
TECHNICAL BULLETIN

Wood Acclimation / Handling and Storage

Wood Acclimation

Wood dries by the movement of free water through fiber cavities, fiber walls, and the movement of water vapor through the wood. Because wood is not homogeneous, it shrinks more along the growth rings (radial) than across the rings (tangential). Tangential (width) dimensional change is often nearly twice that of radial (thickness) movement for wood species, and (longitudinal) dimensional change in wood is almost always negligible. These shrinkage variations cause drying defects like warping and checking. Shrinkage and swelling cease as the moisture content of wood approaches equilibrium with its environment. Species of wood vary in the rate and amount of shrinkage. To minimize shrinkage, warping, checking, and splitting in the finished product, lumber must be acclimated to the middle of the range of expected in-use moisture content. This can occur by either air drying or kiln drying the lumber. The extent of drying defects depends on the species and the rate at which the lumber dries. For much of the United States, the point of equilibrium in the exterior environment is between 12% and 18%. For the seasonal EMC levels in your region, a copy of the US Forest Products Laboratories document titled "Equilibrium Moisture Content of Wood in Outdoor Locations" is available in our pdf library.

Pre-Installation Handling and Storage

Wood products should be stored away from direct sunlight, rain, or snow and kept clean, dry, and off the ground before installation. A moisture barrier should be placed on the ground under the wood to prevent condensation inside the packaging while it is stored on-site. Allow wood decking to acclimate and stabilize to equilibrium humidity levels before installation to reduce post-installation movement.

Reinstallation Handling and Storage

Naturally durable wood decking removed after some years of use will likely have reached equilibrium moisture content. A moisture barrier should be placed on the ground beneath the wood to prevent condensation inside the packaging while it is stored on-site. Allow wood decking to acclimate and stabilize to equilibrium humidity levels before reinstallation to reduce post-reinstallation movement.

Store removed wood away from direct sunlight, rain, or snow and keep it clean, dry, and off the ground before reinstallation. Wood should be stacked in a well-ventilated location with dry wood stickers/slats not less than ½" in thickness, or more than 1.5" in width, placed no more than 24" on center between each row of wood decking. Do not dense pack wood decking after removal, as any surface moisture trapped in the unit may result in de equalization, potential mold growth, or water stains. The likelihood of sticker marks will increase the longer the wood is stored between removal and reinstallation. It is reasonable to expect some movement of the wood upon removal, as tension that was addressed during initial installation will be released upon removal. Reinstall wood decking as per the chosen fastener manufacturer's instructions.