings for the trim and prices on the panels. It is worth the effort, I promise.*

## DOORS AND WINDOWS

The truth is, you can put any door or window in a metal building: some are just easier to install than others. My favorite doors and windows for a shop/industrial

type building are from Dominion Building Products and I always order the pre-hung version. If you want to save a few bucks, you can order what is called a knock-down door but I don't like them. They just don't seem to be as solid as the preassembled and pre-hung doors. The windows from Dominion are made especially for installation in a metal building. Make sure to order the thermal break if you live in a colder climate. There are photos of the Dominion doors and windows. I have also included pictures of other types of windows and doors.



*To start with, these doors arrive at your site packaged like someone cares about them. Most truck drivers can't even damage them when they are crated like this.*

*Pull that crate apart and this is what you get, a 3070 walk door ready to install. On average, I would say that this door takes less than 30 minutes to install. The door hardware comes installed as well. This door has a lever lockset, latch guard and closure right from the factory.*



*Have you ever tried to put a round peg in a square hole. Yep, just like trying to get a 40" wide desk through a 36" wide door. Why not put a 4070 door at the end of the hall and save yourself all that trouble.*

*Still can't get your 4 wheeler out of the garage, install one of these. Two 3070 doors side by side. One door is fixed and one is operable, you decide. You can get all the hardware for these doors preinstalled as well.*



*This Dominion window comes packaged in the same trucker proof crate that the doors come in. The head trim and sill trim are extruded right into the window frame. Once the sheeting is installed, the jamb trim snaps right in place.*

*I like to install this window so that the jambs are in the low part(valley) of the sheeting. If you put the jambs right on the hi ribs, you have to snap a piece of the jamb trim off and it leaves an unfinished edge. Your call.*





*These doors and windows worked just fine for this garage. If you live in a cold weather climate, make sure to request that your windows have a thermal break to reduce condensation problems.*



*If those windows aren't sexy enough for you, go get one of your own. This bay window is installed in both the sheeting and the split face masonry block below it. All it takes is a little extra effort.*

*Nothing wrong with the looks of this vinyl window. It was purchased at a local discount lumber store and installed by the Owner. I like the small band of sheeting that he left below the window to separate the window from the cultured stone.*



## COLORS

Each manufacturer is going to have a standard color chart for you to select a color from. I do not recommend selecting your manufacturer based solely on the colors they offer but color selection has cost me several jobs over the years. Another issue about colors, look at the photo below. This building shows three different shades of white. The wall panels, the walk door, and the overhead door are all a different shade of white. There isn't much you can do about this; it is three different products from three different suppliers. If you want everything to match exactly, I would paint the doors and windows to match the wall panel.



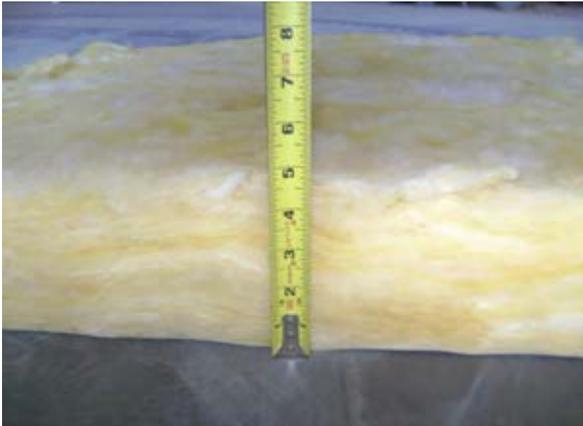
*If I were a better photographer, you would have a better picture to see the point that I want to make here but I'm not so bear with me. The deal is this, the wall sheeting is one shade of white, the walk door is another and the overhead doors aren't even close to either one of them. I can get concrete delivered to a site 100 miles away from the batch plant easier than I can convince some customers that I have no control over this issue. If colors need to match better than this, painting the doors is the only choice.*

## INSULATION

There are many ways you can insulate your metal building. I only list the fiberglass insulation options on my Quote Request Form because most manufacturers will provide a price for this insulation with your quote. Read through the following options and decide if one of them is right for you.

### 4" Vinyl Backed Insulation

This insulation has an R-value of "13" before you install it but because you compress the insulation between the wall panel and the wall framing, you end up with an installed value of about R7. I only use the 4" for light duty applications where the building isn't being heated all the time or an unheated building and I want to minimize condensation. If energy conservation is your goal, this insulation will not do the trick.



*That looks like some pretty good insulation, almost 5" after letting it relax on the floor for about 3 hours. This 4" insulation is rated an R-13, as it sits here on the floor.*

*Doesn't look so fluffy now does it! You can see here that the insulation is compressed between the sheeting and the framing, destroying the R13 rating that it is supposed to have. The insulation does expand a little thicker between the framing members but it still only gets an installed value of R7.2. That's OK for some buildings; I just want you to know this up front so there are no surprises.*





*This is a great application for 4" insulation. This arena will not have any heat in it (other than the polycarbonate panels) but the building will stay comfortable if the outside temperature is 20 degrees or better.*

### 6" Vinyl Backed Insulation

This insulation is rated at R-19 uncompressed and about R-11 installed. I am not a fan of the 6" vinyl insulation at all. You have so much insulation compressed between the sheeting and the framing that the sheeting is bulging out all over the place. The trim around the doors and windows looks like it is about to pop off the building. I have watched some erectors as they install this insulation. They remove most of the insulation around the doors and windows so that the trim looks better. That is insane to me. You pay more money for thicker insulation and someone removes it all in order to make the building look decent so that they can get paid. I would never buy this insulation for a building of my own.



*This is some 6" insulation at an overhead door jamb, before the sheeting has been installed. You can see that the joint between the two pieces of trim is very tight.*

*This is what that joint looks like after the sheeting has been installed. Many erectors will remove most of the insulation right at the doors and windows so that this doesn't happen. As the Owner, why would you pay more money for the thicker insulation and then have someone remove most of it. I am not a fan of 6" vinyl back insulation if you haven't figured that out already.*



#### Cavity fill insulation

These systems do not require all of the insulation to be compressed between the sheeting and the framing like the vinyl back systems so you do not lose the any R-value, at least not much. The wall system has an installed value of R-25 and is 8" of fiberglass insulation suspended in between the girts by metal hooks and covered with a one piece vapor barrier that is glued to the inside flange of the columns. The installed value of R-25 is much better than the 6" vinyl installed value of R-11. You can get even higher R values on the roof. When installing the roof system, the vapor barrier is suspended by high tensile metal banding and then the insulation is laid out on top of that. Rolls of insulation are pre-cut to fit in between the purlins and then a layer is laid out over the top of the purlins. You can get R values in excess of R-50 using this system. WARNING: the best cavity fill systems use a one piece vapor barrier for each bay. There are several companies that use vinyl backed insulation suspended by metal banding and they appear to do the same job, but they don't.



*If energy conservation is your goal, this cavity fill system from Thermal Designs is a great choice. This building has an R-38 roof insulation package and a great look to boot. This building is 150' wide so the vapor barrier for each bay is in two pieces with a sealed joint at the peak. The fabric is also sealed to the tops of the rigid frame rafters.*

*This is what wall insulation is supposed to look like. R-24 fiberglass batts are installed without being compressed by the sheeting and the one piece vapor barrier gives you a very clean look. Notice that the Owner has installed some 2'x12' framed openings for future light panels and a few 4'x4' framed openings for future exhaust fans.*



*This building has a cavity fill system also, it just has metal liner panel for the vapor barrier instead of the fabric with metal bands. R-38 in the roof and R-24 in the walls.*

## POLYURETHANE SPRAY FOAM

I LOVE THIS STUFF- If you think about "cost to build" vs. "cost to own", this insulation is one of my favorites. It seals almost all air penetrations in your building and with just 2" of foam, you have as much insulation as any walk-in cooler in town. I have had customers come up to me years after I completed their building to me tell that they have already recovered the additional cost of this insulation (and the metal liner panel). It is hard to give an honest R-value to this insulation because it has no air infiltration. The Foam Industry usually rates it at about R7 per inch but I can tell you from experience, the installed value is much higher. There are some issues with this product however. One, it produces a nasty odor and overspray while being applied so cover everything very well and have good ventilation. The other issue is most building codes require a 15 minute thermal barrier over the foam. I always sell a complete roof and wall liner panel package if I am using this product; it meets the fire barrier requirement and it looks great. These photos are of the interior of the building on the cover of this EBook.



*It is not pretty but I love it all the same. This polyurethane insulation not only gives your building superior insulation qualities, it will make your building much quieter and stronger. This is about 2-1/2" sprayed on the bottom of the roof panels.*

*Here is the same 2-1/2" sprayed in the walls of this building (cover building). This product goes from liquid to solid in about seven seconds and it plugs any crack it finds.*





*The building code requires that polyurethane foam be covered with a 15 minute thermal barrier. There are paint products that will get you to a 15 minute rating but why not use liner panel like this. It covers the hideous looking foam and it looks awesome.*

## INSULATED METAL PANELS

Another option for getting polyurethane foam insulation in your building is to order Insulated Metal Panels. The panels are insulated in the factory using a pour foam instead of a spray foam and the panels have sheet metal on both side. These panels also come with a stucco texture to add some curb appeal.

## ADDITIONAL COMMENTS

I left some room so that you can include any additional information that you think is important for the manufacturer to know about your building. Here are a few examples of items I might include.

1. I only want gutter on one side of the building.
2. I need 3" flanges on all overhead door jambs
3. I would like to have one extra roof panel and endwall panel (longest) included in the price.\*\*
4. Please include the cost of 2-10' sheets of coil stock so I can make custom trim if needed.\*\* (you can have your HVAC contractor make almost any trim profile out of this that you could need.)
5. I will be placing an order within 10 days, please provide price quote ASAP.

\*\* I use these two requests all the time. It will cost you peanuts now to have a little extra material on site while you are erecting your building. If something gets damaged and you have to order a replacement, you could wait several weeks or longer to get the material.

## PLACING THE ORDER

When you are satisfied that you have your building priced exactly like you want it, it is time to place the order. If you are ordering the building from me, you already have a Purchase Order (and preliminary drawings) from my supplier in your hands. Just sign the PO and return it to me along with the deposit. I will take of everything else.

## NOW WHAT??

Now that you have placed an order, you need to give the manufacturer time to get some work done at their end. You requested approval drawings on the quote request form but it could take a few weeks to get these drawings. Your order is in the manufacturer's pipeline now and they have other orders ahead of yours so be patient.

## REVIEWING APPROVAL DRAWINGS

If this is your first metal building purchase, reviewing these drawings may seem a little intimidating but it really isn't that hard. Every manufacturer's drawings are a little different so I have a short checklist of items for you to look for. If you have hired an erector or a contractor for your project, ask them to review the drawings with you. Any notes that you make on the drawings sent back to the factory should be in red ink. These notes should also be copied onto the drawings that you are keeping for your records.

Here are the items I always look for

1. Verify that all of your customer and jobsite info is correct
2. Review the building design information to make sure that the snow load and wind load info is correct. If you are not sure, take the plans to your local building department and ask them to review them.
3. Make sure that the correct sheeting thickness and color are listed
4. Triple check all of the dimensions on the anchor bolt drawings
5. Look at the cross section drawings to make sure that all of the clearances shown are going to be OK.
6. If you have a roof top HVAC unit, make sure that you see it's location shown on the roof framing plan. If it is not shown, call to make sure this hasn't been overlooked.
7. Review the sheeting lengths to make sure that you are OK with them.

8. The last few pages will usually have enlarged drawings showing things like bolted connections, bracing details as well as sheeting and trim details. There may be some drawings on these pages that do not pertain to your building so just ignore them. Most of these drawings are just generic details and sometimes a few too many get included. It is sloppy but it happens.

You should keep one set of the "marked up" drawings and send the other two back to the manufacturer. You should also send a letter along with the drawings requesting that the noted changes be addressed before fabrication.

## WHAT ELSE?

Soon after the approval drawings are returned you will get a delivery date for your metal building. You will need to make sure that a semi-truck can get into your site. If not, you will need to find an alternate site to unload the material. If you have to rent a forklift, do yourself a favor and rent an extendable boom lift so that you can reach all of the material from one side. A few friends to help put down cribbing and inventory material would also help. If you are short any material, be sure to note that on any and all of the paperwork that the truck driver has with him. You also need to write this on the paperwork-"I have counted the correct number of trim crates but I have not inspected the contents at this time". I have opened trim crates and found holes in the trim from the staples that were used to build the crate-the crate that is supposed to protect the trim. You can't see that kind of damage when you are unloading the crates and you need to protect your rights to report concealed damage. Most manufacturers will allow 30 days to report concealed damage.

## FABRICATION PROBLEMS

No matter who you have decided to purchase your building from, you may encounter some fabrication errors, it just happens. It is usually nothing more than a hole pattern being backwards or a clip welded in the wrong location. Make sure to discuss this with your erector before work starts on your building. Most erectors will take care of little items but you may have to get the manufacturer involved if the errors are significant. Document the problem the best you can with photos and reference the location according to grid lines on the drawings when talking to the factory. It might be best to let your erector talk to the manufacturer if you are not sure how to describe the problem.

## **STILL WANT MORE HELP**

If you have made it to this point and are still looking for some help, send me an email.....[dean@ddvllc.com](mailto:dean@ddvllc.com). I will help you out in any way that I can.

Thanks again for downloading my E-Book. My goal is to provide you the best price and best advice for your metal building project. I would appreciate your feedback; positive or negative.

Dean Byrne