PROTECTING YOUR MILLWORK AT THE JOB SITE

by Amy Mathews

You envisioned the warmth and character of wood. You chose the reputable millwork firm who could make your idea a reality. The product arrives in pristine condition at the job site. You can now breathe easily; your dream is accomplished.

But wait! To guard your investment, take care of one more important element. The millwork was ready for you, but were you ready for the millwork? With ongoing pressure to expedite construction schedules, taking the time to ensure suitable field conditions can be a challenge. The proper job site environment can protect the fine craftsmanship you intended for your project and save you the expense of delays and rework.

Because wood is a natural material, it expands and shrinks depending on moisture levels. The amount the wood absorbs or how fast it dries depends upon several factors: its own moisture content, the wood species, the temperature of the surrounding air, and the humidity in the environment.

Professionals working with wood and wood byproducts know that moisture content is crucial. During production, if wood is not properly dried and seasoned, the best workmanship cannot prevent moisture-related defects, such as surface checks, cracking, bowing and twisting, glue-line failure, and other problems.

The same attention to moisture levels must be considered on job site installations. A building with wet plaster or sheetrock walls, unglazed windows, missing exterior doors, or non-operating HVAC systems can cause the wood to shrink or expand. Many moisture effects are irreversible, and in severe cases the product can be destroyed when wood starts "working" on its own.

As a standards and inspection authority, the Woodwork Institute of California (WIC) can play an important role in protecting your millwork at each stage of a project. When you use WIC standards in your design specification, WIC inspectors are available to ensure that the millwork products meet those standards of production, installation, and field conditions. If you require Certified Compliance of the project, these inspections are free of charge. Arnie Conwell, a Director of Architectural Services for WIC, is called when concerns arise about proper field

At right, *an example of an open joint caused by the shrinkage or expansion of millwork after installation.*

Below, *an open joint resulted from material and/or wall movement caused by a non-operating HVAC system during the millwork's installation.*

conditions. Because of this, he often sees what happens when the WIC standards are not followed. Of the job sites he visits, a large portion fail to conform to needed WIC standards, putting the millwork at risk.

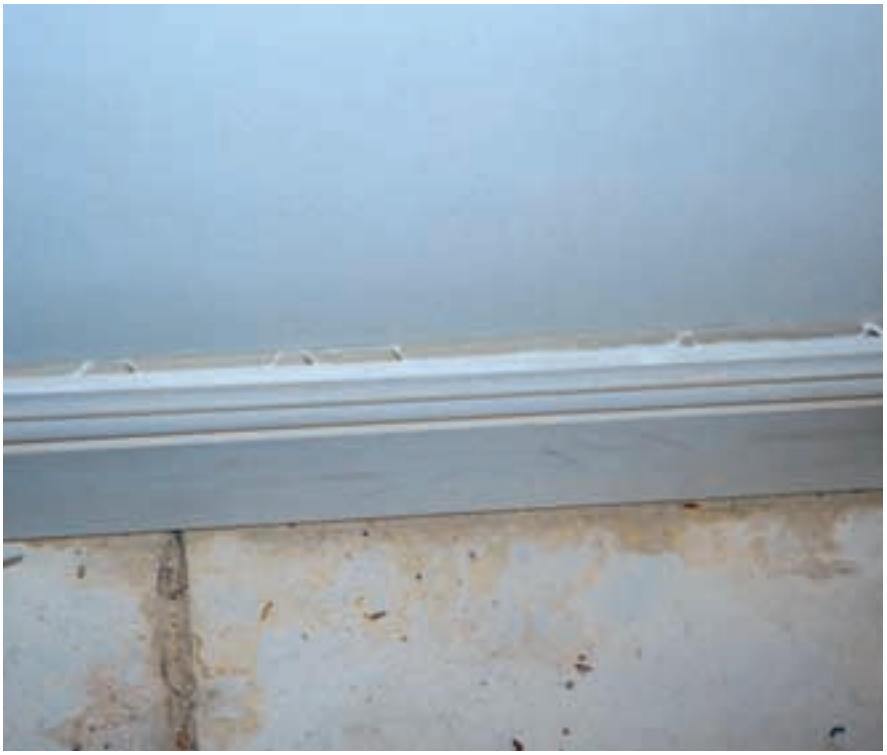
According to Conwell, a common job site problem occurs when wood paneling or cabinetry is placed on a wall shared with the exterior of the building. Without a moisture barrier in place, the millwork will absorb humidity through the wall, possibly causing the wood to move. Paneling and cabinet backs may buckle or joints can shift as a result.

Conwell also commonly observes the effects of installing millwork before the building is closed up. On one particular job, 150 to 160 feet of wood veneer paneling was installed near an unfinished window wall covered only with plastic. The paneling's joints were glued and splined, preventing it from expanding or contracting as the wood absorbed moisture from the outside. Instead, the veneer ended up splitting on both sides of the spline. In such a case, nothing can be done to correct the failure.

Even when the job site is sealed, moisture levels need to be controlled because changes in humidity can affect the wood. On another inspection, Conwell discovered the air conditioning was kept running only during the workweek and turned off for the weekend. The changes in moisture levels over the weekends caused the wood to move. Unfortunately, instead of following WIC guidelines and making the door paneling "float," the panels were glued. The glue prevented the wood's movement in its 'breathing' process, so instead it cracked and failed.

In most cases, the input of a WIC inspector will help ensure that

At right, *the baseboard is pulling away from the wall creating an open joint. This is due to wall shrinkage probably caused by the application of millwork to wet sheetrock walls.*



field requirements are met. If millwork is installed despite the unfavorable conditions, a formal evaluation of the job site conditions can be furnished by any WIC Director of Architectural Services on request. Responsibility for the millwork's failure lies with the party directing the installation under adverse conditions.

And how does Conwell suggest preventing moisture-related failures and maintaining the quality of your millwork? "Just follow the WIC requirements," he says. Established guidelines for proper care, storage, and installation of millwork products are found in WIC's *Manual of Millwork* (see Section 2, Items 8 and 9). In order to obtain final WIC certification, all millwork specified or shown on project drawings should comply with these proper field conditions.

To minimize the movement of wood associated with moisture content: The general contractor must provide a clean, well-ventilated storage or installation area. Moisture levels should be controlled with relative humidity between 45% and 65% at 60 to 90 degrees Fahrenheit and EMC (equilibrium moisture content) conditions between 8% and 12%. The HVAC system must be on and functioning. The architectural millwork supplied must be acclimated to these conditions for 72 hours prior to installation, and the millwork must be protected from direct sunlight, excessive heat, rain, and sudden changes in temperature.

It's important to note that controlled conditions need to be maintained after installation and throughout the life of the architectural millwork in order to prevent future problems.

By following these guidelines and by working with your architectural millwork supplier as a team, the millwork products installed on the job will reflect the quality with which they were made. In today's business environment, time is money — and most of us can't afford to waste either. However, in the rush to complete a project and "keep the customer happy," remember to invest the time to ensure the precision craftsmanship will be enjoyed for years to come.

Amy Mathews is a freelance writer who lives in Goleta, California.