APA Technical Topics
TT-018B MARCH 2012

Weathering Effects on Plywood Siding

Weathering of unprotected or bare wood exposed outdoors causes roughening and slow erosion of wood surfaces due to the action of ultraviolet light and water. It also causes the wood surface to change in color, normally assuming a brownish hue at first and finally a gray. Discoloration from water spotting and mildew can further degrade the appearance of wood siding. The objective of all finishes is to protect the siding from weathering and to help maintain its appearance. Even when finished, however, weathering can cause surface changes in wood-based sidings.

GRAIN LEAFING

Grain leafing, a separation of the wood between successive growth rings, occasionally occurs at the juncture of the latewood and earlywood bands in the face veneer of plywood siding. Leafing can be considered a natural phenomenon caused by the weathering process. It does not affect the structural integrity of the panel and is not restricted in plywood under *Voluntary Product Standard PS 1-09, Structural Plywood,* Form L870, or in *APA Data File, 303® Siding Manufacturing Specifications,* Form B840, www.apawood.org. Top-quality house paints composed of a stain-blocking acrylic latex primer and at least one all-acrylic latex topcoat have been found effective in minimizing grain leafing.

If grain leafing has occurred on siding already in service, all loose wood should be removed prior to finishing. This can be accomplished on textured sidings through cleaning of the surface with a nonmetallic synthetic bristle brush and/or scraping with a blunt instrument such as a broad blade putty knife. Gouges resulting from removal of loose wood may be repaired, if needed, with a two-component resin system as described in *APA Technical Note, Field Repair of Plywood,* Form J805. Once the siding has been cleaned, it may be refinished as discussed above. Be sure to follow the paint manufacturer's recommendations regarding application conditions and procedures.

FACE-CHECKING

Face-checking is another phenomenon caused by weathering and can be expected to occur on non-overlaid plywood sidings, especially on southern facing exposures. Face-checks are lengthwise separations of wood fibers in the face veneer of the plywood. They result from the normal swelling and shrinking of wood as it gains and loses moisture. It is important to realize that these checks are superficial, being confined to the face veneer. They do not alter the structural integrity of the plywood in any way. Because face-checking is considered normal, it is not limited by the manufacturing specifications for plywood siding. Checks on textured siding blend with the architecturally rough surface and are not generally considered objectionable. Medium Density Overlay (MDO) plywood is recommended if a check-free surface is desired.

The amount of face-checking that develops on plywood siding varies with the severity of the exposure environment, the length of exposure, and the degree of protection that is offered by the finish that is used. Repeated wide variations in moisture content caused by wetting and drying favor the development of face-checks. Rapid drying rates can also accelerate their development. Unprotected southern facing exposures are especially severe due to the high surface temperatures that can be generated by solar energy. These high temperatures can rapidly dry plywood siding to a very low moisture content that can also contribute to the development of face-checks.

Finishes that prevent rapid movement of moisture and also remain flexible during weathering can minimize the amount of face-checking that occurs. APA has found that certain top-quality house paint systems that utilize a stain-blocking acrylic latex primer and one or more all-acrylic latex topcoats are much more effective than most other finishes in this regard. It is also important to realize that face-checking tends to be more severe if the plywood is not finished soon after it is installed.

While existing face-checks cannot be completely obliterated by refinishing, they are normally much less noticeable on plywood siding that has been refinished. They tend to be least noticeable if refinished with "earth tone" colors such as low-gloss reds and browns. Face-checks tend to blend in better with such colors. Regardless of the finish that is used, it should be thoroughly worked into the face-checks by use of a paint brush or by back-brushing if a spray is used for application. Proper surface preparation and application, as well as the selection of a high-quality finish, are extremely important in refinishing.

We have field representatives in many major U.S. cities and in Canada who can help answer questions involving APA trademarked products. For additional assistance in specifying engineered wood products, contact us:

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Form No. TT-018B
March 2012