Getting Decked – And Choosing How That Happens

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Getting Decked –
And Choosing How That Happens

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Despite our need for shelter from elements that can kill us, we have always sought the opportunity to get back into or close to nature. We do prefer to do so on our terms, rather than whatever climate and circumstances nature decides to offer when we feel that need. A large part of our effort to reunite with nature has revolved around creating outdoor spaces adjoining our houses. There, we can get outside to enjoy favorable climate conditions, at whatever time we choose.

These outdoor spaces go by many names and have manifested as lanais, porches, screened enclosures, patios, etc. The most common outdoor spaces, constructed and attached to homes in western cultures, are outdoor decks, balconies, and patios. For the purposes of this work, we will explore options available to build decks and balconies, structures that are usually supported at some point above grade.

DECKING / BALCONIES MADE OF WOOD

Support Structures for Wood Decks / Balconies:

Initially, decks and balconies were universally constructed of wood. Support structures of posts and beams were designed to keep everything well above the sometimes moisture laden earth. Then decking was placed on top of the substructure, to create level, usable surfaces. That decking was thin planks of various types of wood, placed transverse to the substructure, presenting a level surface that contained gaps. Through these gaps, water could drain back to the earth below.

On such decks, we have lived, slept, played, entertained, and eaten. All the while, trying not to notice that they were deteriorating beneath us.

Why Wood Decks / Balconies:

The use of natural wood has pros and cons associated with it. Raw wood appeals to us on many levels. The color, the smell, and the texture resonate in our senses as somehow, just feeling right. Wood is a resource capable of renewing itself in nature. The problems associated with wood, stem from the fact that the once living tree we are using, can no longer regenerate itself. It began to decay when we cut it off from the earth.

Advantages of Wood Decks / Balconies:

Besides the natural appeal of wood to our senses, the use of wood for these decks offers additional advantages.

- As mentioned earlier, we can replant trees to renew our supply of wood.
- There are many types of trees, therefore many types of wood available for use. We are slowly gaining knowledge about the benefits of choosing one over another.
- All species of wood are beautiful in our sight.
- Being absorbent, many different finishes can be applied to, cling to, or penetrate wood decking material.
- Even removed from the tree, wood remains somewhat flexible. This gives it the ability to flex slightly under unusual wind loads, and even deform and spring back under some impacts.
- This same resilience is what causes wood to grip nails. Fibers bend to each side as a nail penetrates, then push back against it on all sides, effectively gripping the fastener.
- Wood is easy to work with. It can easily be cut, shaped, sanded, trimmed, etc., by even the most amateur carpenter. Wood can be cut by many instruments, both powered and manual. It can even be bent into a curve in the right circumstances.

Issues with Wood Decks / Balconies:

There are multiple problems also associated with using natural wood.

- It reacts to other forces in nature, pretty much the same way other wood in nature reacts.
- It absorbs water and dries out as moisture hits, penetrates, and evaporates. It tends to cup, swell, and warp because of those ongoing processes.
- The natural colors of wood fade and gray out over time from exposure to UV rays.
- Originally containing significant moisture content, once separated from its root system, wood gradually dries out, shrinks and splits.
- It stains easily since it absorbs moistures with color just as easily as it absorbs rainwater.
- Bugs like wood and so does mildew.
- Over time, raw wood, once so appealing, somewhat loses its luster.
- And of course, in terms of safety, wood is not exactly a fire-resistant material.

Installing Wood Decks / Balconies:

The process of building a wooden deck is straightforward. Wooden posts, usually pressure treated, are driven into the ground or set on top of concrete-filled holes. Alternately, foundations for posts are created using helical piers, cylindrical concrete filled tubes, or isolated bearing structures that distribute weight from points loads underground.

Once posts have been set in place, in their proper place, level beams are set on the posts or attached to their sides with metal hanger systems. These beams, in conjunction with the posts,

are the primary structural system relied upon to keep the deck material from again contacting the earth. These are often made of pressure treated wood.

Across the beams, wooden joists are set at even spacings, typically 16” or 24” O.C. The depth of the joists is determined by the distance they must span between beams. These joists are the secondary structural system, also usually built with pressure treated wood.

On the joists, as will soon be seen, a variety of decking materials may be laid flat and adhered down using different types of fasteners. Since these decking planks receive the most exposure to the elements, they are often the elements coated in some way to resist deterioration.

Depending on the height of these decks above grade, stair systems are sometimes constructed. Railings are also mandated by code under certain circumstances and must be securely fastened in place around the deck perimeter. The code also mandates height, stile spacing, and how much lateral force railings must be able to withstand.

Maintenance of Wood Decks / Balconies:

Over time, man noticed that certain trees do a better job of resisting natural forces. Acting on that observation, seeking to counteract effects of sun, wind, moisture, and insects, wood from such trees became premier (also read as more expensive) material for use for decking. Teak, cedar, and redwood are examples of woods that are desirable because of their natural ability to withstand moisture. They have high contents of natural oil within. Cedar also happens to hold no appeal for many species of insects. Capitalizing on natural characteristics of different wood species, to increase decking lifespan, was one approach to problems associated with the use of natural wood.

Another means, used to retard the natural process of wood decay, was the addition of chemicals to treat the wood. Driven into wood fibers by pressure and/or heat, such chemicals contain properties that greatly increase the resistance of wood to attack from moisture and insects. Some chemicals also add a slight color to the wood, but that seems like a small price to pay for significantly increasing the lifespan of wood structures and decking.

A second key approach to extending the longevity of wood deck components was the development over time of numerous coating materials. Stains, oils, waxes, sealants, paints, and other surfacing solutions have been created, and most are still in use today. Some products add color to raw wood. Some seal the surface of the wood to resist moisture penetration. Some penetrate its fibers, to create more of an integral seal against moisture. Some products do all the above in one application. But all such coatings for wood carry one significant disadvantage. Once in place, they must be maintained and periodically reapplied, to remain effective for their intended purpose. That is problematic since required maintenance also requires people to do the work.

Regardless of the result, the end goals of such coatings separate them into two general classes of product. One group of products is primarily used to seal wood. With their application, a coating or exterior layer is created to protect that component against further intrusion by moisture, heat,

scratches, or even insects. Another class of products is used to alter the appearance of wood. Those solutions are used to add color, contrast, shading, or even to change wood's texture.

Available Finishes for Wood Decks / Balconies:

We understand that many finishing options exist, in various formulated products, to coat and protect wood surfaces. Since we do want our new decks protected, some consideration of relative strengths and weaknesses of available options becomes necessary to properly choose which finish to specify. If wood deck boards have already been pressure treated, to keep anything else from penetrating, other forms of protection will not adhere. For purposes of discussion, it is assumed the surfaces under consideration still need protection.

Surface Preparation

Generally, the most important step to be taken in attempts to extend the life of outdoor decks is the choice to prepare the deck surface properly before coating it. Sanding is liable to be the single most important thing you can do to prepare wood for a good deck stain or refinishing application. Absorbency is key to a long life of an applied finish because any coating needs to get a good grip on the wood fibers, if it's going to endure. Believe it or not, wood, especially new wood, isn't very absorbent. Surface fibers of dimensional lumber have often been somewhat polished by pressure from the sawmill blades that shaped them. Changing that characteristic is the first order of business.

Preparation for wood surfaces includes other choices like mill glaze removers, pressure washing, and waterborne cleaning agents. In testing though, the best results for preparation of wood was the option of sanding. New wood, sanded with a 60- or 80-grit abrasive, developed the greatest absorbency and most durable final deck finish of all preparation options.

The trick is knowing how to sand efficiently, and for that, you need the right equipment. On a large deck, a walk-behind, vibrating floor sander or drum sander will expedite the job. There is a cost to rent them, but they save a lot of wear and tear on the knees. And a big sander is not much use in corners and on railings. For those areas, a small random-orbit sander is a good tool to use. No matter what kind of wood your deck is made of, a dust mask is needed while sanding. Drawing wood dust into the lungs is not a healthy choice.

While sanding is the foundation for a long-lasting finish, how sanding occurs varies depending on the situation. It may not be necessary to sand all the way back to bare wood, even if your deck has an existing deteriorating finish.

Moreover, new wood should be prepped differently than old wood. Sanding new wood on new decks is not a choice most people will care to make. In their minds, it's a lot of work and shouldn't be necessary. They have a new product lying before them. Most will not sand, before applying a finish.

Pre-application pressure-washing is a common way to speed wood preparation because it's easy to do. While pressure washing alone won't result in the absorbency truly needed for new wood, it

can save labor initially when used ahead of the sanding. That said, pressure washing can be dangerous to wood if done incorrectly. The main risk is the danger of actually tearing the surface of the wood. Pressure-washers typically deliver a stream of water at 1500 to 4000 PSI. This is more than enough to loosen surface fibers, especially with softer wood species. The resulting fuzzy surface fibers may be absorbent, but they're also weak. A new deck finish can simply peel off as these fuzzy fibers, to which the coating adhered, just break off and let go. This is why pressure washing is best combined with sanding in a way that can save time and effort.

Pressure washing begins the surface preparation. It will quickly remove some, though not all the mill glaze, from the new wood. The wand tip must be kept far enough away from the surface to avoid tearing the wood. After the washed deck has thoroughly dried, a sander can be run over the surface lightly to remove fuzzy fibers remaining on the surface. Only one or two passes will be needed with the sander, to finish the work begun by the pressure washer. It will be far easier to thoroughly sand the deck with the pressure washing preceding it. The wood will then be ready for a finishing coat to adhere properly.

How the surface of an older deck is prepared for refinishing, will depend on multiple factors. What is the condition of the existing finish? What kind of product is the old finish? What type of new finishing will replace it? Is the wood weathered and cracked? Depending on the answers, one of two courses of action will want to be followed.

The old finish may have just started to fail. If it has lasted decently over the last couple of years, then there's no need to strip back to bare wood. Simply sand the surface lightly in preparation for the new top coating. If it is still solid, don't sand all the way through the old finish. Just scuff the surface, so it accepts and holds a new coat. In small areas where the surface has peeled down to bare wood, sand off any loose remains of the previous finish. Nothing can be left that is loose. Use a workshop vacuum to remove dust, then recoat the deck with the original product. Apply only one coat if the finish is still mostly good; two coats if more than 20% of the surface is bare wood. Don't recoat the deck more than twice, since too much deck finish can trap moisture in the wood and encourage peeling later. The application of too many coats is also a common cause for deck finish failure.

The old finish may have completely failed. This is usually the situation by the time deck owners get serious about refinishing. Making the wooden deck look good again, will depend on removing all traces of the old finish and greyed wood. There is no salvaging that coating. After that, follow the instructions above for dealing with new lumber.

Assuming surface preparation has been done correctly, and a new coat of an old finish does not need to be utilized, the difficulty remains. A choice must be made as to what surface coating to use, for future protection of the new or old wood.

<u>Paint:</u>

Paint is probably the oldest product, known and used to protect wood. Originally, this and a product called whitewash protected homes and other structures in agrarian settings. Pigments to

provide color came from plants and other sources in nature. Red was a popular color because the iron oxide used to tint paint to that color was cheap and readily available.

Paint contains colored pigments. Pigments are basically finely ground solids, that are suspended in a base material. That base material, the medium that carries the solids to location, can be latex, oil, or other substances. Lead-based paint now is no longer available, because of the recently discovered toxicity of the lead.

Choices in paint products today seem endless. There are paints intended primarily for outdoor use and some restricted to indoor use. Exterior grade paints are much more durable, resisting fading, chipping, and peeling. Paints of either type are sold in a variety of finishes, depending upon whether we want them drying to a glossy sheen; a semi-gloss or satin finish; or a flat or eggshell surface. Gloss and semi-gloss finishes have the capability of being washed and perhaps even scrubbed. Flat or satin finishes have a much softer look, but a much less durable finish. Flat or satin finishes present a soft, understated appearance.

Before being painted, raw wood needs to be sealed with a primer. This special type of paint seals the wood fibers and prepares a surface to which the next coat of paint can bond. The type and color of primer used should be matched to the paint that will be used. If any doubt exists as to which paint is best for the application, it is a very good idea to read manufacturers' instructions on product cans or consult with the supplier or a professional painter.

Paint is rarely recommended as a finish for exterior wood d balconies. It doesn't resist much wear and tear on walking surfaces. T e required, to keep such a finish intact and lookin of paint for decks.

Waxes:

Waxes used to coat touch and effect. Used mainly to repel moi nd indoors, whether those be flooring, ca gmentation of grain patterns in wood, re . The wax used most often is Carnuba wax e wax product, known as shellac, comes fro er from India. The name is a derivative uct. Shellac was an old standard wax finish, t -to-use finishes are made available. Popul as very easy to apply in thin coats with quic essive coat. A final paste wax coat was ge coating. And in an interesting side note, s led drink could require the refinishing

One wax polish also po nish. It generated a mellow, reflective surface, but since its ke as shellac, mixed with alcohol to apply it, it too was susceptible to water and heat damage. It too was applied in successive coats, with the wood