

# SOLID WOOD: EXPANSION, CONTRACTION AND SEASONAL CHANGES

Relative humidity in your home vs. Moisture content of wood	
Relative humidity	Moisture content
0%	0%
20%	4%
40%	7%
75%	14%
99%	23-30%

For every 4% change in moisture content, wood changes about 1% in width. Changes in length are negligible.

Seasonal changes in humidity cause wood to shrink in the winter and expand in the summer. Small changes in dimension and shape are normal and are to be expected.

## The science:

Wood is hygroscopic, which means its **moisture content (MC)** will fluctuate based on the **relative humidity (RH)** of the surrounding air. As humidity increases, the MC increases, and the wood expands, and as the humidity decreases, MC decreases, and the wood shrinks. This relationship is referred to as **Equilibrium Moisture Content (EMC)**.

The moisture content of wood is tied directly to the relative humidity of the surrounding air. The higher the relative humidity, the higher the MC of the wood. Furniture delivered into a new environment will take a while to reach its **equilibrium moisture content (EMC)** with the air. In other words, for the wood to acclimate to the humidity level in its new environment, it may take on more moisture or it may dry out. For example, if furniture is made with wood at **6-8% MC** but is exposed to **20% RH**, the wood will dry to 4% MC (and shrink as it dries). If exposed long enough to acclimate to the environment, it could shrink 1%.



## How does that impact my furniture?

As an example, an **Exeter Extension Table** is made 111 ½” long. If it is acclimated to a more humid summer environment, it expands to 112” long. In a dryer winter environment it will return to 111 ½”

In addition to small changes in size, changes in the environment will result in small changes in shape. A table leaf may lift slightly at the edge so that it deviates from plane with the adjacent leaf (.020”). A glass placed across the joining line may rock slightly. If slid from one section to another, it may catch or feel like it is going to “trip”. This is completely normal and to be expected with solid wood extension tables.



The leaves will expand or contract faster at the ends of the panels. This will result in slightly concave shaped edges in the summer and will show a slight gap in the center of the table (image at left).

In the winter the leaves will shrink at the ends and the edges will be a slightly convex. The tiny daylight gap will show at the ends of the leaves. **These are normal seasonal changes and are to be expected with solid wood extension tables.**