

### Introduction

For any given combination of temperature and relative humidity conditions, there is an equilibrium moisture content (EMC) for a piece of wood.

For example, if the temperature is 75 degrees F and steady, and the relative humidity is 51% and steady, then the moisture content of a piece of wood will reach 9.3% and remain there. By remaining at a set moisture content, the wood is said to be at “equilibrium” with the environment. If a piece of wood is introduced into this temperature and humidity environment, and its starting moisture content is higher than 9.3%, then its moisture content will decrease over time and approach the equilibrium value of 9.3%.

See Table 1 for an estimate of wood equilibrium moisture content at various atmospheric temperatures and relative humidities. WeatherLink® will report this value for a Perception station or any other weather station set to run as a Perception. However, stations set as Vantage Pro2™ and Vantage VUE™ stations will automatically show EMC in the Browser and Plots. WeatherLink uses Inside Temperature and Inside Humidity to calculate EMC in all cases.

(View Table 1 on next page.)

		RELATIVE HUMIDITY (%)																			
		5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
Temperature (in degrees F)	30	1.3	2.4	3.5	4.4	5.3	6.3	7.2	8.0	8.8	9.7	10.5	11.4	12.5	13.7	15.1	16.7	18.3	20.4	21.6	22.0
	35	1.3	2.6	3.7	4.7	5.5	6.3	7.1	7.9	8.8	9.6	10.5	11.4	12.3	13.5	14.9	16.5	18.3	20.4	21.6	22.0
	40	1.2	2.4	3.5	4.6	5.5	6.4	7.1	7.9	8.6	9.5	10.4	11.2	12.3	13.4	14.8	16.6	18.3	20.4	21.6	22.0
	45	1.3	2.4	3.5	4.4	5.3	6.3	7.2	7.9	8.6	9.4	10.2	11.1	12.2	13.3	14.7	16.4	18.3	20.4	21.6	22.0
	50	1.5	2.8	3.7	4.6	5.4	6.3	7.2	7.9	8.7	9.4	10.2	11.1	12.1	13.3	14.7	16.3	18.6	20.4	21.6	22.0
	55	1.3	2.7	3.8	4.7	5.5	6.3	7.0	7.8	8.6	9.5	10.3	11.0	12.2	13.4	14.8	16.3	18.2	20.4	21.6	22.0
	60	1.3	2.5	3.7	4.7	5.5	6.3	7.0	7.8	8.6	9.4	10.2	11.1	12.0	13.2	14.6	16.3	18.2	20.4	21.6	22.0
	65	1.2	2.6	3.5	4.5	5.4	6.2	7.0	7.8	8.5	9.3	10.2	11.0	11.9	13.3	14.4	16.6	18.2	20.4	21.6	22.0
	70	1.2	2.5	3.7	4.5	5.5	6.2	7.0	7.7	8.4	9.2	10.1	11.0	11.8	13.1	14.4	16.1	17.9	20.4	21.6	22.0
	75	1.2	2.3	3.5	4.5	5.2	6.0	6.9	7.6	8.4	9.2	10.0	10.9	11.8	12.9	14.3	16.0	18.1	20.4	21.6	22.0
	80	1.1	2.4	3.5	4.5	5.3	6.0	6.8	7.5	8.3	9.1	9.8	10.7	11.7	12.8	14.3	15.9	17.9	20.4	21.6	22.0
	85	1.1	2.0	3.4	4.3	5.2	6.0	6.6	7.5	8.2	9.0	9.8	10.7	11.6	12.5	14.2	15.7	17.6	20.0	21.6	22.0
	90	1.3	2.3	3.3	4.3	5.1	5.9	6.7	7.4	8.1	9.0	9.7	10.5	11.4	12.5	14.0	15.5	17.3	19.7	21.6	22.0
	95	1.3	2.3	3.2	4.1	5.0	5.7	6.5	7.2	8.1	8.8	9.5	10.5	11.4	12.4	13.9	15.3	17.4	19.8	21.6	22.0
	100	1.0	2.4	3.4	4.1	5.1	5.7	6.4	7.2	8.0	8.7	9.4	10.3	11.2	12.4	13.5	15.0	17.0	19.6	21.5	22.0
	105	1.1	2.2	3.3	4.2	4.8	5.6	6.4	6.9	7.8	8.7	9.4	10.3	11.1	12.3	13.5	15.1	16.9	19.0	21.6	22.0
	110	1.3	2.3	3.2	4.0	4.7	5.4	6.2	6.8	7.6	8.4	9.2	9.9	10.8	12.0	13.3	14.8	16.6	19.0	21.6	22.0
	115	1.1	2.1	3.1	3.9	4.6	5.3	6.1	6.7	7.6	8.2	9.1	9.9	10.7	11.9	13.1	14.4	16.2	19.0	21.6	22.0
	120	1.1	2.3	3.0	3.9	4.6	5.3	6.0	6.6	7.4	8.1	9.0	9.7	10.5	11.7	12.9	14.1	16.2	18.5	21.4	22.0
	125	1.0	2.0	3.0	3.7	4.5	5.2	5.8	6.6	7.2	7.9	8.7	9.6	10.5	11.5	12.7	14.0	15.7	18.4	21.3	22.0
	130	1.0	2.0	3.0	3.7	4.4	5.0	5.6	6.4	7.0	7.8	8.5	9.4	10.2	11.3	12.5	13.8	15.6	18.0	21.2	22.0
140	0.0	0.0	2.8	3.5	4.1	4.8	5.5	6.1	6.8	7.5	8.2	9.0	9.8	10.9	11.9	13.4	15.1	17.5	20.7	22.0	
150	0.0	0.0	0.0	3.2	3.8	4.5	5.1	5.7	6.4	7.2	7.8	8.6	9.4	10.3	11.5	13.0	14.5	16.6	20.2	22.0	
160	0.0	0.0	0.0	0.0	3.7	4.2	4.9	5.4	6.1	6.8	7.4	8.2	9.1	9.9	11.0	12.3	13.8	16.2	19.8	22.0	
170	0.0	0.0	0.0	0.0	3.3	4.0	4.6	5.2	5.7	6.5	7.2	7.8	8.6	9.6	10.6	11.8	13.6	15.3	19.4	22.0	
180	0.0	0.0	0.0	0.0	0.0	3.8	4.4	4.8	5.4	6.0	6.8	7.4	8.1	9.0	10.1	11.4	12.9	15.0	18.1	22.0	
190	0.0	0.0	0.0	0.0	0.0	3.6	4.2	4.6	5.2	5.7	6.3	7.0	7.7	8.8	9.6	10.9	12.7	14.2	17.7	22.0	
200	0.0	0.0	0.0	0.0	0.0	3.3	3.9	4.4	4.8	5.3	6.0	6.6	7.4	8.4	9.4	10.8	12.1	14.0	17.3	22.0	
210	0.0	0.0	0.0	0.0	0.0	3.6	4.1	4.6	5.1	5.7	6.3	7.1	8.0	9.0	10.3	11.7	13.8	16.9	22.0		

**Table 1. Equilibrium Moisture Content of Wood (in %).**

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For Vantage Pro2 Stations: #6152, 6152C, 6153, 6162, 6162C, 6163

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