

**Wood Protection Group
School of Forest Resources and Environmental Science
Michigan Technological University**

Humidity Cabinet Surface Mold-Stain Test

Description: This test evaluates the resistance or susceptibility of wood materials to surface mold-stain fungi. The test procedure was developed by MTU as modified from:

- 1) Downey, A., An accelerated performance test for mildewcides (Resin Review, Vol. 41:10-11)
- 2) U.S. Dept. Commerce, Performance standard for wood based structural-use panels (PS 2-92)

Methods

Specimen size: 6 x 4 inches' x board thickness

Replicates per treatment = 7

Control panels: solid aspen or pine

Panels conditioned at 80 F, 80% RH for one week prior to fungus inoculation.

Panels laid in humidity chamber consisting of sealed plastic box with screen supported above a layer of water with surface to evaluate facing up.

Fungi:

Alternaria alternata

Aspergillus niger

Aureobasidium pullulans

Cladosporium cladosporioides

Inoculum produced by washing spores from fully colonized 100 mm petri plates with 10 ml distilled water plus 10 ml rinse (20 ml inoculum produced per plate).

Panels spray inoculated with mixed spore suspension of fungi on the exterior surface; approx. 3-4 ml applied per panel.

Duration and conditions in humidity chamber: 8 weeks, 80 F, 100% RH.

Panels lightly misted two to three times per week to maintain high humidity in the chambers.

Evaluation rating: one side only; weekly for 8 weeks; scale of 0-10, where 0 = no fungus growth, 10 = complete coverage by stain fungi.