

Inspecting Composite Wood Siding

By

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Composite wood siding is here to stay. Today, in the lower end of the new construction housing market, composition wood is one of the most common types of siding used next to vinyl. Nationwide 30% of the new builds are using composite siding according to Ben Skoog, brand manager-LP Engineered Sidings. Builders are attracted to it because it is inexpensive, easy to work with and attractive. Composite siding come with different names, LP Siding, T-11 Paneling, oriented strand board (OSB), hardboard and hardy plank are just a few of the names used. There are close to a dozen manufacturers of composition wood siding products. Many homeowners, insurance companies, home inspectors, and real estate agents have given this type of siding a bad rap caused by moisture-related failures due to product or installation defects, or improper maintenance. Generally speaking, homeowners with siding installed after 1996 will have fewer problems than those installed prior to that. There have been many class action suits against the manufacturers of earlier product. For many homeowners, the time has passed to receive any compensation from the class action suits however most of the composite products do have a warranty and manufacturers such as Louisiana Pacific are paying warranty claims.

The predecessor of composition wood siding is hardboard. Hardboard is a cousin to wood: It's made from small bundles of wood fiber, bound together with resins and wax and compressed under high heat and pressure. It was invented in 1924 by William Mason; Masonite, the company he founded, remains the nation's largest hardboard maker. Masonite hardboard originally was used for such things as clipboards, furniture and interior paneling. Once Masonite's original patents expired, other companies began experimenting with their own hardboards. Weyerhaeuser developed its first hardboard siding in 1963.

Louisiana-Pacific (L-P) developed OSB in the mid-1970s, originally as a plywood substitute. OSB is made from thin strands of wood, predominantly aspen. The strands are aligned into an artificial grain and pressed into a thin layer; several layers are bound together to form the board. Like hardboard, resins and waxes hold OSB together; unlike hardboard, OSB is engineered to be as stiff and strong as plywood. After successfully launching OSB as wall sheathing, L-P introduced its Inner-Seal OSB siding in 1985. The product was wildly popular: L-P estimates that Inner-Seal was installed on 700,000 to 800,000 homes nationwide before being pulled from the market.

Reports that composition wood siding products were prone to warp, buckle and rot in wet weather popped up in the late 1980s and early 1990s. Little attention was paid to the issues until 1992 when the federal government concluded that

Masonite's hardboard siding was prone to fail in humid climates and moved to deny federal mortgage insurance to developments that used it.

The reports of failing in Texas, Florida, Oregon and Washington soon turned into large class action lawsuits against L-P, Masonite, Georgia-Pacific, Smurfit-Stone, Masonite, ABTco and, Weyerhaeuser. The fundamental issue is that the products were failing prematurely even when normal maintenance occurred. Pretty soon claims were coming in nation-wide and the damages ranged into the billions of dollars.

Home inspectors encounter composite wood siding on a regular basis. The challenge is to determine whether the composite is in acceptable condition or if it has failed.

The initial overall inspection is to determine whether the composition wood siding is properly installed. Most manufacturers have the same guidelines with some small differences:

- Gaps must be left between adjacent boards and filled with flexible caulk, to allow room for swelling and shrinkage.
- Only galvanized nails should be used. Any exposed nail holes must be caulked.
- All cut ends - especially the bottom edges, called drip edges - must be sealed.
- The siding should be painted on site with about two coats of acrylic latex paint.
- Siding must not touch masonry or the ground and have at least a 4" clearance where roof and siding come together.
- Sloped, noncorrosive flashing should be installed behind the siding and over the trim at the windows and doors.

With panel siding pay special attention to the bottom edges, gaps in caulking around windows and gutter terminations. With lapboard siding pay attention to the condition of paint, sprinklers hitting siding, bottom courses of siding as well as issues associated with panel siding.

The most common failure seen is moisture damage that can cause siding panels to swell, buckle and warp. It also can cause the panels' protective paint coating to crack, which allows more moisture to penetrate and more damage to occur. And if moisture gets behind the siding panels it will never dry out completely. The wet material becomes a feast for bacteria, fungi and other decay organisms. Unlike woods such as old-growth cedar or redwood, hardboard and OSB have no natural resistance to such organisms, which can turn a solid board into

something the consistency of soggy bread. If damage is found on a panel or lapboard, then based on NEFSI criteria, it will need to be replaced.

Inspectors will be looking for the following issues:

- Thickness swell >20%
- Checking or cracking at the drip edges
- Bowing >1/4" away from wall plane between studs
- Fungal degradation or delamination resulting in marshmallow board or areas that can be deformed with thumb pressure
- Wafer pops
- Wax spots
- Moisture readings <20% one inch above the drip edge

Swelling is measured at the bottom edge and generally should not exceed .540". Typically this means that the material has been exposed to moisture and has started to deteriorate.

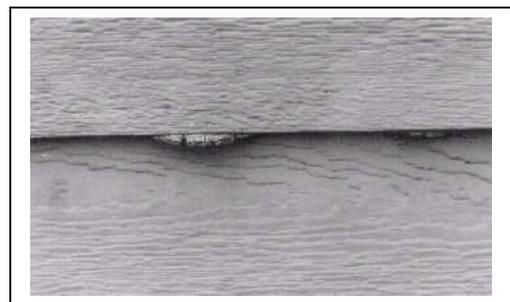
Edge Checking is found at the bottom edge of the siding. In some cases it looks like a stack of business cards view from the side. If you insert a probe into a "check" more than 1/8", the area is considered a "checked edge."



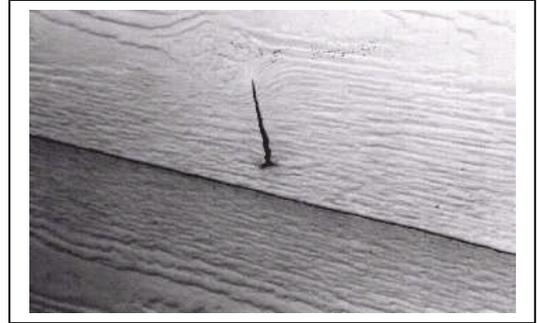
Bowing or dimensional instability is caused by improper installation spacing. If the installer does not leave sufficient room for expansion at the butt joints then the siding will generally buckle however it could be framing issue but that can only be determined after the siding has been removed.

Wax spots are cosmetic issues caused during the manufacturing process.

Fungi or mushrooms are the fruiting bodies of fungus. When fungi have reached the mushroom stage, it's well established in the siding. As it eats the nutrients it will move from one board to another. The sheathing may also be involved so the only sure way to determine the extent is to have a contractor remove the affected siding.



Wafer pops are unique to OSB and occur when strands are folded in the manufacture process and moisture exposure causes them to “unfold” through the top layer.



Composite siding is here to stay and we will see more builders using it in the future. Confusion and apprehension about composite wood siding is still prevalent among homebuyers, sellers, real estate agents. Most of the newer products seem to be holding up better than the old however it remains to be seen if they will hold up in areas with severe climates.

National Organization of Exterior Finish Systems can be reached at Phone: (503) 244-6610 Toll Free: 1-888-549-6531 or www.nefsi.org/

Pictures courtesy Of National Organization of Exterior Finish Systems

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