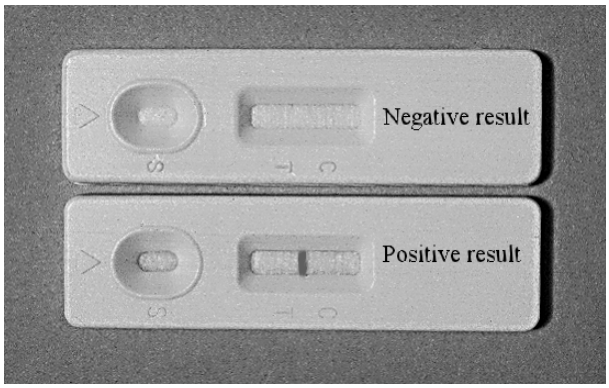
Test for Wood Decay

Each year, billions of dollars are spent to replace wood products destroyed by decay fungi. A large percentage of this loss is incurred by consumers. Researchers at the Forest Products Laboratory (FPL) have developed a new testing procedure, the immunodiagnostic wood decay test, that detects decay fungi in wood prior to visible damage. Other than culturing and microscopic observation, reliable methods are currently not available for early detection of decay in structures. Early detection of the presence of wood decay fungi can prolong the service life of wood by preventing unnecessary replacement and will ensure that infected wood can be replaced or remedially treated to prevent recurrence of decay.

A test sample of wood shavings is removed by drilling a small hole.

This wood decay test is a rapid, inexpensive, and accurate way to determine if fungal decay is present in wood. The test detects the presence of wood decay prior to visible decay or measurable strength loss. It can be used by inspectors, millworks companies, structural engineers, and wood crafters in a variety of applications, such as

- Building inspections
- Historical restorations
- Utility pole inspections
- Structural maintenance programs (e.g., bridge decks, piers, railway ties, wooden aircraft frames)
- Response to warranty inquiries
- Efficacy tests of new preservatives
- Quality assurance for lumber



Test results are revealed by checking the test cassette for the presence of a blue line. If the line appears, decay is present.

This wood decay test is a one-step test that detects antibodies to decay fungi. Wood shavings from the sample are soaked in an extraction fluid for 2 hours. The extracted sample is added to the window of a test cassette. If the extracted sample contains fungal antigen, it binds to a latex conjugate and forms a complex that migrates forward on the test strip. Another antibody immobilized on the test strip captures the complex and forms a blue band that remains in the test cassette window, indicating a positive result.