Application of Pressure-Treated Yellow Poplar Siding

Re-siding South End of Garage
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Michael O. Hunt
Outline

- Introduction/background: 1993 addition
- Problem: premature decay of new yellow poplar siding
- Research to produce pressure-treated yellow poplar for above-ground use: summary
- Production of treated yellow poplar siding to reside problematic south end of garage: manufacturing spec and treatment spec
- Removal of decayed ca. 1993 yellow poplar siding from garage, and observations
- Replacement with pressure preservative-treated yellow poplar
- Painting resided garage
- Related technical information & presentations: Purdue extension bulletin, FPJ and SWST posters, SWST symposium paper
In 1993, a breezeway and garage were added to the 1840s historic house. The addition was of standard construction at the time. Siding for the addition was yellow poplar bevel siding manufactured to be similar to the yellow poplar siding on the house.
Decay fungi fruiting bodies on surface of paint. End of siding lap and vertical window trim extensively decayed. Water trapped beneath the caulking of siding/window trim joint.
Manufacturing Specification for Siding

- Bevel siding size: ½ x 6½-inch at butt (drip edge) tapering to ¾-inch. Dressed width is 5⅛. (This allows for the required 4½-inch exposed face and 1-inch overlap.)
- Siding is manufactured by re-sawing dimension boards.
- Lengths: 10 ft. to 12 ft.
- Grade: exposed face should be free of knots.
- Moisture content: After treatment re-dry to average 12%, individual pieces 9% to 14%.
- Exposed face should be slightly roughened so as to enhance paint performance.
- Slightly ease the sharp edge of the drip edge (butt) to promote greater paint film thickness.
Following American Wood Protection Association standards, the yellow poplar siding was pressure treated with Wolman® AG preservative with water repellent for above-ground use.
Manufacture and Treatment of Yellow Poplar Siding

Bevel siding was manufactured by Koetter Woodworking in Borden, Indiana, and then shipped to H.M. Stauffer & Sons in Leola, Pennsylvania. Stauffer is an authorized wood preserver licensee of Arch Wood Protection, Inc. After preservative treatment the siding was re-dried and shipped to Purdue University in November 2010. In May 2011, the siding was applied to the south end of garage at 602 N. 5th Street, Lafayette, Indiana.

NOTE: Since this was a research project, the relative locations of manufacturer, preserver and consumer were not optimized at this time.
Note the dark black spot at mid-height of the right-side window trim.
Removal of Defective Siding Nearly Completed
Note the extensive water staining and black areas indicating decay on the back sides of the removed siding.
Note the extensive water staining and black areas indicating rot on the back sides of the siding.
The concentration of brownish water staining adjacent to the window trim at left indicates that water has leaked behind the essentially intact caulking of the joint between ends of siding laps and the vertical window trim. It is stressed that the caulked joint down the side of the window trim was intact when the siding was removed. Only one small crack is necessary to allow water to be trapped beneath the caulk and thereby rot of the window trim and ends of siding laps is encouraged.
Extensive brownish water stains which appear to begin under the overlap of adjacent laps of siding and wicking upward on the Tyvek house wrap. My observation is that rain is blown up and under the lap joint where then the water cannot penetrate the house wrap and is held on the backside of the wood siding. This created an ideal situation for decay to progress. This pattern of water staining was observed over the entire face of the wall.
All cut ends of siding laps were dipped for 30 sec. in zinc naphthenate preservative. The dipped ends appear as wet spots in the photo.
Installation of New Siding
Window frame had to also be replaced. Replacement trim was cut from old-growth heartwood of yellow poplar.
Primer was 100% acrylic resin latex.
Painting of the preservative-treated yellow siding completed: one primer coat and two top coats of semi-gloss paint. All products are 100% acrylic resin latex.
Technical Literature

