COOPERATIVE EXTENSION SERVICE
UNIVERSITY OF KENTUCKY • COLLEGE OF AGRICULTURE

Forestry FORFS 98-8

Test Fences for Exterior Wood Finishes

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Three test fences have been placed at the Research and Education Center in Princeton, KY and a second set of three have been established behind the Wood Center located at the Robinson Experiment Substation in Quicksand, KY. These fences demonstrate the wear of a variety of finishing systems applied to different wood surfaces and locations (or aspects).

Fence Construction

The test fences represent exterior wall sections of a residential structure and were constructed during the summer of 1997. The framing is conventional stud-wall construction with a weather barrier directly behind the siding. The wood siding was obtained through conventional building supply sources and consisted of the same milling pattern for three species: dense southern yellow pine, yellow poplar, and decay resistant western red cedar. The three fences were all constructed in a similar fashion with the topmost course of siding acting as a buffering control with no finish. The buffer was followed with four boards of southern yellow pine, four boards of poplar, and four boards of western red cedar. At the top of each fence, a piece of aluminum flashing was placed to prevent water from running behind the siding.

Fence Finishes

Three common finishing systems were applied to the fences. One fence was finished entirely with two coats of a high-quality, semi-transparent stain. A second fence was finished with two coats of a solid color stain. The third fence was finished using a paintable, water-repellent wood preservative; one coat of an acrylic latex primer, and two top coats of an acrylic latex paint. All finishes were selected to closely match color and quality.

Fence Positioning (Aspect)

The fences were all aligned so that one side faced the Northeast and the opposite side faced the Southwest. Therefore, each fence will experience a severe exposure (Southwest with more direct sun and wind) and a mild exposure condition.

Expected Results

Homeowners will be able to see firsthand the behavior of typical finishing systems on conventional wood substrates. The semitransparent stain is expected to show failure first in the form of unacceptable color due to fading and staining. The solid color stain will likely fail next from cracking and peeling. The paint system should be attractive for ten or more years. The red cedar siding will likely appear attractive the longest, followed by the poplar and pine siding. Failure to all finishes should appear first on the Southwest facing aspect.

For More Information: Please contact your local county extension office or the author at 606/257-2806.

(K.Powell, 7/98)