

What material should you choose for your deck?

Choosing the right material is just as important as choosing the right builder.



For More Questions Call: (540) 636-4825

Pressure treated

Until the mid-1990s the only material regularly used for exterior decks was pressure treated wood.

Advantages:

- Pressure treated wood (PT wood) is relatively inexpensive, readily available in nearly every dimension, and easy to use.
- PT wood is generally has a limited lifetime warranty that covers fungal decay (wet rot) and termite infestation only.

Disadvantages:

- When the material hits the jobsite it is very saturated (wet) with the fluid used in the PT process. This fluid eventually dries out of the wood leaving chemicals behind that inhibit rot.
- The problem with very wet wood is that it is also “swollen” and as it dries, it shrinks, splits, and warps.
- These issues are far worse in locations where the material is exposed to direct sunlight.
- Sealing and or staining the PT wood on a regular basis will greatly reduce these problems but no matter how well you care for it PT wood, it is going to shrink, split and warp over time. (The horizontal surfaces that are exposed to direct sunlight are most vulnerable).

Note: The structural framing portion of any deck will almost always be PT wood – it is sheltered from the sun or can be covered so that the damage is minimal.

Early composite material (Trex, Timbertech, Choicedek etc.)

Definition: Composite decking and rail is generally made of material such as plastics and very fine wood saw dust, which is mixed and compressed with intense pressure and heat.

Advantages:

- Nearly impervious to the damaging effects of the sun. (Zero splitting, warping, cracking – minimal shrinking due to thermal expansion – contraction characteristics.)
- Easy to install, face screw similar to PT wood.
- The composites do not absorb any appreciable amounts of moisture so the shrinking issue of PT wood does not exist (Though composites do minimally expand and contract with changes in temperature.)
- Composites do not have the structural “grain” that wood does and therefore does not have the warping or splitting issues of natural wood.
- For these reasons, from a functional point of view, composites are a very good investment for the long term durability of the deck, especially in full sun locations.

Disadvantages:

- Increased cost –adds approximately \$4 per square foot over PT wood for deck flooring only. (Rails are not addressed here.)
- Prone to mildew/mold and staining. (Mold/mildew cleans pretty easy but returns –stains are permanent.)
 - Until recently the two big complaints about composites were the material’s susceptibility to staining and its tendency to mold and mildew, particularly in shaded areas. The material could be cleaned with relative ease to remove dirt, mold, and mildew, but the growth would often return within a year. Grease stains were permanent.
- Possible color variations.
 - Another problem is a lack of consistency between the color of individual boards. Boards manufactured at different times using different sawdust and plastic resins will have color variations. (Dan- “Whenever possible I get all of my material from the same “hack”, minimizing this issue.”)
 - **By the end of 2013 Trex will stop producing this version of composite material and switch completely over to “capstock” material (described next)**

Newer “Cap Stock” composite materials (Trex, Timbertech, Choicedek etc.)

In response to these composite lumber issues most of the major manufacturers have developed “cap stock” products that have a hard, impermeable layer on the exposed surfaces that are extremely resistant to any sort of staining mildew etc. These new cap stock products have effectively cured the staining and mildew problems.

Advantages:

- Nearly impervious to the damaging effects of the sun. (Zero splitting, warping, cracking, minimal shrinking due to thermal expansion / contraction characteristics.
- Nearly impervious to staining.
- Nearly impervious to mold or mildew.
- Good color consistency.

Disadvantages:

- Cost – Caps stock adds approximately \$5 to \$8 per square foot over PT wood for deck flooring only. (Rails are not addressed here.)
- Difficulty of installation – hard surface does not accept screws well. Therefore, time consuming and expensive hidden fasteners are used when possible.
- A bit more slippery, particularly on wet locations.

Rails

There are many options available for your deck rails. Dan would be happy to discuss with you at length any rail option you would like, but to get started we'll give you a short run-down on some of the most common:

Standard pressure treated

Advantages:

- Economical price.
- Very solid “feel”.
- Endless configuration options.
- Usually mounts to the *outside* of the deck giving you the use of the full floor space

Disadvantages:

- As with any PT material, it is prone to the damaging effects of the weather (mostly the sun) – warping, cracking, splitting etc.
- It must be treated regularly to resist these effects. (Top caps need it the most as they are the most exposed to the sun, vertical components not as often).

Pressure treated rail with composite top cap

Advantages:

- All of the advantages of standard PT rail with the added advantage of a top cap that is nearly impervious to the damaging effects of the sun.
 - The top cap is the most visible and most damage prone component of the rail. If you have an existing PT deck, look at the rail and notice how the top cap is far more damaged than the vertical posts and pickets. Also consider the top cap is the part of the rail that you touch the most when using your deck.
- A composite top cap is the best “bang for your buck” that you can get when economy is the driving force in your material choice.

Disadvantages:

- The vertical portion of the rail still needs waterproofing treatments at regular intervals.

Vinyl rail

Vinyl rail has become a popular choice for many deck projects. Usually white, vinyl rails offer a clean formal appearance with very little maintenance. Vinyl rails use aluminum cores (inserts) that go inside the top and bottom rail to give the rail the strength required by code.

When vinyl rails are used, I also wrap the outer edges of the deck and stair stringers with white, wood grained vinyl coil stock (similar to the material used in vinyl siding).

Cost-wise, vinyl rails are mid-range, above pressure treated and composite cap but lower than full composite and more elaborate rails.

Advantages:

- Clean, formal look.
- Very little maintenance (clean with soap and water occasionally).
- Reasonable cost.

Disadvantages:

- Formal look doesn't go well with some house styles (rustic log homes, etc.).
- While vinyl rail is fully code compliant, it often doesn't feel as “rigid” as some other rail types do. Vinyl and aluminum “flex” more than many other rail types.
- Vinyl rails (as well as most composite rails) mount inside the perimeter of the deck, using up about 5” - 6” of floor space.

Composite rail

Composite rails have become popular on high-end decks. Colors and styles are vast with too many options to cover here. (Visit the Trex website to get some ideas.)

www.Trex.com

Advantages:

- Many colors and finishes available with mixing and matching color schemes an option.
- Many baluster options available (square composite, tubular metal, flat metal, ornate metal, glass baluster, glass panel)
- Minimal maintenance required.
- More rigid than vinyl rail.

Disadvantages:

- Cost- composite rails can be expensive.
- Composite rails (like vinyl rails) mount inside the perimeter of the deck, using up about 5" - 6" of floor space.
- Frequently the outer edges of the deck, as well as the stair stringers and risers, are covered in a matching $\frac{3}{4}$ " thick material which matches the color of the rail. This can add considerable cost.

Solid metal rails

Solid metal rail systems can be steel, fabricated and welded to fit on-site, or pre-manufactured aluminum rail sections that are cut to fit and assembled on-site.

Advantages:

- Metal rail systems are generally stronger and can use thinner components, thereby making the rail less obtrusive (opens up the view). Using black rails also helps "hide" the rail.
- Steel (fabricated on-site) rail can be made to fit any un-orthodox design.
- Pre-manufactured aluminum rails come in sections with a baked on powder coating in a choice of colors and can be attached to matching aluminum posts or mixed with wood, vinyl, composite or masonry posts.
- Like steel rails they use thinner components, making them less obtrusive.

Disadvantages:

- Steel, fabricated on site rails are usually painted. Paint does not last as long as some of the more modern coatings and will obviously need to be re-painted at some point.