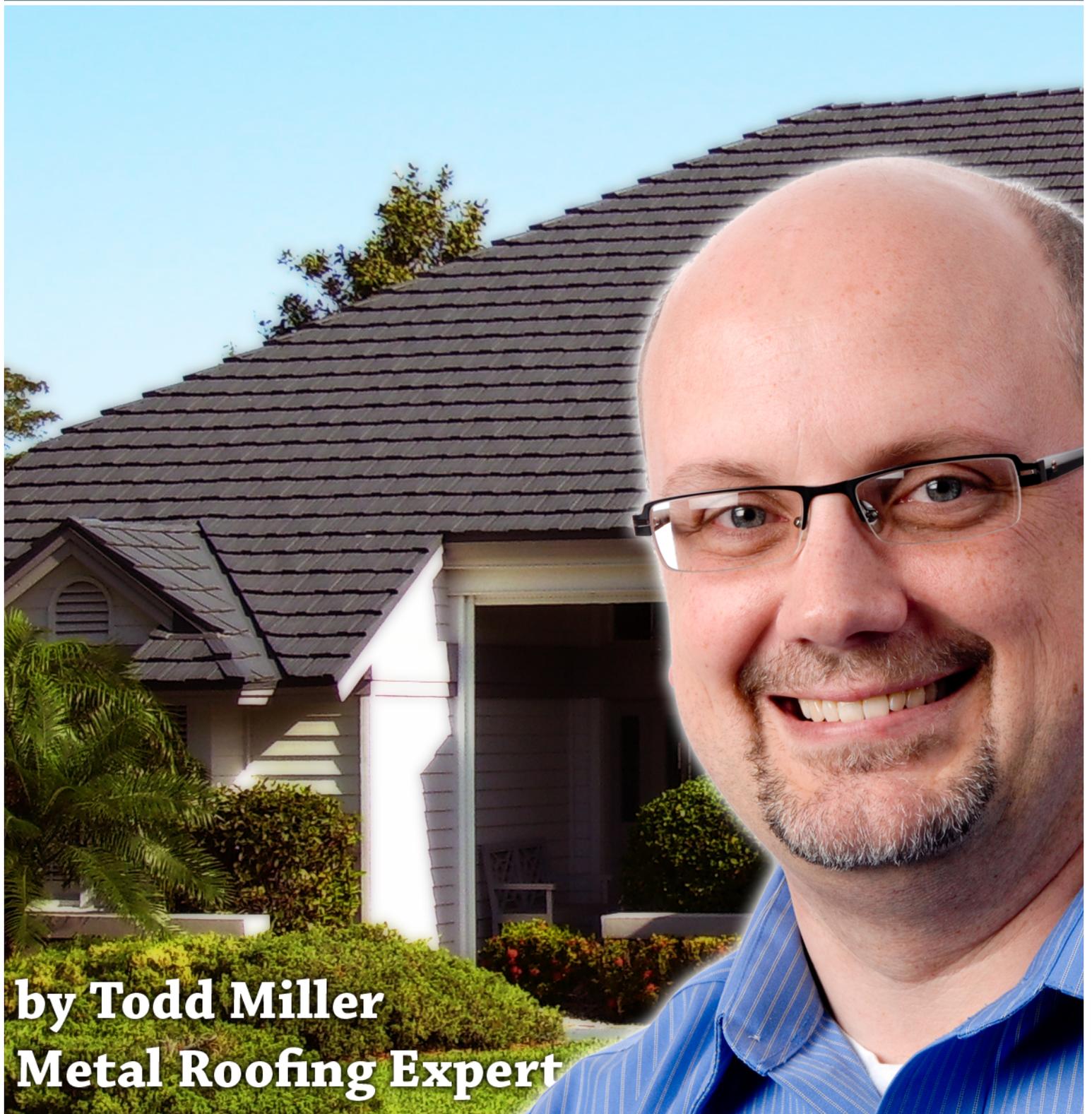


# HOW TO BUY A METAL ROOF!



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# HOW TO BUY A METAL ROOF FOR YOUR HOME

## Introduction

Buying a new roof for your home can be a daunting and difficult task for any homeowner. Most homeowners only re-roof when they know they have a problem—there is a leak into their home or missing shingles after a bad storm. It is an expense people put off until the very last minute because it is easy to forget how centrally important your roof is to not only the protection of your family and your belongings, but also to the cost of cooling and heating your home and the resale value of your home.

There are many excellent reasons to buy a metal roof for your home. Maintenance-free, long life, distinctive looks, energy savings, fire safety, low weight, seismic stability, the ability to be installed over your old roof, recycled content, 100% recyclability, and increased home value are just a few of these reasons. The manufacturers and dealers of metal roofing products will gladly share these compelling considerations with you.

But, while manufacturers and dealers tell you “why” to buy a metal roof, they don’t tell you “how” to buy a metal roof. They will all claim that their product is the best and—amidst all of their product benefits—it can be very hard to figure out what is the best choice for you and for your home. Many homeowners have started down the path of buying a metal roof just to get frustrated by the conflicting stories they are told and then they end up resorting to asphalt shingles once again.

While metal has many benefits, the risk of buying the “wrong” metal roof can be a costly and heart-breaking mistake for you and for your home. The wrong metal roof can leak, age prematurely, cause ventilation issues that may lead to internal mold growth, and be a distraction from the beauty of your home and your neighborhood.

This document is based on my years of residential metal roofing experience, dating back to 1981. I want to help you understand the ins and outs of choosing the right metal roof for your home, and the right contractor. I want to help you get to the bottom (or the top!) of things and make an informed and wise choice. Together, we will look at all of the key considerations to keep in mind when purchasing a new metal roof as well as the important relationship you will have with the manufacturer and the installer. These relationships must be open, honest, and pro-actively directed toward a positive outcome. As soon as they turn in a different direction, a successful outcome may be missed.

## The Manufacturer—The Choice Begins Here

Not all metal roofs are created equal. Some only work in agricultural, industrial, or commercial applications and, when applied to a home, result in a roof that is inappropriate or even dangerous and will detract from the beauty and value of the home.

Unfortunately, there are many contractors and roofing manufacturers who are more interested in the “sale” than in ensuring your home has the right roof to protect and beautify it. I want to help you keep that from happening to you. And, each step of the way, I encourage you that, if your contractor or manufacturer can't answer questions or gives you answers that you know are wrong, look a different direction. I figure that

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contractors and manufacturers who do not know their craft and industry with excellence are not serious about the industry and will take short cuts and probably no longer be around after a few years.

### **Know the Manufacturer's History**

The cost of manufacturing a very simple metal roofing profile is fairly low. As more homeowners become aware of the beauty and longevity of quality metal roofing, many companies with no history or experience are trying to cash in on that market interest. Some are genuinely doing things right and showing a commitment to the industry but others are less serious and looking for a quick dollar. In some cases, these companies are literally producing metal roofing out of their garages.

Some important questions to ask about your metal roofing manufacturer are—

- Do they take a leadership role in the metal and construction industry?
- Do they own their own buildings and facilities?
- Do they have quality installation manuals and training programs for their dealers and distributors?
- Do they have lasting capital assets (large presses and a manufacturing facility) or temporary and “mobile” equipment?
- Do their products meet the Metal Construction Association Certified Metal Roofing program requirements?
- Can they show you proof that the metal they use is “first grade” metal rather than “secondary” metal that was rejected by another manufacturer?
- What warranties do they provide, and who backs them up on those warranties?

If the answer to any of these questions leads you to greater concern, continue your search.

### **Know the Manufacturer's Warranty**

The benefits of a metal roof are the protection, durability, longevity, energy efficiency, and beauty it brings to your home. Those benefits though, are only as good as the strength of the warranty offered by the manufacturer. Buying from a company without a history that is substantial, solid, and significant means that your roof investment is jeopardized by what will be a worthless warranty if that manufacturer goes out of business.

Don't hesitate to talk to the manufacturer. Make sure you know **exactly** what their product warranty covers and doesn't cover.

- Be wary of warranties that seem very broad and non-specific. A quality warranty will state specifically what it covers and will go beyond very broad and hard-to-nail-down terms like “manufacturer's defects” and “cosmetically acceptable”. Do not depend on a warranty that will require a subjective opinion as to whether it provides coverage. Chances are that your opinion and the opinion of the person settling the claim will not agree on subjective matters!
- Make sure your roof is suitable for their product in terms of pitch and configuration. This is especially important if there is anything unusual about your

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roof's shape. I have seen many roof failures occur simply because the product that was used was inappropriate for the project. Today's technology allows even manufacturers hundreds of miles away to often easily access aerial images of your roof. These images can be very helpful.

- Ask them how they have handled past warranty claims, and how many claims they have had.
- Find out whether their raw material suppliers back up the warranty they offer you.
- Find out about their relationship with your metal roofing dealer/installer.

Look for a warranty from a manufacturer that—

- Includes lifetime protection from any defects in the metal
- Is transferable to all new owners for a period of time
- Is non pro-rated rather than diminishing in coverage as the roof ages
- Protects against fading and chalking
- Covers the paint or coating against peeling and chipping
- Covers for chipping and leaking due to hail
- Covers the cost of replacing defective material **and** of installing the replacement material as well, should a warranted failure occur

### Accessories

Metal roofs designed and intended for residential use will include a full complement of appropriate trim pieces like eave starter, drip edge, gable trim, wall flashings, valleys, hip caps, and ridge caps. Using these accessories helps to ensure the longevity, durability, and beauty of your roof. It also helps to ensure that everything “color matches” on the roof – both today and in the future as the product ages. Some metal roofing manufacturers who primarily sell their products for non-residential applications will not offer these trim parts. It is always best to find a manufacturer who is truly committed to residential roofing so that you will have peace of mind as well as future service and support. Inquire also with your dealer to make sure that they are taking advantage of and using manufacturer-formed accessories. Some dealers will try to make their own and, while this can be done successfully, it also leaves more room for error and greater potential for finger-pointing between the manufacturer and the installer if problems should arise.

### Certifications, Memberships, and “Prime” Metal

The same way all roofs are not created equal, all metal is not necessarily good metal. Many manufacturers, in an effort to cut costs, are buying “less than prime” metal. The integrity of this metal is compromised by impurities and even defects overlooked and ignored in its creation. Several manufacturers who use prime metal that has been tested and tracked for quality are listed under the **Metal Construction Association Certified Metal Roofing Panel**\* program (this means the metal and coatings are certified to meet standards of quality set by the industry).

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\* [www.metalconstruction.org/roofing](http://www.metalconstruction.org/roofing)

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There are, of course, many other manufacturers using “prime” metal. What has happened in recent years though has been an emerging market for “secondary” metal. This is metal that has been rejected at some point along the way for quality reasons. Whereas this metal used to be melted down and re-formed into new metal, it is now instead often sold as non-warranted “secondary” product. Make sure that your metal roofing supplier can verify that their metal is “prime” metal carrying a full warranty. Secondary metal is at high risk of having a wide variety of appearance and performance issues.

### **Regional Standards and Testing**

Not all metal roofing is made for all conditions. Steel roofing along a salt or brackish water coast will be at risk for rust because of the salt in the water and the air. Likewise, lighter weight corrugated roofing can easily blow off in hurricane strength winds. And, due to their design and raw materials, some products are more resilient to severe hail than others. Find out whether the manufacturer’s products are properly tested and listed for application in your area. Dishonest manufacturers try to skirt under the radar on testing and regional standards. Manufacturers with a history of longevity and performance are setting industry standards and are constantly and consistently updating their product and testing certification to ensure the life of your roof.

### **Customer Service and Experienced Installers**

Many homeowners make the mistake of finding a product they like and making an inquiry about it with their “roofing guy” or local “big box” home center. Metal roofing should be lifetime protection for your home—don’t leave the decision to guard your most valuable investments to someone without extensive experience in metal roofing. There are complexities to metal roofing systems. If you speak with someone who doesn’t know the answers to your questions, they probably won’t know how to properly specify or install the product down the road.

Quality metal roofing manufacturers want to talk with homeowners. Customer service is a core practice of any good roofing manufacturer and they are very well suited to help you choose the right product and profile for your home. They also know who you can trust to install your new metal roof. Good roofing manufacturers will take the time to answer any questions you might have and will connect you with dealers and installers who are qualified, trained, and have the experience necessary to provide you with the right metal roof for your home and your area.

## Understanding Your Roof

### **Roof Terminology 101**

In order to make the right decision for your home, it is important to know some basic concepts and definitions.

- Eaves—The horizontal edge of the roof that is closest to the ground.
- Ridge—The peak of the roof where two roof surfaces meet.
- Gables—The vertical edge of the roof. Where a course of shingles either begins or ends.

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- Hips—The outside corner of two intersecting roof surfaces.
- Valleys—The inside corner of two intersecting roof surfaces.
- Flared Gables – This occurs when the ridge of the roof is wider than the eave and it does require special consideration.
- Dead or Blind Valleys - Areas where adjoining roof planes drain into each other or where a roof plane drains against the back of a large protrusion like a wall or chimney.
- Cricket or Saddle – This refers to special flashing on the uphill side of a chimney designed to direct water flow down the sides of the chimney.
- Flashings – This is a generic term used to refer to metal pieces separate from the roof panels themselves which are used to guide water and divert it away from the structure.

### Pitch and “Shape” of Your Roof

In 8<sup>th</sup> grade science, students learn the two rules of water are

1. Water always moves downhill
2. Water always takes the path of least resistance

Water on a roof needs to be told where it is going. It needs clearly defined paths to travel or else it will find its way into your attic space and will eventually drip its way onto your insulation and into your living space. Understanding pitch is the most important part of directing that water away from the inside of your home.

What is the pitch of your roof? **Roof pitch is referred to in terms of the inches of vertical rise in relationship to the inches of horizontal run.** For convenience sake, run is always 12. So, a 6:12 pitch roof will have 6” of vertical rise for every 12” of horizontal run. A 12:12 pitch roof will have 12” of rise for every 12” of run, effectively making it be at a 45-degree angle.

Most metal roofs are designed for roof pitches of no less than 3:12. There are a few vertical seam panels that can be used down to a 2:12 pitch or maybe 1-1/2:12. However, for most roofs less than 2:12 pitch, a special kind of standing seam called a “mechanically seamed” metal roof must be used. This type of product is installed on the roof as side-by-side panels which are then seamed using an electric machine or hand crimpers to create a folded watertight lock on top of the seams.

In addition to pitch, we need to also look at the “shape” of your roof. In some cases, the geometry of your roof may mean that a particular roof area will carry a large amount of water. This happens most often when a higher roof slope drains onto a lower roof slope. In these cases, special care must be taken, perhaps through a larger “pan flashing,” to spread that water over a wider area and make certain that an individual roof panel is not overwhelmed with so much water that the interlock between the panels is “flooded out,” allowing water to force its way under the panels. Many even very experienced metal roofing contractors will fail to consider this important factor.

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**Should you ever install a product at lower than its manufacturer-specified minimum pitch? Absolutely positively 100% “no”.** Contractors will sometimes, through the use of special underlayments or other materials, try to place a watertight roof beneath the metal panels in hope of making the panels work at lower pitches than those for which they are intended. **This will eventually fail.** Do not let anyone do this to your roof. There are many good alternatives for low pitched roofs, including metal. Do not allow your contractor to try and make the “wrong” product work. Some manufacturers may offer products appropriate for lower pitch sections of your roof in colors matching the product you may choose for the steeper pitch portions of your roof.

### What Lies Underneath the Roofing Materials

#### **The Roof Deck**

One of the frequent benefits of a metal roof is that it often be installed over existing shingles. Regardless of whether your old shingles are left in place, what is beneath them? What is the lumber that comprises your roof deck? This is important to know. Virtually any metal roofing product intended for residential use can be installed over what is called solid decking—typically a plywood, OSB (Oriented Strand Board), or closely spaced dimensional lumber surface placed over and attached to your roof rafters.

It is important that your roof deck be examined closely in order to ensure that it is sound and will hold fasteners well. If the old shingles are removed, then it can be examined from the top side. In all events and most importantly, though, it should be observed from the bottom side as part of an attic inspection. Contractors who understand roofing science will always want to do an attic inspection. If the roof has been leaking, often times that will be more visible from the bottom rather than from the top due to how gravity causes water to spread. Any areas of soft or rotted decking must be addressed and should not be just “roofed over”. If the roof deck can’t be observed from the bottom side and there are concerns about how sound it is, core samples can be taken from the top side using a circular drill blade in order to observe the condition of the entire roof system through its various layers.

Areas of question on the roof deck, no matter how they are observed, can have fastener pull-out resistance testing done on them. This is done by driving the fastener that will be used on the new roof into a strip of thin steel and into the roof. An agricultural hand scale can then be attached to both ends of the steel strip and a cross bar positioned in it. Two individuals then pull up on the cross bar, using the scale to determine at what point the fastener pulls out. I would suggest that fastener pull out should not occur before 80 pounds of pressure. The area of the decking most suspected of being problematic should be tested.

#### **Battens**

Some metal roofing products though, can also be installed over battens or lathe boards. Sometimes called “strapping,” these are spaced apart boards fastened to and spanning horizontally across your home’s rafters. There are a few products which must be batten-

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mounted, even if the battens must be installed over a solid deck. And there are some tile and shake profile products which, while they normally require solid decking, can also be installed over existing wood shingles on spaced sheathing.

Making sure that the product you're choosing is appropriate for your application is critical. The final authority on how the metal roofing should attach to the roof should be your roofing manufacturer. Generally, the more heavily formed a product is, the easier it will be to install over existing shingles but that is not a hard and fast rule. It is always best to consult with the manufacturer. Quality manufacturers are ready and willing to answer your questions and will ask for dimensions, photos and any other information you can give them.

Still, though, I often get asked this question about whether battens are necessary underneath a metal roof. Many contractors who do not understand the laws of thermal dynamics and therefore do not realize that condensation concerns within a roofing system are typically on the underside of the roof deck, not the under side of the roof panel, will sometimes say that metal roofs should never be installed without battens. That is not true. Please read below for more details on this question.

Not all metal roofs can be installed over battens. Before even considering it, make sure the product you're installing is approved by its manufacturer for installation over battens.

Basically all metal roofs that can be installed on battens can also be installed on solid decking with underlayment. There are some exceptions to this with some of the batten-mounted tile and shake profiles but that is about it.

If you do not have good ventilation in the attic, then battens may be helpful. Installing metal panels that lay flat against the roof without battens can reduce the temperature of your roof decking during cool evenings. This is because the metal panels touch the underlayment which touches the decking and cold is transmitted by conductance. (This is not the case with formed metal shingles which stand up off of the roof deck.) This could cause the decking to reach dewpoint and especially if you have a lot of moisture in the attic caused by inadequate ventilation, this can cause condensation in the attic. Having the metal panels up on battens stops that conduction of cold and can help avoid this situation. (For metal roofs that can't be installed on battens, this same effect can be achieved by installing sleepers on top of the decking over the rafters, followed by another layer of decking.

Another benefit to formed metal shingles or flat metal roofs installed on battens is that the thermal break caused by the airspace will help some with energy efficiency. It behaves much like the airspace between two panes of glass in a thermal pane window. It blocks conductive heat transfer. However, if your attic is vented well and you're using a roof panel with reflective pigment, the added benefit of the cavity from battens is minimal.

Again, though, most metal roofs are not installed on battens. Concerns with battens include that they can make the roof less walkable and they also mean you have to have

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extra trims to cover up the extra roof system thickness created by the battens. This could also mean you will have to raise the gutters on the home if there are any.

### **Should the existing shingles be removed?**

I frequently am asked whether old shingles should be removed from a home's roof before a new metal roof is installed. My answer often surprises people. However, it is based upon experience with tens of thousands of installations over many years.

The vast majority of installations of the metal roofing systems produced by my company are over existing shingles. The low weight of metal roofing is one thing that encourages this. Steel shingles weigh about 1/4 what asphalt shingles weigh and aluminum shingles weigh about 1/8 what standard shingles weigh. I would say that in most cases, less weight is being added to the home by the new metal roof than what the current shingles have lost due to granule wear and oil evaporation. In other words, the total roof weight was probably greater when the last layer of shingles was installed than it will be when the metal roof is completed.

One important thing for folks to keep in mind if they are trying to decide what type of roof to buy is that new asphalt shingles should not be placed on top of old asphalt shingles. With most asphalt shingle manufacturers, doing so will void the warranty on the new roof. This is partly because the old shingles will not allow the sun's heat to pass so easily into the attic so the new shingles end up staying at a warmer temperature, shortening their life.

That is not the case with metal — temperature does not damage the metal or a quality paint finish. The warranty on your new metal roof should not be impacted at all by going over the old shingles.

In over 30 years and tens of thousands of installations over old shingles, I have yet to go back on a job later and find myself saying "Hmmm ... maybe the old shingles should have been removed." It just never becomes an issue. And many of those installations actually have been over wood shingles and thinner wood shakes! I have also re-roofed personal properties with our products five times now over the years — every time was over the old shingles, and no regrets.

I like going over the old shingles for three reasons:

- 1) It stops the need to fill up landfills with old shingles.
- 2) It ultimately increases the thermal resistance (R Value) of the roof assembly, actually increasing energy efficiency compared to tearing off the old shingles. The benefit of this is during the summer.
- 3) It allows the property owner to spend discretionary dollars on a better roof rather than on removing the old roof and disposing of it.

Going over the old shingles also avoids the potentially damaging issues that can occur, like unexpected rainstorms, when old roofs are torn off.

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Still, ultimately, it is the property owner's decision but I would have no qualms about going over a layer of old shingles in most cases. It's not uncommon to go over multiple layers either actually. On older homes, of course, I do put the caveat out there that if there are signs of an existing weight issue or old leaks, those need to be addressed and that may require removing the old shingles. If there are concerns about the integrity of the roof decking, then pull-out resistance tests using the roof fasteners can be performed.

One other thing to keep in mind is that building codes, where active, usually require no more than two layers of roofing of any type on a structure. There have been instances of building inspectors waiving that requirement but that is not an easy thing to get accomplished.

In a typical year, approximately 90% of the roofs our company manufactures are installed over old shingles. In my opinion, going over the old shingles is worthy of consideration because of the benefits of doing so. Every roof needs to be evaluated individually.

### **Underlayment**

Underlayment serves as an extra layer of protection against water penetration and protects both the panel and the interior of your home during installation and for years to come. If your metal roof is to be installed over solid decking or over existing shingles, a layer of quality underlayment between the two is essential. It protects the roof deck from moisture and, if the old shingles are left in place, underlayment protects the back side of the metal roofing from abrasion caused by the rough surface of the old granulated shingles. Underlayment is also a good idea when the roof is installed over battens though a natural tendency for the underlayment to drop between the battens can be a problem.

For many years, the standard underlayment beneath a metal roof was 30-pound felt. In some cases, local building codes may require a more fire resistant underlayment or may even require the use of self-adhering "ice and water shield" underlayment over the perimeter and valleys of the roof. Always make sure that you're adhering to the more stringent of either building code requirements or manufacturer specifications. If a self-adhering underlayment is used, it must be a smooth surface product rather than a granulated surface product so that the rough surface does not scratch the back of the metal panels. A scratched panel could leave your roof vulnerable to rust and eventual cracks and holes from the abrasiveness.

Recent years have seen the development of many new underlayments generically called "synthetics". These polymer-based products are longer lasting and easier to install than 30-pound felt. They also serve as a "slip sheet" for standing seam products that can be prone to sticking to traditional roofing felt in hot weather. When this happens, expansion of the metal can tear or wrinkle the felt underlayment.

### **Know Your Roof's Hotspots**

Walk around your home and look closely at your roof. Professional contractors who really want to serve you and your home well will insist on walking around your home with you. Use binoculars if they are helpful. If it makes it easier to understand your roof,

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imagine an aerial view of your roof and sketch it on paper. (Getting satellite or aerial images of your home and roof may also be helpful.) Don't get on the roof – leave that to the professionals. Some important questions to ask—

- Are there any unusual areas on your roof where, because of the roof's shape or configuration, water flow might be slowed down or impeded?
- Are there any “curves” on the roof?
- Do you know of points where leaks are occurring? (If so, be certain to tell the manufacturer and your contractor about these!)

In the case of all of these things, discuss them with your contractor and ask how they have addressed similar situations in the past and how they will address them on your home. Also, consult with your chosen roofing manufacturer— a quality and serious manufacturer will always be the best expert in terms of knowing how their product should be used and how it will perform. If your manufacturer cannot answer your questions, doesn't have the proper information, or prefers to not be bothered by homeowners calling them, it is wise to re-consider your manufacturer choice. If they cannot help you before you buy, can you expect their support if you have a problem after the sale?

### **Dips and Swales**

As you look at your roof, look for dips or swales. Does the roof have any “waviness” to it? It is not unusual to see this on older structures or even some newer buildings. These are usually a result of structural settlement or inadequate initial construction. They can also be caused by structural damage (such as a snapped rafter) or roof leaks which would need immediate attention.

If dips and swales seem to be the result of structural settlement, you may have a choice of paying to have the roofing and decking removed to remedy the situation or just putting up with it. There are occasions when heavily configured shake profile metal roofs will hide dips and swales. But that isn't always the case. In fact, the strong vertical lines of standing seam or the horizontal lines of shake, shingle, or tile products can accentuate dips and swales and make them even more apparent. Discuss this with your manufacturer and contractor.

### **Weighing In**

One of the big benefits of metal roofing is its low weight. More weight on the roof means your home is susceptible to buckling or snapping rafters. Worse, extra weight on the roof can be deadly in an earthquake or interior fire where the structure of the home loses its integrity and collapses under its own weight.

Composition (asphalt) shingles will tip the scales at 275 to 425 pounds per “square” (100 square feet) of roof while a tile roof can add up to 2000 pounds per square to your home. Steel and copper roofing will weigh around 85 to 125 pounds per square. Aluminum will weigh even less at 45 to 70 pounds.

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The low weight of metal roofing often allows it to be installed over existing shingles. In many cases, the temporary shingles have lost more weight in terms of evaporated oils and worn-away granules than what the new metal roof will add. As discussed earlier, because of its low weight, metal roofing is often successfully installed over multiple layers of old shingles. This saves you money on costly tears offs that are “dumped” in landfills and pollute the ground water with its petroleum based chemicals.

However, in some areas, building codes prohibit more than two layers of roofing. Oftentimes though, by talking with the building inspector and explaining the low weight of metal roofing, metal has been approved for applications over 2, 3 or even 4 layers of old shingles. A quality manufacturer will help you in dealing with your local government officials with literature and documented history from past experiences.

### The Style of the Panel—Finding the Profile that Complements

One of the beauties of metal roofing is the wide variety of panel profiles which is available. Homeowners can choose from corrugated looks to true standing seams to shake, slate, shingle, and tile facsimiles. But which “look” is best for your home? While this is a matter of personal choice, not every profile “fits” aesthetically and stylistically with every house.

### Is Your Roofer also a Design Expert?

The installer you choose for your roof should not only have an excellent history of roofing, but he or she should also have an eye for the design and know which product will complement the beauty of your home. In some cases, your metal roofing supplier may bring sample panels so you can see for yourself and have a better idea of what a particular product may look like on your home. Some metal roofing manufacturers offer “imaging” software that shows a photo of your house with different roof profiles and colors that can be superimposed onto your home. These things, along with the expertise and experience of your manufacturer, will help you make an informed decision on the profile and color that best showcases your home.

### A Special Word on Standing Seam Roofs and “Oilcanning”

In recent years, vertical standing seam roofing has become increasingly popular. From porches to complex roofs, log homes to accents—Standing seam’s angular lines add to the beauty of many different types of homes. It is important to know up front though that standing seam roofs have their own special issues that need to be addressed with the manufacturer and the installer. The most important of these issues is oilcanning.

Oilcanning is a phenomena through which flat standing seam panels may show ripples on the roof. This does not occur with heavily formed products such as metal shake, slate, or tile and it also does not happen with “corrugated” types of metal roofing.

So, when does it occur and why? It can occur for any of a number of reasons on standing seam panels. Many of these reasons are unavoidable and it is important to realize, if

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you're buying a standing seam roof, that oilcanning may be present on the finished job. Here are some things that can lead to oilcanning:

- A) Improper rollforming of the panels or a rollformer that is out of gauge.
- B) Dips, swales, or rolls in the roof surface.
- C) Installing over existing shingles rather than removing them first.
- D) Improper installation, often involving improper clip or fastener placement and tightness.
- E) Inherent stresses in the metal itself.
- F) Damage to the panels prior to installation.

Talk to your dealer/installer about what steps they take to avoid oilcanning with standing seam jobs but do realize that, for the above reasons, oilcanning can occur and, generally speaking, the industry does not consider oilcanning to be a reason for rejection of a particular installation.

### **Built to Scale**

When choosing the right look for your home, it is important to keep "scale" in mind. For example, if your home is only 50' in width, using a 24" wide standing seam panel may be over-powering because you will end up with just 25 panels across the entire width of the roof. Likewise, a very "heavy" looking shake or tile profile may be too much for a smaller home.

In general, roofs with steeper pitches go well with a heavier looking shake. Historic homes such as a Victorian or Cape Cod, are enhanced by a lower profile "slate" looking shingle. Ranches and roofs with a lower slope do well with a low profile or wood shingle look. Standing seam has been made popular on log homes, cabins, and as accents on a lower roof such as over a porch.

### **Consider the Neighborhood**

Keep your neighbors and neighborhood in mind when choosing a profile. You want to add to your home's value. This can be achieved by setting your home apart from others in your neighborhood in terms of distinction and beauty. However, accidentally making your home stand out like a sore thumb through the color or product you choose can detract from home value and also not enamor yourself to your neighbors.

## Venting Your Roof

### **Good Ventilation Prevents Mold**

In New Orleans after Hurricane Katrina, many homes were condemned not because of damage caused by wind but by rising and receding water that left deadly black mold in its wake. Mold is caused by a combination of moisture, warmth and stillness. When water leaks from the roof into the attic and sits, microscopic organisms in the water begin to feed off of any organic material they can find. Eventually they grow into overpowering colonies of black mold that affect your health as well as your living space.

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Regardless of where you live, mold is a major concern to be taken seriously. We create a lot of moisture in our homes—laundry, dishwashing, house plants, bathing, fireplaces and other appliances add microscopic water droplets that need to escape out of the house and back into the atmosphere. Unfortunately, in attempting to build more energy efficient houses over the past 30 years, the building industry has been constructing homes that are that are “tighter” than ever before. As a result, they have inadvertently “captured” all that moisture in your home. All of that moisture gravitates upward into the attic and if not vented out, it will condense on cool surfaces. If the back side of the metal roof is exposed (which I advise strongly against in all cases) in the attic, it creates an ideal situation for severe condensation. However, condensation can also occur on the back side of solid decking if moisture is not properly vented out. All this condensation can become a potential haven for mold.

If your home suffers from high moisture levels or a lack of proper ventilation or insulation, re-roofing is the time to determine and address those concerns. Professional roofing contractors will always insist on doing an attic inspection to determine whether your attic is properly vented, whether any rot or mold are present already, and to check for moisture levels in the lumber and insulation. It’s important to note that, when insulation is damp, it loses its effectiveness and R value.

### **Ice Damming**

Another problem resulting from the lack of attic ventilation occurs in northern climates when warm air reaches the roof system and melts wintertime snow loads. This can result in damaging ice dams on the roof especially over the eaves where re-freezing can occur. This problem can be made even worse by a lack of insulation in the ceiling floor. Keeping the attic very cool in the winter through good ventilation will eliminate this possibility.

Every winter, I hear from folks are searching for information on roof ice dams and also metal roofing as a possible solution to ice damming. This is especially bad when snow and ice occur in areas of the country that do not normally get snow and ice. This poses a unique problem because, while there are ways to help make a home be resistant to ice damming, if you do not normally get much ice and snow, you don’t build your home to handle it well. Of course, oftentimes weather patterns repeat themselves for a few years so the folks getting ice and snow this year can quite possibly expect it in future years as well.

There are two primary reasons why ice damming occurs on roofs. They are as follows:

1) Heat from inside the house escapes into the attic and then reaches the roof, causing “hot spots” that melt the snow. This melted snow then runs down the roof until it hits cold areas of the roof at the eave overhangs where it re-freezes. This leads to a gradual build-up of ice on the bottom edges of the roof. This situation is most prevalent when outside temperatures stay cold and there is no sun to cause melting over the entire roof rather than just the aforementioned “hot spots”. This phenomenon, of course, describes winter in many areas.

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2) Converging snowloads on the roof, often at valleys in the roof, cause “packing” where the snow cannot slide off the roof. Eventually as this snow packs tighter and tighter, ice is formed.

When analyzing a problem, I always like to first look at what can be done to permanently fix the situation rather than just try to relieve the symptoms. So, in the two above scenarios, what is a permanent fix? Read on!

1) Eliminating “hot spots” on a roof which lead to ice dams is best done by increasing insulation on the attic floor and also increasing ventilation in the attic. Insulation helps hold heat inside the home where you want it. Ventilation helps keep the attic as cold as possible. To avoid ice dams, ideally, you’d like your attic to be the same temperature as outside. The key to ventilation is having good intake vents and also good exhaust vents. Intake and exhaust vents need to be well balanced in terms of the air that can flow through them. They also should be positioned in a way which continually “bathes” the entire underside of the roof deck with fresh cold air from outside, eliminating “hot spots”.

The issue with all of this is that some homes really are not constructed well for ventilation. That is when building a roof over the existing roof, creating a new vented chamber, can be very wise. This is also called a “cold roof”. It is not a cheap or easy fix but it is a very good, permanent fix. A product like Green American Home’s ThermaDeck can help make this method be even more effective by combining ventilation with insulation and reflectivity.

A true bonus of increasing home insulation and ventilation is that these things also help reduce air conditioning loads in the summer. So, particularly for homeowners in temperate climates, these solutions to ice dams can help reduce summer energy costs as well.

2) If ice dams are being caused by roof geometry (“shape” or “footprint”) and the resulting converging snow masses, it is difficult to arrive at a permanent fix shy of major changes to the home’s design. In this case, adding things like snowguards on the roof, uphill a bit from the trouble areas, can help hold snow and prevent it from sliding so quickly. If you can hold the snowload until it melts naturally, then you can avoid the converging snowloads and the resulting ice dams. (As an additional note on snow guards, I generally suggest their use in ways which breaks up the snow as it slides from the roof. This will help protect shrubbery, plantings, and statuary around your home while keeping doorways from being block by snow and ice.)

The next question then becomes, what if these permanent fixes cannot be made or, in the case of roof shape, do not have adequate effect? In that case, there are systems which can be added to your roof that will help in melting unavoidable ice dams. Some of these systems lay on top of the roof, such as “heat tape” and are easily added to any existing roof. Other systems become more permanent and integral to the structure and actually are placed under the roof system or under the roof deck in the areas where ice dams occur,

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heating the roof surface and preventing the ice creation and accumulation.

The next question that folks ask a lot of times is whether metal roofing avoids ice dams. Metal roofing manufacturers and contractors sometimes make the claim that their systems can help minimize ice dams. The fact is, metal roofing can help but it is by no means a cure-all for ice dams.

Metal roofs tend to shed snow more quickly than most other roofing materials. This is because they have a fairly smooth top surface and also because, when the sun does appear on winter days, heat from the sun passes through the snowload, hits the metal, and is reflected back outside. It then starts to melt the bottom of the snow on the roof over the entire roof not just over the heated areas. Once that snow melts a bit, it gets slippery and tends to slide off the roof, much like snow off of the hood of your car once the engine warms up.

However, metal roofing does not necessarily help prevent ice dams from converging snow and, if the sun doesn't come out, snow can hang around on metal roofing for a long time just as it does on other roofing materials, making it very susceptible to melting over the living spaces of the home and freezing over the cold overhangs. That brings us back to not wanting to ignore the possibility of permanent solutions to ice damming even on homes where metal roofing is being installed. One benefit of metal roofing, if ice dams do occur, is that typically due to the interlocking nature of the panels, the strength of the metal, and the underlayments used beneath the metal panels, there is less chance of the melted snow and ice working their way into the homes, its walls, or its overhangs, than there can be with other roofing materials. So, even though ice dams may occur, they will be less damaging.

### **Proper Venting for a Lifetime**

Proper attic ventilation is critical to a healthy and efficient home. Attic ventilation plays a great role in reducing your summer air conditioning costs by venting heat out of the attic. It also vents out the moisture which migrates from inside the home to the attic. In winter, good ventilation helps to avoid ice dams on your roof.

Effective ventilation requires intake and exhaust air. Usually intake air is achieved through eave soffit vents. Exhaust venting is done through vents higher on the roof such as ridge vents, turbine vents, or various types of "can" vents. A good way of thinking about ventilation is to understand that your desire is to continually and consistently "bathe" the underside of the roof deck with fresh air. This prevents condensation, keeping your decking dry and preventing the growth of mold.

Always think of air flow when thinking of ventilation. Air flows the shortest distance possible. Think, for example, if your home had soffit vents, gable vents, and a ridge vent. The intention is to bring air in the soffit and out the gable and ridge. What will really happen, though, is the gable vents will bring in air to feed the ridge vent, reducing or eliminating the draw through the soffit vents. That drastically minimizes the effectiveness of the venting in your attic. Well balanced attic ventilation will often consist

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of ridge vents and soffit vents with the net free air flow being equal between the two types of vents. If they are not equally balanced, you would want to have the soffit vents slightly exceed the net free air flow through the ridge vent.

If you choose a metal roofing product that needs to be installed over battens or “strapping” and you do not have solid decking in place, you will need to pay exceptionally close attention to proper ventilation in order to avoid condensation problems. In fact, because of this, you will often find that the most credible manufacturers of metal roofing products that can technically be installed over battens will advise always having solid decking in place for residential applications. That is always my advice.

If your home’s construction does not allow for ventilation, then you need to check whether a vapor barrier is in place in the roof assembly to prevent moisture from migrating to the decking or roofing. This vapor barrier can be a sealed sheet of polyethylene (usually directly behind the ceiling drywall) or certain types of insulation such as sprayed-on polyurethane. If these things are not in place, then having a vented “cold roof” constructed on top of your current roof may be wise.

### **Hire a Contractor Who Knows About Ventilation**

The critical thing to keep in mind about ventilation when buying a metal roof is that a professional contractor who cares about more than just selling you a roof will understand ventilation. They will discuss it with you, evaluate your needs, and either approve of your home’s existing ventilation, or offer a better solution. If your contractor seems to not want to talk about ventilation, or does not seem to be knowledgeable about it, it is a good indication that perhaps a different contractor will pay more attention to the details and service that are required by a successful roofing application.

### **What about insulated attics and structural insulated panels?**

We are increasingly seeing homes being constructed with insulated or “conditioned” attics. These usually are done with a closed cell urethane foam that has been sprayed on all portions of the attic space. A similar situation is homes that are constructed of Structural Insulated Panels, also called “sandwich panels”. There is no risk associated with installing metal roofs over these systems. However, it is critical that the foam be sprayed or the insulated panels be installed in a way which acts as a vapor barrier and prevents any moisture migration through or around the insulation. This is critical no matter what type of roofing is being installed because, if moisture gets around the insulation, it will end up doing so in large amounts, meaning it likely will condense someplace in the roof system and cause rot and problems over time.

### **Other Roof Considerations**

Every roof will have its own peculiarities. During the bidding process with your contractor, be certain that all intricacies of your roof are identified and discussed. The contractor should specifically detail how various things will be handled. As examples, consider the following:

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- If your roof has valleys and there are trees around, is the valley system being used with your roof one that carries all water and debris on top of the roof or in hidden channels beneath the roof's surface? Hidden channels are prone to clogging.
- What sort of sealant does the contractor use and what steps do they take to ensure minimal dependence upon sealants for watertightness?
- How will pipe protrusions and vents be handled on the roof?
- If you have skylights, how will those be flashed? My advice is to replace any skylights that are ten years old or older as they are nearing the end of their expected life.
- How will roof to wall intersections on your roof be flashed rather than just sealed?
- What sort of underlayment will they use? Is ice and watershield required?
- If your roof has flared gables, how will those be handled to ensure they do not trap tree leaves, pine needles, ice, snow, and other rooftop debris?
- If you think that you may want to someday put solar panels on your roof, that must be considered now. Solar panels can be attached to true standing seam roofs with clips and no fasteners through the roof panels. Most other metal roofs will require some sort of penetration for fasteners or brackets. There are ways to do that, of course but, in some cases, it may be helpful to do some unique things with the original roof installation to help it better accommodate solar panels in the future.

Never be afraid to ask questions. You want to know exactly what will be done on your roof, and even have it in writing. Contractors who can't answer your questions or do not wish to take the time to answer your questions are often likely to cut corners, and probably won't want to be there to help you down the road if problems occur.

### Your Metal Roof Options

Knowing some basic facts that are universal to metal roofing will help you make a more informed decision on the type of metal roofing that is best for your home.

Exposure to the sun and weather will cause metal to expand and contract. Metals like copper or aluminum have greater movement than steel. The integrity of the metal itself is not affected by the movement but the manufacturer needs to build in allowances for that movement into the design of their product.

### Types of Metal

In roofing, there are many different metals to choose from—galvanized, galvalume, steel, aluminum, copper, and others. Regardless of what metal you choose, the most important thing to look for is if the metal meets the requirements of the Metal Construction Association (MCA) Certified Metal Roofing program. They have set the standard for galvanized steel to be at least G90 in quality and AZ50 for galvalume steel.

Raw, uncoated steel, because of its molecular make up and the iron involved, is prone to rust. Galvanized and galvalume have a zinc/aluminum mixture that is applied to the surface of the metal for corrosion resistance. Galvanized has primarily a zinc coating while galvalume has primarily an aluminum coating. G90 and AZ50 refer to the thickness

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of the corrosion-resistant metallic coating that is applied to both sides of the steel prior to painting or other finishing. Panels that are designed for agricultural applications often do not have this greater layer of protection. Unscrupulous manufacturers and installers are selling these “ag” panels to homeowners which leaves the home exposed to corrosion. The manufacturer of the metal roof you are choosing should share this information freely with you. If they are unconcerned with at least meeting the requirements of MCA certification, continue your search for another metal roof.

Sometimes, contractors will talk about metal thickness as being the most important part of choosing a metal roof but this is only one part of the story. If the product in the gauge you’re considering has passed required performance testing for building codes in your area, it should be acceptable. My preference would always be for a well designed and engineered roof made from thinner metal over a poorly engineered system made from thicker metal.

Aluminum roofing is commonly available in shingle form and less commonly available in standing seam. Aluminum roofing should have a quality coating on both sides though the back side is usually a clear coat. Copper roofing is normally uncoated, allowing it to patina over time. The patina is a desired part of the look of copper. Zinc roofing is also installed uncoated. Other, even more exotic, metals are available but rather uncommon in residential roofing.

### **Coatings**

The coatings on a metal roof are part of its beauty and durability. With the exception of “natural” metals like copper, zinc, and terne, coatings not only color but also protect the metal being used. Coatings for residential metal roofing fall into three broad categories: Clear Coats, Paint Finishes and Stone Coats.

#### **Coatings—Clear Coats**

Clear Coats are used primarily on galvalume where a silvery mill finish look is desired. These acrylic finishes are designed to protect from scratches from transportation and installation and they are relatively short lived. After a few years of weathering, most clear coats dissolve away. The one exception to this are some pigmented paint systems that incorporate a higher quality clear coating on the top surface which does enhance durability and scratch resistance for a longer period. This clear coat differs significantly from those acrylic finishes used on mill finished roofs. It is designed to bond more fully with the rest of the paint and protect for the life of the system. Rather than being designed to wear away after a few years, these clear coatings are designed to lengthen the life expectancy of the roof coating as a whole.

#### **Coatings—Paint Finishes**

Older aluminum siding was known for its chalking. Like the blackboard at school, if you rubbed your hand on old siding, you would end up with a fine white powder on your palms, shirt and pants. Fortunately, today’s paint systems are more sophisticated and advanced and have been preserving color on metal roofing for over 30 years.

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The gold standard of paint finish is called polyvinylidene fluoride or PVDF for short and sold under the names of Kynar 500® or Hylar 5000®\*\*. These finishes resist chalk because of the tight molecular bond in the paint's chemistry. That bond is due to a resin derived from the mineral fluorite which holds the pigment in place. They are also known for fade resistance as the result of superior pigmentation involving only inorganic ceramic pigments. These coatings are tested by hanging metal panels on fences in Florida and are monitored for their ability to maintain color and resist chalking. As a result, they carry significant fade and chalk warranties. Manufacturers of quality residential metal roofing will use Kynar 500® or Hylar 5000® because of its long life and high standards. Lesser grade finishes include acrylics and various polyester paint systems. Many are mixed overseas and do not have the history or testing to adequately warrant against fade and chalking.

Metal roofing that uses paint finishes can be easily repainted in the future if the original coating was a lesser grade finishes and has not weathered well or if a different color is desired. However, field-applied coatings will not be as durable as the original coatings.

Some metal roofing manufacturers are starting to use powder-applied Kynar 500® or Hylar 5000® finishes (usually for a decorative purpose) on top of a standard Kynar or Hylar finish. Some paint systems are utilizing reflective pigments for enhanced energy efficiency even in dark colors. These finishes allow the products coated with them to be US Energy Star listed. Increasingly, manufacturers also are offering a variety of patterned or "printcoat" finishes for a more random and natural look. These higher quality innovative finishes are usually only happening with the Kynar and Hylar coatings.

One thing to consider with any metal roof is whether trees that might drop sap are in the vicinity of the roof. While a hallmark of the PVDF coatings is that they naturally resist much dirt accumulation, tree sap that lands on the finish can adhere to it and then potentially gather dirt and even support biological growth. This would happen with any roofing material and it is not damaging to the metal but it is important to be aware that it may happen. Additionally, with higher profile shake and tile panels that have a significant horizontal bottom edge thickness, if there is a lot of debris and pollen that gets on the roof, that dirt can accumulate on the vertical bottom edges of the roof panels, where rain water does not have the washing effect that it does on the face of the panels.

### **Coatings—Stone Coat**

Finally, some shake, tile, and slate steel profile roofs use stone coatings. Small colored granules— similar to those used on standard asphalt and fiberglass shingles— are glued to the product's base steel. Stone coatings offer a very natural look but can be susceptible to the same streaking and staining that affects standard shingles over time, especially in damp or fungus-prone climates. One recent development to encourage "cool roofs" with stone coatings has been the use of lighter colored stones as well as stones with reflective pigment built in. Stone coated roofs usually come with an "appearance" warranty but usually do not include a fade warranty. While stone coatings create a nice "bridge: for

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\*\* Kynar 500® is a product of Arkema, Inc. Hylar 5000® is a product of Solvay Solexis, Inc.

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consumers from asphalt roofing to steel roofing, they may not bring homeowners the durability and consistent beauty they are seeking with a metal roof investment.

### Exposed Fasteners

Some metal roof systems have exposed fasteners and others are designed with concealed fasteners. Exposed fasteners are screwed down through the surface of the metal panel. As a result, they are unprotected against the sun and changing weather. As the metal panels expand and contract, the fasteners may loosen and require occasional tightening or even replacement. Exposed fasteners, even with regular maintenance, can eventually leave an easy hole for rain and weather to enter your home. Some systems with exposed fasteners do have horizontal breaks or even overlaps in the metal panels. Those help, too, in allowing for the metal's thermal expansion and contraction with less fatigue on the fasteners and pressure on the fastener holes.

If you choose a roof with exposed fasteners, ask the manufacturer about the quality of the fasteners. Where are they made? Generally, fasteners made in America will be of higher quality. Stainless steel fasteners are available and can be used with virtually any metal roofing panels for extra durability and lasting strength.

### Concealed Fasteners

A metal roof with concealed fasteners offers more protection from the weather but is equally susceptible to the expansion and contraction of the metal roof itself. A roof with concealed fasteners should make special accommodations to allow for the movement of the metal. A metal roof with concealed fasteners should include one of the following

- Clips that attach to the metal panels and are then fastened down
- Slotted fastener holes or “accordion” pleats formed into the metal to allow for movement.

### The Dealer/Installer—Don't Let Just Anybody On Your Roof

As you can see, there are many different factors to consider before choosing the right metal roof for your home. Unfortunately, many homeowners make the mistake of contacting a dealer/installer for their metal roof before they have chosen the right product for their home. The result is, rather than getting the product that is right for you, the dealer/installer tries to sell you on the product they want you to have. Use the information in this guide to **select a roofing product and a manufacturer first**. Top quality manufacturers will guide you to an experienced dealer/installer for their products. The internet is a great resource for contacting roofing manufacturers and researching the right product for you.

### Time and Research

Keep in mind the seriousness of your roof. When talking with a dealer/installer, allow a minimum of two hours to visit with them so that you fully understand their company, their competency, and what their relationship with you will be like. Ask lots of questions and make sure they fully understand and acknowledge what you want to accomplish with your next roof. Before the appointment, ask for references of jobs they have done so that

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you can experience for yourself the level of craftsmanship and customer service they offer. Your roof is an investment in your home. Do not trust that investment to just anybody. Be prepared with questions by researching your options and knowing what they bring to your roof.

Ask for answers to some of these questions

- Is the contractor properly licensed and insured and do they have the necessary documentation to prove it?
- How experienced is the crew that will be installing your roof? How were they trained? Were the reference jobs you saw installed by the same crew?
- What is the process and timetable if you go with their company? How long will the job take?
- What if problems arise? Who will be supervising the job and who will be your point of contact with them?
- What steps will they take to protect your home and property during the installation process from any physical damage (to shrubs, windows, driveways, lawn, etc.) as well as from water infiltration (especially if the old roof is removed)?
- Do they have any “Customer Commitment” documents they can share with you which will say what you can expect regarding customer care and service?
- Do they have a workmanship warranty that is specific, comprehensive, and in writing?

### **Warranties**

You should receive two warranties when you purchase your roof. One is from the manufacturer and the other is from the dealer/installer. You should ask for copies of both to read over before purchasing. Ask questions about both warranties and make sure that you understand them.

It is not uncommon for warranties to have some degree of pro-ration which doesn't necessarily have to mean a red flag. Watch out, though, for warranties that pro-rate right from the start or that run at 100% for several years and then suddenly drop significantly.

Manufacturer warranties should also have supporting warranties that they receive from their coating and even metal suppliers. Ask your manufacturer and dealer/installer to provide you with information about how they are supported against paint, coatings, or coil problems and see how those warranties affect your warranty.

Be wary of warranties that have very broad or general wording. If you cannot read the warranty and see specifically what it covers, that may be a problem because it means the warranty will always be open to interpretation and misunderstandings.

Since metal roofing is a lifetime choice, the workmanship and manufacturer's warranties should be transferrable. If you sell your home, a major selling point will be the beauty and energy efficiency of the metal roof. Being able to transfer warranties, even multiple

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times, will add to the value of your home and ensure that future homeowners are protected.

A warranty—in and of itself—does not make a successful roof installation. Warranties really are ongoing contracts between you, the manufacturer, and the installer. They specify what will happen if problems occur and are built on history and trust. Dodgy manufacturers and dealers/installers with a short history and lack of commitment for the future will offer vague promises while making audacious claims about their products because they care more about the dollar than their reputation and growth.

### Cost

Metal roofing will cost more than traditional asphalt shingles and often be more comparable to other premium roofing materials like wood shakes, various tiles, slate, and polymer-based materials. There are some important factors to consider when thinking about the cost of a metal roof over and above other roofing options—

- Life Expectancy—High quality residential metal roofing lasts a lifetime where more temporary roofing needs budgeted for and replaced every ten to fifteen years.
- Energy Savings—High quality residential metal roofing will reflect the sun's heat away in the summer and lower your energy bills.
- Maintenance Free—High quality residential metal roofing will, with few exceptions, require little to no ongoing maintenance.
- Earth-friendly—High quality residential metal roofing contains some percentage of recycled material and all of it should be 100% recyclable.

Other factors that will affect the cost of your metal roof include

- Location of the home.
- Freight costs from the manufacturer to the region.
- Complexity of the roof. The more complex a roof, the more labor it will require (regardless of product).

### Negotiating Price

Some homeowners wonder if it is acceptable to “dicker” over the price of a roof. Generally, what you will find is that less professional contractors, who usually don't understand the cost of running a business for the long term, will negotiate price. So will contractors who offer a high number hoping you will bite, and then offer huge and attractive discounts if you don't. However, professional contractors who understand their product and its cost will not be able to negotiate other than perhaps to give you some small discounts for things like job signs, or buying with a minimal advance number of visits to your home. They will give you their best price upfront and rarely will they deviate from it. More than likely, this will be the highest “final” bid you receive. But when buying a product that is as important as your next roof, it is important not to cut corners but to choose the product you want and select a contractor who can install it properly.

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### During Installation

Good installers—like quality manufacturers—welcome questions. It is important to give installers space to work and trust in their ability (built during your research of manufacturers and dealers/installers) to complete the job successfully. Good contractors though, will welcome questions you might have about your roof, their installation and any hotspots they might run into.

Not every installation goes by the book. Dips and swales and roof complexities are just some of the issues that an installer might run into on a roof. A good installer with experience in metal roofing will be able to recognize and work with these situations and will be able to answer your questions with ease, explaining why they do things the way they do.

### After the Installation

After your new metal roof is completed, your dealer/installer should walk you around the home to ensure that you understand how your roof works and that you are satisfied with the end result. They should provide you with:

- Special instructions on where and how to walk on your roof—Some shake and shingle profiles offer foam backers to enhance the walkability of the roof. If these are used, you will want to receive a “map” of where they are located.
- The manufacturer’s warranty—This should include the original documentation that is to be sent back to the manufacturer.
- The workmanship warranty—This should include all necessary documentation including contact persons to ensure that your roof has been installed properly.
- A Photo release form—If the dealer/installer would like to use your home in their future advertising, they need to have written permission to photograph your home.
- A Referral form—Just like you drove around to see different jobs the dealer/installer completed, others will be interested in seeing how they did with your home. The dealer/installer should request written permission to give your address to other potential clients.
- Special instructions for maintenance—Generally a metal roof should not require any maintenance. However, walk around your home a few times a year and, from the ground, take a close look (use binoculars if necessary) at the roof to make sure that you do not see anything like damage from animals, wind gusts or other issues. If you do see anything, report it to your dealer and/or manufacturer immediately. Your dealer/installer should tell you how to get in touch with their office as well as the manufacturer.

If you have chosen the right roof for your home and have worked with the manufacturer to find the best installer for your area, you should not experience any issues with your roof. But, if you do see something that concerns you, contact your installer and manufacturer to ensure your home is protected and the issue solved.

### What if?

What if not everything in your purchasing and installation process goes “according to the book”? What if the installer did not meet to your expectations or is no longer available?

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Having a good relationship with a high quality manufacturer can help you find immediate solutions to your problems. Ask manufacturers how they respond to difficult situations. Do they have anyone who can consult with you regarding problematic installations? Quality manufacturers will not only answer your questions before the sale, but will walk with you through any issues you may have after the installation.

### Where to Go From Here

**I hope you now have the tools necessary to start your search for the right metal roof for your home. By following these steps and advice, you can enjoy a worry-free metal roof for your home. The key to finding the right metal roof is research. Research the metal roofing manufacturer and research the dealer/installer. Utilize the *Metal Roofing Checklist* that follows so that you can be informed on this very important investment.**

**I am happy to be a resource for you in your ongoing research. You can contact me, Todd Miller, via email at [todd@asktoddmiller.com](mailto:todd@asktoddmiller.com). I will be happy to put my 30 years of experience as a manufacturer and industry leader to answer your questions about metal roofing that you may have. You're also welcome to call me where I work – Isaiah Industries, Inc. – at 1-800-543-8938, ext. 201.**

# HOW TO BUY A METAL ROOF FOR YOUR HOME

## The Metal Roofing Checklist

- The Manufacturer
  - Name \_\_\_\_\_
  - Address \_\_\_\_\_
  - Web \_\_\_\_\_
  - Contact Person \_\_\_\_\_
  - Phone \_\_\_\_\_ Email \_\_\_\_\_
  - Do they take a leadership role in the metal and construction industry? \_\_\_\_\_
  - Do they own their own buildings and facilities? \_\_\_\_\_
  - Do they have quality installation manuals and training programs for their dealers and distributors? \_\_\_\_\_
  - Do they have lasting capital assets (large in-plant equipment and a manufacturing facility) or temporary and “mobile” equipment? \_\_\_\_\_
  - Do their products meet the Metal Construction Association Certified Metal Roofing program requirements? \_\_\_\_\_
- The Warranty
  - Includes lifetime protection from any defects in the metal? \_\_\_\_\_
  - Is transferable to new owners? \_\_\_\_\_
  - Protects against fading and chalking? \_\_\_\_\_
  - Covers paint peeling or chipping? \_\_\_\_\_
  - Covers for chipping and leaking do to hail? \_\_\_\_\_
  - Covers the cost of replacing defective material **and** of installing the replacement material as well? \_\_\_\_\_
- The Roofing System
  - What type of metal do they use? \_\_\_\_\_
  - What type of coatings do they use? \_\_\_\_\_
  - Do they use Kynar 500 ® or Hylar 5000 ®? \_\_\_\_\_

## HOW TO BUY A METAL ROOF FOR YOUR HOME

- If it is stone coated, are the granules reflective? \_\_\_\_\_
- Do they meet MCA metal roofing certification? \_\_\_\_\_
- What type of profiles do they offer?
  - Standing seam? \_\_\_\_\_
  - Wood shingle? \_\_\_\_\_
  - Wood shake? \_\_\_\_\_
  - Low profile? \_\_\_\_\_
  - Slate? \_\_\_\_\_
  - Barrel Tile? \_\_\_\_\_
- Regional approvals? \_\_\_\_\_
- What is the recommended pitch for installation? \_\_\_\_\_
- Do they include all the proper accessories such as starter strip, drip edge, valleys, etc.? \_\_\_\_\_
- Can the roof be installed over my current roofing material? \_\_\_\_\_
- Does the roof utilize a batten system for installation? \_\_\_\_\_
- Do they recommend underlayment? Synthetic or felt? \_\_\_\_\_
- Do they have a fully integrated ventilation system with accessories? \_\_\_\_\_
- Do they use concealed or exposed fasteners? \_\_\_\_\_
- If exposed, where are the fasteners manufactured? \_\_\_\_\_
- The Dealer/Installer
  - Name \_\_\_\_\_
  - Address \_\_\_\_\_
  - Web \_\_\_\_\_
  - Contact Person \_\_\_\_\_
  - Phone \_\_\_\_\_ Email \_\_\_\_\_
  - Were they suggested by the manufacturer? \_\_\_\_\_
  - Are they properly licensed and insured? \_\_\_\_\_
  - Do they have the necessary documentation to prove it? \_\_\_\_\_

## HOW TO BUY A METAL ROOF FOR YOUR HOME

- How experienced is the crew that will be installing your roof? \_\_\_\_\_
- How were they trained? \_\_\_\_\_
- Were the reference jobs you saw installed by the same crew? \_\_\_\_\_
- What is the process and timetable? \_\_\_\_\_
- How long will the job take? \_\_\_\_\_
- Who will supervise the job? \_\_\_\_\_ Phone \_\_\_\_\_
- Who is the contact during the job? \_\_\_\_\_ Phone \_\_\_\_\_
- If there is a problem, what do I do? \_\_\_\_\_
- What steps will they take to protect home and property during the installation process from any physical damage (to shrubs, windows, driveways, lawn, etc.) as well as from water infiltration (especially if the old roof is removed)?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- Do they have a “Customer Commitment” document which says what I can expect regarding customer care and service? \_\_\_\_\_
- Do they have a specific and comprehensive workmanship warranty? \_\_\_\_\_
- What will I receive after the installation is complete? Will it include
  - The manufacturer’s warranty? \_\_\_\_\_
  - The workmanship warranty? \_\_\_\_\_
  - A letter of completion? \_\_\_\_\_
  - A photo release form? \_\_\_\_\_
  - A request to use my home as a referral home? \_\_\_\_\_