

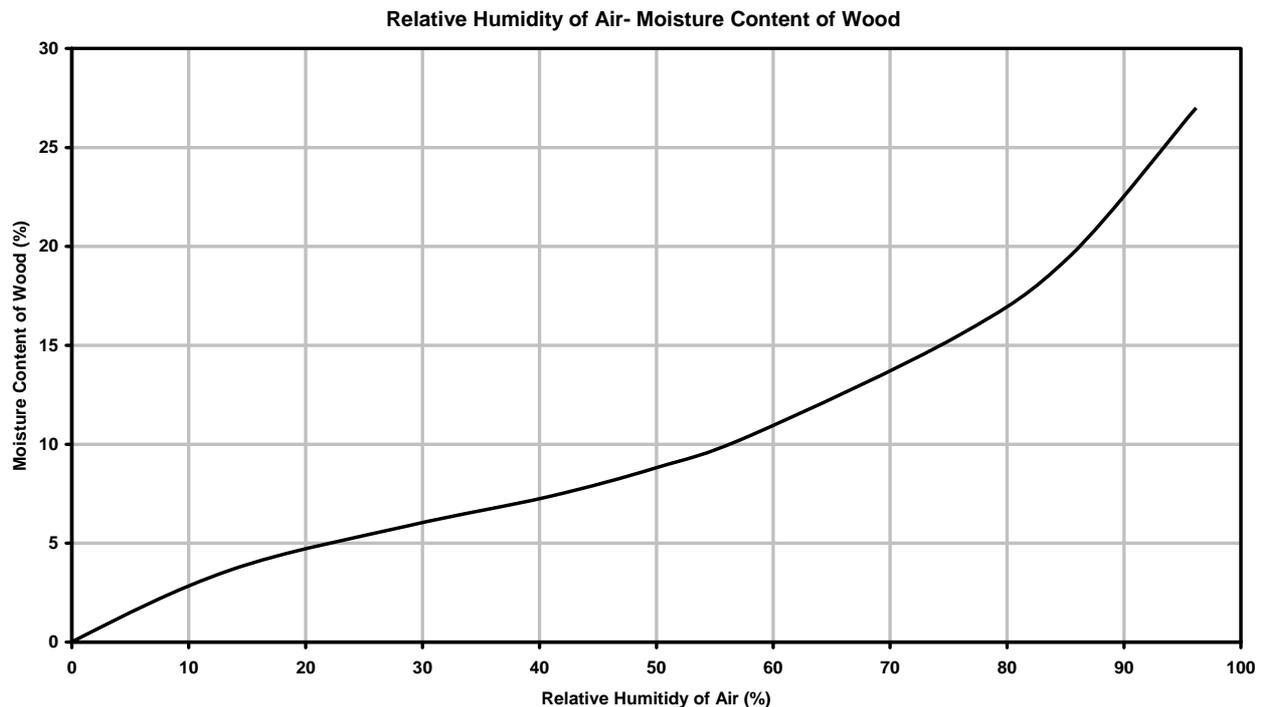


HUMIDITY AND MOISTURE CONTENT AND THEIR AFFECT ON TIMBER

PURPOSE

This section provides information on the relationships between air temperature, relative humidity, timber moisture content and their relevance to successful painting.

Air is able to hold varying amounts of water in suspension as a gas/vapour, depending on the temperature. The degree to which this occurs is the humidity level. The air can become saturated at any given temperature, meaning that no more water can be dissolved into the air. Relative humidity is the amount of moisture in the air, compared to the saturation point at that temperature. As the temperature increases or decreases, so does its ability to hold water.



Timber exposed to air, will change its moisture content in line with changes in the atmosphere, and will shrink or swell accordingly. The tendency of the timber to shrink and swell with moisture content variation depends on the species and direction of the grain of the wood. It is also affected by the method of cutting; edge grain (produced when the timber is quarter sawed) and flat grain (plain sawed) surfaces are affected differently. Every board has both an edge grain and a flat grain surface, but is named according to which type of grain is shown on the wider dimension.

The amount of shrinkage or swelling for a given change in moisture content is twice as great across the flat grain as it is across the edge grain. Consequently, when it dries the wood shrinks more in one direction than the other and tends to distort itself.



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The difference in shrinking tendencies means that when timber of different moisture contents, different species, or different grains are glued side by side in plywood or in a solid piece of furniture, some pieces will shrink or swell more than others. This results in "sunken cores" or a "wash board" appearance, as illustrated below.



Similarly, a poor selection in grains, species or moisture contents will result in the opening of joints, cracking, warping and other defects due to the variations in expansion and contraction.

It is essential to maintain consistent moisture content in the timber prior, during and after application and assembly.

For the most up to date information contact Wattyl Customer Service Hotline or visit the Wattyl Website.

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